

# THE UNIVERSITY OF CHICAGO

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GRADUATE PROGRAMS IN THE DIVISIONS

ANNOUNCEMENTS

*Fall 2009*



## THE UNIVERSITY OF CHICAGO

Andrew M. Alper, *Chairman of the Board of Trustees*

Robert J. Zimmer, *President of the University*

Thomas F. Rosenbaum, *Provost*

Candidates for admission to graduate programs at the University of Chicago should address their inquiries, including requests for application materials, to the Dean of Students of the relevant graduate division or school to which application is being made.

All of the information in this volume, as well as in the Announcements of each of the professional schools, is available online at <http://catalogs.uchicago.edu>. These documents are updated periodically. You will find admissions applications and more detailed information about a program that interests you on divisional websites.

The statements contained in these Announcements are subject to change without notice.

Division of the Biological Sciences  
924 East 57th Street  
Chicago, IL 60637  
(773) 834 2105  
[biosci-grad-affairs@bsd.uchicago.edu](mailto:biosci-grad-affairs@bsd.uchicago.edu)  
<http://gradprogram.bsd.uchicago.edu>

Division of the Physical Sciences  
5747 Ellis Avenue  
Chicago, IL 60637  
(773) 702-8789  
Email: individual departments  
<http://physical-sciences.uchicago.edu>

Division of the Humanities  
1115 East 58th Street  
Chicago, IL 60637  
(773) 702-8512  
<http://humanities.uchicago.edu>

Division of the Social Sciences  
1130 East 59th Street  
Chicago, IL 60637  
(773) 702-8415  
Email: [ssdadmissions@uchicago.edu](mailto:ssdadmissions@uchicago.edu)  
<http://socialsciences.uchicago.edu>

The University of Chicago Booth School of Business  
5807 S. Woodlawn Ave.  
Chicago, IL 60637  
(773) 702-7743  
[admissions@chicagobooth.edu](mailto:admissions@chicagobooth.edu)  
[www.chicagobooth.edu](http://www.chicagobooth.edu)

Divinity School  
1025-35 East 58th Street  
Chicago, IL 60637  
(773) 702-8217  
[tdowens@uchicago.edu](mailto:tdowens@uchicago.edu)  
<http://divinity.uchicago.edu>

Law School  
1111 East 60th Street  
Chicago, IL 60637  
(773) 702-9484  
[admissions@law.uchicago.edu](mailto:admissions@law.uchicago.edu)  
<http://www.law.uchicago.edu>

Irving B. Harris Graduate School of Public Policy Studies  
1155 East 60th Street  
Chicago, IL 60637  
(773) 702-8401  
<http://www.HarrisSchool.uchicago.edu>

School of Social Service Administration  
969 East 60th Street  
Chicago, IL 60637  
(773) 702-1250  
[ssa.dos@uchicago.edu](mailto:ssa.dos@uchicago.edu)  
<http://www.ssa.uchicago.edu>

The University of Chicago central switchboard:  
(773) 702-1234.

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## GENERAL INFORMATION

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*Announcements: Graduate Programs in the Divisions* provides an overview of all graduate programs at the University of Chicago in the Divisions of the Humanities, the Social Sciences, the Physical Sciences, and the Biological Sciences. Professional schools in the University are closely integrated into the wider University; their programs are briefly described here. An individual issue of the *Announcements* is also available from each professional school which describes its programs and requirements in detail.

This volume is organized in a way that reflects the organization and functioning of the University. Each department or degree granting committee in the divisions of the University conducts its own admissions and aid competition, and sets its own degree requirements within a framework that is set by the University and by each division. However, divisions and departments engage in a substantial number of cooperative efforts, as evidenced by the large number of interdepartmental and interdivisional programs, committees, centers, and research groups in the University. Therefore, this volume contains a section for each division, and a separate section for interdivisional programs, centers, committees, and other organizations in which students may participate and, in some cases, earn a degree. The introductory section, which you are now reading, contains information about the University that is relevant to all students and applicants. A final section contains information for those interested in one of the professional schools.

Readers of these *Announcements* are advised that the policies and degree requirements of academic units that are set forth herein may change at any time without prior notice, or may represent a summary of more detailed policies and requirements. Students and applicants who wish the most up to date information regarding courses and degree requirements should review the division or department website or contact the department or the dean of students in the relevant division. The provisions of these *Announcements* are for informational purposes only and are not intended to create a contract or agreement between the University and any applicant or student.

### HISTORY AND PURPOSE

The University of Chicago is a private, nondenominational, coeducational institution of higher learning and research. It is located in the community of Hyde Park-South Kenwood, a culturally rich and ethnically diverse neighborhood seven miles south of downtown Chicago. Hyde Park-South Kenwood encompass one and one quarter square miles of commercial and residential districts that extend from 47th Street on the north to 61st Street on the south and from Cottage Grove Avenue eastward to the shoreline of Lake

Michigan. The neighborhood is a stimulating blend of the urban and small town.

The University of Chicago includes the undergraduate College; four graduate Divisions (of the Biological Sciences, the Humanities, the Physical Sciences, and the Social Sciences); six graduate professional schools (The University of Chicago Booth School of Business, the Divinity School, the Law School, the Pritzker School of Medicine, the Irving B. Harris Graduate School of Public Policy Studies, and the School of Social Service Administration); the libraries, laboratories, museums, clinics, and institutes; the Graham School of General Studies; and the University of Chicago Press.

The University was founded by John D. Rockefeller. William Rainey Harper was its first president. Classes began on October 1, 1892, with an enrollment of 594 students and a faculty of 103, including eight former college presidents. In 1930 the undergraduate College and the graduate divisions were created by President Robert Maynard Hutchins to foster interdisciplinary study and encourage interdepartmental cooperation. Such cross fertilization continues to characterize the University.

Since its founding, the University has earned a reputation for recruiting a faculty committed to scholarly distinction and intellectual innovation. The faculty is represented in more than seventy honorary and professional societies, including the National Academy of Sciences, the American Academy of Arts and Sciences, the American Philosophical Society, and the National Academy of Education. Over eighty members of the faculty, former students, or individuals who did research at the University have been named Nobel laureates, and seven are currently members of the faculty. Notable is the faculty's tradition of developing cross disciplinary fields of study, such as Law and Economics, Conceptual and Historical Studies of Science, Ecology and Evolution, and the Institute for Mind and Biology. A leader in higher education, the University of Chicago has had a major impact on the nation's colleges and universities.

The graduate programs in the University aim to send out graduates who have begun to develop mastery of the content and methods of their chosen field of study and who are equipped to continue to learn and to produce new knowledge. To that end, the University of Chicago offers an unusually free environment for graduate study, one that encourages both faculty and young scholars and researchers to develop their interests and talents by working with colleagues throughout the University.

In addition to its Ph.D. programs and the master's degrees offered through them, the University offers a number of special degree programs for students who have completed an A.B. These free standing master's degree programs, which may be departmental and multidisciplinary, or offered in conjunction with a master's degree in a professional school, are carefully tailored for students

whose goal is a master's degree. Some students who successfully complete these programs subsequently decide to apply to doctoral programs at the University or elsewhere. However, these special degree programs are conceived as self contained. These programs are listed below:

Division of the Humanities

Art History

Visual Arts (M.F.A.)

Master of Arts Program in the Humanities

Division of the Social Sciences

Master of Arts Program in the Social Sciences

International Relations

Interdisciplinary programs

East European and Russian/Eurasian Studies (as M.B.A./A.M. only)

Latin American and Caribbean Studies

East Asian Studies (as M.B.A./A.M. only)

Middle Eastern Studies

South Asian Studies (as M.B.A./A.M. only)

Division of the Physical Sciences

Professional Master of Science Program in Computer Science

Divisional Master of Science Program in the Physical Sciences

Master of Science Program in Financial Mathematics

Division of the Biological Sciences

Health Studies

## APPLICATION TO THE PROGRAMS IN THE DIVISIONS

Applicants for admission to graduate programs in the divisions at the University of Chicago should address their inquiries to the dean of students of the graduate division or to the program to which application is being made. Applications are submitted electronically; applicants should consult the appropriate divisional or program website for information and instructions

Associate Dean of Students  
BSD Office of Graduate Affairs  
924 East 57th Street, Suite 104  
Chicago, IL 60637 5416  
(773) 834 2105  
biosci-grad-affairs@uchicago.edu

Division of the Physical Sciences

Applicants should consult the website of the program to which they intend to apply for up to date admission materials.

<http://physical-sciences.uchicago.edu>

Dean of Students

Division of the Humanities

Walker Hall 111

1115 East 58th Street

Chicago, IL 60637

(773) 702-1552

[humanitiesadmissions@uchicago.edu](mailto:humanitiesadmissions@uchicago.edu).

<http://humanities.uchicago.edu>

Dean of Students

Division of the Social Sciences

Foster Hall 105

1130 East 59th Street

Chicago, IL 60637

(773) 702-8415

[admissions@ssd.uchicago.edu](mailto:admissions@ssd.uchicago.edu)

<http://socialsciences.uchicago.edu>

An applicant who holds a degree from an accredited institution is considered for admission on the basis of (1) an undergraduate record, (2) a well organized plan for graduate study, (3) Graduate Record Examination (GRE) and English proficiency scores, where required, and (4) recommendations from three college faculty members acquainted with the character, ability, potential, qualifications, and motivation of the applicant. Persons who have been away from school for several years may submit recommendations from employers, professional associates, or supervisors.

Certain departments of the University require additional credentials; details concerning these additional credentials are available with the application form, or will be sent to candidates for admission after they have filed their applications.

Transcripts of all academic work should be submitted with the application if at all possible; the applicant should request each institution attended to provide an official transcript in a sealed envelope or via a digitally secured pdf originating from the college's registrar. Letters of recommendation should also be submitted with the application; each recommender should enclose the evaluation in sealed envelopes and put his or her signature across the sealed flap. Foreign records of university work may be certified copies of the original. More detailed instructions are included with the application. Every applicant is asked to study the general statement of the division he or she plans to enter and specific requirements of the proposed field of graduate study.

*International students.* Students from abroad must submit, in addition to the usual credentials, proof of proficiency in English and documentation of all sources of

financial support to cover their first year of expenses at the University. Only those students from abroad who hold the equivalent of a U.S. bachelor's degree and whose academic record is excellent will be considered for admission.

#### APPLICATION DEADLINES

Applications for admission and for aid must be submitted by the appropriate deadline. Application deadlines can be found on the online applications and may be as early as December 1 for the following autumn. Incomplete applications will be evaluated on the basis of materials received at the time of the regular review process.

#### PART TIME STUDY

Part time study is more feasible in some fields than in others. The divisional dean of students can answer questions about opportunities for part time study in particular departments. Student loans are available to students enrolled at least half time. Applicants for part time study are generally not eligible for scholarship assistance since priority in assigning limited University aid funds must necessarily go to full time students.

Applicants who wish to begin their studies on a part time basis should so indicate on their applications.

#### DECISIONS

Most admission and aid decisions for the autumn quarter are sent by mid March. Students have until **April 15** to accept or decline.

In agreement with the Resolution of the Council of Graduate Schools in the United States, a student who agrees to accept a scholarship, fellowship, traineeship, or graduate assistantship at the University of Chicago or at any of these schools prior to April 15 and subsequently desires to change plans must resign the financial aid offer and/or acceptance of admission at any time through April 15 in order to accept another scholarship, fellowship, traineeship, or graduate assistantship, regardless of any understanding reached before then. This protects the student's right to select the offer that is most attractive.

#### STUDENTS WITH DISABILITIES

As soon as possible after having been admitted, students should contact their divisional dean of students.

#### CONDITIONS OF ACCEPTANCE

Acceptance of a scholarship or fellowship is conditional on the student's agreement to devote full time to graduate study toward an advanced degree at the University of Chicago. In cases of students holding larger awards, special permission for remunerative work must be secured in advance.

#### APPLICATION TO PROFESSIONAL SCHOOLS

Students interested in the University's professional schools the Graduate School of Business, the Divinity School, the Law School, the Pritzker School of Medicine, the Harris School of Public Policy Studies, or the School of Social Service Administration should contact the admissions office of each school.

#### BEING A STUDENT AT THE UNIVERSITY OF CHICAGO

From healthcare services to cultural programming, The University of Chicago is dedicated to supporting and enriching the life of its graduate students. To that end, there are many offices and programs that exist to create a healthy, safe, and productive environment for students both inside and outside the classroom. You can find a list of resources available to graduate students at <http://grad.uchicago.edu/>

Chicago is a vibrant and exciting city that you will want to explore. As a world class city, Chicago also presents all of the typical challenges of a complex modern urban society. While the University takes measures to ensure a safe campus environment, there are also many things you can do to ensure your own safety. The University's campus safety report, Common Sense, is designed to help equip you to navigate the city successfully and offers information about the University offices that provide services related to security and safety. The report is available online at <http://commonsense.uchicago.edu/>. Hard copies of Common Sense are available upon request from the Office of Campus and Student Life, 5801 S. Ellis Ave., Chicago, IL 60637, (773 702-7770).

As a member of The University of Chicago community, there are University policies and regulations you are responsible for knowing. These policies protect your rights and outline your responsibilities as students. For instance, the Graduate Student Parents Policy grants academic accommodations to graduate students who are also new parents, and the Residence System for Students in PhD programs defines the status of doctoral students as they progress through their studies. A complete statement of policies and regulations can be found at <http://studentmanual.uchicago.edu/>

## INTERDIVISIONAL PROGRAMS

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The University of Chicago has a distinctive and distinguished tradition of interdisciplinary research and teaching. Faculty and students with interests that span departmental lines are readily able to find colleagues throughout the University. The many interdivisional programs that flourish at the University vary widely in purpose and organization. Some are formal, degree granting committees, some are area studies centers, some are comparatively informal groupings of faculty and advanced students who share an interest in some method, approach, or subject area.

### COUNCIL ON ADVANCED STUDIES IN THE HUMANITIES AND SOCIAL SCIENCES

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#### *Chair*

Cathy Cohen

#### *Members*

Dain Borges, History

Thomas Christensen, Music

Elisabeth Clemens, Sociology

Judith Farquhar, Anthropology

Rachel Fulton, History

Elaine Hadley, English Lang. & Lit.

Travis Jackson, Music

Gabriel Richardson Lear, Philosophy

Dario Maestriperi, Comparative Human Development

Sankar Muthu, Political Science

Rebecca Zorach, Art History

#### *Ex Officio Members*

Richard Rosengarten, Dean of the Divinity School

Martha T. Roth, Dean of the Division of Humanities

John Mark Hansen, Dean of the Division of Social Sciences

### GRADUATE WORKSHOPS IN THE HUMANITIES AND SOCIAL SCIENCES, 2009-2010

Graduate workshops in the humanities and social sciences for 2009-2010 are described below. Most of these are ongoing, although the focus may change from year to year. Because new workshops are established on an annual basis, please see our website (<http://cas.uchicago.edu>) for current information and links to workshop websites. Generally meetings consist of discussions of papers by advanced graduate students, University of Chicago faculty, or guest speakers

from other institutions, although this varies according to each workshop's objective and focus.

#### *African Studies*

This Workshop is an interdisciplinary forum for graduate students and faculty whose work concerns the material and socio-cultural lives of people of the African continent and its discursively constituted diasporas, presently and historically. Student participants tend mostly to come from the Anthropology department, but the workshop also has active members in the fields of History, Human Development, Literatures, Political Science, Religious Studies, and History of Culture, and encourages cross-disciplinary collaboration and exchange. In addition to regular presentations by students, faculty, and invited guests, the Workshop hosts bi-annual Red Lion Seminars jointly with Northwestern University's Program of African Studies.

#### *American Literatures and Cultures*

We strive to promote the canonical diversity and comparative approaches that have become critical to the analysis of American cultures. We also investigate the thematic, methodological and pedagogical issues across historical periods within the fields of literary studies and American studies. This workshop discusses papers by graduate students, faculty and guests relating to the broadly defined fields of American literary and cultural studies.

#### *American Religious History*

This Workshop explores the role of religion in American history, culture, and society from the colonial period to the present day. The Workshop engages in historiographical, theoretical, and methodological discussions about the place of religion in narratives of American history by focusing on issues and topics such as gender, race, theology, consumer culture, literature, and the rise of evangelicalism. The Workshop welcomes scholars from a variety of academic disciplines including, but not limited to, the Divinity School and the History, English and Sociology departments. Presentations by students, faculty and guest speakers take place in a relaxed discussion oriented environment designed to further the research and knowledge of participants.

#### *Ancient Greek and Roman Philosophy*

A wide range of issues concerned with Ancient Greek and Roman philosophy will be discussed at this workshop. In addition to paying close attention to the arguments, we will consider the historical and literary context as well as the reception of ancient philosophy up to the present. We welcome interdisciplinary approaches.

#### *Ancient Societies*

The theme of this year's Workshop is "Religion and Law," which is a natural development on last year's theme, "Epigraphic habits." First, many religious systems in the ancient world publicized the rules of cult and even occa-

sionally deontological text, which recent epigraphic work has brought to light. Second, new historical and linguistic investigations have allowed us to contextualize legal documents more robustly than before. Finally, ancient history is witnessing a renewed emphasis, buttressed by new questions and techniques, on the study of law. The time is ripe to bring the fruits of that labor to bear upon the role of discourses of law in the self-articulation of cultic communities, and likewise in the regulation of such by the political communities in which they existed.

#### *Anthropology of Europe*

This Workshop explores current research in the anthropology of Europe and examines ongoing ethnographic fieldwork—local, regional, national, and transnational—in all areas of Europe. While the workshop focuses on anthropological approaches, it also draws on insights from history, sociology and cultural studies, inviting participants from these and other disciplines. Presentations range from lectures by visiting Europeanist anthropologists, to discussions of work in progress by Chicago faculty, to papers by students on their field research.

#### *Art and Politics of East Asia*

This workshop provides a common intellectual forum for students and scholars of diverse fields investigating the interaction of aesthetics with political economics as reflected in textual, visual, and performance media in East Asia. Taking as its focus the cultural products emerging out of East Asian societies as they experience modernity, the workshop confronts existing theoretical frameworks and methodological issues relevant to the study of artistic production and consumption. The workshop is a space for students to share their work, discuss major cross-regional themes, and engage the work of noted scholars in the field.

#### *China Before Print*

This Workshop takes advantage of the wealth of recent archaeological discoveries in China to bring together students, faculty, and visitors in an informal setting to present and review research into the study of ancient cultures. Placing special emphasis on the history of the book, the workshop considers the following questions: what are some approaches to ancient literacy and manuscript culture? How were different kinds of ancient knowledge composed, circulated, transmitted, and stored? What constitutes some of the fabrics of the diverse cultures both within China and beyond from beginnings to the coming of print? The workshop provides an open and lively forum for debate on all of these questions and more.

#### *City, Society and Space*

The social organization of urban environments has always held a prominent place in the social sciences and at the University of Chicago in particular. This workshop carries on that tradition, providing an interdisciplinary forum for

faculty and graduate students to present current research, participants contribute to the development of new understandings of the social structures and processes within a city. This workshop hosts a lively and interactive series of presentations covering such topics as political economy, culture, social organization, globalization, crime and urban history.

#### *Clinical Ethnography*

Workshop meetings provide the opportunity for the faculty and students involved with clinical ethnography and psychiatry to meet together to discuss clinical cultural issues. The intellectual ambition of the group is to understand the influence of cultural meaning and social structure on the identification, experience and treatment of mental illness from psychological anthropology and cultural psychology perspective while maintaining a commitment to the clinical reality of these struggles.

#### *Comparative Behavioral Biology*

Jointly sponsored by the Institute for Mind and Biology and the Department of Comparative Human Development, this workshop brings together individuals broadly interested in how biology and environment influence social behaviors and how the environment in turn influences genetic change. Presenters conduct research on how developmental, physiological and immunological mechanisms influence organismal behavior, and how evolutionary processes promote these mechanisms. Our regular participants study human and non-human animals, researching paternal behaviors, mate choice, immunology and endocrinology, kin selection and cognition, among other topics. Graduate students interested in any area of the biological and social aspects of behavior are encouraged to attend this open forum.

#### *Comparative Human Development*

The workshop builds upon the reemergence of cultural psychology as the comparative study of the way culture and psyche are constitutive of one another. It is specifically concerned with the ways in which the person and their mental well-being are defined and developed in diverse environmental and sociocultural contexts. Presentations by students, faculty, and outside speakers from anthropology, psychology, and allied fields will focus on diverse topics in mental health behavioral research, including the cultural constitution of disease, the temporal patterning of health-related processes within a lifespan perspective and optimal experience. They also may address positive psychological processes such as enjoyment, creativity, and wisdom. The workshop encourages participants from all fields.

#### *Comparative Politics*

Comparative politics is a broad field. The common thread running through the research presented at our workshop is the search for broad theoretical propositions and fresh empirical insights through the comparative study of

politics. What explains levels of violence in civil wars? Why have some former communist systems evolved into democracies with substantial patronage and corruption, whereas other democracies in the region are relatively clean? Why do poor people sometimes migrate internationally to countries that are just as poor as the countries they left? If economic growth encourages democratization, is this because modern economies are wealthier or because they are more egalitarian? These are the sorts of questions raised by papers presented at the workshop.

#### *Contemporary Art and Its Histories*

The Contemporary Art Workshop provides a context for the consideration of history as an indispensable component of work on contemporary art. In addition, the workshop seeks to create a meeting place for artists, art historians, curators and critics both from the University and from without. We offer a supportive, yet critical setting in which the arts community can engage in the sustained analysis and debate of current practices.

#### *Contemporary European Philosophy*

The Contemporary European Philosophy Workshop is an interdisciplinary forum that seeks to promote sustained advanced research in the field of European philosophy at the University of Chicago and to foster a local community of scholars from across the humanities and social sciences. It welcomes students, faculty, and members of the wider philosophy community to present and discuss their latest work.

#### *Early Christian Studies*

The purpose of the Early Christian Studies Workshop is to provide a venue for students and scholars of the New Testament, Greco-Roman religions and literatures and the early history of Christianity to present their creative work on primary texts and other evidence for the early Christian movement and the world in which it grew.

#### *Early Modern*

This interdisciplinary workshop focuses on every aspect of the early modern experience, circa 1350-1800. It encompasses the entirety of the Mediterranean and European worlds as well as their rivals and colonial possessions. While the workshop's approach is historical, we actively encourage participants who work on any aspect of the areas and period covered. Most sessions discuss pre-circulated papers presented by graduate students, faculty, or invited visitors. The Early Modern Workshop is a forum for the Chicago community to meet and help one another in ongoing research about political, cultural, economic and legal topics broadly situated across four centuries of world history, from colonial America to Europe to Southeast Asia.

#### *East Asia: Politics, Economy, and Society*

Current social science research on East Asian societies, particularly the People's Republic of China, Korea, Taiwan, and Japan is the focus of the workshop. The scope of the workshop is truly interdisciplinary, as we attract students and faculty from economics, political science, sociology, international studies, and various other areas. The workshop features presentations by university faculty members, graduate students, and guest speakers working on East Asia. Graduate students are especially encouraged to present their thesis and dissertation research.

#### *East Asia: Transregional Histories*

This workshop invites students, faculty and scholars from other academic communities to present creative and original work that speaks across the national lines of East Asia as well as the disciplinary lines of the academic community. Joint presentations among participants that incorporate multi-disciplinary and/or trans-regional historical perspectives are especially encouraged. While recognizing the continuing importance of the nation state in historical understanding, we believe that it is just as important to give exposure to themes of a transnational and regional or global nature that have been obscured by the national paradigm. Such approaches can prove particularly fruitful when undertaken at a level of understanding beyond traditional departmental and specialty boundaries.

#### *Education*

This interdisciplinary workshop supports the advancement of education related research and theory among members of the university community in two types of sessions: 1) Methodology and 2) New Findings in Education. Methodology sessions enable presenters with work in progress to seek advice from workshop participants on research design and analysis approaches. New Findings in Education sessions provide an outlet for presenters to share ongoing research and completed papers with workshop participants.

#### *Eighteenth and Nineteenth Century Cultures*

During the years 1660-1900 cultural production achieved unprecedented heterogeneity throughout Britain, its colonial possessions, and Western Europe. The goal of this interdisciplinary workshop will be to examine the tensions between this diversified production and the unifying narrative of modernity often imposed on this two hundred and forty year span. Although students of English, American, and Western European literatures have traditionally formed the core of our attendance, we enthusiastically invite scholars from other areas of inquiry as well: students of non-Western cultural production, art history, philosophy, the history of science and the social sciences. This workshop discusses pre-circulated papers.

### *EthNoise!: Ethnomusicology*

The workshop contributes to a growing interdisciplinary discourse on music and its cultural context, establishing and interchange between disciplines in the humanities and social sciences. This forum capitalizes upon the ongoing work of graduate students in the university and invites innovative scholars to Chicago to explore the challenges faced by music ethnographers. We welcome submissions from graduate students in all disciplines and encourage university wide faculty participation.

### *Gender and Sexuality Studies*

This workshop provides an interdisciplinary forum for the development of critical perspectives on gender and sexuality. The workshop's primary purpose is to promote studies of the ways in which gender and sexuality shape human experiences and are embedded in other social practices. The workshop serves as a forum for discussing both graduate student papers and unpublished work from scholars in the field. Graduate student presentations may focus on any area of gender and sexuality studies. Workshop participants share the responsibility for choosing topics and speakers and for evaluating the effectiveness of the workshop's interdisciplinary process.

### *Global Environment*

The goal of this workshop is to provoke an informed, interdisciplinary dialogue on the various dimensions of how people engage with their environments. The environment broadly considered as a dynamic product constantly produced through the interaction of people and the material world they both comprise and occupy- is a source of human sustenance as well as an object of politics, social movements, discourses, and cultural representations. Our goal for this year is to explore the relationships between human rights, perceptions of the environment, cultural representations of nature, and the materiality of environmental histories as they are configured in specific social, political, and cultural contexts.

### *History, Philosophy, and Sociology of Science*

This workshop is a forum devoted to interdisciplinary approaches to the sciences. Its meetings provide a chance to encounter the latest work in science studies, presented by outside speakers, faculty, and graduate students. Topics range widely: in recent years the workshop has hosted discussions of subjects as diverse as Aristotelian logic, Renaissance astronomy, William James' Philosophy, modern bioethics, and the sociology of industrial-academic collaboration.

### *Human Potential*

This is an interdisciplinary forum for graduate students, postdocs, and faculty whose work concerns behavior, health, and well-being across the lifespan and the ways in which technology and public policy shape human potential

and achievement. The workshop has active members in the areas of social, behavioral, health, and policy sciences. The workshop alternates between two types of sessions. Not only do we regularly invite outside speakers, but we also provide a forum for faculty postdoctoral fellows and graduate students to present research in progress in order to receive critical and constructive feedback.

### *Human Rights*

Due to domestic and world events, human rights has become a vital focus for academic research across disciplines. This workshop responds to a growing need to examine and discuss human rights and for the presentation of research and discussion on relevant contemporary human rights issues. The Human Rights Workshop crosscuts all academic disciplines and helps the campus community to engage in the examination of issues of moral and political significance. The 2009-10 Human Rights Workshop will be organized along thematic lines, in cooperation with faculty sponsors: Autumn, human security; Winter, global justice/local justices and; Spring, the practice of human rights.

### *Immigration*

The purpose of the workshop is to stimulate and promote the development and discussion of theoretical and empirical research related to international migration and immigrants' experiences. The immigration related issues cut across historical periods, generations, languages and national boundaries. Who are those people who choose to migrate? Why do they migrate? How do host countries define migrant rights and obligations? How do immigrants and their families integrate into their host societies? How do immigrants influence their host societies? What are the relationships between immigrants and their countries of origin? How does international migration influence global dynamics? The Immigration workshop provides a venue in which to address these and many other questions central to the academic and public debates on immigration.

### *Interdisciplinary Approaches to Modern France*

This workshop provides a forum for faculty and students from different departments in the social sciences and the humanities who share a common interest in France from the mid-seventeenth century to the present. Bringing together different disciplinary perspective and research horizons, it encourages participants to enrich the intellectual and methodological range of their own work. Topics will reflect the diversity of the group and include representatives from the fields of history, anthropology, literature, art history, sociology, and political science. Participants from all disciplines are welcome.

### *Interdisciplinary Archaeology*

The primary objective of the Workshop is to forge a lively and respectful dialogue on aspects of method and theory that cut across the field's diverse disciplinary locations.

There is a widely perceived need for a forum to engage in conversations and projects of comparison across the different disciplinary homes of archaeology. "Method, practice, and the nature of archaeological knowledge," will be the centerpiece of a series of explorations to be held in a variety of formats throughout the year. Our goal will be to understand the mutual shaping of methods and interpretation from a wide array of perspectives. All interested participants are encouraged to attend.

#### *Interdisciplinary Workshop in Paris*

This workshop provides a forum for Chicago faculty and students conducting research in Paris to share and discuss their work with their colleagues. The diverse nature of participants will assure the interdisciplinary character of the workshop.

#### *International Politics, Economy and Security (PIPES)*

PIPES is a center of research and training in international studies at the university. Weekly workshops provide a forum for graduate students and faculty to present their research. Topics include the full range of international studies; including political economy, security studies, foreign policy, international law and organization, international environmental issues, critical international relations theory, and a wide variety of regional issues. This works is methodologically diverse, encompassing historical research, mathematical modeling, quantitative studies and interpretive approaches.

#### *International Security Policy (PISP)*

PISP is a widely attended and intellectually vigorous workshop at the university. PISP's activities revolve around a simple and important goal: to serve as a major center for scholarship and graduate student education for deep understanding of mainstream issues of international security. The workshop original unpublished research paper, commonly a draft of a journal article or dissertation/book chapter by a faculty member or student from the University of Chicago or other intellectual institution. Topics include all aspects of the causes of war and peace, American national security policy, and international security affairs.

#### *Islam and Modernity*

The Islam and Modernity Workshop is predicated on the belief that studying the way Muslim societies and the religion of Islam have interacted with Western modernity poses unique challenges for scholars. The workshop aims to support students interested in tackling these challenges by exposing them to the ongoing research on Islam and Muslims not only in area studies departments but also throughout the social sciences and among scholars of divinity and law.

#### *Islamic Art and Artifact*

The workshop will explore Islamic culture, history, and identity through archaeological and art historical interpretations. The visual arts and material artifacts provide new analytical methodologies that independently create frameworks with which to examine the impact of Islam on the Middle East and surrounding areas. This is in direct response to the tradition of scholarship in the field of Islamic studies that has heavily concentrated on texts and documentary evidence. Exposure to these two ways of seeing will combine lectures and roundtable discussions often in the same meeting in order to draw wider participation and lively discussion.

#### *Language, Cognition, and Computation*

This workshop is an interdisciplinary forum for graduate students and faculty whose work addresses human language from a variety of perspectives: cognitive, computation, experimental, theoretical, and their intersection.

#### *Language, Variation, and Change*

This workshop provides an interdisciplinary forum for graduate students and faculty to discuss the motivations and consequences of language change. This is conducted from diverse perspectives including linguistic, historic, social, cognitive, and computational.

#### *Late Antiquity and Byzantium*

We study all aspects of the peoples, cultures, histories, and religions of the Late Antique and Byzantine world, including the near Eastern and Slavic regions and endeavor to create a forum for communications about recent archaeological discoveries in the region.

#### *Latin American Cultures*

This workshop is a place of gathering for collaborative discussions and student presentations that seek to create a forum for interdisciplinary interaction and research projects in the field of Latin American cultural studies. The workshop addresses the multiple linguistic, textual, and visual traditions of Latin America, including countries such as Cuba, Haiti, Mexico, and Brazil. Topics to be discussed will range from colonial studies to contemporary topics of relevance in the cultural world of Latin America.

#### *Latin American History*

The Workshop is a forum for discussion of novel approaches to Latin American history. It aims to develop wide comparative historical perspectives and to examine methods and techniques from a variety of disciplines. Presentations cover a broad temporal (early colonial to contemporary), geographical (Mexico, Central America, the Caribbean, and South America), and disciplinary range.

### *Law, Culture, and Society*

The law stands at the center of virtually every social, political, linguistic and cultural domain. It plays a critical role in shaping our most basic concepts and categories of thought and identity, and responds in turn to social and historical transformations. The goal of this Workshop is to facilitate the study of law as a cultural and social institution in both historical and contemporary contexts. Among the questions to be considered are: how do different disciplines conceptualize the concept of law? Are there any universal elements of the law? What are the boundaries of the law? Why does the law take the formations it currently has?

### *Literature and Cultural History of Pre-Modern East Asia*

This workshop aims to explore the cross disciplinary understanding of literature, theater, and cultural history in early modern China. In close relation with other disciplines such as art, religion, music, and philosophy; we will examine the literary and cultural representations and practices that emerged over the fourteenth to the twentieth centuries in Chinese speaking communities. While focusing on the flow of cultural productions and ideas across regional boundaries, we will also discuss theoretical and historical issues such as gender and sexuality, performance and popular culture, literati and self-representation, book publishing and print culture, and the interactions between text and image in expressions of this period. Media of particular interest range from theater, performance, and music, to print and material culture.

### *Mass Culture*

This workshop is a forum for recent and ongoing academic research on the historical, theoretical, and practical dimensions of modern mass (commercial, consumer, or popular) media, including cinema, television, journalism, popular music, photography, advertising, fashion, public amusements, and computer technology. While we do consider interpretive problems presented by individual works and different types of mass media, our focus rests on broader questions regarding the key role mass culture plays in the formation of contemporary public spheres. Because the scope of many forms of mass culture extends beyond the boundaries of any one discipline, the Workshop is committed to interdisciplinary work.

### *Medicine, Practice, and Body*

This workshop focuses on medical and psychiatric practices as a middle ground between the formerly dominant polarities of body as brute materiality, on the one hand, and as mere symbolic representation, on the other. It also seeks to provide a venue for reports on bodily and scientific matters from several disciplinary orientations and from a variety of Western and non-Western settings. Out thematic interest for the 2009-10 academic year include: the efficacies of psy-

chiatric practice; disciplines of the body; semiotics and the senses; violence and memory; ecology and environment; development logics and humanitarian aid systems as they relate to medicine and the body; reproductive demographics and state policy; scientific and legal approaches to medicine and the body; and the institutional work of health care.

### *Middle East History and Theory (MEHAT)*

This Workshop serves as a multidisciplinary platform where University students in the Humanities and Social Sciences can discuss a wide array of academic questions related to the history, culture, societies and politics of the Middle East. As an area studies workshop, we accept papers dealing with this broad range of subjects throughout the geography of the Middle East, North Africa, and Central Asia, and over a time span extending from the advent of Islam to the present. One of the Workshop's main concerns is to bridge the existing gap between factual and theoretical approaches to studies of the Middle East.

### *Modern European and Russian Studies*

This workshop offers a forum to discuss and critique works in progress concerning the history, culture, and societies of Modern Europe, including the former Soviet Union, East Central Europe, Germany, and France. Presenters come from the University faculty and students as well as invited scholars working on related research projects. The workshop is a place to discuss current research and is the focal point of a larger interdisciplinary community of scholars.

### *Modern Philosophy*

This workshop provides a forum for graduate students and faculty interested in the history of philosophy from Descartes to Kant. Workshop sessions include presentation from graduate students as well as hosting presentations from prominent modern philosophy scholars. Presenters at the workshop typically focus on: Descartes, Kant, Locke, Hume, Berkeley, Rousseau, Hobbes, Spinoza, Leibniz, and other figures. They can also examine post-Kantian German idealism and twentieth century Kantianism and approaches in contemporary ethical theory as well as moral and political philosophy that take one of the modern philosophy figures or conceptions as their points of departure.

### *Money, Markets, and Consumption*

This workshop emphasizes the role of ethnographic fieldwork and historical finding to critically analyze economic assumptions. The workshop provides a forum for both theory and research into empirical, "on the ground" economic behavior around markets, money and consumption, which allows researchers to observe and deduce the various social and cultural factors that influence and problematize this behavior. This workshop aims to build up an interdisciplinary community of students and faculty to both critique and complement rational economic theories about

individual and group economic behavior, through factors such as social, cultural, and historical context

### *New Media*

This workshop provides a forum for faculty and graduate students to discuss the innovation and obsolescence of media, where these overlapping, asynchronous events are understood through social practices and lived experience. Spurred by the ongoing, but always uneven impact of media on everyday life, and the most recent materialization of media as “new” and digital, we explore the historical intersection of technology, culture, politics, and aesthetics. The New Media Workshop is committed to fostering critical dialogue on all aspects of mediated experience and invites participation from across all disciplines.

### *Poetry and Poetics*

This workshop provides a forum for all those members of the University devoted to the practice and study of poetry, be they graduate students, faculty or poets. We commit ourselves to the historical and formal engagement with poetry in all languages and across all periods. We welcome comparative work, as well as work that issues from a variety of theoretical perspectives. We especially encourage graduate students from any field to present essays and dissertation chapters at the workshop.

### *Political History*

This workshop explores one of the more vigorous developments in the social sciences over the past decade: an interdisciplinary revitalization of the study of politics from historical perspectives. The central aim of the workshop is to explore the roles that politics broadly construed have played in history and how understanding these political developments can reveal a richer and more nuanced view of American and related histories more generally. While workshop presentations and discussions may focus on the United States, they will also address the connections between past and current events as well as the world beyond the United States.

### *Political Communication and Society*

With faculty sponsors and participants drawn from several disciplines in the social sciences, the Political Communication and Society Workshop provides a home to the academic study of communication and society. A community of scholars from across the humanities and the social sciences, the workshop facilitates lively discussions about developing or recent political communications scholarship from a variety of perspectives. Our conversations for this academic year will center on two themes: the politics of piety and the phenomenology of democratic practice.

### *Political Psychology*

This workshop focuses on how psychology informs the study of political behavior and how the political world

provides useful ways of studying psychological phenomena. Participants in the Workshop seek to understand how the structure and function of the mind informs us about the political world and how political intuitions, events, and actors regulate the workings of the mind. The interdisciplinary focus facilitates synergies and insights, contributing to the burgeoning field of political psychology. The Workshop will draw upon outside speakers in psychology and political science, as well as local faculty and students in those departments and related fields.

### *Political Theory*

This workshop is a forum for the critical discussion of new research in all varieties of political theory, political philosophy, and moral, social and legal theory and philosophy, historical and contemporary. Presenters include graduate students, faculty from the University and other local institutions and prominent visitors. Graduate students also have the opportunity to serve as discussants for presentations by other students, faculty, and visitors. The Workshop subscribes to no particular methodology or political ideology and welcomes participants from all departments and disciplines. We seek to create a rigorous but comfortable space for the development of graduate student projects and professional skills.

### *Politics, Communication, and Society*

This Workshop ties together diverse strands of research on the social and political aspects of communicative practices. With faculty sponsors and student coordinators drawn from several disciplines in the social sciences, the workshop provides participants opportunity to approach the issue of communication from a variety of analytical perspectives. The Workshop offers a space for a wide ranging exploration of topics like the social efficacy of political rhetoric and symbolism, the role of language in the construction of reality, the transformation of concepts through the media, and the relationship between socio-historical processes and systems of signification.

### *Race and Religion: Thought, Practice, and Meaning*

This Workshop seeks to address the ideas, meanings, and practices of the sacred within racially marginalized communities. The Workshop seeks to acknowledge both an intellectual conviction to the exploration of religion among racialized peoples and a commitment to engaging with and clarifying the impact of religion in racialized communities.

### *Renaissance*

The emphasis of the Workshop is on a cross-disciplinary study of English and Continental culture during the Renaissance, in areas such as literature, politics, theology, and natural science. Our interests include early modern poetry, prose, and drama, humanist pedagogy, politics and law, theological controversy, book history, the literature of trade and exploration, the history of the emotions and much

more. Student presentation in the form of article drafts, dissertation proposals or chapters, practice job interview presentations, practice campus visit talks are given priority. We will also meet with scholars from other institutions and hear from members of Chicago's faculty.

### *Reproduction of Race and Racial Ideologies*

This Workshop address the different processes of racialization experience within groups as well as across groups in sites as diverse as North America, Latin America, the Caribbean, Africa, the Asian Pacific, and Europe. This workshop will examine theoretical and practical considerations of scholarship that highlights the intersection of race and ethnicity with other identities such as gender, class, sexuality, and nationality and interrogates social and identity cleavages within racialized communities. Fundamentally the Workshop is committed to engaged scholarship that rejects the false dichotomy between rigorous intellectual work and community activism.

### *Rhetoric and Poetics*

This workshop is concerned with the literature of classical Greece and Rome, considered whether on its own terms or in relation to the literature and poetry of other cultures. It invites presentation of critical arguments completed or in progress from the broadest possible range of perspectives.

### *Semantics and Philosophy of Language*

The subject of meaning in natural language is currently investigated both by philosophers and linguists, with different foci, methods, and emphases. The two are typically guided by different concerns and goals (e.g., linguists are centrally concerned with patterns of cross-linguistic variation and language acquisition; philosophers investigate the normativity of language and the metaphysical presuppositions of particular theoretical claims), but both groups can profit from cross-disciplinary discussions and mutual understanding of their different questions, methods, and results. The topic of the 2009-10 workshop will be compositionality: the hypothesis that the meaning of a complex expression is fully determined by the meaning of its parts and the way in which they are put together.

### *Semiotics: Culture in Context*

Presentations will come from a variety of fields including, but not limited to linguistics, psychology, sociology, political science, literary theory, history, and anthropology based on a semiotic framework. The workshop thus does not seek to limit its topics of research by area, period or discipline, thereby providing an eminently suitable forum for wide ranging discussions and conceptualizations regarding the study of social and cultural phenomena as embedded in meaningful contexts. Building on various seminal studies that have used semiotic approaches, the goal of the workshop is to continue to develop and refine rigorous analytic frameworks that provide the methods for clearly

defining linkages between the object of analysis and its context.

### *Sex Panics*

This workshop will examine sexuality, sex, and gender as grounded, emergent, pragmatic, and meaningful cultural practices. Pushing beyond identity based approaches, we think through sexuality with the same rigor, ambivalence, and curiosity with which it is deployed, played with, and contested in presenters' various field sites. Rather than focusing on assumed categories of female, male, queer, or delineating communities based on trans-cultural sexual identity, we invite scholars to consider how such categories are constantly contested and in flux and in part created by the researcher's methodology.

### *Social History*

This workshop provides a forum to discuss and develop work that takes seriously social history methodology –the history of everyday life and people who have been excluded from dominant historical narratives. The Workshop focuses primarily on the United States, but also examines issues that transcend U.S. boundaries, such as race, class, gender, and sexuality. Presentations by visitors are interspersed with those of regular participants and frequently include dissertation proposals, chapters in progress, and overviews of dissertations in progress. Occasional sessions are devoted to discussion on methodological and theoretical issues in historical research. Participants include graduate students and faculty in social, cultural, and intellectual history and related disciplines.

### *Social Theory*

This Workshop explores issues in social theory across a variety of disciplines in the social sciences and humanities. The emphasis is less on developing social theory than on exploring in a sustained fashion the social theoretical implications of the participants' work. Themes to be addressed are likely to include the relationship between social and cultural transformations; questions of the public sphere, civil society, and democracy; and conceptual issues posed by globalization.

### *Social Theory and Evidence*

Social scientists continue to struggle over the relative merits of their many enterprises: explanation versus interpretation, causal versus descriptive analysis, the development of theories versus the testing of hypotheses. Two questions are foundational: What constitutes a good Theory? And at what point does the evidence for an argument turn from plausible to compelling? These problems, present from the birth of social science have grown no less thorny, but also no less critical, since how we choose to solve them informs the evidence we believe and the theories we generate. This workshop focuses on the clarity and cogency of social

theories and the logic and effectiveness of evidence in social research.

### *Theater and Performance Studies*

This workshop seeks to provide a forum for questions of performance that have arisen in a host of disciplines. In addition, the workshop seeks to extend to the graduate level a systematic reflection on the longstanding divide between the theories and praxes of performance that has, for the past few years, animated the field.

### *Theology*

This Workshop offers an interdisciplinary and comparative approach to the history, ideas and methods of reading and thinking about theological texts and traditions. We are concerned with facilitating conversations across disciplinary lines into the relationship between theological discourse and cultural metaphors, symbols, values, and perspectives. The Workshop proposes to explore theological discourse in its manifold historical, sociological, ethical, mystical, liturgical, poetic, and philosophical forms by offering a setting in which the various disciplines of the University come together for discussion. The premise of the workshop is that the study of theology belongs to the horizon in which we pose fundamental questions about the role and place of human beings in society, culture, and the world.

### *Theory and Practice in South Asia (TAPSA)*

This workshop is an important part of the fabric of intellectual activity in South Asian studies at the University of Chicago. The TAPSA talks are scheduled to coordinate with the South Asian Seminar, to provide regular interdisciplinary intellectual events, including papers by graduate students, faculty and visiting scholars. For students, the benefits of TAPSA include the opportunity to present their work in progress to an interdisciplinary audience of peers and teachers, and to benefit from the intensive interaction and feedback.

### *United States Locations*

This Workshop explores ethnographic research in Canada and the United States within social scientific fields engaging core cross-disciplinary anthropological problems. In a world of global interconnections, we provide a forum for anthropologists and other social scientists crafting rigorous approaches to locating America as a cultural and sociological entity within, across, and outside the geographic boundaries of North America. Critically analyzing the burgeoning literature on ethnographic practice and theory, and focusing on carefully formulated empirical studies in particular locations, this workshop aims to locate the theoretical position of North America within the field of anthropology and related disciplines.

### *Visual and Material Perspectives on East Asia*

This workshop is focused on the study of material or visual objects from East Asia. It explores the possible uses of recent theories of art, history, and material and visual culture in the study of East Asia. Presentation of studies of objects and visual materials from a variety of historical periods and geographic locations within East Asia serve as case studies for the exploration of such methodological concerns. The Workshop is about two-thirds student presentations and about one-third outside speakers.

### *Western Mediterranean Culture*

The study of all aspects of Western Mediterranean culture from 1200-1700 is the focus of this workshop. The Workshop addresses the multiple linguistic, textual, and visual traditions of five regions/ countries: France, Italy, Portugal, Spain, and North Africa (including parts of the Ottoman Empire). It seeks to foster discussion between Medieval and Early Modern specialists as well as between different disciplines. With a focus during 2009-10 on the theme of "the poetics and the translation of history and literature," the Workshop will emphasize the movement and exchange of peoples, ideas, motifs, and goods among the different parts of the region.

### *Wittgenstein*

This Workshop aims to foster a variety of forms of interdisciplinary research that take their point of departure from a shared interest in Wittgenstein's intellectual achievement. The Workshop will seek to provide a forum in which the following activities can be pursued in conjunction with one another; the careful study of Wittgenstein's contributions to both philosophy and other disciplines; the discussion of current research by graduate students with related interests; and the presentation of work by some of the leading contemporary scholars at work in these areas.

## INTERDISCIPLINARY OPPORTUNITIES

### COMMITTEE ON AFRICAN AND AFRICAN AMERICAN STUDIES

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#### *Chairs*

Jennifer Cole  
Kenneth Warren

#### *Faculty*

Ralph A. Austen, History Emeritus.  
Kenneth Warren, English. Co Chair.  
Lauren Berlant, English  
Dain Borges, History  
James E. Bowman, Pathology and Medicine Emeritus  
Cathy Cohen, Political Science  
Jennifer Cole, Human Development  
Jean Comaroff, Anthropology.  
John L. Comaroff, Anthropology and Sociology  
Shannon Dawdy, Anthropology  
Michael Dawson, Political Science  
James W. Fernandez, Anthropology Emeritus  
Jacqueline D. Goldsby, English.  
John A. Goldsmith, Linguistics.  
Gene B. Gragg, Near Eastern Languages and Civilization  
and Linguistics.  
Thomas Holt, History.  
Dennis Hutchinson, College and Law School.  
Rachel Jean-Baptiste, History  
Loren Kruger, Comparative Literature and English.  
Donald N. Levine, Sociology Emeritus.  
Omar M. McRoberts, Sociology  
Salikoko Mufwene, Linguistics.  
Dolores G. Norton, Social Service Administration.  
Emily L. Osborn, History  
Stephan D. Palmie, Anthropology  
François G. Richard, Anthropology  
Julie Saville, History  
Michel Rolph Trouillot, Anthropology  
Robert von Hallberg, English.

The Committee on African and African American Studies is an interdepartmental and interdivisional body concerned with promoting the study of African and African American culture and society from prehistoric to contemporary times. The University does not grant a graduate degree in African or African American Studies and students must be admitted to one of the regular departments or programs. The University of Chicago offers broad opportunities for interdisciplinary and comparative work. Its Divisions of Social Sciences and Humanities and range of interdisciplinary non Western area programs are among the strongest in the country and are organized on a flexible basis to meet

a wide range of student interests. Students seeking a Ph.D. based upon a specialization in African or African American studies may apply to one of the departments with faculty listed above. Students seeking an A.M. degree based upon a specialization in African or African American studies may apply to the Master of Arts Program in the Social Sciences, the Committee on International Relations, or the Master of Arts Program in the Humanities. The main activities of the Committee on African and African American Studies are the coordination of graduate studies programs (including opportunities for student teaching in undergraduate courses) and the management of workshops (advanced research seminars) and conferences. For African American Studies, some of this work is shared with the Center for the Study of Race, Politics and Culture (773 702 8063, [socialsciences.uchicago.edu](http://socialsciences.uchicago.edu), <http://socialsciences.uchicago.edu/ucrpc>).

The CSRPC also maintains a list of Courses with Substantial Content on Race and Ethnicity <http://socialsciences.uchicago.edu/ucrpc/Resources/classindex.htm>

For further information on the committee, contact Jennifer Cole; Committee on African and African American Studies; The University of Chicago; 5730 South Woodlawn Ave 60637; telephone: 773-702-4235; Fax 773 702-0320. Web page (via Social Sciences Division): <http://www.uchicago.edu/uofc/acadunits/SSD.html>

### CENTER FOR GENDER STUDIES

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#### *Director*

Deborah Nelson

#### *Faculty*

Danielle Allen, English Language & Literature  
Leora Auslander, History  
Kelly Austin, Romance Languages & Literature  
Orit Bashkin, Near East Languages & Civilizations  
Lauren G. Berlant, English Language & Literature  
Catherine Brekus, Divinity  
Bill Brown, English Language & Literature  
Margot Browning, Humanities Division  
E. Summerson Carr, Social Services Administration  
Mary Anne Case, Law  
Tamara Chin, Comparative Literature  
Kyeong Hee Choi, East Asian Languages & Civilizations  
Elisabeth Clemens, Sociology  
Cathy Cohen, Political Science  
Bertram J. Cohler, Human Development  
Jennifer Cole, Human Development  
Jean Comaroff, Anthropology  
Bradin Cormack, English Language & Literature  
Raul Coronado, English Language & Literature  
Kristine Culp, Divinity  
Jane Dailey, History

Shannon Dawdy, Anthropology  
 Daisy Delogu, Romance Languages & Literature  
 Wendy Doniger, Divinity  
 Sascha Ebeling, Near East Languages & Civilizations  
 Darby English, Art History  
 Jean Bethke Elshtain, Divinity  
 Jacob Eyferth, East Asian Languages & Civilizations  
 Martha Feldman, Music  
 Norma Field, East Asian Languages & Civilizations  
 Sheila Fitzpatrick, History  
 Ping Foong, Art History  
 Richard Fox, Divinity  
 Mary Anne Franks, Law  
 Susan Gal, Anthropology  
 Leela Gandhi, English Language & Literature  
 Melissa Gilliam, Obstetrics and Gynecology  
 Jan Ellen Goldstein, History  
 Ramon Gutiérrez, History  
 Elaine Hadley, English Language & Literature  
 Miriam Hansen, English Language & Literature  
 James Heckman, Economics  
 Elizabeth Helsinger, English Language & Literature  
 Julia Henly, Social Services Administration  
 Judy Hoffman, Visual Arts  
 Rachel Jean-Baptiste, History  
 Janet H. Johnson, Oriental Institute  
 Waldo Johnson, Social Services Administration  
 Robert L. Kendrick, Music  
 Janice Knight, English Language & Literature  
 Don Kulick, Human Development  
 Aden Kumler, Art History  
 Edward O. Laumann, Sociology  
 Laura Letinsky, Visual Arts  
 David Levin, Germanic Studies  
 David Orlinsky, Human Development  
 Agnes Lugo Ortiz, Romance Languages & Literatures  
 Armando Maggi, Romance Languages & Literature  
 Rochona Majumdar, East Asian Languages & Civilizations  
 Patchen Markell, Political Science  
 Jeanne Marsh, Social Service Administration  
 Jill Mateo, Human Development  
 Martha K. McClintock, Psychology  
 Françoise Meltzer, Romance Languages & Literatures  
 Stuart Michaels, Gender Studies  
 J. Mark Miller, English Language & Literature  
 Kathleen Morrison, Anthropology  
 Deborah Nelson, English Language & Literature  
 Larry Norman, Romance Languages & Literatures  
 Martha C. Nussbaum, Law  
 Wendy R. Olmsted, College  
 Mark Osadjan, Biological Sciences  
 Emily Lynn Osborn, History  
 Lucy Pick, Divinity  
 Valerie Ritter, South Asia Languages & Civilizations

Melissa Roderick, Social Service Administration  
 Martha Roth, Near Eastern Languages & Civilizations  
 Lisa C. Ruddick, English Language & Literature  
 Julie Saville, History  
 J. Scappettone, English Language & Literature  
 Kristen Schilt, Sociology  
 Reynolds Barton Schultz, Humanities Division  
 Bozena Shallcross, Slavic Languages & Literatures  
 Michael Silverstein, Anthropology  
 William Sites, Social Service Administration  
 Amy Dru Stanley, History  
 Christine Stansell, History  
 Richard Allen Strier, English Language & Literature  
 Leigh VanValen, Ecology & Evolution  
 William R. Veeder, English Language & Literature  
 Candace A. Vogler, Philosophy  
 Linda Waite, Sociology  
 Froma Walsh, Social Services Administration  
 Martha Ward, Art History  
 Elissa Weaver, Romance Languages & Literatures  
 Lisa Wedeen, Political Science  
 Rebecca West, Romance Languages & Literatures  
 Jennifer Wild, Cinema & Media Studies  
 Alison Winter, History  
 David Wray, Comparative Literature  
 Wu Hung, Art History  
 Tara Zahra, History  
 Judith Zeitlin, East Asian Languages & Civilizations  
 Linda Zerilli, Political Science  
 Rebecca Zorach, Humanities

The Center for Gender Studies coordinates courses and activities that take up gender and sexuality as primary objects of study and categories of analysis. Courses engage these domains in many different ways, including: the study of gender and/or sexuality as historical practice; scientific concept and site of representation; in social movements such as feminism and gay and lesbian liberation; feminist and queer theory; family structures; the gendering of labor force participation; representations of women in literature and the visual arts; intersections of race and gender, transnationalism; and women's and men's participation in politics.

Our courses fall under traditional disciplinary rubrics, and use gender and sexuality as categories of analysis to track contemporary transformations in these and other domains of knowledge. We are interested in developing points of comparison within and among diverse areas of organized knowledge, not assuming that gender means the same thing in different disciplines, historical moments, epistemologies, or cultural frameworks. We are also dedicated to fostering debate about the construction and implications of categories of gender difference and sexual identity. Further, we promote engagement with ways that gender and sexuality give us insight into other modes of

social organization and change, including transformations of economic and political systems; media public spheres; forms of repression and resistance; modes of production, knowledge and experience; and everyday life.

The Center for Gender Studies confers no graduate degrees at this time. It does, however, foster graduate participation in the center. In addition to offering undergraduate and graduate courses and an undergraduate major and minor in gender studies, the Center sponsors lectures and symposia of interest to graduate students. It also encourages and supports graduate student initiatives for conferences and speakers, as well as student participation in the governance of the center. In addition, many Gender Studies faculty and students participate in the graduate workshops conducted under the auspices of the Council on Advanced Studies in Humanities and Social Sciences that engage questions of gender, sexualities and identities including the Gender and Sexuality Studies Workshop. Each year, the Center offers a dissertation writing fellowship as well as an office space competition at the Center. Problems in the Study of Gender and Problems in the Study of Sexuality (the core undergraduate courses for the program) and Introduction to Theories of Sex and Gender (a graduate level theory course) promote collaborative teaching among faculty and graduate students. The Center also offers graduate student teaching opportunities in the form of free standing courses in the College. A library of textual materials related to the curriculum and the workshops, together with information about gender and women's studies programs at other institutions and funding opportunities for research on women's and gender studies, is kept in the Center for Gender Studies at 5733 S. University Avenue. Additionally, the Center's student caucus, made up of graduate and undergraduate students, organizes its own initiatives, events and programs with the support of the Center.

The resource faculty draws from departments, committees, and professional schools dispersed throughout the University. Members of this faculty support interdisciplinary work in gender studies, even when their major course offerings are not directly gender studies courses. Faculty also regularly direct master's essays and Ph.D. dissertations in the field of gender studies within the MAPSS and MAPH programs as well as in their own disciplines. Students interested in gender studies who wish to earn advanced degrees leading to careers in research and teaching should apply for admission to the department in which their chief interest falls. Please contact the Center for Gender Studies, (773) 702-9936, for specific information regarding courses and programs. More information can also be found on the Center's website at <http://genderstudies.uchicago.edu>.

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## HUMAN RIGHTS PROGRAM

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*Faculty Director*

Michael Geyer

*Executive Director*

Susan Gzesh

The University of Chicago Human Rights Program, founded in 1997, is currently led by Faculty Director Michael Geyer and Executive Director Susan Gzesh. The Program's research and teaching in human rights integrate exploration of the core questions of human dignity with critical examination of the institutions designed to promote and protect human rights in the contemporary world. The Human Rights Program is an initiative unique among its peers for the interdisciplinary focus its faculty and students bring to bear on these essential matters.

The Human Rights Program continues the Chicago tradition of rigorous academic preparation, integrated with real world experience and perspectives. The Human Rights curriculum includes a core sequence and an array of elective courses which examine human rights from a variety of disciplinary, thematic, and regional perspectives. The Human Rights Internship Program provides fellowships to students for practical experiences at host organizations in the U.S. and around the world. Through conferences, workshops, lectures, and film series, the Program brings the world to the campus, incorporating the broader community into its educational mission.

For more information please see our website: <http://humanrights.uchicago.edu>

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## MEDIEVAL STUDIES

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*Director*

Christina von Nolcken

*Faculty*

Michael Allen, Classical Languages & Literatures

Persis Berlekamp, Art History

Robert Bird, Department of Slavic Languages and Literatures

Arnold Ira Davidson, Philosophy

Daisy Delogu, Romance Languages & Civilizations

Fred Donner, Near Eastern Languages & Civilizations

Constantin Fasolt, History

Rachel Fulton, History

Ryan Giles, Romance Languages & Civilizations

Norman Golb, Near Eastern Languages & Civilizations

Richard Hellie, History

Dick Helmholz, Law School

Walter E. Kaegi, History  
 Robert L. Kendrick, Music  
 Aden Kumler, Art History  
 Franklin Lewis, New Eastern Languages & Civilizations  
 Bruce Lincoln, Divinity School  
 Jonathan Lyon, History  
 Yitzhak Melamed, Philosophy  
 John Mark Miller, English Language & Literature  
 Michael J. Murrin, English Language & Literature  
 David Nirenberg, Social Thought and History  
 Lucy Pick, Divinity School  
 Tahera Qutbuddin, Near Eastern Languages and Civilizations.  
 Anne Walters Robertson, Music  
 James Robinson, Divinity School  
 Jay Schleusener, English Language & Literature  
 Michael Sells, Divinity School  
 Justin Steinberg, Romance Languages & Civilizations  
 Josef J. Stern, Philosophy  
 Noel M. Swerdlow, Astronomy & Astrophysics  
 Christina von Nolcken, English Language & Literature  
 Donald S. Whitcomb, Near Eastern Languages & Civilizations  
 John E. Woods, Near Eastern Languages & Civilizations

The faculty in Medieval Studies advises students in the planning of a medieval specialization in any field. Students take their advanced degrees under the auspices of a department or interdepartmental degree granting committee and must submit their applications to the department or committee in which their primary interests lie.

Courses in medieval studies may be found in the listings of the Departments of Art History, Classical Languages and Literatures, English Language and Literature, History, Music, Near Eastern Languages and Civilizations, New Testament and Early Christian Literature, Romance Languages and Civilizations, Slavic Languages and Literatures, and in the Divinity School.

## CENTER FOR INTERNATIONAL STUDIES

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*Director*

Kathleen Morrison

*Interim Director*

Mark Lycett

The Center for International Studies, which coordinates many of the University of Chicago's international programs, has grown out of the University's six decade long involvement in the study of international phenomena. This involvement began in the 1930s, with the creation of the Committee on International Relations, the first program of its kind in

the United States. In the 1950s and 1960s, University faculty responded to international upheavals resulting from the World Wars by launching area studies centers along with the Center for International Studies. These centers provided an innovative approach to the study of other cultures that became the model for universities across the United States. Today, the University of Chicago is home to six federally funded National Resource Centers in international and area studies—the Center for International Studies itself, along with the Center for East Asian Studies, the Center for East European and Russian/Eurasian Studies, the Center for Latin American Studies, the Center for Middle Eastern Studies, and the South Asia Language and Area Center.

The Center for International Studies promotes collaboration among the six National Resource Centers on educational outreach efforts, scholarly conferences, and thematic initiatives. It coordinates two regional initiatives, on Central Eurasian Studies and on African Studies. In addition, the Center is at the heart of multidisciplinary and inter-regional discussions about the nature of area studies and the need for new tools to analyze international and global phenomena, with recent and ongoing projects on themes including partitions and population exchanges; changing forms of American power; and new intellectual and policy frameworks for studying forest ecosystems and other socio-natural systems. The latter is part of the new Program on the Global Environment described below.

### INTERDISCIPLINARY INITIATIVES

Among the most pressing issues facing the world in the early twenty-first century are environmental challenges including deforestation, climate change, pollution, water resources, habitat loss, and the food and energy needs of a growing population. Addressing these issues requires area-specific knowledge, knowledge that crosses traditional academic divisions such as that between the natural and human sciences, as well as global and international perspectives and cooperation. To that end, the Center for International Studies launched the Program on the Global Environment in 2007, to coordinate the study of environmental issues across academic units in the biological and physical sciences, social sciences, humanities, and policy studies.

Components of the Program on the Global Environment include the Environmental Studies BA major and minor, the graduate Workshop on the Global Environment, conferences, lecture series and other events, liaison with student groups and the campus Sustainability Council, and public education and outreach. The program awards annual lectureships to graduate students for courses taught in Environmental Studies. The program also hosts visitors and post-doctoral fellows and encourages research collaborations across disciplinary divides.

## PROGRAMS OF STUDY

Through its federal grant, the Center for International Studies supports curriculum development within the undergraduate International Studies and Environmental Studies majors, in the Human Rights Program, and in the College's study abroad programs. The Center for International Studies collaborates closely with the Committee on International Relations, which offers an A.M. degree and a joint A.B./A.M. program.

## ON CAMPUS COLLABORATION

Thanks to the acknowledged eminence of its international faculty in the social sciences, humanities, business, and law and to the vitality of the University's own intellectual culture, there is a rich, collaborative environment in international studies at the University of Chicago. The Center for International Studies is perfectly situated to develop new modes of collaboration between disciplines and between those who study different regions of the world.

## CENTER FOR EAST ASIAN STUDIES

### *Director*

Donald Harper

### *Associate Director*

Theodore N. Foss

### *Faculty*

Guy S. Alitto, History

Susan Burns, History

Michael Bourdagh, East Asian Languages & Civilizations

Tamara Chin, Comparative Literature

Fangpei Cai, East Asian Languages & Civilizations

Kyeong Hee Choi, East Asian Languages & Civilizations

Paul Copp, East Asian Languages & Civilizations

Bruce Cumings, History

Prasentit Duara, History

Jacob Eyferth, East Asian Languages & Civilizations

Judith Farquar, Anthropology

Norma Field, East Asian Languages & Civilizations

Ping Foong, Art History

Susan Goldin Meadow, Psychology

Donald Harper, East Asian Languages & Civilizations

Yuming He, East Asian Languages & Civilizations

James Hevia, International Relations

Christopher Hsee, Chicago Booth & Behavioral Science

Paola Iovene, East Asian Languages & Civilizations

Matthew Kapstein, South Asian Languages & Civilizations

Yoko Katagiri, East Asian Languages & Civilizations

Anil K. Kashyap, Business

James E. Ketelaar, History

Hi-Sun Kim, East Asian Languages & Civilizations

Jung Hyuck Lee, East Asian Languages & Civilizations

Meng Li, East Asian Languages & Civilizations

Yuxiang Liu, East Asian Languages & Civilizations

Misa Miyachi, East Asian Languages & Civilizations

Hiroyoshi Noto, East Asian Languages & Civilizations

William L. Parish, Sociology

Michael Raine, East Asian Languages & Civilizations

Edward Louis Shaughnessy, East Asian Languages & Civilizations

Bernard S. Silberman, Political Science

Laura A Skosey, East Asian Languages & Civilizations

Ruey Tsay, Business

Grace Tsiang, Economics

Youqin Wang, East Asian Languages & Civilizations

Yoshiko Watanabe, East Asian Languages & Civilizations

Hung Wu, Art History

Kazuo Yamaguchi, Sociology

Dali Yang, Political Science

Jun Yang, East Asian Languages & Civilizations

Alan Yu, Divinity

Judith Zeitlin, East Asian Languages & Civilizations

Dingxin Zhao, Sociology

The Center for East Asian Studies (CEAS) is an interdepartmental and interdivisional coordinating body whose primary functions include promoting student and faculty research in East Asian Studies, coordinating a joint master's degree program with the Graduate School of Business through the Division of the Social Sciences, and sponsoring special events. For the A.M. and the Ph.D. degrees, students specializing in Chinese, Japanese, or Korean Studies must be enrolled in one of the regular departments of the University. Courses in the various fields of East Asian Studies are offered in several departments in both the Division of the Humanities (see listings for the Departments of Art History, East Asian Languages & Civilizations, and Linguistics in these Announcements) and the Division of the Social Sciences, as well as the Divinity School, the Law School, and the Graduate School of Business.

CEAS supports graduate training and basic research through fellowship programs and faculty research grants. It works closely with the East Asian Library to build resources for current and future research needs. Through seminars, workshops, and public lectures, CEAS promotes intellectual exchange among scholars in the field.

The East Asian Library is one of the world's most distinguished East Asian research collections, and contains over 600,000 volumes in East Asian languages. It is particularly strong in history, politics, classics, literature, and local institutions.

CEAS also has a list of resources of other facilities that exist within the city of Chicago for the study of East Asia for both members of the University and interested members of the Chicago community. The Field Museum of Natural History and the Art Institute of Chicago display notable and extensive collections of objects from East Asia of anthropological and artistic interest; in addition, their libraries are available for consultation by students.

## CENTER FOR EAST EUROPEAN AND RUSSIAN/EURASIAN STUDIES

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*Director*

Victor A. Friedman

*Associate Director*

Meredith Clason

*Outreach and Campus Programs Coordinator*

Andrew Graan

*Faculty*

Kagan Arik, Near Eastern Languages & Civilizations

Howard I. Aronson, Slavic Languages & Literatures (Emeritus)

Robert Bird, Slavic Languages & Literatures

Philip Bohlman, Music

John W. Boyer, History

Steven C. Clancy, Slavic Languages & Literatures

Robert Dankoff, NELC (Emeritus)

Bill J. Darden, Slavic Languages & Literatures (Emeritus)

Sheila Fitzpatrick, History

Cornell Fleischer, Near Eastern Languages & Civilizations

Victor Friedman, Slavic Languages & Literatures and Linguistics

Paul Friedrich, Anthropology (Emeritus)

Susan Gal, Anthropology

Leonid Gavrilov, NORC

Natalia Gavrilova, NORC

Anastasia Giannakidou, Linguistics

Thomas Ginsburg, Law

Yaroslav Gorbachov, Slavic Languages & Literatures

Lenore Grenoble, Slavic Languages & Literatures and Linguistics

Jonathan M. Hall, History and Classics

Eric P. Hamp, Linguistics (Emeritus)

Hripsime Haroutunian, NELC

Reinhold Heller, Art History (Emeritus)

Angelina Ilieva, Slavic Languages & Literatures

Norman W. Ingham, Slavic Languages & Literatures (Emeritus)

Matthew Jackson, Art History

Walter E. Kaegi, History

Joanna Kurowska-Mlynarczyk, Slavic Languages & Literatures

James Leitzel, Public Policy Studies

Sandra Levy, Regenstein Library

Ofer Malamud, Public Policy Studies

Stanislav Markus, Political Science

John J. Mearsheimer, Political Science

Paul Mendes-Flohr, Divinity School

Jason Merchant, Linguistics

Michael Murrin, Comparative Literature

Charles Payne, SSA

John Perry, NELC (Emeritus)

Nada Petkovic, Slavic Languages & Literatures

Valentina Pichugin, Slavic Languages & Literatures

Eric Posner, Law

Raikhel, Eugene, Comparative Human Development

Jan Schwarz, Committee on Jewish Studies

Michael Sells, Divinity School

Bozena Shallcross, Slavic Languages & Literatures

Holly Shissler, NELC

Mark Slouka, English

Adam Smith, Anthropology

Edward Snyder, Business

Lina Steiner, Slavic Languages & Literatures

Malynne Sternstein, Slavic Languages & Literatures

Ronald Suny, History and Political Science (Emeritus)

Natalia Tamarina, Medicine

Yuri Tsivian, Slavic Languages & Literatures

Robert Ward Vishny, Business

Bernard Wasserstein, History

Diane P. Wood, Law

John E. Woods, History

Tamra Wysocki-Niimi, Linguistics

Alan Yu, Linguistics

Tara Zahra, History

Marvin Zonis, Business (Emeritus)

The Center for East European and Russian/Eurasian Studies (CEERES) is an interdivisional center which promotes the study of, and research about, the countries of Central and Eastern Europe and the former Soviet Union. The University of Chicago has been providing instruction in disciplines of the CEERES region continuously since 1903, when courses in Russian language and area studies were begun. The center now known as CEERES has been in existence since 1965, and it continues to coordinate instruction and facilitate research about Russia/Eurasia and Eastern/Central Europe, including the Baltic States, Balkans, Caucasus, and Central Asia.

In addition to its robust language offerings, CEERES supports curricula which are particularly strong at present in Russian/Soviet history; Slavic, Balkan, and Baltic linguistics; nationalities studies of the former USSR; Slavic literatures (Russian, Polish, Czech, Balkan); Russian and East European cultural anthropology; comparative literature; archaeology of the Caucasus; Russian and East European film and art history; and business administration. CEERES affiliated faculty have expertise also in political science, international relations, economics, sociology, and Central and Eastern European, Byzantine, and Ottoman history. The center does not itself offer a separate master's degree; however, it does administer a joint A.M./M.B.A. degree through the Division of the Social Sciences in conjunction

with the Graduate School of Business. The faculty members that teach and do research in our area are supported by one of the best libraries for that purpose in the country.

CEERES has a mission to disseminate information about and increase knowledge of a vast and diverse region of the world. This starts with a commitment to scholarship within the university community and extends to outreach into the greater Chicago community, the nation, and the world. We accomplish these goals in a variety of ways: through conferences, workshops, and seminars, including close collaboration with the Council on Advanced Studies workshops; by providing curricular support and administering Foreign Language and Area Studies (FLAS) Fellowships; by organizing teacher training workshops and assisting in developing CEERES-focused curricula for K-12 and community college instruction; and by hosting concerts and cultural programming, including music and dance performances, films, and artistic exhibits open to the general public. We publicize our activities at our website ([ceeres.uchicago.edu](http://ceeres.uchicago.edu)), through weekly e-bulletins sent through our listserv, and by means of our biannual newsletter. A number of our events are also recorded and available as free podcasts at <http://chiasmus.uchicago.edu>.

## CENTER FOR LATIN AMERICAN STUDIES

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### *Director*

Dain Borges

### *Faculty*

Robert Z. Aliber, Business

Fernando Alvarez, Economics

Kelly Austin, Romance Languages and Literatures

Dain Borges, History

Pastora S. Cafferty, Social Service Administration (Emerita)

Anne Carr, Divinity

Raúl Coronado, English

Frederick A. de Armas, Romance Languages & Literatures

René de Costa, Romance Languages & Literatures

Shannon Dawdy, Anthropology

Keisha Fikes, Anthropology

Susan R. Gzesh, Human Rights

James Heckman, Economics

Thomas Holt, History

Kristine Jones, Latin American Studies

Friedrich Katz, History (Emeritus)

Robert L. Kendrick, Music

Alan Kolata, Anthropology

Emilio H. Kourí, History

Hedibert Lopes, Business

John A. Lucy, Human Development

Agnes Lugo Ortiz, Romance Languages & Literatures

Alfredo Cesar Melo, Romance Languages & Literatures

Stephan Palmié, Anthropology

Marcos Rangel, Public Policy

Mario Santana, Romance Languages & Literatures

Julie Saville, History

Paul Sereno, Organismal Biology & Anatomy

Alberto Simpser, Political Science

Larry A. Sjaastad, Economics

Robert M. Townsend, Economics

David W. Tracy, Divinity

Michel Rolph Trouillot, Anthropology

Established in 1968, the Center for Latin American Studies (CLAS) fosters intellectual exchange and innovation in the research and teaching of Latin America at the University of Chicago. CLAS coordinates workshops, seminars and conferences; hosts visiting scholars; and provides financial support for preliminary student field research, library acquisitions, and the development of curricular materials in the less commonly taught languages of the region. In consortium with the University of Illinois at Urbana Champaign, the Center for Latin American Studies has been designated a National Resource Center by the United States Department of Education continuously since 1976. This funding provides a wide range of support, including Foreign Language and Area Studies (FLAS) fellowships. A full description of Latin American Studies programming is available at the Center's website, <http://clas.uchicago.edu>.

The Center sponsors various activities that contribute to the richness of Latin American Studies at the University of Chicago. The Center sponsors major academic conferences every year, bringing scholars from around the world to examine particular issues in Latin American studies. The Latin American Briefing Series brings renowned figures to campus for public lectures on current affairs in Latin America. Graduate workshops in Latin American History, the Anthropology of Latin America, Caribbean Studies, and Colonial Latin America provide forums for scholarly feedback on works in progress. The Monday Brown Bag Colloquium provides a forum for informal discussions on preliminary results from student and faculty research.

Distinguished faculty at the University of Chicago have earned recognition for bringing particular thematic programs of study to prominence. The study of Mexico has a venerable history at the University of Chicago, with particular emphasis on the Mexican Revolution; the history and sociology of the public sphere; the social study of migration and transnationalism; land tenure and the political economy of agriculture; and democratic consolidation. Faculty strengths in Andean studies focus on economic development and the environment; political economy and democratization; colonial literature; and Andean pre history. The study of Afro Caribbean cultures emphasizes Afro Cuban religious formations and the uneven integra-

tion of Afro Caribbean populations into the world economy. Collaboration between the Center for Latin American Studies and the Human Rights Program sustains research into the relationships between development, migration, and human rights in Latin America, particularly in Mexico and Central America.

The Edward Larocque Tinker Professorships complement the traditional strengths of University of Chicago faculty. The Tinker Visiting Professorship annually brings three prominent professors, practitioners, activists, and/or journalists from Latin America and Iberia to campus to teach a course in their area of expertise and deliver a public lecture.

CLAS supports preliminary field research for site assessment, data collection, archival research, and to establish professional and institutional contacts through the Tinker Summer Field Research Grant. The study of Amerindian languages facilitates human subject and archaeological/archival research. Aymara is offered biennially through a summer intensive institute. Yearlong intensive courses in Yucatec Maya, Náhuatl, and Kiché Maya are offered on an alternating three year cycle.

The Center for Latin American Studies administers a Joint A.M./M.B.A. degree through the Division of Social Sciences and the Booth School of Business. Students take an integrated program of fourteen courses in the business school and nine in Latin American studies. Applicants submit a single application to the joint program through the Booth School of Business. (The business school accepts applications for autumn quarter only.) Business School students may choose to apply to the joint program during their first quarter of residence. The two degrees can be attained in three years or less, depending on the student's previous training.

The Center also administers a Master of Arts degree Program in Latin American Studies. For details on the Master of Arts in Latin American Studies, please see the entries under either Social Sciences Master of Arts Programs or Humanities Master of Arts Programs.

## CENTER FOR MIDDLE EASTERN STUDIES

---

*Director*

Fred Donner

*Associate Director*

Rusty Rook

*Project Assistant*

Traci Lombré

*Outreach Coordinator*

Alexander Barna

*Near Eastern Languages & Civilizations*

Osama abu-Eledam

Kagan Arik

Orit Bashkin

Menachem Brinker (Emeritus)

Richard L. Chambers (Emeritus)

Robert Dankoff (Emeritus)

Fred M. Donner

Peter Dorman (Emeritus)

Muhammad Eissa

Ariela Finkelstein

Cornell Fleischer

Noha Aboulmagd Forster

Saeed Ghahremani

McGuire Gibson

Norman Golb

Gene B. Gragg

Hripsime Haroutunian

Kay Heikkinen

Halil Inalcik (Emeritus)

Janet H. Johnson

Wadad Afif Kadi (Emerita)

Carolyn G. Killean (Emerita)

Franklin Lewis

Heshmat Moayyad

Amina Mohamed

Farouk Mustafa

Dennis G. Pardee

John R. Perry (Emeritus)

Tahera Qutbuddin

Na'ama Rokem

Jaroslav Stetkevych (Emeritus)

Matthew W. Stolper

William Sumner (Emeritus)

Aslihan K. Yener

*Anthropology*

Kathleen Morrison

*Art History*

Persis Berlekamp

*Business*

Marvin Zonis (Emeritus)

*Divinity*

Michael Fishbane

Joel Kraemer (Emeritus)

Bruce Lincoln

Michael Sells

Malika Zeghal

*Geographical Studies*

Marvin W. Mikesell

*History*

Ralph A. Austen (Emeritus)

Walter E. Kaegi

John E. Woods

Bernard Wasserstein

*Law*

Gidon A.G. Gottlieb

*Linguistics*

Eric P. Hamp

*Music*

Philip Bohlman

*Political Science*

Ronald Suny (Emeritus)

Lisa Wedeen

Since its establishment in 1965, the mandate of the Center for Middle Eastern Studies has been to coordinate, stimulate, and encourage academic, extracurricular, and outreach activities relating to the study of North Africa, Western Asia, Central Asia, and the Islamic World.

In fulfillment of this mission, the Center funds and administers a wide variety of programs and projects. At the undergraduate level, CMES ensures the availability of elementary and intermediate language courses and seeks to enhance their quality. In addition, CMES has taken the lead in helping to develop new non language courses in the College. CMES also administers one of the finest summer intensive Arabic language programs in the nation. The Center is a designated National Resource Center funded by the Department of Education; this funding includes Foreign Language and Area Studies (FLAS) fellowships. Graduates of the doctoral programs in Middle Eastern studies at Chicago continue to achieve recognition nationally and to find placement in the finest institutions of higher learning in the United States and abroad. The Center coordinates and sponsors a lecture series, several film series, current events forums and the student organized and administered Middle East History and Theory Workshop and Conference. Finally, the ultimate goal is to produce American experts in and citizens knowledgeable about the Middle East, its languages, and international affairs, as well as to build and maintain a strong research base in these areas.

The Center administers two joint programs through the Division of the Social Sciences, Graduate School of Business, and the Harris School of Public Policy Studies. Students interested in this option should refer to the Social Sciences Announcement for further details.

The Center also administers an interdisciplinary Master of Arts program in Middle Eastern Studies. For information on the A.M. program, please see the entries under

either the Social Sciences or the Humanities Master of Arts programs.

Virtually all the disciplines in the humanities and social sciences are represented in Middle East programs of study. Ten languages of the ancient Middle East are taught and 12 of the classical and modern periods. Most of the distinguished faculty hold appointments in one or more departments or schools. The interdisciplinary, comparative, and innovative approaches to knowledge and learning pioneered at Chicago profoundly inform the language and area studies programs at the University. This feature of the curriculum has been significantly strengthened by the creation of the Foreign Language and Area Studies Council under the aegis of the Center for International Studies. Research in all spheres is powerfully supported by one of the finest library collections in North America.

Long a national model, the CMES public education program is introducing satellite technology and the Internet to provide materials and services to educators, schools, community groups and cultural institutions, healthcare providers, businesses, and the media. To achieve this objective of service to the community most efficiently, we seek partnerships with likeminded organizations whose aims are consistent with our own goals of enhancing Americans understanding of the nation's global connections and its multicultural society through education and training on the Middle East and the Islamic World.

## COMMITTEE ON SOUTHERN ASIAN STUDIES/ SOUTH ASIA LANGUAGE & AREA CENTER

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*Chair, Committee on Southern Asian Studies*

William T. S. Mazzarella

*Director, South Asia Language and Area Center*

James H. Nye

*Associate Director, South Asia Language and Area Center & Committee on Southern Asian Studies*

Tarini Bedi

*Members: Faculty and Emeritus Faculty*

Muzaffar Alam, South Asian Languages and Civilizations

Daniel Arnold, Divinity

Kali Charan Bahl, South Asian Languages & Civilizations  
Emeritus

Elena Bashir, South Asian Languages &amp; Civilizations

Mandira Bhaduri, South Asian Languages &amp; Civilizations

Philip V. Bohlman, Music

Yigal Bronner, South Asian Languages &amp; Civilizations

Dipesh Chakrabarty, South Asian Languages &amp; Civilizations

Steven Collins, South Asian Languages & Civilizations  
 Wendy Doniger, Divinity  
 Sascha Ebeling, South Asian Languages & Civilizations  
 Philip Engblom, South Asian Languages & Civilizations  
 Richard Fox, Divinity  
 Leela Gandhi, English  
 Jason Grunebaum, South Asian Languages & Civilizations  
 Ronald B. Inden, History Emeritus  
 Matthew Kapstein, Divinity  
 John D. Kelly, Anthropology  
 Alan Kolata, Anthropology  
 Nisha Kommattam, South Asian Languages & Civilizations  
 James Lindholm, South Asian Languages & Civilizations  
 Mark Lycett, Anthropology  
 Rochona Majumdar, South Asia Languages & Civilizations  
 McKim Marriott, Anthropology Emeritus  
 Colin P. Masica, South Asian Languages & Civilizations  
 Emeritus  
 Kaley Mason, Music  
 William Mazarella, Anthropology  
 Atif Mian, Graduate School of Business  
 Kathleen Morrison, Anthropology  
 Choudhri M. Naim, South Asian Languages & Civilizations  
 Emeritus  
 Ralph W. Nicholas, Anthropology Emeritus  
 Martha Nussbaum, Law  
 James H. Nye, Library  
 Maureen Patterson, Library Emeritus  
 Tahera Qutbuddin, Near East Languages & Civilizations  
 Frank E. Reynolds, Divinity Emeritus  
 Lloyd I. Rudolph, Political Science Emeritus  
 Susanne Hoerber Rudolph, Political Science Emerita  
 Clinton B. Seely, South Asian Languages & Civilizations  
 Emeritus  
 Richard Shweder, Human Development  
 Daniel Slater, Political Science  
 Ulrike Stark, South Asian Language & Civilizations  
 Richard P. Taub, Comparative Human Development  
 Gary Tubb, South Asian Languages & Civilizations  
 Christian Wedemeyer, Divinity  
 Norman H. Zide, South Asian Languages & Civilizations  
 Emeritus  
 Affiliates: Faculty and Emeritus Faculty  
 Paul Friedrich, Anthropology Emeritus  
 Heshmat Moayyad, Near Eastern Languages & Civilizations  
 John Perry, Near Eastern Languages & Civilizations  
 Emeritus  
 Robert M. Townsend, Economics  
 John E. Woods, History

The University of Chicago is one of the leading centers for the study of Southern Asia. Countries in which we have scholarly expertise include in South Asia, Afghanistan, Bangladesh, Bhutan, India, Nepal, Pakistan, and Sri Lanka,

and Tibet (as an autonomous region); and in Southeast Asia, Burma (Myanmar), Cambodia (Kampuchea), East Timor, Indonesia, Laos, Malaysia, Papua New Guinea, the Philippines, Singapore, Thailand, and Vietnam. Chicago's Southern Asia strength is built around two related bodies: a federally-funded Title VI South Asia Language and Area Center (SALAC), the Committee on Southern Asian Studies (COSAS) made up of faculty across the University who share teaching and research interests in Southern Asia.

The University of Chicago Committee on Southern Asian Studies and the South Asia Language and Area are separate, but closely aligned, organizations promoting the study of South and Southeast Asia at the University of Chicago.

The Committee on Southern Asian Studies is an interdepartmental and interdivisional committee that coordinates research and teaching dealing with the countries of South and Southeast Asia. The committee works cooperatively with the South Asia Language and Area Center, inaugurated in 1959 with grants from the Ford Foundation and the United States Department of Education under the National Defense Education Act, Title VI.

The center (SALAC) and the committee work to enhance opportunities available to scholars both in the United States and in South and Southern Asia and to foster intellectual and scholarly communication and inter-disciplinary collaboration among the students and faculty at the University of Chicago and the wider Chicago and Southern Asian Studies communities.

The committee and the center do not offer degrees, but cooperate with the several departments, committees, and schools within which specialized work on South or Southeast Asia may be combined with a degree program. These include the College; the Departments of Anthropology, Art History, Comparative Human Development, Comparative Literature, Economics, English, History, Linguistics, Music, Political Science, Psychology, Sociology, and South Asian Languages & Civilizations; the Committees on History of Culture, International Relations, and Social Thought; in the Divinity School, the fields of History of Religions, Church History, Philosophy of Religions; and in the Law School, International and Comparative Legal Studies.

A joint A.M. in Southern Asia Studies/M.B.A. is administered through the Graduate School of Business and the Division of the Social Sciences. Advanced degree programs with specialization in Bengali, Hindi, Malayalam, Marathi, Pali, Sanskrit, Tamil, Telugu, Tibetan, and Urdu languages, literatures, and civilizations are available in the Department of South Asian Languages & Civilizations. Persian and Arabic are available through the Department of Near Eastern Languages & Civilizations. A limited number of fellowships, scholarships, and grants in aid are awarded by the committee in support of training or research dealing with South or Southeast Asia. Students in all disciplines interested in training in South Asian languages may also

apply for Foreign Language and Area Studies Fellowships under Section 602 of Title VI of the Higher Education Act of 1965 as amended. For further information, please write to the Director of the South Asia Language and Area Center.

The University of Chicago Library has a very strong and well balanced collection of South Asian books, government documents, journals, and maps. It includes extensive holdings in all South Asian languages, as well as publications on the subcontinent from major publishing centers around the world. The library has been a comprehensive participant since 1962 in the Library of Congress Foreign Acquisitions Program for South Asia. The library's membership in the nearby Center for Research Libraries, and in its South Asia Microfilm Project (SAMP), provides ready access to additional valuable research materials. The library's South Asia Collection staff coordinates acquisition and processing, and provides specialized reference service. A smaller collection of Southeast Asian materials is limited to Western language works on the area from Burma to the Philippines.

#### *Courses*

For faculty course offerings see departmental course listings in the "*University of Chicago Time Schedules.*"

## THE DIVISION OF THE HUMANITIES

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#### *Dean*

Martha Roth

#### *Associate Dean*

Thomas Christensen

#### *Dean of Students*

Thomas Thuerer

Students in the Division of the Humanities investigate the varied achievements of the human mind in language and literature, music, the visual arts, and philosophy. These investigations can range from the methods of the established humanistic disciplines to the newer alliances of humanities and social sciences, from the history of a civilization to the philosophy of science, from the aesthetics of a literary genre to the broader cultural occasions that bring the visual arts into contact with linguistic theory or musicology into contact with anthropology. The division regards a multiplicity of questions and approaches as the hallmark of its intellectual life and encourages its students to share in this diversity.

The academic units of the division exist to guide and support the students' investigations and are correspondingly varied. Degrees are granted both by departments, which largely represent the established fields of humanistic inquiry, and by committees, which offer special opportunities for study not easily accommodated within departments. These programs of study are described in detail in this section of the Announcements. The University also provides additional settings for cross disciplinary work by students already registered in a department or committee. Noteworthy among these settings are numerous Graduate Workshops, established under the auspices of the Council on Advanced Study in the Humanities and Social Sciences, which regularly bring together faculty and advanced graduate students from diverse fields to discuss their current work on topics of common interest. The Division of the Humanities further collaborates with the Division of the Social Sciences in supporting Interdisciplinary Opportunities, which comprise groups of faculty and students investigating such areas as archeological studies and gender studies, and Area Studies centers, devoted to distinct cultural, political, and geographical systems such as Latin America and South Asia. The interdisciplinary and area studies units are described more fully in another section of these Announcements.

The Franke Institute for the Humanities was established to provide further support for humanistic inquiry at the University. It serves as a gathering place and center of

research for scholars, both from other institutions and from the division's faculty and advanced students, whose shared discussions fruitfully bring together diverse interests and methods. Many of its occasions, including lectures and special symposia, are open to the entire University community.

Students must fulfill divisional degree requirements as well as the requirements of their department or committee. They should become familiar with the requirements listed below and should consult their departmental advisers or committee chairs in planning their programs.

### ADMISSION TO THE DIVISION

Students from other colleges or universities should apply for admission to the division through the Office of the Dean of Students, Division of the Humanities.

A student with a bachelor's degree or with a master's degree will, in general, be considered for admission on the basis of his or her academic record and on the recommendation of the department or committee under whose guidance the student wishes to study.

All students in the division are expected to acquire foreign language competence sufficient for advanced study in their degree programs; for further information on these requirements, please see the statements of the departments and committees.

### ADMISSION AS STUDENT AT LARGE

A person who is qualified for independent study, but who is not seeking a degree, may be admitted to the division as a student at large. Admission is considered upon the basis of a formal application, transcripts of former academic work, and a statement of purpose. U.S. citizens and permanent residents should apply for admission through the University's Graham School of General Studies. International students should apply directly through the Office of the Dean of Students, Division of the Humanities.

### DEGREES

Degrees are awarded upon the demonstration of competence in a field or fields of study, not solely upon the satisfactory completion of University residence requirements. Each department, committee, or program sets its specific requirements, but in general students demonstrate this competence by passing comprehensive examinations and by writing a thesis or its equivalent. Courses are intended to assist students in preparing for the examinations and the writing of the research paper or dissertation.

The bachelor's degree is a prerequisite for the master's degree, unless the department, committee, or program in which the student is registered waives this requirement in writing.

### MASTER OF ARTS

For students who have taken a bachelor's degree, the divisional requirements for the master's degree are as follows:

1. The completion of three quarters of full-time residence; during this period the student will normally complete with satisfactory grades a program of courses, arranged in consultation with the student's adviser, to meet the requirements concerning work in the field as set up in the individual departments and committees.
2. In certain departments and committees, presentation of an acceptable master's research paper or thesis.
3. In certain departments and committees, satisfactory performance on a final comprehensive examination.

For the special requirements of the Master of Arts Program in the Humanities please see the descriptions of that program.

### MASTER OF FINE ARTS

This degree is awarded to students who complete the requirements described under the entry for the Committee on Visual Arts.

### DOCTOR OF PHILOSOPHY

The divisional requirements for the degree of Doctor of Philosophy are as follows:

1. The completion with satisfactory grades of a program of courses arranged in consultation with a adviser to meet the requirements concerning work in the field of concentration as set up in the individual departments and committees.
2. The demonstration of reading competence in a foreign language sufficient for advanced study in the division. This requirement is normally met by receiving a grade of high pass on a University language reading examination. For information on the choice of language and additional requirements of reading facility in a second or third language, see the statements of the departments and committees.
3. Admission to candidacy at least eight months before the date the degree is to be conferred. Students are admitted to candidacy by the dean of students in the division upon recommendation of the departments and committees. Prerequisite to admission to candidacy are the fulfilling of the language requirement, the passing of an examination in the field of concentration, and formal approval of the dissertation proposal.
4. The completion of an acceptable dissertation involving an original contribution to the advancement of knowledge.
5. The passing of the final oral examination.

## MASTER OF ARTS PROGRAM IN THE HUMANITIES

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### *Co-Directors*

David Levin, Germanic Studies, Cinema & Media Studies,  
Theater & Performance Studies

Mark Miller, English Language and Literature

The Master of Arts Program in the Humanities (MAPH) is a one-year program leading to the A.M. degree. It is designed to address the diverse needs and interests both of intellectual generalists and of specialists who stand to benefit from a year of intensive work in the humanities. Some MAPH students are recent college graduates. Others are professionals at mid-career, freelance writers, or performers. They hold undergraduate degrees from public and private institutions throughout the world, in disciplines ranging from biology to English to marketing. A number come with extensive experience in non-academic fields, including independent filmmaking, industrial design, politics, science, foundation work, and business.

Approximately half the students in MAPH plan to continue their studies at the Ph.D. level in preparation for a career in university teaching and research. They find that MAPH provides an ideal setting for clarifying their academic and professional goals and offers a year of intensive preparation for competitive Ph.D. programs.

MAPH's emphasis on critical writing, analytical thinking, scholarly research, and flexible cultural perspectives has also proved invaluable for those interested in careers in cultural institutions and cultural policy, publishing, journalism, business, politics, secondary school or community college teaching, and the full spectrum of the nonprofit sector.

### DEGREE REQUIREMENTS

Requirements for the A.M. degree include:

1. 2. The fall quarter core course, Foundations of Interpretive Theory ("Core"), begins two weeks before regular University classes. Core covers seminal works by thinkers such as Freud, Lacan, Marx, Adorno, and Zizek. It is taught jointly by the MAPH Co-directors and includes several guest lectures by distinguished faculty members from different disciplines. The course is designed to give MAPH students a shared base for their further study.
3. Seven elective courses chosen from the Division of the Humanities, Social Sciences, or other divisions or professional schools. The choice of these courses is left largely to the student, although a program of study must be approved by a faculty adviser or a preceptor. Some students restrict their courses to one field of study; others take a wide-ranging variety

of courses in as many as five disciplines. Most programs of study fall somewhere in between these two extremes.

MAPH Program Options, developed in consultation with Humanities Division departments and committees, provide guidance in selecting electives for interested students. MAPH administers programs of study designed by Classics, Cinema and Media Studies, the Cultural Policy Center in the Harris School of Public Policy Studies, and the University of Chicago Writing Committee (the MAPH Creative Writing Option is the University of Chicago's alternative to a traditional MFA).

4. A master's thesis of 25-to-35 pages, produced under the supervision of a faculty thesis adviser and a preceptor, and completed toward the end of the spring quarter. In conjunction with thesis preparation, students take a thesis workshop, which involves small group meetings focused on the development of thesis topics and the writing of the thesis. MAPH thesis projects range from traditional research papers to creative works accompanied by a critical assessment.

### PRECEPTORS

Preceptors are advanced graduate students or recent Ph.D.s, each of whom oversees the progress of 12 to 14 MAPH students. Each student is assigned a preceptor for the academic year. In addition to serving as a general adviser, the preceptor leads small discussion groups in connection with the colloquium and core course and leads the thesis workshop. Preceptors also offer courses specially designed for MAPH in the winter quarter.

### ADMISSION

Applicants to MAPH must meet the divisional requirements for admission. Students applying to the MAPH Creative Writing Option must also submit two copies of a substantial creative writing sample in their chosen genre (e.g., several poems, a short story, a chapter from a work of longer fiction in progress, a play, or a 10-15 page work of creative nonfiction).

For further information, visit the MAPH website at <http://maph.uchicago.edu> or email [ma-humanities@uchicago.edu](mailto:ma-humanities@uchicago.edu) or phone (773) 834-1201.

To apply, go to <https://grad-application.uchicago.edu/>.

## MASTER OF ARTS IN LATIN AMERICAN STUDIES

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### *Director*

Dain Borges

### *Associate Director*

Josh Beck

Please see entry for Center for Latin American Studies for the list of the Latin American Studies faculty committee, also available at <http://clas.uchicago.edu>.

The Center for Latin American Studies administers a Master of Arts degree Program in Latin American Studies. The Master of Arts Program is a one year program of graduate studies that provides students with a thorough knowledge of the cultures, history, politics, and languages of the region. Students benefit from various resources that put the University of Chicago at the forefront of research and scholarship on Latin America, including world renowned faculty, top quality library resources, graduate workshops, and field research grant opportunities. Please see the Center for Latin American Studies entry in the Graduate Announcements for full details on Center resources. The Center also administers a Bachelor of Arts (major and minor) in Latin American Studies (for details please see <http://clas.uchicago.edu/programs/>).

The master's program attracts students who will benefit from interdisciplinary training in a highly individualized and flexible program. Each student works closely with faculty and the program advisor to design a customized curriculum, define an area of scholarly research, and write a master's paper. Students take advantage of the program's flexibility to advance their academic and/or career objectives before making a major professional or educational commitment. Some students approach a research interest from a multidisciplinary perspective. Others strengthen their training in a single discipline as it relates to Latin American Studies, or explore new fields.

Through the M.A. Proseminar, the required common core of the master's program, students gain a critical understanding of the major theoretical approaches, principal research methods, and current trends in Latin American Studies. During the winter quarter of the Proseminar students develop the proposal for their master's paper. The master's paper is meant to demonstrate the student's ability to apply formal training in Latin American Studies toward a specific and original research problem. Primary Latin Americanist faculty at the University of Chicago serve as guest lecturers in the Proseminar to introduce students to their research.

The master's program provides students with the opportunity to develop and enhance skills and knowledge appro-

priate for careers related to Latin America or as preparation for further graduate work or professional training. Graduates of the program enter or return to careers for which the master's degree is increasingly an entry-level requirement, including secondary and higher education, government, business, and various cultural organizations and non-profit agencies. Others enter doctoral and professional degree programs with support and advice from Latin American Studies staff and faculty.

### ADMISSION TO THE MASTER'S PROGRAM

Prospective students to the Master of Arts Program in Latin American Studies may apply to the Program through the Division of the Social Sciences or through the Division of the Humanities and will receive the degree from the division through which they have been admitted.

### INFORMATION ON HOW TO APPLY

The application process for admission and financial aid for all graduate programs in Humanities is administered through the divisional Office of the Dean of Students. The Application for Admission and Financial Aid, with instructions, deadlines and department specific information is available online at: <http://humanities.uchicago.edu/prospective/#admissions>

Questions pertaining to admissions and aid should be directed to [humanitiesadmissions@uchicago.edu](mailto:humanitiesadmissions@uchicago.edu) or (773) 702-1552. All correspondence and materials sent in support of applications should be mailed to:

The University of Chicago  
Division of the Humanities  
Walker, Suite 111  
1115 East 58th Street  
Chicago, IL 60637.

Foreign students must provide evidence of English proficiency by submitting scores from either the Test of English as a Foreign Language (TOEFL) or the International English Language Testing System (IELTS). Current minimum scores, etc., are provided with the application.

Students who wish to earn a Ph.D. degree should apply to a degree program in one of the graduate departments or committees in the Division of the Humanities or the Division of the Social Sciences. Foreign students should be advised that in the United States completion of a master's degree program is generally not a prerequisite to entering a Ph.D. program.

### PROGRAM REQUIREMENTS

Upon entering the program, students will work under academic direction of the CLAS Associate Director to develop a specific program of study, cultivate their research interests, and identify a faculty advisor for their master's paper. The basic components of the master's program are described below.

## LANGUAGES

A fundamental requirement of the program is proficiency in one of the spoken languages (other than English) of Latin America and the Caribbean. This requirement normally will be met in Spanish or Portuguese. However, substitution of an Amerindian language (such as Aymara, Yucatec Maya or Nahuatl) or a language spoken in the Caribbean, such as French, is permissible with the approval of the program advisor. Petitions for substitution will be evaluated in light of the student's prior competency and curricular program and the adequacy of instructional resources in the substitute language. Proficiency examinations will be administered to evaluate the entering student's language skills. Students usually meet the language requirement through the proficiency examination in Spanish or Portuguese.

## COURSE REQUIREMENTS

The standard course requirement is nine quarter courses, to be met as follows: the M.A. Proseminar in Latin American Studies; five courses in Latin American and Caribbean Studies, and three elective courses. Students are expected to fulfill the language requirement through proficiency examination, and complete the master's program in three quarters of course work. In consultation with the program advisor, the student will select three elective courses suited to individual curricular interests. These courses may be selected from the offerings in the divisions and professional schools of the University. Non degree graduate level courses at the University completed prior to admission to the master's program may be used in fulfillment of elective requirements, upon approval of the program advisor.

Credits towards the Master of Arts in Latin American Studies must be taken at the graduate level (courses designated as 30000 or above). However, certain lower level courses may be accepted, at the discretion of the program advisor. All course requirements can be met in three academic quarters.

## THE MASTER'S PAPER

In addition to the course requirements outlined above, every master's degree candidate is required to submit a master's paper. This paper is meant to demonstrate the student's ability to apply formal training in Latin American and Caribbean studies toward a specific research problem developed over the course of the program. The research and writing of this paper will be conducted under the guidance of a faculty advisor. A student may register for the course Master's Paper Preparation, which is arranged on an individual basis with the faculty advisor for the project. This course, while optional, may be counted as one of the five required Latin American Studies core courses.

## COURSES

Courses pertinent to the Latin American area are offered through the individual departments and committees of the Divisions of the Social Sciences and the Humanities, and through the University's professional schools. Please refer to the listings in these Announcements and in the quarterly Time Schedules for specific offerings. Additionally, special courses are offered by senior visiting Latin Americanist faculty through the Center's Tinker Visiting Professorship and through the Rio Branco Visiting Professorship of Brazilian Studies. Each quarter the Center compiles a comprehensive list of Latin American and Caribbean courses to be offered at the University available at <http://clas.uchicago.edu/courses.shtml>.

For additional information about the Master of Arts in Latin American Studies program, please see <http://clas.uchicago.edu> or call (773) 702-8420

## MASTER OF ARTS IN MIDDLE EASTERN STUDIES

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*Director*

Fred Donner

*Associate Director*

Rusty Rook

*Project Assistant*

Traci Lombré

*Public Education Project Director*

Alexander Barna

Please see entry for Center for Middle Eastern Studies for the list of Middle Eastern Studies faculty, also available at <http://www.cmes.uchicago.edu>.

The Center for Middle Eastern Studies offers an interdisciplinary Master of Arts program designed for students who wish to use their knowledge of the Middle East in careers other than university teaching and research. The program is also suitable for students considering an academic career who have not had the appropriate academic background for direct entrance into a doctoral program. Language and area studies preparation may be supplemented by relevant course work in a professional school or department. Students may be admitted to the Master of Arts program in either the Division of the Social Sciences or the Humanities and will receive the degree from the division through which they have registered. Students with significant previous training in Middle Eastern or Islamic studies who wish to earn a doctoral degree leading to careers in research and college or university teaching should apply for admission directly to one of the graduate doctoral departments or committees of the University.

### ADMISSION

Applicants for the Master of Arts in Middle Eastern Studies are expected to meet the graduate admissions requirements of the University and of the division to which they apply. In addition, applicants to the Middle Eastern Studies program must submit an academic writing sample. Foreign students must provide evidence of English proficiency by submitting scores from either the Test of English as a Foreign Language (TOEFL) or the International English Language Testing System (IELTS).

Students are encouraged to enter the program in the autumn quarter. Although the program is designed for full time students, applications from those who can attend only on a part time basis will be considered.

To apply, go to <https://grad-application.uchicago.edu/>.

### PROGRAM REQUIREMENTS

Only courses taken for a quality grade will count toward fulfilling the requirements. No P or R grades will be accepted.

The requirements are satisfactory completion of:

- Six quarters of a Middle Eastern language (through at least two year proficiency);
- One quarter core colloquium, Approaches to the Study of the Middle East;
- Three quarters of an approved integrated Middle Eastern survey course such as Introduction to Judaic Civilization, or History of the Islamic Middle East, 600 to the Present;
- Seven courses in relevant electives;
- One course in thesis preparation, or reading and research;
- A master's thesis.

The Master of Arts program (including the core methodology course and a three quarter survey course, six quarter language courses and three or four relevant electives) offers a joint degree option with the Harris School of Public Policy Studies or the Graduate School of Business. A student may earn the M.P.P. in Public Policy or the M.B.A. along with the A.M. in Middle Eastern Studies in an integrated joint program normally requiring a total of three years of study.

### LANGUAGE

Placement examinations will be given so that entering students may register for courses at the appropriate level of instruction. All or part of the language requirement may be met through the placement examination.

Students who elect to study Arabic will concentrate on the modern literary language. Students who elect to study Persian, Turkish, or Hebrew will concentrate on the modern and contemporary idiom.

### MIDDLE EASTERN STUDIES

All students in the A.M. program are required to take the core colloquium Approaches to the Study of Middle East (History 58000; Near Eastern History and Civilization 30631). Students must enroll in one of the two following three quarter sequences: Introduction to Judaic Civilization (Jewish Studies 31000, 31100, 31200) or History of the Islamic Middle East (History 35700, 35800, 35900; Near Eastern History and Civilization 30621, 30622, 30623). Those with previous work in Islamic studies will be advised to substitute, where appropriate, more advanced and specialized courses in the field.

### ELECTIVES

In consultation with advisers, students select courses providing instruction in skills related to their future careers. These courses may be in research methodology; statistics; cross cultural, demographic, or economic analysis; or computer training. They may be selected from the offerings of departments in the graduate divisions, such as the

Departments of Economics, Statistics, or Sociology; or of the professional schools, such as the Graduate School of Business, the Law School, the Harris School of Public Policy Studies or the School of Social Service Administration.

Students are strongly encouraged to consider participating in the University Writing Program (Little Red Schoolhouse).

#### MASTER'S THESIS

Students are required to submit a master's thesis that should deal with a problem relevant to the student's intended career and should give evidence of the specialized disciplinary aspects of his or her training. The student's program adviser and a faculty member with special interest in the subject of the paper will guide the research and writing of the paper and judge whether it exhibits proof of competence in the field.

During the writing of the paper, the student will register for a thesis preparation or reading and research course. The thesis title will be listed on the student's transcript.

#### Courses

Consult in these Announcements and in the quarterly Time Schedules the listings of the Departments of Art History, Anthropology, English Language & Literature, History, Music, Near Eastern Languages & Civilizations, Political Science, Sociology, South Asian Languages & Civilizations, and the Committee on Geographical Studies.

## DEPARTMENT OF ART HISTORY

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#### *Chair*

Joel M. Snyder

#### *Professors*

Charles Cohen, Department of Visual Arts

Jás Elsner

Tom Gunning

Elizabeth Helsinger, English Language & Literature

William J. T. Mitchell, English Language & Literature

Richard Neer

Joel M. Snyder

Yuri Tsivian

Ralph Ubl, Committee on Social Thought

Wu Hung, East Asian Languages & Civilizations

#### *Associate Professors*

Darby English

Christine Mehring

Katherine Taylor

Martha Ward

Rebecca Zorach

#### *Assistant Professors*

Persis Berlekamp

Ping Foong

Chelsea Foxwell

Cécile Fromont

Matthew Jackson, Department of Visual Arts

Aden Kumler

Verity Platt

#### *Harper Schmidt Collegiate Assistant Professor*

Megan Luke

#### *Director of Visual Resources*

Megan Macken

#### *Emeritus Faculty*

Neil Harris

Reinhold Heller

Robert S. Nelson

Linda Seidel

Barbara Stafford

The Department of Art History provides a program for the study of the history and theory of art, leading to the degree of Doctor of Philosophy. The program seeks to create a forum for the exploration of the visual arts as manifested in major epochs of European, Near Eastern, Asian and American civilizations. This is accomplished by encouraging the exploration of diverse approaches and the examination of varied materials. The department seeks to cultivate knowledge of salient works of art, of the structures within which they are

produced and utilized, and of the ways in which the visual environment in the broadest sense generates, acquires, and transmits meaning. Ways of addressing and analyzing the range of materials that constitute visual culture are emphasized in lectures, seminars, and workshops through the oral and written presentation of research and inquiry into specific objects, periods, and issues.

### ADMISSION

A student wishing to enter the graduate program should have a sound undergraduate education in the humanities and liberal arts, preferably but not necessarily with a major in the history of art. It is highly recommended that students have usable skills in French, German, or Italian. To apply to the program, students are normally required to submit Graduate Record Examination aptitude scores. Both applicants with a B.A. and applicants who bring an M.A. in Art History from another institution are welcome to apply for admission to the Ph.D. program. The department grants M.A. degrees but does not have an independent M.A. program.

The application process for admission and financial aid for all graduate programs in the Division of the Humanities is administered through the divisional Office of the Dean of Students. The Application for Admission and Financial Aid, with instructions, deadlines and department specific information is available online at: <http://humanities.uchicago.edu/prospective/#admissions|the-application>

Questions about admissions and aid should be directed to [humanitiesadmissions@uchicago.edu](mailto:humanitiesadmissions@uchicago.edu) or (773) 702-1552. All correspondence and materials sent in support of applications should be mailed to:

The University of Chicago  
Division of the Humanities  
Walker, Suite 111  
1115 East 58th Street  
Chicago, IL 60637.

### THE DEGREE OF DOCTOR OF PHILOSOPHY

The department sets specific requirements in areas of language, course distribution, and procedures leading to the completion of a dissertation. These are worked out individually, in accordance with a student's interests, in consultation with the major advisor and the director of graduate studies. Ordinarily they include proficiency in two foreign languages and eighteen courses, at least twelve of which are in art history, distributed between major and minor fields. These courses are taken during a two year period and center on seminars, including one in methodology and one in historiography. Independent research work in the student's area of interest completes the program and provides the opportunity for the development of a dissertation proposal.

After completing course work and a qualifying paper, the student prepares for a written examination testing knowledge in his or her major field of study and probable area of dissertation research. Successful completion of these preliminary examinations and departmental approval of the dissertation proposal qualifies the student for admission to candidacy. This identifies the final, most challenging and gratifying stage of doctoral study, the research and writing of the dissertation, an original contribution of scholarly or critical significance. Because the requirements for the programs in art history are regularly reviewed and revised, applicants should consult the department for up-to-date statements.

### THE DEGREE OF MASTER OF ARTS

The objective of the program is the Ph.D. degree. However, students may apply for the M.A. degree along the way to achieving the Ph.D., or if they choose or are advised to leave the Ph.D. program after the second-year review. Any student is eligible for the M.A. degree after completing the following requirements: one foreign language required for the student's field; fifteen one-quarter courses, which include Methodology and meet the first-year distribution requirements; two seminar paper approval forms; approval of the qualifying paper from both readers. Students normally complete their 15 courses before applying for the M.A. degree. If instead they wish to obtain the degree in the quarter during which they complete the required courses, they must make arrangements to obtain course grades from their instructors by Friday of 10th week. For more specific information, inquire at the department or see the departmental website at: <http://arthistory.uchicago.edu/>.

#### *Courses*

The following is a sampling of graduate courses offered by the Department of Art History.

#### **Art History Lecture Courses**

- 30100. The Art of Ancestral Worship. H. Wu. Spring.
- 30605. Roman Art. J. Elsner. Spring.

31410. Introduction to Theories of Sex/Gender: Ideology, Culture, and Sexuality. R. Zorach. Winter.
30509. Skills and Methods in Chinese Painting History. P. Foong. Autumn.
33400. Art, Architecture, and Identity in the Ottoman Empire. P. Berlekamp. Autumn.
34110. Venetian Painting from Bellini to Tintoretto. C. Cohen. Winter.
34710. Japan and the World in Nineteenth-Century Art. C. Foxwell. Winter.
35900. Theories of Media. W.J.T. Mitchell. Winter '10.
36400. The History of Photography in America. J. Snyder. Autumn.
36609. Abstraction. C. Mehring. Autumn.
35806. Visual Culture of Rome and her Empire. E. Mayer. Winter.
36810. Roman Visual Culture in the NW Provinces. E. Mayer. Spring.
37400. Photography/Modernism/Esthetics. J. Snyder. Spring.
37503. Modern/Postmodern. D. English. Spring.
- 27610/37610. Drawing After 1953. M. Naef, Winter.
- Seminars
40100. Proseminar: Art Historical Theory & Method. R. Neer. Autumn.
40610. Democratic Athens. R. Neer. Winter.
42010. Art and Neoplatonism, East and West. P. Berlekamp and R. Zorach. Spring.
42610. Imperial Collections of Chinese Painting and Calligraphy. P. Foong. Winter.
43410. Sem: The Poetry of Death. E. Mayer, Spring.
43500. Italian Renaissance Drawings: History, Theory, Practice. C. Cohen. Autumn.
44909. Japanese Handscroll Paintings. C. Foxwell. Autumn.
45010. Art, Death, and Immortality. H. Wu. Spring.
46210. Arabesque Narrative: A Hybrid Form of the Imaginary. R. Ubl and D. Wellbery. Winter.
46309. Secularization and Resacralization of the Work of Art. R. Ubl and D. Nirenberg. Autumn.
48910. From the Rubble: Art, Architecture, and Design in the Era of European Reconstruction. C. Mehring. Winter.
49309. Race, Media, and Visual Culture. D. English and W.J.T. Mitchell. Autumn.
49910. Writing Art History: From Antiquity to Modernity. J. Elsner. Spring.

## DEPARTMENT OF CINEMA AND MEDIA STUDIES

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### *Chair*

Yuri Tsivian

### *Professors*

James Chandler, English Language & Literature  
 Tom Gunning, Art History  
 Miriam Hansen, English Language & Literature  
 Joel Snyder, Art History  
 Yuri Tsivian  
 Rebecca West, Romance Languages & Literatures

### *Associate Professors*

James Lastra, English Language & Literature  
 Laura Letinsky, Visual Arts  
 David J. Levin, Germanic Studies

### *Assistant Professor*

Michael Raine, East Asian Languages & Civilizations  
 Noa Steimatsky  
 Jennifer Wild

### *Senior Visiting Lecturer*

Judy Hoffman, Visual Arts

*Resource Faculty:* Leora Auslander, History; Lauren Berlant, English Language and Literature; Robert Bird, Slavic Languages & Literatures; Bill Brown, English Language and Literature; Dipesh Chakrabarty, South Asian Languages and Civilizations; Jean Comaroff, Anthropology; Martha Feldman, Music; Jacqueline Goldsby, English Language and Literature; Neil Harris, History; Reinhold Heller, Art History; Berthold Hoeckner, Music; Thomas Holt, History; Loren Kruger, English Language and Literature; William T.S. Mazzarella, Anthropology; W.J.T. Mitchell, English Language and Literature; Eric Santner, Germanic Studies; Bozena Shallcross, Slavic Languages and Literatures; Barbara Stafford, Art History; Malynne Sternstein, Slavic Languages and Literatures; Katherine Taylor, Art History; William Veeder, English Language and Literature; Martha Ward, Art History

The Department of Cinema & Media Studies offers a Ph.D. program that focuses on the history, theory, and criticism of film and related media. Faculty are drawn from a wide range of departments and disciplines, primarily in the humanities. In addition to offering its own doctoral degree, the committee offers courses and guidance to students who specialize in film and related media within departmental graduate programs or might be pursuing a joint degree.

Centering on the cinema, the graduate program provides students with the critical skills, research methods, and an understanding of the debates that have developed within

cinema studies as a discrete discipline. At the same time, the study of cinema and related media mandates an interdisciplinary approach in a number of respects. The aesthetics of film is inextricably linked to the cultural, social, political, and economic configurations within which the cinema emerged and which it in turn has shaped. Likewise, the history of the cinema cannot be separated from its interaction with other media. Just as it is part of a wholly new culture of moving images and sounds that includes television, video, and digital technologies, the cinema draws on earlier practices of instantaneous photography and sound recording and, in a wider sense, those media that are more often described as the fine arts (painting, sculpture, architecture, literature, theater, and music). Finally, the interdisciplinary orientation of the program entails an emphasis on the diversity of film and media practices in different national and transnational contexts and periods and thus an understanding of the cinema as a historically variable and rich cultural form.

The Film Studies Center, located on the third floor of Cobb Hall, serves as a resource for course related and individual research and as a forum for cinema and media related activities.

For more information on the Film Studies Center visit <http://filmstudiescenter.uchicago.edu>.

## THE DEGREE OF DOCTOR OF PHILOSOPHY

The requirements for the Doctor of Philosophy in Cinema & Media Studies are as follows:

Students are expected to complete sixteen courses during their course of study, of which a minimum of eleven have to be listed among the offerings of the Committee on Cinema & Media Studies. These cinema and media studies courses will include:

1. Three required courses originating in the committee:
  - (a) Methods and Issues in Cinema and Media Studies: an introduction to research methods, key concepts, and theoretical approaches, using case studies to introduce students to debates and issues in the field;
  - (b) History of International Cinema: a two quarter survey course that is designed as both a beginning level graduate and an upper level undergraduate course.
2. Eight elective courses in the Department of Cinema and Media Studies.

A sample program for students entering the department without previous graduate study in cinema and media studies would consist in the following:

*First year:* A total of seven courses: the three required courses; a minimum of two elective courses in the Department of Cinema & Media Studies; two further elective courses.

*Second year:* A total of six courses: a minimum of four elective courses in the Department of Cinema & Media

Studies; two further elective courses. Of these six courses, three must be designated as advanced courses.

*Third year:* A total of three courses; at least one Ph.D. research seminar in the Department of Cinema & Media Studies; two elective courses.

Students entering the committee with an M.A. from another institution or another program may ask to be exempt from some of these requirements. Such requests will be handled on an individual basis. Students wishing to waive requirements must get the approval of their adviser and the Director of Graduate Studies.

*Fields examination:* Students entering the committee without previous graduate study in cinema and media studies are expected to take their fields examination by the end of the third year; students entering with a master's degree may be encouraged to take the examination earlier.

*Language requirement:* Given the highly international nature of the field of cinema and media studies, proficiency in two modern foreign languages has to be demonstrated by high passes on the University's foreign language reading examinations. The first of these two languages must be either French or German, and proficiency should be demonstrated by the end of the autumn quarter of the student's second year. The second language will be chosen in consultation with the graduate adviser, and proficiency must be demonstrated before the student will be permitted to take the fields examination.

*Teaching:* Students are eligible for course assistantships after their field's examination (but may apply for them as soon as a date for the exam is scheduled). Once students have served as course assistants, they may apply for teaching a free standing course (normally during their fourth and/or fifth year).

*Dissertation proposal:* Before being admitted to candidacy, students must write a dissertation proposal under the supervision of the dissertation committee.

*Dissertation:* Upon completion of the dissertation, the student will defend it orally before the members of the dissertation committee.

For further information concerning Cinema & Media Studies, please see <http://humanities.uchicago.edu/cmtes/cms> or contact the Program Coordinator at (773) 834-1077 or via e-mail at [cine.media@uchicago.edu](mailto:cine.media@uchicago.edu).

## APPLICATION AND FINANCIAL AID

The application process for admission and financial aid for all graduate programs in the Division of the Humanities is administered through the divisional Office of the Dean of Students. The Application for Admission and Financial Aid, with instructions, deadlines and department specific information is available online at: <http://humanities.uchicago.edu/prospective/#admissions|the-application>

Questions about admissions and aid should be directed to [humanitiesadmissions@uchicago.edu](mailto:humanitiesadmissions@uchicago.edu) or (773) 702-1552.

All correspondence and materials sent in support of applications should be mailed to:

The University of Chicago  
Division of the Humanities  
Walker, Suite 111  
1115 East 58th Street  
Chicago, IL 60637

### *Courses*

The following list represents the range and variety of graduate courses taught in the past, including those taught by visiting faculty. For current course offerings and detailed descriptions of the courses below, see the department's website at <http://humanities.uchicago.edu/cmtes/cms/academics/gradcourses.html>.

30301. Women Mystery Writers: From Page to Screen  
*West*
31900. American Cinema Since 1960  
*Hansen*
32300. Staging Femininity: Gender as Spectacle in Opera and Film  
*Levin*
33000. Neorealism: Space, Culture, History  
*Steimatsky*
33200. Italian Americana: Literature and Cinema  
*West*
34901. Cinema in Japan: From Classical Cinema to the Golden Age  
*Raine*
34902. Cinema in Japan: Postwar/Postclassical/Postmodern  
*Raine*
34906. Theories of Media  
*Mitchell*
34907. Japanese New Wave Cinema, 1955-1973  
*Raine*
34909. The East Asian Film Musical  
*Raine*
35000. Eisenstein and Soviet Aesthetic Theory  
*Tsivian*
35100. East/Central European Avant Garde  
*Sternstein*
35600. Magic and the Cinema  
*Gunning*
36500. The Cinema of Max Ophüls  
*Hansen*
37000. Classical Film Theory  
*Staff*
37200. Theories of the Photographic Image and Film  
*Snyder*
37200. Slavic Critical Theory from Jakobson to Zizek  
*Sternstein*
37300. Perspectives on Imaging  
*Stafford and Beck*
37600. Beginning Photography  
*Letinsky*
37700. Advanced Photography  
*Letinsky*
37800. Theories of Media  
*Mitchell*
37800. Visual Culture  
*Mitchell*
38100. Issues in Film Music  
*Hoeckner*
38200. Styles of Performance  
*Tsivian*
38201. Political Documentary Film  
*Hoffman*
38300. Film Noir  
*Staff*
38700. Cinematic Visions of Twentieth Century Italian and Italian American Culture  
*West*
38800. The Films of Fritz Lang  
*Gunning*
39000. Left Wing Art and Soviet Film Culture of the 1920s  
*Tsivian*
39800. Cinema and French Popular Culture  
*Staff*
40000. Methods and Issues in Cinema Studies  
*Wild*
41500. Perception and Understanding of Multimedia  
*Hoeckner*
41900. Seeing/Writing the Everyday in 20<sup>th</sup> Century France  
*Wild*
48500. History of International Cinema, Silent Era
47000. The Ends of American Photography  
*Snyder and Mitchell*
47400. Modernity and the Sense of Things  
*Hansen and Brown*
48100. Genre and Authorship in Postclassical Cinema  
*Hansen*
48303. Before and After Beckett: Theater and Drama  
*Kruger*
48400. Technology and Representation in Film History and Film Theory  
*Lastra*
48402. Styles of Performance  
*Tsivian*

48500. History of International Cinema, Part I, Silent Era  
*Lastra*

48600. History of International Cinema, Part II, Sound  
Cinema to 1960  
*Gunning*

49100. Interactivity and the Cultural Analysis of Film  
*Tsivian*

49200. Film Exhibition  
*Gunning*

50200. Seminar: Catharsis and Other Aesthetic Responses  
*Kruger*

51300. Race, Media, and Visual Culture  
*Mitchell*

58600. Film and the Avant Garde (Experimental Film)  
*Lastra*

**Seminars**

61000. Sound Theory/Sound Practice  
*Lastra*

62000. New Deal Culture: Stage, Screen, and the Public  
Sphere  
*Kruger*

62200. Drama, Theatre, Image, Performance  
*Kruger*

64000. 19th Century Cinema  
*Gunning*

64100. Film and Melodrama  
*Gunning*

64600. South African Literature in English: Colonial,  
Postcolonial, and Other Canonizations and Contestations  
*Kruger*

64900. Political Modernism and Japanese Cinema  
*Raine*

65200. Animate and Inanimate: Cinema's Uncanny relation  
to the Illusion of Life  
*Gunning*

65300. Symbolism and Film  
*Tsivian*

66200. The Persistence of Surrealism: Buñuel and Beyond  
*Lastra*

67300. Classical Cinema as Vernacular Modernism  
*Hansen*

67500. Frankfurt School on Cinema, Modernity, and Mass  
Culture  
*Hansen*

68500. The Concept of Spectatorship in Film Theory and  
Film History  
*Hansen*

68702. Cinema Post-Cinema  
*Hansen*

69200. Space, Place, and Landscape  
*Mitchell*

## DEPARTMENT OF CLASSICS

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*Chair*

Jonathan M. Hall

*Professors*

Clifford Ando  
Elizabeth Asmis  
Shadi Bartsch  
Alain Bresson  
Christopher A. Faraone  
Jonathan M. Hall  
Michèle Lowrie  
James M. Redfield  
Peter White

*Associate Professors*

Michael I. Allen  
Helma J. Dik  
David G. Martinez  
Mark Payne  
David L. Wray

*Assistant Professors*

Emanuel Mayer  
Sarah Nooter

*Emeritus Faculty*

Walter R. Johnson  
D. Nicholas Rudall

*Affiliated Faculty*

Tamara Chin, Comparative Literature  
Michael Dietler, Anthropology  
Jas' Elsner, Art History  
Elizabeth Gebhard, Director of Excavations, Isthmia  
Janet Johnson, Near Eastern Languages and Civilizations  
Walter Kaegi, History  
Gabriel Richardson Lear, Philosophy  
Bruce Lincoln, Divinity School  
Glenn Most, Committee on Social Thought  
Richard Neer, Art History  
Martha Nussbaum, Philosophy and Law  
Wendy Olmsted, Humanities  
Dennis Pardee, Near Eastern Languages and Civilizations  
Verity Platt, Art History  
Seth Richardson, Near Eastern Languages and  
Civilizations  
Kent Rigsby, Emeritus, Duke University  
Robert Ritner, Near Eastern Languages and Civilization  
Martha Roth, Near Eastern Languages and Civilizations  
David Schloen, Near Eastern Languages and Civilizations  
Laura Slatkin, Committee on Social Thought  
Matthew Stolper, Near Eastern Languages and  
Civilizations

### Theo van den Hout, Near Eastern Languages and Civilizations

The Department of Classics offers advanced study in the civilizations of the ancient Mediterranean, including literature and literary theory, history, philosophy, science, art, and archaeology. The programs of the department lead to A.M. and Ph.D. degrees and seek to prepare students for careers in teaching and research. They allow students to explore areas with which they are unfamiliar, as well as to strengthen their knowledge in those in which they have already developed a special interest.

The classics faculty consists of active scholars, expert in one or more areas of classical studies. Apart from their influence through books and articles, the faculty has long been identified with the publication of *Classical Philology*, one of the leading journals devoted to classical antiquity. The diverse graduate students at the University include a number in programs outside the Department of Classics also engaged in the study of the ancient world. The Oriental Institute, the Divinity School, the Committee on Social Thought, and the Departments of History, Linguistics, & Near Eastern Languages & Civilizations all have programs that focus on different aspects of the classical period. Graduate student faculty workshops, where graduate students, faculty, and visiting scholars present work in progress, are a further means of scholarly collaboration and training. The department currently sponsors workshops entitled *Ancient Societies*, *Rhetoric and Poetics*, and *Ancient Philosophy*, which involve participants from other areas as well.

### RESEARCH AND LIBRARY RESOURCES

The library system of the University contains over six million volumes. Classics has been one of the strongest parts of this collection since its first formation in 1891, when the University purchased the entire stock of an antiquarian bookstore in Berlin which specialized in classical philology, archaeology, and science. Apart from current monographs, the library receives more than seven hundred serials devoted to ancient Greece and Rome. Major editions of classical texts printed from the Renaissance through the eighteenth century are available in the Department of Special Collections, which also houses collections of Greek and Latin manuscripts and a large reference library devoted to paleography, manuscript catalogues, and facsimiles.

The database of the *Thesaurus Linguae Graecae* and the software needed to use it are accessible over the campus network; the Latin texts prepared by the Packard Humanities Institute, the CETE DOC database of ancient and medieval Christian Latin texts, and several other electronic databases useful to the study of the classics are mounted on workstations in the Regenstein Library; and additional computing resources are available in the departmental computer cluster in the Classics Building.

### FELLOWSHIPS

All fellowships cover tuition and health insurance and include a generous stipend for living expenses. Aid is awarded primarily on the basis of merit, and students entering with aid have the assurance that it will be renewed without competition if they make satisfactory progress in the program. All fellowships are for five years, including those for students who enter with an A.M. Graduate students in classics may also apply for fellowships which aid students during the writing of Ph.D. dissertations and for travel fellowships that support visits to libraries, collections, and archaeological research sites in Europe and the Near East.

### TEACHING OPPORTUNITIES

At the University of Chicago, undergraduate classes are small, the situations in which graduate students take an instructional role are varied, and teaching need not be a constant sideline to the detriment of their own studies. Moreover, the department and the University have invested considerable effort in training graduate students to teach effectively. The Center for Teaching and Learning conducts a series of workshops and forums designed to build skills in lecturing, leading discussions, and focusing writing assignments.

Teaching opportunities lie in four areas. The first is in classics, where students who have completed the first two years of coursework may apply to serve as course assistants alongside regular faculty in the beginning Greek and Latin and ancient civilization sequences. Experienced course assistants may apply to teach independently in the first or second year language courses. Graduate students also have a broad role in the summer Greek and Latin Institute, and in the Graham School of General Studies, for which they are encouraged to offer courses of their own design (some recent courses have been devoted to the *Iliad*, the *Odyssey*, and the *Aeneid*).

The second area of teaching is through The Little Red Schoolhouse, a nationally famous writing program in which graduate students are taught how to deal constructively with the confused prose they will encounter in undergraduate papers, and are then assigned as interns in the humanities and social sciences core courses of the College. Here they work in a small class with the professor, serving as special writing instructors and learning how to teach courses in which reading, discussion, and short papers are the chief ingredients. A third area of teaching is serving as the graduate assistant for the College's ten-week Study Abroad program in Athens, which is regularly staffed by faculty from the Classics Department. The graduate assistant serves as both a course assistant and a resident assistant and as an instructor for a course entitled *Readings in Attic Greek*. Finally, at the most advanced level, graduate students are eligible to teach sections of the humanities core

sequence. All teaching is recompensed by a stipend proportional to the teaching responsibility and normally includes remission of tuition.

### PROGRAMS OF STUDY

The department offers Ph.D. degrees in Classical Languages and Literatures, the Ancient Mediterranean World, and Ancient Greek and Roman Philosophy, as well as a joint Ph.D. in Social Thought and Classics.

#### PH.D. PROGRAM IN CLASSICAL LANGUAGES AND LITERATURES

The curriculum in Classical Languages and Literatures emphasizes excellence in the Greek and Latin languages and training for scholarly investigation. Various kinds of courses are offered to meet the students' needs and desires. Some are devoted to the reading of texts, with emphasis on the linguistic structure. Others stress literary, historical, or philosophical interpretation. Several seminars each year, which deal with Greek and Latin texts and are often related to current research interests of the faculty, invite students to think deeply about an aspect of antiquity and provide training in the writing of scholarly research papers. A synoptic view is furnished by a yearlong sequence devoted in alternate years to Greek and to Latin literature. These survey courses are designed to help the student acquire skill in the rapid reading of Greek and Latin. Students may also pursue individual interests by taking courses offered outside the department, and may, in special circumstances, arrange for independent study.

Applicants to the Program in Classical Languages & Literatures should have a strong background in Greek and Latin. Students with undergraduate degrees in other fields are encouraged to apply if their scholarly interests lie in classics and if they have begun intensive study to make up any deficiencies in Greek and Latin. All graduate students are expected to demonstrate proficiency in reading French and German, one language for the A.M. degree and the second for the Ph.D.; entering students should have begun this preparation if they are not already competent.

The Ph.D. Program in Classical Languages and Literatures is designed for six years, the first two being devoted to a full load of nine courses, the third and fourth to completing course work and examinations, and the final two to the dissertation.

In the first year of the Classical Languages and Literatures program, students regularly take one of the survey courses, a prose composition course, two seminars, at least two courses in the minor language, and other courses (often in other departments such as Art History, Linguistics, Near Eastern Languages & Civilizations, etc.) to meet special interests. Students are required to take the qualifying exam in the language of the survey sequence at the end of this year. This is also the year to pass the first modern language

exam in French or German. Students who complete their coursework and pass the French or German exam are awarded the A.M. in Classical Languages and Literatures.

The second year is similar, usually with a major focus on the second survey course and such courses as may allow students to explore new areas; in the spring, students are required to pass the second language qualifying examination. In the third year, students are required to pass examinations in Greek and Roman History (this requirement can also be met by certain ancient history courses or study abroad programs) and to prepare the special field exam (a study of a particular text chosen by the student). In the fourth year and fifth year students should expect to develop a topic for the dissertation, and to write the dissertation.

#### PH.D. PROGRAM IN THE ANCIENT MEDITERRANEAN WORLD

The Program in the Ancient Mediterranean World (formerly the Committee on the Ancient Mediterranean World) was founded in 1975 with the intention of bringing together faculty whose fields of study, ranging from the ancient Near East and the ancient Greek world to late antiquity, adjoin and overlap chronologically and geographically. While these fields require mastery of relevant languages, the Program in the Ancient Mediterranean World is focused less on texts than on contexts; it offers students an opportunity to use philological skills in historical and cultural explorations. Most students in this program are in the areas of ancient history, history of ancient religions, Greek and Near Eastern studies, or late antiquity.

Although not primarily a language program, students in the Program in the Ancient Mediterranean World are required to take competency examinations in two ancient languages and should therefore have a strong background in at least one. All graduate students are expected to demonstrate proficiency in reading French and German, one language for the A.M. degree and the second for the Ph.D.; entering students should have begun this preparation if they are not already competent.

The Ph.D. Program in the Ancient Mediterranean World is designed for six years, the first two being devoted to a full load of nine courses, the third and fourth to completing course work and examinations, and the final two to the dissertation. In the first year of the Ancient Mediterranean World program, students regularly take the two-quarter research seminar and a range of courses, at least two of which must be distributed across two of the following disciplinary fields: literature; philosophy/religion; art/archaeology; and social sciences (e.g. anthropology, sociology, political science). This is also the year to pass the first modern language exam in French or German. Students who complete their coursework and pass the French or German exam are awarded the A.M. in the Ancient Mediterranean World. In the second year, students are required to take a further nine courses, at least two of which must be dis-

tributed across a different pair of the disciplinary fields specified above and to pass the first ancient language qualifying examination. Before the end of the third year, students are required to pass written and oral examinations in one major and two minor historical fields and, before the end of the fourth year, the second ancient language qualifying examination. Students should also, in the course of their fourth year, expect to develop a topic for the dissertation, which is written in the fifth and sixth years.

#### PH.D. PROGRAM IN ANCIENT GREEK AND ROMAN PHILOSOPHY

The study of ancient Greek and Roman philosophy is inherently interdisciplinary. Scholars must be able to situate philosophical texts in their broader cultural context. They must also be alive to the way a given text engages with and contributes to its philosophical tradition. Finally, they must be able to communicate effectively with scholars trained in either Classics or Philosophy. Thus, a student who plans to specialize in ancient philosophy ought to receive an interdisciplinary training. The Program in Ancient Greek and Roman Philosophy allows students to enroll either in the PhD program in Classics or in the PhD program in Philosophy but with the requirement that they will take certain courses in the department in which they are not enrolled. The program is a joint program in the sense that the faculty of both departments are committed to training students in the other department and in the sense that the students will develop a working relationship with each other, both through participation in seminars and in the Ancient Greek and Roman Philosophy workshop.

The Ph.D. Program in Classical Languages and Literatures is designed for six years, the first two being devoted to a full load of nine courses, the third and fourth to completing course work and examinations, and the final two to the dissertation. In the first year, students regularly take one of the survey courses, a prose composition course, two quarters of seminar work, at least one of which must be in ancient philosophy, one course in the Philosophy department that deals with a topic other than Greek or Roman Philosophy, and one course in the minor language. Students are required to take the qualifying exam in the language of the survey sequence at the end of this year and also the first modern language exam in French or German. Students who complete their coursework and pass the French or German exam are awarded the A.M. in Classical Languages and Literatures. The second year is similar; in the spring, students are required to pass the second language qualifying examination. In the third year, students are required to take two additional graduate courses on a philosophical topic and the special field exam, which is a written examination on a Greek or Latin philosophical text (complete or an excerpt) of the candidate's own choosing. In the fourth year and fifth year students should expect to develop a topic for the dissertation, and to write the dissertation.

#### THE JOINT PH.D. PROGRAM IN SOCIAL THOUGHT AND CLASSICS

The Joint Ph.D. Program in Social Thought and Classics is intended for students whose study of a particular issue or text from the ancient Greek and Roman world requires a broadly interdisciplinary approach alongside a professional mastery of philological skills. Those interested in pursuing this joint degree program must first be admitted in EITHER the Committee on Social Thought OR the Department of Classics and must complete at minimum the three quarter language survey (Greek or Latin) offered by the Department of Classics, with an average grade of B or higher. Application shall then be made to the second department and, provided that the standards of admission to that department are met, students will be admitted to joint degree status. Their original department, however, will remain their sole department for purposes of registration and financial aid (including dissertation fellowships).

Students admitted to the joint degree program must satisfy both all the normal requirements for the A.M. and Ph.D. in Classical Languages and Literatures and all the normal requirements for the A.M. and Ph.D. in Social Thought. However, the Social Thought language requirement of a high level pass in a foreign language exam will be automatically met by the requirements of the Classics program. Students with joint degree status will be required to offer at least a majority of non Classical texts on the Social Thought Fundamentals Examination. The dissertation proposal will have to be approved by both departments and the dissertation committee will normally include three faculty, at least one of whom will come from each department.

#### APPLICATION

The application process for admission and financial aid for all graduate programs in the Division of the Humanities is administered through the divisional Office of the Dean of Students. The Application for Admission and Financial Aid, with instructions, deadlines and department specific information is available online at: <http://humanities.uchicago.edu/prospective/#admissions|the-application>

Questions about admissions and aid should be directed to [humanitiesadmissions@uchicago.edu](mailto:humanitiesadmissions@uchicago.edu) or (773) 702-1552. All correspondence and materials sent in support of applications should be mailed to:

The University of Chicago  
Division of the Humanities  
Walker, Suite 111  
1115 East 58th Street  
Chicago, IL 60637

*Courses*

The courses listed below are offered regularly, normally on a three-year rotating basis. In addition, new courses are frequently introduced, especially seminars and classics courses, and these cannot be predicted very far in advance. In 2009-2010, for example, these included seminars on Early Rome, Tragedy and the Tragic, A History of Rhetoric, Greek Tragedy in Africa, Juvenal, The Ancient Economy, Oral Poetries, The Poetry of Death, Security in Latin Literature, and Stoics and Epicureans.

**Greek**

Homer

Hesiod

Greek Hymns

Greek Lyric Poetry

Greek Elegy

Plato

Aeschylus

Aristophanes

Menander

Herodotus

Sophocles

Euripides

Survey of Greek Literature I

Survey of Greek Literature II

Survey of Greek Literature III

Lyric and Epinician Poetry

Aristotle

Thucydides

Greek Prose Composition

Theocritus

Hellenistic Poetry

Greek Linguistics

**Latin**

Livy

Roman Elegy

Roman Novel

Vergil

Augustine

Lucretius

Roman Satire

Roman Oratory

Survey of Latin Literature I

Survey of Latin Literature II

Survey of Latin Literature III

**Ovid**

Sallust and Tacitus

Horace

Roman Comedy

Silver Latin Epic

Latin Prose Composition

Political Philosophy

Latin Paleography

Medieval Literature

Letters: Cicero and Sen

## DEPARTMENT OF COMPARATIVE LITERATURE

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### *Chair*

David Wray, Classics

### *Professors*

Arnold Davidson, Philosophy  
 Frederick de Armas, Romance Languages & Literatures  
 Loren A. Kruger, English Language & Literature  
 Françoise Meltzer, Romance Languages & Literatures  
 Michael J. Murrin, English Language & Literature  
 Joshua Scodel, English Language & Literature  
 Yuri Tsivian, Slavic Languages & Literatures  
 Robert von Hallberg, English Language & Literature  
 David Wellbery, Germanic Studies

### *Associate Professors*

Lawrence Rothfield, English Language & Literature  
 David Wray, Classics

### *Assistant Professor*

Tamara Chin  
 Boris Maslov

### *Emeritus Faculty*

David Bevington, English Language & Literature  
 Walter R. Johnson, Classics  
 Kenneth J. Northcott, Germanic Studies  
 Frantisek Svejksky, Slavic Languages & Literatures  
 Edward Wasiolek, Slavic Languages & Literatures  
 Anthony C. Yu, Divinity

The Department of Comparative Literature is organized to facilitate the study of literature unrestricted by national boundaries and the conventional demarcations of subject matter. The department makes every effort to arrange a course of studies fitted to the individual student's background and interest. Students may choose from courses offered by the department, as well as those offered by relevant departments in the Division of the Humanities and in some cases those offered by other divisions. Students are expected to read relevant texts in the original languages. The master's program may be used to explore areas of interest by the student, as well as to strengthen areas of established interest and competence. Students who proceed to the Ph.D. program will choose one of two tracks in their learning and training: (1) national literatures, (2) literature and other disciplines. Track 1 is a program of studies of one national literature (the major) in its historical entirety and of a second national literature (the minor) in a specified area. Track 2 will consist of the study of a literature or some part of that literature and its relationship to another discipline such as sociology, psychoanalysis, philosophy, or religion. It is assumed that whichever option the student chooses, an international perspective on the relevant problem will

be sought and maintained. Students will be provided with individual counseling to help them formulate programs of study that will answer to their needs and interests. There are no formal boundaries to the extent and nature of these interests, although the department will require that programs be coherently conceived and responsibly carried out.

### APPLICATION

The department requires a writing sample of no more than 25 pages, usually a critical essay written during the student's college years.

### THE DEGREE OF MASTER OF ARTS

The formal requirements for the A.M. degree are the following: For students entering the program in the fall 2003 and after, a program of eight graduate level courses (one full academic year), all of which must be taken for a letter grade; the required two quarter sequence Seminar: Introduction to Comparative Literature[50100 and 50200;] and demonstrated competence (high proficiency in a graduate literature course or high pass in a University examination) in two foreign languages, one of which must be either French or German. The remaining six quarter courses are normally divided among two literatures, although a student may, with department permission, place greater emphasis on one literature or on some special interest. Admission to the Ph.D. program will be based on a student's grade record and performance in the required two quarter sequence.

### THE DEGREE OF DOCTOR OF PHILOSOPHY

Programs leading to the doctor's degree in the department will be organized for students possessing the A.M. who have shown unusual competence and who wish to prepare themselves for teaching and scholarly investigation in comparative literature. Students are required to take six graduate level courses in their second year of Ph.D. study and two in their third year. Students are also required to write a minimum of two substantial papers the second year, and one the third year. Copies of these papers must be submitted to the graduate chair.

In the two years of post-M.A. courses, students may take no more than one of the required courses per year for a Pass/Fail grade (i.e., one of the six required graduate level courses for the first year of post-M.A. doctoral level study, and one of the two required graduate level courses in the second year of doctoral level study).

Before the student is recommended for admission to candidacy for the doctor's degree he or she must pass satisfactorily an oral examination after completion of eight Ph.D. level courses. This examination will be based on one of the following two options.

Track I requires The National Literature Oral. This is an examination based on no fewer than 60 titles in the major literature and no fewer than 30 titles in the minor litera-

ture. The list for the major literature will cover all periods and genres. The list for minor literature will cover the major texts of the approved period or genre.

Track II requires The Field Oral. This is an oral examination on a representative list of approximately 70-90 titles in a given comparative field, such as literature and anthropology, literature and art, literature and film, literature and history, literature and linguistics, literature and music, literature and psychology, literature and sociology, literature and religion, literature and science. Texts chosen for this exam are to be distributed evenly between the two disciplines.

For admission to candidacy the same language requirements hold for BOTH tracks. These are as follows: either high proficiency in one language (=normally one graduate literature course) + two University reading exams in two additional languages (with a high pass on both) OR two high proficiency (graduate literature courses) in two languages. In both tracks one of those languages must be either French or German. All graduate students who wish to fulfill the language requirement through graduate course work must pick up a form in the departmental office to be filled out by the instructor after the course work has been completed. No student will get credit for the language requirement by course work without the instructor's completion of such a form. The form will rate the student's general knowledge of the language with almost exclusive emphasis on reading.

Before entering candidacy students will be asked to present and discuss their dissertation proposals at a proposal hearing attended by their dissertation committee and other interested faculty. After entering candidacy students will participate in a colloquium, normally in the fifth quarter after their admission to candidacy, in which they will discuss with their dissertation committee the current state of the dissertation and outline their plans and schedule for further progress. Students are strongly urged to join appropriate workshops and present dissertation chapters on a regular basis to such workshops. After satisfying the above requirements, the candidate is expected to pursue independent research under the direction of a member of the faculty culminating in the writing of a doctoral dissertation. The candidate must conclude his or her studies by defending successfully this dissertation in an oral final examination.

For additional information about the Comparative Literature program, please see <http://humanities.uchicago.edu/depts/complit/> or call (773) 702- 8486.

### INFORMATION ON HOW TO APPLY

The application process for admission and financial aid for all graduate programs in Humanities is administered through the divisional Office of the Dean of Students. The Application for Admission and Financial Aid, with instructions, deadlines and department specific information is

available online at: <http://humanities.uchicago.edu/prospective/#admissions|the-application>

Questions pertaining to admissions and aid should be directed to [humanitiesadmissions@uchicago.edu](mailto:humanitiesadmissions@uchicago.edu) or (773) 702-1552. All correspondence and materials sent in support of applications should be mailed to:

The University of Chicago  
Division of the Humanities  
Walker, Suite 111  
1115 East 58th Street  
Chicago, IL 60637

### Courses

The listing below is a sampling of recently offered courses.

30500, 30600. History and Theory of Drama I, II  
*Bevington*

31201. Contemporary European Philosophy and Religion  
*Davidson*

32400. History of International Cinema I: Silent Era  
*Tsivian*

32500. History of International Cinema II: Sound Era to 1960  
*Tsivian*

32901. Film Noir: French and American  
*von Hallberg*

34501. Lyric Genres from Classical Antiquity to Postmodernism  
*Maslov*

34901. Cosmopolitanisms  
*Chin*

35901. Reading Modern Poets  
*von Hallberg, Zagajewski*  
36400. *Interpreting Goethe's Faust*  
*Wellbery*

36801. Love-Songs  
*von Hallberg*

38100. Travelers on the Silk Road  
*Murrin*

38101. Don Quijote  
*de Armas, Pavel*

38300. Theories of Narrative  
*Maslov*

39601. Historiography, Literature, Archaeology  
*Chin*

40100. Islamic Love Poetry  
*Sells*

40200. Comparative Mystical Literature  
*Sells*

## DEPARTMENT OF EAST ASIAN LANGUAGES AND CIVILIZATIONS

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### *Chair*

Edward Shaughnessy

### *Professors*

Prasenjit Duara, History

Norma Field

Donald Harper

Jongyon Hwang

James Ketelaar, History

Hung Wu, Art History

Judith Zeitlin

### *Associate Professors*

Guy S. Alitto, History

Michael Bourdaghs

Susan Burns, History

Kyeong Hee Choi

### *Assistant Professors*

Paul Copp

Jacob Eyferth

Yuming He

Paola Iovene

Reginald Jackson

Michael Raine

### *Senior Lecturers*

Fangpei Cai

Hi Sun Kim

Hiroyoshi Noto

Youqin Wang

### *Lecturers*

Yoko Katagiri

Jung Hyuck Lee

Meng Li

Yuxiang Liu

Harumi Lory

Misa Miyachi

IJun Yang

### *Emeritus Faculty*

George Chih Chao Chao

Harry Harootunian, History

Ping Ti Ho, History

Tetsuo Najita, History

David T. Roy

Tsuen Hsuin Tsien

Anthony C. Yu, Divinity

The Department of East Asian Languages & Civilizations is a multidisciplinary department, with faculty specialists in history, art, philosophy, languages, literature, and religions, offering a program of advanced study of the traditional and modern cultures of China, Japan and Korea. At the same time, students are encouraged to pursue their interests across traditional disciplinary lines by taking courses in other departments in the University.

### INFORMATION ON HOW TO APPLY

The application process for admission and financial aid for all graduate programs in Humanities is administered through the divisional Office of the Dean of Students. The application for Admission and Financial Aid, with instructions, deadlines, and department specific information is available online at: <http://humanities.uchicago.edu/prospective/#admissions|the-application>

Questions pertaining to admissions and aid should be directed to [humanitiesadmissions@uchicago.edu](mailto:humanitiesadmissions@uchicago.edu) or (773) 702-1552. All correspondence and materials sent in support of applications should be mailed to:

Division of the Humanities

The University of Chicago

1115 East 58th Street

Walker Museum, Suite 111

Chicago, IL 60637

Foreign students must provide evidence of English proficiency by submitting scores from either the Test of English as a Foreign Language (TOEFL) or the International English Language Testing System (IELTS).

For additional information about the East Asian Languages and Civilizations program, please see <http://ealc.uchicago.edu> or call (773) 702-1255.

### THE DEGREE OF MASTER OF ARTS

EALC Requirements for the Master's Degree and for All Students in Scholastic Residence: (The category of Scholastic Residence applies to the first four years of graduate study. These provisions, except for that pertaining to M.A. papers, apply both to students who arrive with master's degrees and to those who have completed only bachelor's degrees.)

*Language requirement:* The mastery of languages is the first, essential step toward the understanding of civilizations. The minimum language requirement for the M.A. is three years of modern Chinese, Japanese, or Korean, which may be fulfilled by completing course work with a grade of B or better or by passing with a grade of high pass a language exam administered by the Department. Students entering with prior training must take this placement exam, the results of which will either ensure their enrollment at an appropriate level or allow them to pass out of additional language course work. Students whose native language is an East Asian Language may be exempt from

this requirement. They must, however, fulfill the translation requirement.

*Course requirement:* All full-time students must take 18 courses (9 per year) during their first two years of scholastic residence, 1 of which must be EALC 65000 (Directed Translation). No more than 3 courses may be taken for an R or a P grade. Students must take at least two courses in an East Asian civilization other than that in which they are specializing.

All work for incompletes must be submitted to the relevant instructor/s by September 1 prior to the subsequent academic year. In other words, incompletes may not be carried from one academic year into the next. Failure to comply may result in denial of permission to register.

*Translation requirement:* All students must satisfy a translation requirement during their first two years of scholastic residence. The translation must be approved by an EALC faculty member. The student should fulfill this requirement by enrolling in EALC 65000 (Directed Translation), and earning a grade of B or better. The translation and faculty approval will be submitted to the department for the student's file.

*Master's papers:* In addition to meeting the above requirements, those students who entered the program without an M.A. are required to fulfill the requirements for this degree by submitting an M.A. paper or papers. This requirement may be satisfied in one of two ways.

The student may choose to use two papers that have previously been submitted for course work. Each paper must be approved by at least two different faculty members, at least one of whom must belong to EALC, and at least one paper must demonstrate the ability to use primary materials in Chinese, Japanese, or Korean.

The student may, in consultation with her/his adviser, write a single, longer paper, of the sort more traditionally construed as an "M.A. thesis." This paper too must be read and approved by two faculty members, at least one of whom must belong to EALC. Students who choose to write such a thesis may register for two Thesis Research (59700) courses and apply them toward their 18 required courses. Papers will be kept in the student's file.

After the student has fulfilled the M.A. requirements, the student may submit a degree application and have the Department certify to the Division of Humanities that all requirements have been met and will recommend the awarding of the degree of Master of Arts.

*Annual review:* All students will be reviewed by the department each spring quarter. The purpose of this review is to monitor and encourage progress, including progress toward or the satisfactory fulfillment of language and course requirements. This is an important opportunity for faculty to communicate with students on such matters as the advisability of continued study for the Ph.D. degree. Annual spring quarter review of students will continue

until completion of degree. The provision for redeeming incompletes applies through the completion of the degrees of M.A. and Ph.D.

Students will be asked to complete a self-review in the month prior to the faculty review. The purpose of this review is to have the student track his/her progress and consider projected deadlines. The review gives students an opportunity to express concerns and desires to faculty.

The faculty will report the outcome of the review to students. This will include concerns with incompletes or deadlines. Although the faculty may personalize letters, many students will receive a standard letter notifying him/her that he/she has satisfactorily passed the review and reminders of department policy. If the student has more specific concerns about his/her review, it is the student's responsibility to discuss these concerns with his/her advisor or the graduate advisor.

## THE DEGREE OF DOCTOR OF PHILOSOPHY

The requirements for the Ph.D. degree are:

*Language requirement:* Students will be expected to demonstrate mastery of the language of the civilization they are studying. At a minimum, this will normally entail completion of all language courses the Department offers in that language or their equivalent. All students will be expected to acquire or demonstrate competence in a second language, normally an East Asian language, chosen in consultation with their adviser/s as best suited to their research interests. At a minimum, this will normally entail satisfactory completion (with a grade of B or higher) of two years study of a modern language or one year of a classical language, although students are encouraged to take more where possible. If an East Asian or European language is acquired elsewhere, the student must pass an examination designed by the relevant program with a high pass or its equivalent.

In the event that specialization requires the working knowledge of a third language (Asian or non Asian), the student will be asked to certify proficiency through classes and/or examinations.

*The Ph.D. qualifying examination:* After consulting the faculty adviser, and clearing all incompletes, the student should consult with the desired examination committee. After selection of the committee, the student should notify the Department of his or her wish to take the Ph.D. qualifying examination. The Department Chair, in consultation with student and adviser, will approve a committee of three faculty members (one of whom may be from another unit of the University) who will conduct and grade the examination. The Ph.D. qualifying examination will consist of two sections, one written and one oral, testing the student's knowledge of the field, both specific (usually the field that will be the topic of the student's doctoral dissertation) and

general (covering two topics, differentiated either by time period or by discipline).

In consultation with the examination committee, the student will submit, at least two months prior to the date of the examination, three bibliographies of works studied in preparation for these fields. It is expected that these bibliographies will contain some works in the primary language of research.

For the examination, each member of the examination committee will examine the student in one field. The student will have four hours per field (usually on consecutive days). After the examination committee has had a chance to read the written responses (a period usually not to exceed one week), the candidate and committee will meet for a two hour oral examination based upon the completed written examination. Grades in either section will be High Pass, Pass or Fail.

A student who fails in either section may retake it only once, within the next two quarters (summer quarter excepted), and must pass it on the second try in order to continue work in the Department.

The qualifying examination may not be taken later than the ninth quarter of residence after the M.A has been awarded (or, for those with advanced degrees other than the Department's M.A., the ninth quarter after they have been admitted into the Ph.D. program).

*The dissertation proposal:* After successful completion of the qualifying examination, the student may proceed to invite faculty members of his/her choice to form a dissertation committee. Normally, the membership of the committee consists of an adviser and two readers, but the composition need not be identical to the qualifying examination committee. Occasionally, the student may choose to work with two co-advisers and one reader. As in the case of the qualifying examination, at least two members of the dissertation committee should be from EALC, while the third member may be a faculty member from another unit of the University.

The student will present to the Department a short essay (about seven to fifteen pages) describing his or her dissertation project, its purpose and its method, and its expected contribution to scholarship in the field. To this should be appended a bibliography of relevant materials. This proposal should be written in close consultation with the members of the student's Ph.D. dissertation committee.

The proposal will be evaluated in a meeting of the student and the committee, open to all departmental faculty and graduate students, scheduled at least two weeks after submission.

*Admission to candidacy:* Once the student has passed the dissertation proposal defense, the department will certify that the student has met all the requirements for the Admission to Candidacy (all requirements for degree with the exception of the dissertation). The department will

submit paperwork to the Dean of Student's office recommending that the student be admitted to candidacy for the Ph.D. degree.

*The defense of the dissertation:* With agreement of the dissertation committee, the Department Chair will set a date for the oral defense of the dissertation in an open examination. An abstract of the dissertation will be sent to all department members, and a complete copy of the draft must be filed with the Department coordinator and made available for inspection by faculty members at least three weeks in advance of the oral defense. In addition to the dissertation committee, a Dean's representative from outside the Department will normally attend and will report on the examination to the Dean of the Division of the Humanities. Upon successful completion of this examination (open to all departmental faculty and graduate students), the Department Chair will certify to the Division that all Departmental requirements have been met, and will recommend the awarding of the Ph.D. degree.

### Courses

The following is a sampling of courses offered in the department.

#### EALC

30102 Skills and Methods in Chinese Painting History

*P. Foong*

32025 Japanese Love Stories

*J. Yoshida*

33623 An Introduction to Korean Poetry

*J. Hwang*

34101 Zen and History

*J. Ketelaar*

46400 Creation and Re-Creation of Yuan Drama

*Y. He*

36500 The Shi Jing: The Classic of Poetry.

*E. Shaughnessy*

40300 Theories of the Body and Modern Japanese Literature

*M. Bourdaghs*

40500 Modern Chinese History/Doc Sources-1

*G. Alitto*

42609 Japanese Handscroll Paintings

*C. Foxwell*

52300 Modern Japanese History-1

*J. Ketelaar*

30201 Japan and the World in Nineteenth-Century Art

*C. Foxwell*

32624 Imagining a Nation: Korean Literature, Painting and Cinema

*J. Hwang*

34305. .Autobiographical Writings, Gender, and Modern Korea  
K. Choi
- 34907 The East Asian Film Musical  
M. Raine
- 39400 The Ghost Tradition in Chinese Literature, Opera, and Film  
J. Zeitlin
- 43000 Censorship in East Asia: The Case of Colonial Korea  
K. Choi

**Graduate only**

- 40301 Early Postwar Literary Discourse in Japan  
M. Bourdaghs
- 42610 Imperial Collections of Chinese Painting and Calligraphy  
P. Foong
- 42609 Japanese Handscroll Paintings  
C. Foxwell
- 44701 Nativism and Nationalism in Japan  
S. Burns
- 45800 Readings in Chinese Buddhist Texts  
P. Copp
- 52301 Modern Japanese History-2  
J. Ketelaar
- 30101 The Art of Ancestral Worship  
H. Wu
- 32001 Translating Modern Japanese Poetry  
N. Field
- 32601 Korean Narrative Tradition  
J. Hwang
- 32630 The Democratization of South Korea in Literature and Visual Drama  
K. Choi
- 34908 Japanese New Wave Cinema, 1955-1973  
M. Raine
- 37901 Asian Wars of the Twentieth Century  
B. Cummings
- 37460 Historiography, Literature, Archaeology  
T. Chin.
- 42221 Chinese Divination and Games  
D. Harper
- 44201 Historical Knowledge and Popular Culture in Japan  
S. Burns
- 45010 Art, Death and Immortality  
H. Wu
- 45852 Reading Ritual, in East Asia and Elsewhere  
P. Copp

**Chinese**

- 10100 10200 10300. Elementary Modern Chinese I, II, III  
Cai, Li, Liu.
- 11100 11200 11300 First –year Chinese for Bilingual Speakers I,II,III  
Yang.
- 20100 20200 20300. Intermediate Modern Chinese I, II, III  
Wang.
- 20800 20900 21000. Elementary Literary Chinese I, II, III  
Skosey.
- 21100 21200 21300 Accelerated Chinese for Bilingual Speakers  
Li.
34500. Reading Qing Documents  
Alitto.
- 30100 30200 30300. Advanced Modern Chinese I, II, III  
Yang
- 31100 31200 30300 Business Chinese I, II, III  
Liu.
- 40800 40900 41000. Readings in Literary Chinese I, II, III  
Harper, Zeitlin
- 41100 41200 41300. Fourth Year Modern Chinese I, II, III  
Wang

**Japanese**

- 10100 10200 10300. Elementary Modern Japanese I, II, III  
Katagiri, Miyachi, Watanabe.
- 20100 20200 20300. Intermediate Modern Japanese I, II, III  
Katagiri, Miyachi.
- 21200 21300. Intermediate Modern Japanese through Japanimation II, III  
Katagiri.
- 30100 30200 30300. Advanced Modern Japanese I, II, III  
Noto.
- 34900 34901 34902. Premodern Japanese: Kindai Bungo  
Noto.
- 40500 40600 40700. Fourth Year Modern Japanese I, II, III  
Watanabe.

**Korean**

- 10100 10200 10300. Introduction to the Korean Language I, II, III  
Lee
- 20100 20200 20300. Intermediate Korean I, II, III  
Kim
- 30100 30200 30300. Advanced Korean I, II, III  
Kim
- 40100 40200 40300. Readings in Korean Culture, Politics and Society I, II, III  
Lee

## DEPARTMENT OF ENGLISH LANGUAGE AND LITERATURE

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### *Chair*

Jay Schleusener

### *Professors*

Lauren G. Berlant

Bill Brown

James K. Chandler

Leela Gandhi

Miriam Hansen

Elizabeth Helsinger

Loren A. Kruger

William J. T. Mitchell

Michael J. Murrin

Joshua Keith Scodel

Richard Allen Strier

Robert von Hallberg

Mark Slouka

Kenneth W. Warren

### *Associate Professors*

Bradin Cormack

Jacqueline D. Goldsby

Elaine Hadley

Janice Knight

James Lastra

John Mark Miller

Deborah Lynn Nelson

Lawrence Rothfield

Lisa C. Ruddick

Jay Schleusener

Christina von Nolcken

### *Assistant Professors*

Raúl Coronado

Srikanth Reddy

Jennifer Scappettone

Eric Slauter

### *Emeritus Faculty*

David Bevington

George Hillocks, Jr.

J. Paul Hunter

James E. Miller, Jr.

Janel Mueller

Richard G. Stern

Stuart M. Tave

Anthony C. Yu, Divinity

### *Visiting Professors*

David Bunn, Autumn 2009, Autumn 2010

Jane Taylor, Autumn 2009, Autumn 2010

Victoria Kahn, Autumn 2009

Graduate students in English work with a distinguished faculty of critics and scholars to develop their own interests over a broad range of traditional and innovative fields of research. The program aims to attain a wide substantive command of British, American, and other English language literatures. In addition to specializations in the full range of chronologically defined fields, the program includes generous offerings in African American Studies, Latino/a Studies, gender studies, and cinema and other media studies. Students are also trained in textual studies, editing, literary and cultural history, and a variety of critical theories and methodologies. The interests of both faculty and students often carry through to neighboring disciplines like anthropology, sociology, history, art history, linguistics, and philosophy. The University provides a supportive environment for advanced studies of this kind.

### THE DEGREE OF DOCTOR OF PHILOSOPHY

The program leading to the Ph.D. degree aims primarily to prepare students for independent work as teachers, scholars, and critics by developing their abilities to pose and investigate problems in the advanced study of literatures in English and in film. Departmental requirements are designed to lead to the doctorate in five to six years. Course work, the preparation of oral fields examinations, workshops, teaching, and the dissertation introduce students to a variety of textual modes, critical methodologies, and historical/cultural problems; provide extensive practice in research, discussion, argument, and writing; and develop pedagogical skills through supervised teaching. While a student's progress will be carefully monitored and periodically evaluated by individual advisors and the department, all students will be accepted into the program on the assumption that they will proceed to the Ph.D.

In the first two years of the Ph.D. program, students are required to enroll in six graduate courses each year (including at least two seminars the first year and three the second year). All first-year students also participate in a one-quarter colloquium designed to introduce theoretical and practical questions posed by the study of literature (through readings in a range of theoretical and literary texts). In the autumn of their third year students will also take a one quarter course in various approaches to the teaching of literature and composition.

Note: Students entering with an M.A. degree in English will be asked to complete at least one year of coursework (six courses, including at least three seminars) plus two additional courses in their second year, participate in the fall quarter colloquium, and take the fall quarter course on teaching in either their second or third years.

Students in their third and fourth years will normally teach at least one quarter-long course each year: initially as course assistants in departmental courses for undergradu-

ates; then as lecturers in the departmental methods and issues course for majors; as bachelor's paper supervisors; or as instructors in courses of their own design. Students may also be employed as writing tutors, assistants in introductory humanities and social sciences core courses, instructors in the College Writing Program course in expository writing (which provides its own training in the teaching of composition), or as teachers at other area colleges and universities. The department believes that both training and experience in teaching is an important part of the graduate program.

### THE DEGREE OF MASTER OF ARTS

Students seeking a master's degree should apply to the Master of Arts Program in the Humanities (MAPH), a three-quarter program of interdisciplinary study in a number of areas of interest to students, including literature and film. MAPH permits students to take almost all of their courses in the English Department, sharing classes with students in the Ph.D. program. The resulting degree is equivalent to a master's in English.

Further details about the MAPH program are available from the Dean of Students for the Division of the Humanities, to whom students should apply for admission.

### INQUIRIES

For more information on the department's programs and requirements, please see the Department of English website at <http://english.uchicago.edu> or call the Department Coordinator, at (773) 702-8537.

### INFORMATION ON HOW TO APPLY

The application process for admission and financial aid for all graduate programs in the Humanities is administered through the divisional Office of the Dean of Students. The Application for Admission and Financial Aid, with instructions, deadlines and department specific information is available online at: <http://humanities.uchicago.edu/prospective/#admissions|the-application>

Questions pertaining to admissions and aid should be directed to [humanitiesadmissions@uchicago.edu](mailto:humanitiesadmissions@uchicago.edu) or (773) 702-1552. All correspondence and materials sent in support of applications should be mailed to:

The University of Chicago  
Division of Humanities  
Walker Hall, Suite 111  
1115 East 58th Street  
Chicago, IL 60637

International students must provide evidence of English proficiency by submitting scores from either the Test of English as a Foreign Language (TOEFL) or the International English Language Testing System (IELTS). (Current minimum scores, etc., are provided with the application.) For more information, please see the Office of International

Affairs website at <http://internationalaffairs.uchicago.edu>, or call them at (773) 702-7752.

### Courses

The listing below represents the range and variety of the curriculum, not the course offerings in any given year. Applicants may write to the department for information about current course offerings.

#### Gender Studies

*Field*

Theories of Sex and Gender

*Berlant*

History and Theory of Drama I, II

*Bevington*

Topics in Critical Theory

*Schleusener*

History of Criticism

*Murrin*

Psychoanalytic Interpretation

*Ruddick*

The Intimate Public Sphere

*Berlant*

Marxism and Modern Culture

*Kruger*

Visual Culture

*Mitchell*

Theories of Media

*Mitchell*

Stein and Wittgenstein

*Reddy*

Caribbean Literature: Corporality, Eroticism, and Identity

*Staff*

Academic and Professional Writing (The Little Red Schoolhouse)

*McEnerney*

Medieval Dream Poetry

*von Nolcken*

Old English: Beginning Course

*von Nolcken*

Old English Poetry

*von Nolcken*

Beowulf

*von Nolcken*

The Middle Ages

*von Nolcken*

Body and Soul

*Miller*

Chaucer: The Canterbury Tales

*Schleusener*

- Tough Broads  
*Nelson*
- Politics of Literacy in Pre Modern England  
*von Nolcken*
- Medieval Epic  
*von Nolcken*
- Renaissance Lyric  
*Strier*
- Travelers on the Silk Road  
*Murrin*
- Renaissance Epic  
*Murrin*
- Renaissance Romance  
*Murrin*
- Renaissance Love  
*Scodel*
- The Mourners Bench: Writing, Grief & African American Literature  
*Goldsby*
- Society and Politics in Shakespeare's Plays  
*Strier*
- Culture, Society, and Politics in Seventeenth Century England  
*Strier*
- Seventeenth Century Poetry  
*Scodel*
- Shakespeare's Sonnets  
*Cormack*
- Women Poets of the Seventeenth Century  
*Strier*
- Milton  
*Mueller, Murrin, Scodel, Strier*
- Seventeenth Century Neoclassicism  
*Scodel*
- The Films of Max Ophuls  
*Hansen*
- Dr. Johnson and His Circle  
*Chandler*
- The Lyric and History  
*Chandler*
- Victorian Wives, Mothers & Daughters  
*Hadley*
- The Nineteenth Century Realist Novel  
*Rothfield*
- The Victorian Period  
*Rothfield*
- Victorian Childhood  
*Hadley*
- Medieval Allegory  
*Murrin*
- Virginia Woolf  
*Ruddick*
- Professionalism and Its Discontents  
*Rothfield*
- Pauperism and Poverty in Nineteenth Century  
*Hadley*
- Victorian Poetry  
*Helsing*
- Text and Image in Victorian Britain  
*Helsing*
- Victorian Women Writers  
*Helsing*
- Middlemarch  
*Rothfield*
- Pre Raphaelite Poetry and Painting I, II  
*Helsing*
- Chicago  
*Knight*
- Nineteenth-Century US Latino/a Literature to Modern  
*Coronado*
- Ulysses  
*Ruddick*
- Recent American Poetry  
*von Hallberg*
- Women, Writing, Spirituality: England and America, 1546-1725  
*Knight*
- Redeemer Nation: Rhetorics of Religious Nationalism in Colonial America  
*Knight*
- Colonization/Canonization: Making of South African Literature  
*Kruger*
- Redeemer Nation: America 1585-1750  
*Knight*
- Brechtian Representations: Theatre, Theory, Cinema  
*Kruger*
- The Contemporary Historical Novel  
*Veeder*
- Post Modern Autobiography  
*Nelson*
- American Gothic  
*Veeder*
- American Women Writing/Mid Century  
*Nelson*
- After Great Pain: From Sentimentality to Trauma in the U.S. Liberal Tradition  
*Berlant*

Typologies of Gender in Puritan America  
*Knight*

Urban Fictions and American Space, 1880-1900  
*Brown*

Nineteenth Century American Gothic  
*Veeder*

American Enlightenment  
*Slauter*

Metaphysical Poetry  
*Strier*

American Fiction in the Nineteenth Century  
*Veeder*

African American Poetry  
*von Hallberg*

Elements of Poetry and Poetics  
*von Hallberg*

Slavery and the Literary Imagination  
*Goldsby*

American Poetry Since 1945  
*von Hallberg*

Confessional Writing in the Cold War  
*Nelson*

Methods and Issues in Cinema Studies  
*Lastra*

Genre and Authorship in Post Classical Cinema  
*Hansen*

The Films of Max Ophuls  
*Hansen*

Close Analysis: Methods in Film Study  
*Tsivian*

Capra and Hollywood  
*Chandler*

Cinema in Africa  
*Kruger*

Making Up the Past: History, Memory, Media  
*Chandler*

The Films of Josef von Sternberg  
*Gunning*

Fiction's Fiction  
*Veeder*

**Seminars**

Principles of Teaching Writing  
*McEnerney, Williams*

The Teaching of English  
*Hadley*

Medieval Dream Poetry  
*von Nolcken*

Perfection and Utopia in Late Medieval England

*Miller*

Ethics and Psychology in Late Medieval England  
*Schleusener*

The Matter of Law in Early Modern English Literature  
*Cormack*

The Politics of Taste  
*Rothfield*

Intellectual Backgrounds of the Renaissance in Europe  
*Strier*

Religion/English Renaissance  
*Strier*

The Invention of Britain in Early Modern Literature  
*Cormack*

Radcliffe, Scott & Dickens  
*Chandler*

British Literary Culture 1750-1850  
*Chandler*

Narrative Point of View: Theory/Practice, Fiction/Cinema  
*Chandler*

Victorian Liberalism: Institutions, Ideas, Literatures  
*Hadley*

Poetry and the Arts: Britain, 1850-1880  
*Helsing*

Sensibility, Sensation, Sexuality  
*Rothfield*

Colonial Encounters  
*Knight*

America after Columbus  
*Knight*

Objects & Artifacts  
*Brown*

Henry James: The Great Novellas  
*Veeder*

Am Lit/Law: Age of Doug/Mel  
*Slauter*

Kitsch, Camp, and the Politics of Culture  
*Brown*

Postmodernism: Seminar in Art and Literature  
*von Hallberg*

Ezra Pound and Paul Celan  
*von Hallberg*

Birth of the Cool  
*Goldsby*

Harlem Renaissance Reconsidered  
*Goldsby*

Cultural Markets  
*Rothfield*

Elements of Poetry and Poetics

- von Hallberg*
- Philosophical Literature  
*Schleusener, Vogler and Miller*
- Technology and Representation  
*Lastra*
- Film and the Avant Garde (Experimental Film)  
*Lastra*
- Seminar: Classical Cinema as Vernacular Modernism  
*Hansen*
- Drama, Theatre, Spectacle, Performance  
*Kruger*
- Realism, Modernism, Socialism: The Politics of Literary Form  
*Kruger*
- Nationality, Sexuality, and Gender: Practicum in Feminist Theory and Pedagogy  
*Berlant*
- Space, Place, and Landscape  
*Mitchell*
- Cavell and Criticism  
*Strier*
- Politics of Literacy in Pre Modern England  
*von Nolcken*
- The Language of Rights in Eighteenth Century America  
*Slauter*
- Wordsworth and Scott  
*Chandler*
- Romanticism and Political Economy  
*Chandler*
- The Historical Novel  
*Chandler*
- British and German Modernism: A Comparative Approach  
*von Hallberg*
- Nationalism and Cultural History: Representing 19th Century Britain  
*Helsingner*
- Nineteenth Century History and Fiction  
*Helsingner*
- The US Historical Novel  
*Berlant*
- From Sentiment to Trauma  
*Berlant*
- Romantic Fetishism in America  
*Brown*
- Whitman and the Logics of America  
*Brown*
- Early American Modernism  
*von Hallberg*
- American Literature 1930 1950  
*Warren*
- Irishness and Modernity  
*Ruddick*
- Modernity and the Reinvention of the Folk  
*Ruddick*
- Culture of Cold War  
*Nelson*
- John Donne in History and Theory  
*Strier*
- Representation & Violence  
*Mitchell*
- New Deal Culture: Stage, Screen, and the Public Sphere in 1930s America  
*Kruger*
- Nationalism and Authority  
*Ruddick*
- Governing Belief  
*Knight*
- Topics in Sex and Theory: Bodies in Space  
*Berlant*
- The Concept of Classical Cinema  
*Hansen*
- International Cinema and the Emergence of Film  
*Tsivian*
- Victorian Virtue and Vice  
*Rothfield*
- Frankfurt School  
*Hansen*
- The Persistence of Surrealism  
*Lastra*
- Cinema and the Artistic Tradition  
*Tsivian*
- Film Exhibition  
*Gunning*
- Poetry and Socio Linguistics  
*von Hallberg*
- Totemism, Fetishism, and Idolatry  
*Mitchell*

## COMMITTEE ON INTERDISCIPLINARY STUDIES IN THE HUMANITIES

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*Chair*

David Bevington

*Faculty committee*

Ralph Austen  
Ted Cohen  
Bert Cohler  
John Comaroff  
Christopher Faraone  
Thomas Gunning  
Miriam Hansen  
Samuel Jaffe  
Jean Krupnick  
Larry Norman  
D. Nicholas Rudall  
Danilyn Rutherford  
Joshua Scodel  
Mark Siegler  
Michael Silverstein  
Herman Sinaiko  
Joel Snyder  
William Veeder  
Candace Vogler  
Kenneth Warren

*Theater and Performance Studies faculty committee*

David Bevington  
Heidi Coleman  
Jean Comaroff  
Tom Gunning  
David Levin  
Larry Norman  
Nicholas Rudall  
Danilyn Rutherford

There is, at the present time, no graduate program in either General Studies in the Humanities or Theater and Performance Studies; prospective students interested in pursuing graduate studies in the range of fields encompassed by these programs should consider applying to the Master's Program in the Humanities (MAPH).

## DEPARTMENT OF GERMANIC STUDIES

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*Chair*

David E. Wellbery

*Professors*

David E. Wellbery  
Eric L. Santner

*Associate Professors*

David Levin  
Susanne Luedemann  
Christopher J. Wild

*Assistant Professor*

Robert Buch  
Senior Lecturers  
Catherine Baumann  
Kimberly Kenny  
Jan Schwarz  
Emeritus Faculty  
Reinhold Heller  
Samuel Jaffe  
Kenneth J. Northcott  
Hildegund Ratcliffe

*Affiliated Faculty:*

Philip V. Bohlman (Music), German-Jewish and German-American ethnomusicology; theory and history of folksong; John W. Boyer (History), German and Austrian history, 18th century to the present, religion and politics in modern European history, European urban history; Daniel Brudney (Philosophy), Marx, German philosophy, Frankfurt School; James Conant (Philosophy), Kierkegaard, Heidegger, Wittgenstein; Kathleen Conzen (History), German-American history and the history of international migration; Constantin Fasolt (History), early modern German history; Michael Geyer (History), German history of the 19th and 20th centuries with special interest in contemporary German and European affairs; Andreas Glaeser (Sociology), theories of culture and identity with reference to Germany, post-unification controversies, social memory and architecture, reality construction processes among civil servants in authoritarian regimes; Miriam Hansen (English, Cinema and Media Studies), Frankfurt School, film theory, German cinema, contemporary German intellectual life, Alexander Kluge; John Haugeland (Philosophy), Heidegger, philosophy of language; Gary Herrigel (Political Science), political economy of advanced industrial states (Germany, USA, Japan), German political and industrial history in the 19th and 20th centuries, social and political theory; Berthold Hoekner (Music), 19th century Austro-German music,

Lyrik und Lied Romantische Musikästhetik, Wagner, Adorno and music; Loren Kruger (English, Comparative Literature), German literature 18<sup>th</sup> century to present (especially drama), GDR and contemporary Germany, Brecht, Heiner Müller, Marxism, the Cold War, Frankfurt School, Das andere Deutschland; Jonathan Lear (Social Thought, Philosophy), Freud, Heidegger, Wittgenstein; Françoise Meltzer (Romance Languages, Comparative Literature), German romanticism, philosophy; Paul Mendes-Flohr (Divinity, Jewish Studies, History), German-Jewish intellectual history; Glenn W. Most (Social Thought,) German literature and philosophy since the 18th century; Robert B. Pippin (Social Thought, Philosophy), Kant; German Idealism; Nietzsche; Heidegger; Modernity Theory; Moishe Postone (History,) Marx, Frankfurt School, contemporary European social theory, contemporary German affairs (with particular focus on issues of anti-Semitism and the relation of the Nazi past to postwar German society and culture); Jarrold Sadock (Linguistics), Germanic languages (Scandinavian, Yiddish); Saskia Sassen (Sociology), globalization, cities, immigration; Malynne Sternstein (Slavic Languages and Literatures)

The graduate program in Germanic Studies at the University of Chicago stresses an interdisciplinary model of study, long an emphasis at this University, which allows students to construct fields of research in fresh ways. In order to draw on the University's strengths, both inside and outside the department, students are encouraged to work not only with departmental and affiliated faculty but with faculty throughout the University whose courses are of relevance to their particular interests.

Participation in the department's conferences, workshops, and lectures is considered to be an important part of graduate training. The University's Workshops (non-credit, interdepartmental seminars that meet bimonthly) offer a further avenue for interdisciplinary work.

Students in the Department of Germanic Studies are as a rule admitted to the entire Ph.D. sequence of study. Students interested in a one-year interdisciplinary Master's program in Germanic Studies may want to contact the [Master of Arts Program in the Humanities](#). Study towards the M.A. degree, normally completed after the first year, is intended as an introductory period, a time for both faculty and students to decide on the suitability of an extended graduate program. All students in the Ph.D. program undergo an informal evaluation at the end of each year in the department to assess their progress and to plan their further course of study.

All graduate students take one graduate-level course in language pedagogy and have the opportunity to teach at the beginning, intermediate and advanced levels in the language program. Language courses taught in the department include German, Norwegian, and Yiddish.

## APPLICATION AND FINANCIAL SUPPORT

Applicants to the Department of Germanic Studies should have a solid background in German language and culture. Students with undergraduate degrees in other fields are encouraged to apply but must include with their application a list of relevant German/Germanic courses as well as a letter of recommendation from a faculty member able to evaluate their level of German language competency. Such students will be asked to make up deficiencies in their language preparation before entry into the graduate program. All entering students whose native language is not German are required to pass an ACTFL (American Council on the Teaching of Foreign Languages) oral proficiency examination in German during their first quarter in the program.

Admission to the department is competitive. Fellowships awarded by the Department of Germanic Studies for a small number of highly qualified students combine stipend and teaching salary to provide support beyond tuition amounting to \$21,500 per year (figure for 2009-10), renewable for five years. (This package includes University student health insurance.) The Humanities Division provides two summer stipends in the amount of \$3,000 each. Additional summer stipends and teaching opportunities are available on a competitive basis to support students engaged in summer projects, travel, and research. In addition, the Norwegian Culture Program Endowment Fund provides some money for research and travel support for students interested in Norwegian language and culture. Finally, competitive university grants are available for dissertation level teaching, research, and writing.

Applications to the program must include a writing sample of not more than twenty pages, in German or English; Graduate Record Exam scores from the general examination; TOEFL (Test of English as a Foreign Language) scores, if applicable; and three letters of recommendation.

The application process for admission and financial aid for all graduate students is administered through the divisional Office of the Dean of Students. The Application for Admission and Financial Aid, with instructions, deadlines and department specific information is available at: <http://humanities.uchicago.edu/prospective/#admissions|the-application>

Questions pertaining to admissions and aid should be directed to [humanitiesadmissions@uchicago.edu](mailto:humanitiesadmissions@uchicago.edu) or (773) 702-1552. All correspondence and materials sent in support of applications should be mailed to:

The University of Chicago  
Division of the Humanities  
Walker, Suite 11  
1115 East 58th Street  
Chicago, IL 60637

## DEGREE REQUIREMENTS

The following is an outline of the main features of the graduate program. If you need additional information, please write directly to the Department of Germanic Studies.

Students in the Department of Germanic Studies are as a rule admitted to the entire Ph.D. sequence of study. Students interested in a one-year interdisciplinary Master's program in Germanic Studies may want to contact the Master of Arts Program in the Humanities (<http://humanities.uchicago.edu/maph>). Study towards the M.A. degree, normally completed after the first year, is intended as an introductory period, a time for both faculty and students to decide on the suitability of an extended graduate program. All students entering the Ph.D. program with a master's degree from another institution will undergo an informal evaluation at the end of their first year in the department to assess their progress and to plan their further course of study.

## DEGREE OF MASTER OF ARTS

**Course Work:** Three quarters of course work, for a total of eight courses, are required during the first year of study. These include the mandatory pedagogy course ("Acquisition and Teaching of Foreign Languages"). A completed M.A., which includes the pedagogy courses and a "superior" rating on the German oral proficiency test, are prerequisites for teaching appointments. Besides the pedagogy course, students must take at least one course each quarter from departmental faculty, and at least two additional courses from departmental faculty during the year. The remaining course could be one course containing little or no Germanic material and taken primarily for methodological, theoretical, or historical interest. Course selections must receive the approval of the Director of Graduate Studies. All courses must be taken for a letter grade. At least one of the papers written in the M.A. year must be a significant research paper (see Rules and Guidelines). Students are expected to develop a broad historical sense of German culture through coursework as well as their own background reading. The primary aim of the master's year is for students to explore a variety of materials, approaches, and problems.

**Language examination:** Students who do not achieve a superior rating on the oral proficiency examination in German (to be taken early in their first quarter) will be advised to undertake further language training or to take other steps to improve their skills; they will be re-tested during the second quarter.

**M.A. Exam:** The purpose of the M.A. exam is to test students' ability to work with concepts central to the discipline, to articulate literary-historical arguments, to discuss significant patterns that extend beyond individual texts, and to articulate how such concepts relate to the interpretation of individual works. In addition, the exam establishes

a useful foundation of knowledge upon which the student can build in later studies.

The examination takes place in the eighth week of Spring Quarter of the student's first year of graduate study. Its basis is a list of some 20-25 texts selected by the student in consultation with the two members of the student's M.A. exam committee. (The committee, consisting of two members of the department's core faculty, is to be designated by the Director of Graduate Studies in consultation with the student.) This list reflects a category of literary research such as a genre, a period, or a general concept bearing on a mode of writing. Examples of the former might be "The Bourgeois Tragedy," "Modern Urban Short Prose," or "The Elegy." Periods can be variously conceived: e.g., Enlightenment, Realism, Weimar Republic. General concepts are more abstract categories such as narrative or performance or argumentative writing. Lists could also be organized along thematic lines or in terms of a traditional narrative subject. The point is that the list be designed so as to sustain a process of coherent intellectual inquiry. In addition to the 20-25 primary texts, the list includes a representative cross section of secondary literature addressing the topic under study.

The M.A. examination itself has two components:

- 1) a take-home written examination, and
- 2) an oral examination approximately one hour in length.

The take-home component consists of three essays (of two and one half, never more than three double-spaced pages) written in answer to questions devised by the faculty. These questions offer the student an opportunity to demonstrate her/his ability to explore various intellectual issues raised by the list as a whole as well as by specific works on the list. Students will receive these questions on Friday morning of the eighth week of classes and will hand in their completed essays by 5:00 p.m. the following Monday. The oral examination is devoted to a critical discussion of the student's three essays as well as to works included on the list but not addressed in the written part of the examination. It will take place one week after the written exam. Following a forty-minute discussion of the essays, the student and the faculty examination committee will assess the student's overall progress, including course work.

A crucial aspect of the M.A. examination is planning and advising. Students should choose their examiners and have one planning meeting with each examiner by the eighth week of Autumn Quarter. Students should choose examiners and design the lists with a view to the seminars they plan to attend throughout the year. Students must submit their lists for approval at the end of the fourth week of Winter Quarter. Two weeks after submission, they should meet with their examiners to discuss preparation for the exams. During Spring Quarter, students should meet with their examiners twice prior to the exam in order to

discuss questions arising from their readings. Of course, students are encouraged to discuss their project with other faculty members, both inside and outside the Department of Germanic Studies.

First Year: Time Schedule for M.A. Exam

Autumn-Week 8 Choose examiners

Winter-Week 4 Submit exam list for approval

Winter-Week 7 Arrange to meet with the examiners to discuss exam preparation

Spring-Week 8 Written exam

Spring-Week 9 Oral exam

### THE DEGREE OF DOCTOR OF PHILOSOPHY

The Ph.D. phase of study will be self-designed to a greater extent than the M.A. Students who enter with an M.A. from another university will be required to take one pedagogy course in their first year ("Acquisition and Teaching of Foreign Languages"). This requirement may be waived by the department if a student can prove that equivalent work was successfully completed at another institution. Completion of the courses (or departmental waivers), together with a superior rating on the oral proficiency interview in German taken early in the first quarter (or re taken later if necessary), are prerequisites for teaching appointments.

Course work: Students will establish that balance of course work and individual preparation that best suits their intellectual agenda. Course selections, however, must be approved by the Director of Graduate Studies. A minimum number of eight courses over two years, not including the pedagogy course, is required. All of these courses must be taken for credit. Six must be taken for a letter grade; the remaining two may be taken Pass/Fail. During the two first post-M.A. years, students must successfully complete two significant research papers (see Rules and Guidelines). Typically, the two post-M.A. years (during which students will also be teaching) will look as follows: two seminars each quarter of the first year; at least one seminar each quarter for the fall and winter quarters of the second year; exams in the spring quarter of the second year. In this way students will have ample time during the second Ph.D. year to prepare for the exams.

Language examination: All students are required to pass one university foreign language reading examination (usually in French, Latin, Russian or Italian) before taking their Ph.D. oral exams. Students whose dissertation work requires them to read original texts in a language not listed above may petition the department and division to accept that language instead.

Ph.D. examinations: Students will complete the Ph.D. exams in three stages. During the last quarter of the first Ph.D. year and the following summer, students are asked to begin assembling a Ph.D. major field list (of about 50 works) and two annotated syllabi for future courses—one undergraduate, one graduate—that they would like

to teach. These courses should be on topics other than the major field, although they may intersect with it. An important part of the job market portfolio, the syllabi are to demonstrate the student's ability to 'translate' some of their research interests into viable seminars and to explain their choices. The syllabi should include a rationale for the design of the course. The two courses should be on topics other than the major field, although they may intersect with it. The major field list should be organized around a broad topic such as "Discourses of Madness from Kant to Musil," "Worldly Provincialism: German Realism, 1850-1900," or "The Aesthetics of Sacrifice in Post-war German Literature and Art." Students should then group their 50 works into several clusters according to particular themes or sets of questions. Students are invited to consult with as many faculty members as possible as they work on these materials. They should also arrange for an exam committee of three faculty: two faculty members (normally both members of the department) to compose and evaluate the written examination questions, and a third faculty member (usually drawn from the departmental or affiliated faculty) to serve as an additional examiner for the oral exam.

At the beginning of the fall quarter of the second Ph.D. year, students will submit preliminary exam lists and both syllabi to the faculty committee they have chosen and to the Director of Graduate Studies. In many cases, students will actually wish to submit one of these syllabi for the annual Tave competition in the winter quarter. (The Stuart Tave Teaching Fellowship allows graduate students to teach a free-standing, self-designed undergraduate class.)

The four-hour, open-book, written exam will be taken no later than the seventh week of the spring quarter. Six weeks prior to the exam, each student will submit to the exam committee and to the Director of Graduate Studies a list of categories and questions that indicate what he or she considers to be the salient issues of the major field. Faculty will use this list as a guide in preparing the exam. Within two weeks of the exam, the committee, joined by the third member, will meet with the student for an hour long discussion that will encompass the exam, the two syllabi, and plans for the dissertation. Students should work on their dissertation proposals over the summer and schedule the formal proposal defense at the beginning of the fall quarter of the third Ph.D. year. For further details regarding the Ph.D. examinations, students are encouraged to consult with the Director of Graduate Studies

Second Ph.D. Year: Time Schedule for Ph.D. Exam

Autumn-Week 3 Preliminary exam list and syllabi

Spring-Week 2 Submit list of questions or categories designed to help you organize and think about the texts on your major field; these should be submitted to the exam committee and the Director of Graduate Studies

Spring-Week 7 Written exam

Spring-Week 9 One-hour long discussion of written exam, syllabi, major field list, and dissertation plans

*Dissertation Proposal:* After the Ph.D. examination, a student should identify and select a dissertation committee. One member of the committee is chosen as the dissertation advisor and primary reader, and the others as second and third readers. A proposal ought not to attempt to predict the final conclusions of the project before the research is fully under way. Instead, it should attempt to divide the project into subordinate questions and to rank the parts of the project in terms of priority. It should include a preliminary bibliography and a potential chapter structure and indicate a rough timetable for the research and writing of the dissertation. The proposal of 15-25 pages should be problem-driven and question-oriented and should contextualize the project within current debates in the field. The student will then have an opportunity to discuss the project in a Proposal Defense with the dissertation committee. This should be done not later than one quarter after the Ph.D. examination. Students should file copies of their examination lists and proposal with the department coordinator.

Writing the dissertation: After the proposal has been approved by the readers, the student should plan on spending the remainder of the fourth year researching and reading. Some students may spend this time away; others may choose to remain in Chicago to work closely with their readers. We encourage students to try to complete the dissertation during the fifth year, if possible. All students should complete the dissertation by the end of the sixth year.

### TEACHING IN THE COLLEGE

Graduate students in the Department of Germanic Studies at the University of Chicago will enter the job market with a solid basis in current pedagogical theory and practice as well as a range of teaching experiences in a variety of classroom settings. Teaching in the undergraduate language program is an integral part of the graduate program.

Before they begin teaching, graduate students must participate in a graduate seminar on pedagogy ("Acquisition and Teaching of Foreign Languages"). This course is an introduction to foreign language acquisition and to the theoretical models underlying current methods, approaches and classroom practices. Syllabus and test design and lesson planning are also treated. All participants do two days of observation and two days of supervised teaching in a first year class.

Graduate students also have the opportunity to teach in the beginning and intermediate German language program. They have full responsibility for the courses they teach, including syllabus design, day-to-day instruction, test design, grading and all other record keeping. Input from the graduate students is also critical in the ongoing implementation and revision of the curriculum. Internal grant monies have been made available to support the develop-

ment of an on-line writing project designed by graduate students, as well as other curricular innovations.

Graduate students also have the opportunity to work as on-site coordinators and/or instructors in study-abroad programs in Vienna and Freiburg. The preparation of students for study-abroad and their reintegration into the curriculum is an ongoing process in which graduate students, in their roles as instructors, are deeply involved.

Each fall there is an orientation for all graduate students who will teach that year. It is often held in conjunction with other language departments in the College and deals with general procedural and pedagogical issues as well as specific course objectives and practices. This interdepartmental cooperation also includes jointly held workshops and seminars on different topics in the field of second language teaching, offered by University of Chicago faculty and experts from other institutions.

### COURSES

#### *German Courses*

30209. Film Aesthetics: Agency and Fate in Film Noir. (=SCTH 30209)

This course is a discussion of how philosophical issues are raised and addressed by movies through an examination of a particular film genre. The genre to be considered: film noir. We focus on ten Hollywood film noirs from the 1940s and 1950s. Topics include the pictorial and dramatic representation of the relation between thought and action, the nature of agency, and the problem of fate. We also secondarily touch on questions concerning the ontology and aesthetics of film (e.g., What is a movie? What is it to give a reading of a movie? What is a film genre?). We see and discuss a film each week and read several pieces of criticism about each film. *R. Pippin and J. Conant, Autumn, 2009.*

32900. Beowulf. (=ENGL 15200, ENGL 35200, FNDL 28100).

This course will aim to help students read Beowulf while also acquainting them with some of the scholarly discussion that has accumulated around the poem. We will read the poem as edited in Klaeber's Beowulf (4th ed., Univ. of Toronto Press, 2008). Once students have defined their particular interests, we will choose which recent approaches to the poem to discuss in detail; we will, however, certainly view the poem both in itself and in relation to Anglo-Saxon history and culture in general. Prerequisite: Eng 149/349 or equivalent. *M. Von Nolcken, Winter 2009.*

33300. For German for Research Purposes.

This rigorous course begins with an introduction to grammar and vocabulary enabling students to read and comprehend German. Students then perform a series of process exercises designed to practice the specific skills they need to use German for research. Students are able to work with texts and journals in their own discipline to

complete these exercises. Graduate students who take and perform well in this course will be able to read in a foreign language reading, and will also master skills they useful as scholars in their field. The course also prepares student for the graduate reading exam. No previous knowledge of German necessary. *Spring 2010.*

35100. Newberry Library: Law & Literature in Anglo-Saxon England. (=ENGL 15104/35104).

Law and literature are both narratives that reveal much about the community that produces them. This seminar will explore legal issues such as feud, marriage and status of women, and theft. We will read and translate the legal texts that discuss these issues and then see how literary texts incorporate legal elements to create tension and drive the narrative. Some texts include laws from Aethelberht, Alfred, Edmund, and Cnut, as well as selections from Beowulf, the Anglo-Saxon Chronicle, Juliana, and the Wife's Lament. *J. Schulman, Winter 2010.*

35109. Literary Case Studies.

Since the French lawyer Francis Gayot de Pitaval published his famous collection of criminal cases ("Causes célèbres et intéressantes", 1734-1743), the case study as a specific genre has basically been developed in the fields of clinical and juridical anamnesis. At the same time, this genre has always been very close to literature: Not only have lawyers and psychiatrists always used literary techniques to present their cases, but literature itself has picked up these 'real' cases and made them the initial basis for investigating the hidden mainsprings of crime and madness. However, the objectives of literary case studies are neither clinical nor juridical in the narrower sense of these terms: whereas medicine and law aim at subsuming the individual case under general categories of disease or crime (such as "schizophrenia" or "murder"), the cognizance of literature is more directed at bringing out the stress ratio between singular case and general norm. In literary texts, an individual becomes a 'case' just because his or her singular fate cannot be subsumed under general rules, because he or she remains excluded and / or exempt from the law. If deviant subjectivity in modern literature can nevertheless be called exemplary, this exemplarity is paradoxically due to its state of exception. In this course we will read literary case studies from Schiller to Handke to examine how they deal with this paradox of a 'particular general' or an 'exemplary singularity'. We will also read selected clinical and juridical case studies with regard to the mutual interferences of law, literature and medicine. Readings will include Friedrich Schiller, "Der Verbrecher aus verlorener Ehre" / "Schillers Pitaval" („Merkwürdige Rechtsfälle als ein Beitrag zur Geschichte der Menschheit, verf., bearb. u.hg. v. Friedrich Schiller") / Carl Philipp Moritz, "Magazin zur Erfahrungsseelenkunde" [excerpt] / Heinrich v. Kleist, "Michael Kohlhaas" / E.T.A. Hoffmann, "Der Einsiedler Serapion"; "Der Sandmann" / Georg Büchner, "Lenz" /

Theodor Fontane, "Unterm Birnbaum" / Sigmund Freud, "Studien über Hysterie" / Michel Foucault, "Der Fall Rivière" / Ingeborg Bachmann, "Der Fall Franza" / Peter Handke, "Die Angst des Tormanns beim Elfmeter". The course will be given in German. *S. Lüdemann, Spring 2009.*

35209. Literary Realism.

Realism in German literature reached its peak in the period between 1850 and 1890 when authors increasingly focused on the literary representation of bourgeois experience and everyday life. However, programs of realism are in a way as old as literature itself: Mimesis, imitation of the contemplated or experienced reality, and verisimilitude have been ideals in Arts and Literature since antiquity and have seen numerous revivals and transformations throughout history. Yet it was only in the 19th century that the "realistic impulse" (Richard Brinkmann) became so explicit that a whole generation of artists and writers now called itself "realists". However, this "programmatically realism" came along with the withdrawal of reality itself that no longer appeared a simple 'given' or self-evident to human perception. Thus, "realism" is not only a category of style or the designation of a period but also the indication of a problem: the problem of how to bridge the gap between representation and what is represented, between the 'subjectivity' of an observer and the supposed 'objectivity' of the observed. The more sophisticated the literary techniques of description and hypotyposis became, the more reality revealed itself to be dependent on the media in which it is described. In this course we will reconstruct the history of the 'realistic problem' through a range of literary and theoretical texts from the 18th to the 20th centuries. Readings will include Goethe, E. T. A. Hoffmann, Franz Grillparzer, Gottfried Keller, Adalbert Stifter, Theodor Fontane and Robert Musil. The course will be given in German. *S. Lüdemann, Winter 2009.*

35210. Literary Landscapes.

Landscape is to literature what setting is to theatre. "Where should something take place, if not in the landscape?" as Matthias Goeritz put it. Thus, even the first book of Genesis opens with a pastoral scene, in fact with the opening up of landscape per se as a backdrop to humanity. The first book of Genesis also shows that the creation of landscape is the creation of a symbolic order where things and beings are placed in specific spatial and social relations to each other. However, landscape as a concept and aesthetic object (rather than just a 'region' or a 'tract of land') only arose in the 16th century, when the poetic act of 'staging' or opening up of fictional spaces through words or images became self-reflective, i.e., artists no longer saw themselves as replicating God's creation, but rather as creators of their own artificial settings. In this course we will examine landscapes and their topologies from the late 18th to 20th centuries. Although the course will focus on (German) literature, it will also take the interrelationship of literature and painting

into account. Readings will include Goethe, Schiller, Kleist, Jean Paul, Eichendorff, Fontane, Stifter and others. Reading will be mainly in German and discussion in both German and English. *S. Lüdemann, Winter 2010.*

35509. Media and Theology. (= CMST 35509, THEO 35509). Theology as the discourse of the divine is predicated on the deep chasm between God and man, transcendence and immanence, as well as the assumption that communication across this divide is simultaneously possible and problematical. At different historical junctures the problem of mediation and communication came especially to the fore. Beginning with the Old and the New Testaments we will examine some of these junctures, but we will focus in particular on the European Reformation and its cultures of communication. Arguably, at the center of the Reformation was a crisis of mediation to which it responded and which it helped to perpetuate. Religious media were thought to be fundamentally corrupted and corruptive and hence in need of reform. To name only a few examples, priesthood, liturgy, worship, and scripture had all been perverted and had to be restored to their original state of 'pure communication.' Consequently, media were as much instruments of reform as they were its targets. Likewise, the various theologies of the Reformation offered different solutions to the perceived crisis of mediation. It will be one of the working assumptions of this course that theology and Reformation theology in particular are one of the major tributaries of modern thinking about media and communication. Readings and discussions in English. *C. Wild, Winter 2009.*

35809. Jacques Derrida: Early Writing.

Jacques Derrida, Early Writings Deconstruction can be conceived as both a philosophical project and a practice of reading. As a philosophical project, deconstruction inscribes itself in the tradition of the critique of metaphysics, from Nietzsche via Heidegger and Adorno to post structuralism. As a practice of reading (and, consequently, of writing), deconstruction performs the movement of a decentering and a displacement of traditional concepts which is to challenge classical figures of identity, being, sense and others. Both the philosophical project and the practice of reading belong together: According to Derrida, 'to be an heir' means to assume responsibility for one's own reading of the texts of the metaphysical tradition; 'Reading' means to follow a significant trace which has to be produced by the act of reading itself. In this course, we will examine the exposition of the project and the practice of reconstruction in Derrida's early books: "Of Grammatology", "Writing and Difference", and "Margins of Philosophy". We will not only deal with important concepts such as 'writing', 'trace' and 'différance', but also with the political and ethical commitment underlying Derrida's attack on logocentrism. All reading and discussion will be in English. Recommended editions: "Of Grammatology", translated by Gayatri Chakravorty Spivak, Johns Hopkins University Press,

corrected paperback edition 1998. "Margins of Philosophy", translated by Alan Bass, The University of Chicago Press, paperback edition 1985. "Writing and Difference", translated by Alan Bass, The University of Chicago Press, paperback edition 1978. *S. Lüdemann, Autumn 2009.*

36009. Translations. Figurations of Trans-Nationality in Texts of Goethe and Political Romanticism.

What is now called by historians as "the long 19th century" (the period from the French Revolution to the end of World War One), was mostly interpreted as the main period of modern European nation building. But nevertheless, already at its very beginning, this period is also a time of thinking the trans-national structure of Europe in a new way. Especially in the 'Age of Goethe,' the number of attempts viewing and conceiving Europe as an entity of mutual translations (and transfers) in the domains of culture and politics are increasing. But on the other hand, thinking Europe as an entity of translation means something different in this time: to take up the traditional doctrine of *translatio imperii*, which had its origins in the Christianity of the Middle Ages. Against the background of current philosophical theories concerning the future of Europe (Rémi Brague, Massimo Cacciari, Peter Koslowski), the course will investigate the contemporary combination of as well as the contemporary tension between these two models of cultural and political translation. It will be devoted to close readings of texts of Goethe, Kant, Novalis, and Friedrich Schlegel in their cultural and political aspects and implications. Readings in German (and English); discussion in German. *U. Hebekus (Bosch Fellow), Spring 2009.*

36409. Interpreting Goethe's Faust. (=CMLT 36400, SCTH 47011).

Intensive study of Goethe's Faust, Parts I and II. The major task of the seminar is to develop a synthetic reading of the entire Faust drama, as Goethe conceived it. What are the leading concepts of a contemporary interpretation of Faust? Discussion will address the major lines of interpretation as developed especially in the philosophical literature and in the major recent studies commentaries. Selective consideration of the tradition of Faust-representations (from the so-called Volksbuch to Valéry will enable us to circumscribe the historical and aesthetic specificity of Goethe's work. Sound reading knowledge of German required. *D. Wellbery, Autumn 2009.*

GRMN 36709. Shakespeare, Marlowe, Benjamin, and Brecht.

In this course, we will read several plays of Shakespeare and Marlowe in relationship to the theoretical writings of two twentieth-century critics, Walter Benjamin and Bertolt Brecht. Why did Benjamin and Brecht think Shakespeare and Marlowe were radical, avant-garde playwrights? What conclusions did they draw from Shakespeare and Marlowe for their own political moment? How were Brecht's own plays

and dramatic theory influenced by these earlier writers? Texts will include Shakespeare, Hamlet; Marlowe, Edward II and Tamburlaine; Benjamin, The Origin of German Tragic Drama and Understanding Brecht; Brecht, Selected Plays and his Short Organon for the Theater. Intended for students with an interest in Renaissance literature and European modernism, as well as a strong interest in literary theory. *V. Kahn, Autumn, 2009*

36710. Literature in the "Age of Extremes."

This course examines literary responses and philosophical reflections on what the historian Eric Hobsbawm has called the "Age of Extremes": the twentieth century, its radical aspirations and its terrors. Our starting point are two recent theoretical works that seek to reassess, from two diametrically opposed angles, the totalitarian experience which has marked the century, Alain Badiou's *Le siècle* (2005) and Peter Sloterdijk's *Zorn und Zeit* (2006). The main focus of the course is on a series of literary works that embody the century's exalted aspirations and their price. Readings, in German and English, include Kafka, Brecht, Ernst Jünger, Louis-Ferdinand Céline, Varlam Shalamov, Danilo Kiš, Peter Weiss, and Heiner Müller. *R. Buch, Winter 2010.*

37610. Theater and Tragedy in the (German) Baroque.

Most Benjamin scholars have only a limited knowledge of the dramas discussed in his seminal work, the "Ursprung des deutschen Trauerspiels;" and most scholars of the German Baroque theater don't take Benjamin's failed *Habilitationsschrift* seriously enough in order to engage its insights in a sustained manner. The major task of the seminar will be to reconcile both by first acquiring first-hand knowledge of major works of seventeenth-century German drama. We will not restrict ourselves to the two best known dramatists, Andreas Gryphius and Daniel Casper von Lohenstein, but will, following Benjamin's lead, peak at the second and third tier and read Haugwitz, Hallmann and others. In order to contextualize the Protestant theater of the 17th Century, we will, as far as time permits, survey other theatrical cultures (Jesuit, English, Spanish et al.). In a second step we will use the historical and textual knowledge gained to seriously engage Benjamin's book in its own right. As one of the profoundest examinations of theater and theatricality in the German Baroque and beyond it has much to offer in way of understanding theater's formal semantics and structure. A sound reading knowledge of German is required. If you are preparing for the seminar by (re-)reading "Ursprung des deutschen Trauerspiels" you may skip the "Erkenntniskritische Vorrede." *C. Wild, Spring 2010.*

37909. Poor World: Walsher, Kafka, Beckett.

The seminar will focus on a series of modernist authors whose project would appear to be to discover the possibilities of human life and expression at the point of a radical impoverishment of one's world or form of life. The seminar

will begin with a discussion of Melville's Bartleby and move on to novels and short prose by Walser, Franz Kafka, and Samuel Becket. *E. Santner, Winter 2009.*

41100. The Noise of Imperial Cities. (= CDIN 41700, MUSI 42109, SALC 43100, ENGL 47110, RLIT 41700, HIST 44902). The soundscapes of empire converge in the cities of empire to unleash a complex cacophony and counterpoint of colonial encounter, appropriation, and subversion. Center and periphery collapse in upon themselves, transforming the traditional arts of power and powerlessness into modern mixes, in which history's telos falters before the avant-garde and edge of multiple modernisms and post-modernisms. The cosmopolitan noise the imperial city remixes contains the sounds of the local and the global, the classical monumentality of the colonial capital and the post-colonial experimentation of the displaced. *P. Bohlman and L. Koch, Spring 2009.*

41200. Richard Wagner and Critical Theory (=CMST 41200, MUSI 45509).

PQ: Advanced standing and consent of instructor. This course examines the intersection of Wagner and contemporary critical theory. We read a broad range of Wagner's writings and a broad range of writings on Wagner; we explore a number of the stage works on paper and in production. In addition to Wagner's own writings, we read critical works by: Carolyn Abbate, Theodor Adorno, Elisabeth Bronfen, Catherine Clement, Carl Dahlhaus, Friedrich Kittler, Barry Millington, Jean-Jacques Nattiez, Michel Poizat, Michael Steinberg, Hans-Rudolf Valet, Samuel Weber, Marc Weiner and Slavoj Žižek. *D. Levin, Winter 2009.*

45300. Colloquium: Marx (=HIST 64600, PLSC 46400).

This course will undertake an intensive examination of Karl Marx's mature social theory. Although it will also consider the development of Marx's thoughts, the course will primarily focus on a close reading of *Capital*. That text will not be approached as a positive science of economics, but as an attempt to formulate a critical and reflective theory of social mediation that would be adequate to the character and dynamic of modern social life. *M. Postone, Autumn 2009.*

45510. Affect and Embodiment in 17<sup>th</sup> Century Opera (=MUSI 45510).

This seminar will deal with issues of affect and embodiment in 17<sup>th</sup> Century opera, approached in a grounded historical way but also through the lens of the present. Course taught in English. *C. Risi (Bosch Fellow), Spring 2010.*

48910. From the Rubble: Art, Architecture, and Design in the Era of European Reconstruction. (=ARTH 48910).

This class examines the art, architecture, and design produced in Western Europe from the end of World War II and into the 1960s, with an eye to understanding the ways in which these forms of expression grappled with the horrors

of World War II, the reconstruction of cities, the so-called "economic miracle," and the continent's emerging role in the Cold War. A central question will be the way in which art and design practices central to modernism such as essentialism, organism, abstraction, self-expression, or the ready-made resonate with the reconstruction era in ways that go beyond its more obvious representations. Focusing on the art of France, Italy, the Benelux and German speaking countries, we will also consider the redefinitions of national identity and the emergence of a continental, pan-European identity. Permission of instructor only. Limited to 14 students. Solid reading knowledge of German, French, or Italian required. Please send an e-mail to Prof. Mehring per instructions given in the first class meeting. *C. Mehring, Winter 2009.*

49100. Acquisition/Teaching of German. Independent Reaching Course.

An introduction to foreign language acquisition and to the theoretical models underlying current methods, approaches and classroom practices, as well as their practical applications. Required of all graduate students who wish to teach in the College German Program. *C. Baumann, Autumn, Winter, Spring.*

51200. Translating Theory. (= CDIN 51200, CMLT 51200, ENGL 59303, SLAV 40200).

This seminar uses the theory and practice of translating texts of theory, criticism, philosophy and other genres of disciplinary inquiry to explore the boundaries between disciplines. Authors may include: T.W. Adorno, Walter Benjamin, Jacques Derrida, Umberto Eco, José Ortega y Gasset, Roman Jakobson, Friedrich Schleiermacher and Viktor Shklovsky, and current theorists whose work raises questions of translation directly or indirectly such as Franz Fanon, Nestor García Canclini, and Philip Lewis. Topics include the translation of sacred and quasi sacred texts (including Marx) as well as contemporary theory. Open to all humanities \*PhDs\* including philosophy, visual art, and all language departments, as well as the divinity school and the committee on social thought. Cultural social sciences (e.g. anthropology or history) by application. PQ ACTIVE working knowledge of at least one source language: French, German, Italian, Russian, Spanish; possibly Dutch. Admission to seminar based on a short in-class translation. Requirements: formal presentation on an existing translation and final translation of an as yet untranslated text of theory, philosophy or criticism. *L. Kruger and R. Bird, Spring 2009.*

51400. Arabesque Narrative: A Hybrid Form of the Imaginary. (=CDIN 51400, ARTH 46210, SCTH 51400).

This seminar takes as its object of study the arabesque narrative, a form located between verbal and pictorial modes of representation. Our task will be twofold: 1) to analyze a specific tract in the history of pictorial-literary

relations that extends, roughly, from the seventeenth to the twentieth century; 2) to develop an analytical vocabulary for the analysis of verbal-pictorial relations that will support productive intellectual exchange between literary and art history. From Gotthold Lessing to Clement Greenberg, a predominant tendency in the theory of the relationship between the arts has been to emphasize their mutually exclusive character. One correlate of this oppositional mode of thought is an emphasis on "purity" in representation: that is, the proscription of modes of interference and interlacing between the artistic media. The tradition of "arabesque narrative" is an intriguing theme just because it represents a counter-trend to the purist tendency in, broadly speaking, 'modern' aesthetics. For this very reason, of course, arabesque narrative constitutes a privileged zone in which to explore the relations between art-historical and literary-historical inquiry. We will discuss texts by Sterne, Lichtenberg, E.T.A. Hoffmann, Baudelaire among others and the work of artists such as Hogarth, Runge, Menzel, and Klinger. Sponsored by the Center for Disciplinary Innovation at the University of Chicago. *D. Wellbery and R. Ubl, Winter 2010.*

55300. Coll. Marx.: Critical Theory and 20th Century – 1.

The ensemble of approaches developed by theorists of the Frankfurt School, and critically extended by Habermas and others – is arguably one of the richest and most powerful attempts to formulate a social and historical theory adequate to the twentieth century. Eschewing conventional disciplinary boundaries and orthodox Marxist understandings of social life, critical theory sought to grasp the large-scale transformations of the twentieth century by synthesizing various dimensions of modernity – political, social, economic, cultural, legal, aesthetic, psychological – systematically and intrinsically, rather than eclectically and extrinsically. These theorists reject the notion of a social-scientific standpoint independent of its social and historical context, by insisting on epistemological self-reflection as a condition of an adequate historical/social theory. This two-quarter colloquium considers this tradition in depth, the theoretical difficulties it encountered, and some possible theoretical responses to the dilemmas of critical theory. We begin by examining the "first generation" theorists of the Frankfurt School, focusing on works by Horkheimer, Marcuse, and Adorno; the second quarter will concentrate on later works by Adorno, as well as the theoretical trajectory of Habermas. *M. Postone, Winter 2009*

55400. Coll. Marx.: Critical Theory and 20th Century – 2.

The second quarter of this two-quarter colloquium concentrates on later works by Adorno, as well as the theoretical trajectory of Habermas.

*M. Postone, Spring 2009*

*Yiddish Courses*

33709. Singer and Bellow: Jewish Novelists of the 20th Century. (= GRMN 23709/33709, CMLT 22801/32801, ENGL 28909/48917).

The American novelist Saul Bellow and the Yiddish storyteller I.B. Singer, two of the most innovative writers of the twentieth century, created artful fiction that articulated the search for a spiritual realm in a starkly secular world. They both rejected political and religious utopias, which they vehemently exposed in their work. Their writings encompass the major seismic changes in modern Jewish life in the twentieth century: migration, urbanization, war, Holocaust, marital breakup, sexual freedom, alienation, and exile. In this course we will compare and contrast the novels of Bellow and Singer. Both came of age as writers in the polarized political and cultural climate of the interwar period. They were indebted to the Eastern European Jewish culture in Yiddish that continued to inspire them. The Yiddish-American context will be discussed in connection with their only collaboration in print, Bellow's translation of Singer's short story "Gimpel the Fool," which became the latter's introduction to a mass readership in English. We will examine how Bellow and Singer developed a neo-conservative world view that articulated their disillusionment with modernity and the political and cultural isms of the twentieth century. The secularization of Jewish life became the backdrop against which the two writers created individual characters who, often in monologue form, elaborated on their discontent with modernity and quest for spiritual meaning. Both writers were at the forefront of the Jewish literary renaissance of the 1950s and 1960s. We will examine how they artistically addressed the aftershock of the Holocaust in their novels of the 1960s, Bellow's *Mr. Sammler's Planet* (1969) and Singer's *Enemies: A Love Story* (1972). Bellow and Singer reinvented the novel as a poetic universe of self reflection that gave voice to the Jewish urban experience. As such, to quote Murray Baumgarten, they created "city scriptures"; novelistic styles that aspired to "higher" transcendental meanings beyond the market driven conditions of modern life. The novels of these two belated neo-Romanticists encapsulate the central intellectual and spiritual ferments of their times: the secularization of Jewish life and its impact on the individual in the break-up of traditional religious life, the urban experience, and the destruction of European Jewry in World War II. *J. Schwarz, Winter 2009.*

## COMMITTEE ON THE HISTORY OF CULTURE

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*Chair*

Robert Kendrick, Music

*Professors*

Leora Auslander, History

Shadi Bartsch, Classics

William L. Brown, English Language & Literature

James K. Chandler, English Language & Literature

Philippe Desan, Romance Languages & Literatures

Robert Kendrick, Music

Bruce Lincoln, Divinity

Armando Maggi, Romance Languages & Literatures

*Emeritus Faculty*

James Fernandez, Anthropology

Martin E. Marty, Divinity

### PROGRAM

[The Committee on the History of Culture is an interdisciplinary group that provides a space of opportunity for highly motivated and independent students doing original, critical work in the humanities and the interpretative wing of the social sciences, or better yet, work that problematizes this categorical divide. The program brings together faculty with primary expertise in a variety of signifying practices (literary/linguistic, visual, gestural, and musical/sonic), historic periods, parts of the globe (North America, Europe, South Asia, Australia), and theoretical orientations. At the broadest level, our goal is to explore the politics and poetics of knowledge and culture, bringing a cultural studies perspective to bear on the artifacts and historic record of the past, as on contemporary society. Beyond this, we attempt to reflect critically on the historic development of discourse about culture, as well as the cultural significance and political import of historiography.]

This program is not currently accepting applications.

For additional information about the History of Culture program, please see <http://humanities.uchicago.edu/cmtes/hisc/program.html> or call (773) 702- 8486.

## COMMITTEE ON JEWISH STUDIES

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### *Chair*

Paul Mendes-Flohr, Divinity

### *Professors*

Leora Auslander, History  
 Philip Bohlman, Music  
 Michael Fishbane, Divinity  
 Michael Geyer, History  
 Paul Mendes-Flohr, Divinity  
 Moishe Postone, History  
 Martha Roth, Oriental Institute  
 Eric Santner, Germanic Studies  
 Josef J. Stern, Philosophy  
 Bernard Wasserstein, History

### *Associate Professors*

David Schloen, Oriental Institute

### *Assistant Professors*

Orit Bashkin, Near Eastern Languages & Civilizations

### *Senior Lecturer*

Ariela Finkelstein, Near Eastern Languages & Civilizations

### *Emeritus*

Howard I. Aronson, Slavic Languages & Literatures  
 Menachem Brinker, Near Eastern Languages & Civilizations  
 Joel Kraemer, Divinity  
 Jerrold Sacock, Linguistics

Jewish Studies has been an important field of research at The University of Chicago since the days when its first president, the Biblical scholar William Rainey Harper, oversaw the beginnings of programs in Bible and Ancient Near Eastern Civilizations. In addition to Professor Harper, Rabbi Emil Gustav Hirsch taught Jewish Studies from the very founding of the university. In 1892 he was appointed one of the first four full professors at the fledgling university, occupying a chair in "Rabbinical Literature and Philosophy." He held the chair until his death in 1923. In fact, the University of Chicago was one of the first universities in the world to have a full fledged program in Jewish Studies. A few decades later, these early initiatives received a huge institutional boost with the founding of the Oriental Institute, which remains one of the pre eminent centers for the study of ancient Near Eastern language, civilization, and archeology. But the flourishing of Jewish Studies over the years at Chicago has also been sustained by appointments in a wide range of departments: professorships of Jewish Hellenism in Classics, Medieval Jewish Philosophy in Philosophy, Jewish Social and Economic History in History, to name only a few. During the past decade, the

University has appointed eminent scholars in the study of Hebrew Bible, Midrash, Jewish Medieval Studies, Hebrew Literature, American Jewish Literature, and German Jewish Culture. Working together, they have created one of the most modern comprehensive, distinguished and interdisciplinary programs in Jewish Studies available at any American university. Advanced degree programs are available at the A.M. and Ph.D. degree levels. Students can make full use of the resources in Jewish Studies available through the Divinity School, the Departments of Germanic Studies, History, Linguistics, Philosophy, Music, Near Eastern Languages & Literature, and the Oriental Institute. The Workshop on Jewish Studies meets throughout the year to bring together faculty and students from the diverse range of departments represented in the committee for discussion of topics related to ongoing research.

The Committee on Jewish Studies is no longer accepting applications to the A.M. or Ph.D. programs.

## THE MASTER OF ARTS IN JEWISH STUDIES

The Master's of Arts Program in Jewish Studies at the University of Chicago is unique on the American scene. The program offers students the chance to orient themselves within the domain of Jewish Studies and to pursue their own research interests in the area that most interests them. Students are required to take a core course in Jewish history and culture as well as courses in Hebrew language. In addition, each student designs the rest of the program to meet his or her needs. Students are encouraged to participate in ongoing seminars given by visiting scholars; attend lectures by international scholars in many areas of Jewish Studies; and participate in the broad range of Jewish and general culture available at the University and in the Chicago area. Graduates of this one-year program gain a deeper sense of the depth and range of Jewish traditions, as well as a sharper insight into the complexities of their chosen field.

A Jewish Studies A.M. from the University of Chicago should be of interest to students who intend to pursue more advanced work in Jewish Studies at a professional level (whether graduate work, the rabbinate, or education), but need time to develop skills or determine specific areas of interest; to students for whom a general background in Jewish Studies would contribute to advanced work in another field (such as contemporary continental philosophy, comparative literature or history, or ancient or medieval Christian thought or Bible interpretation); and to students interested in expanding their general knowledge of Jewish culture, whether to enrich their work in Jewish professional organizations or simply for its own sake. For all these kinds of students, access to the archival resources in Jewish Studies, the chance to work closely with professors at one of the world's great research universities, and the general vibrancy of intellectual life at the University

mark the Master of Arts in Jewish Studies as a very special opportunity.

### DEGREE REQUIREMENTS

To receive the degree of A.M. in Jewish Studies, a student must complete at least nine courses with a minimum grade of B. Two of the nine courses must be taken from the three-quarter sequential core, Jewish Civilization I, II, III, (covering all periods, from ancient Israel to modern times). This course is team taught by faculty from several different departments. Students are also required to take a third required course, focusing on a particular period, genre, or cultural problem in Jewish Studies, which gives students the chance to think about fundamental methodological and interpretative issues. In addition, students may be required to take up to three courses of Hebrew (or its approved equivalent in Yiddish or Ladino), if necessary to achieve proficiency. No thesis is required, but one paper of research quality must be submitted and approved by a faculty committee; it can be related to the student's course of study.

The core sequence is designed to provide students with a firm basis for delving into their own field of interest in the program they construct out of their remaining electives. These electives are to be chosen, with the help of faculty advisors, from the offerings of any of the departments in the humanities and social sciences, and even, where feasible, from elsewhere in the University. Many different interdisciplinary concentrations are possible. Some possible concentrations include: Hebrew Bible and Ancient Near Eastern History, Literature, or Archeology; Ancient Bible Interpretation in Alexandria, Eretz Israel, and Babylonia; Jews in Islamic Civilization; Jewish Liturgy and Music; Jewish History and Historiography; Medieval Bible Commentaries in Christian Europe and Islamic Civilization; Medieval Jewish Thought, Philosophy, or Mysticism; German Jewish Culture in the Ashkenaz; Hebrew Literature and Cultural Ideology.

### THE PH.D. IN JEWISH STUDIES

The Committee on Jewish Studies at the University of Chicago offers the Ph.D. degree in several areas: (1) the Hebrew Bible and the Ancient Near East; (2) the history of Judaism (with sub specialties in classical rabbinic literature and thought; medieval Jewish thought and religion; Judeo-Arabic thought and culture; modern Jewish thought, history, and culture); (3) modern German Jewish thought and culture; (4) modern Hebrew literature and culture; (5) modern Jewish history and culture. Each of these areas is coordinated by faculty steering committees, and each has developed its own requirements. All areas are coordinated with programs and faculties in the appropriate cognate or comparative disciplines.

For further information about degree requirements, focus of study, and typical programs, contact the following faculty:

1. Classical Judaism: Prof. Michael Fishbane  
office: Swift 205  
telephone: (773) 702- 8234  
e-mail: mfishban@uchicago.edu

2. Medieval Jewish Thought & Culture: Prof. Joel Kraemer  
office: Swift 306B  
telephone: (773) 702- 8247  
e-mail: jkraemer@uchicago.edu

3. Modern Jewish Thought: Prof. Paul Mendes Flohr  
office: Swift 306E  
telephone: (773) 702- 5084  
e-mail: prmenides@uchicago.edu

4. Modern German Jewish History & Culture: Prof. Moishe Postone  
office: HM E481  
telephone: (773) 702- 8560  
e-mail: mmp1@uchicago.edu

5. Modern Hebrew Literature & Jewish Culture: Prof. Menachem Brinker  
e-mail: menachem2002@yahoo.com

### RESEARCH AND LIBRARY RESOURCES

The University of Chicago library system serves the research and study interests of faculty and students and houses a bound volume and microfilm collection of more than 5 million volumes; a manuscript and archival collection of over 7 million pieces; serial holdings of some 95,000 titles; and a photographic study collection of visual art of more than 500,000 pieces. The physical facilities of the library system consist of the Joseph Regenstein Graduate Research Library, supporting research activities and graduate programs in the humanities and social sciences; Harper Memorial Library, serving primarily students in the College; and six professional and departmental libraries. Regenstein Library provides the central location for research materials in the humanities, the social sciences, and the ancient and modern languages an array of resources numbering more than 3 million volumes.

Regenstein Library contains the Department of Special Collections, a major repository of archival and rare published materials. Regenstein also houses the Middle East Collection, with rich holdings in Assyriology and Egyptology. Of particular interest to students in Jewish Studies is the unique Ludwig Rosenberger Collection, which contains thousands of items in German Judaica. In addition, the Oriental Institute maintains extensive holdings in ancient Near Eastern and Biblical studies and archaeology.

Library resources are not limited to the University community. The libraries of the cluster of eight theo-

logical schools in the University neighborhood enrich the available library facilities by more than 1,000,000 volumes. The libraries of the Art Institute and the Chicago Historical Society also contain extensive resources for historical study. The Newberry Library, located on Chicago's Near North Side, is a world-renowned research collection of some 1,000,000 titles and 5,000,000 manuscripts in the humanities, chiefly in history, literature, music, and philosophy, with special strengths in European, American, and Latin American history and literature.

For additional information about the Jewish Studies program, please see <http://humanities.uchicago.edu/depts/jewish/>.

## DEPARTMENT OF LINGUISTICS

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### *Chair*

Chris Kennedy

### *Professors*

Victor Friedman, Slavic Languages & Literatures

Susan Gal, Anthropology

Anastasia Giannakidou

John Goldsmith

Lenore Grenoble, Slavic Languages & Literatures

Chris Kennedy

Salikoko Mufwene

Michael Silverstein, Anthropology

### *Associate Professors*

Amy Dahlstrom

Jason Merchant

Alan Yu

### *Assistant Professors*

Greg Kobele

Jason Riggle

### *Emeritus Faculty*

Howard I. Aronson, Slavic Languages & Literatures

Bill Darden, Slavic Languages & Literatures

Gene B. Gragg, Oriental Institute

Paul Friedrich, Anthropology

Eric P. Hamp, Linguistics

Carolyn G. Killean, Near Eastern Languages & Civilizations

Colin P. Masica, South Asian Languages & Civilizations

G. David McNeill, Psychology

Jerrold Sadock, Linguistics

Victor H. Yngve, Psychology

Since 1926, the Department of Linguistics at the University of Chicago has been at the center of the development of the field, counting among its faculty linguists of the first rank such as Sapir and Bloomfield. It is theory-oriented with a deep empirical interest in languages. One of its outstanding characteristics is its commitment to a wide range of approaches to the study of language. Interdisciplinary, interdepartmental study is encouraged, and students regularly work with faculty in several other departments. Students are expected to become active researchers as soon as possible after their arrival here. Many students come with strong undergraduate training in linguistics, or with a Master's degree; others come with strong training in fields such as philosophy, mathematics, or a particular language or language group. The faculty are involved in synchronic and diachronic research on languages from around the world. These varied interests are reflected in the topics of the dissertations that have been written in the Department.

## PROGRAM

The University of Chicago operates on the quarter system. The graduate program in linguistics leading to the PhD degree is intended to be completed in **five years**. Graduate students normally register for three courses per quarter, three quarters per year. They generally take three to four years of coursework. In the **first year**, students take the following six courses: Phonological Analysis 1-2, Syntactic Analysis 1-2, and Semantics and Pragmatics 1-2. In subsequent years, students have a great deal of flexibility in course selection, though their programs of study must include: one course each in historical linguistics and morphology; a “methods” course (field methods, mathematical methods, etc.); and one advanced course in each of the following areas: 1) phonetics/phonology, 2) syntax/semantics/pragmatics, and 3) socio-historical linguistics. In years two and three, when students are writing qualifying papers, they must also take the Research Seminar.

A large proportion of courses offered in the Linguistics Department are advanced courses that are open to all students. The topics of these courses change from year to year, in reflection of the ongoing research interests of both faculty and graduate students, and cover areas of current interest in the field at large. Students are also free to take courses related to their research interests that are offered by other departments in the University.

In the second and third years, students continue taking courses and write two **qualifying papers** under **faculty supervision**. In addition to these major landmarks, students are required to pass reading examinations in two **scholarly languages** (normally French, German, Spanish, Chinese, Japanese, or Russian), and to satisfy a **non-Indo European language requirement**. Upon completion of the qualifying papers and language requirements and defense of a **dissertation proposal**, students are admitted to candidacy for the PhD; the only remaining requirement is the **dissertation**.

The University of Chicago offers several joint doctoral programs. Such options currently exist between the Department of Linguistics and the Department of Anthropology, the Department of Comparative Human Development, the Department of Psychology, the Department of Near Eastern Languages and Civilizations, the Department of Slavic Languages and Literatures, and the Department of Philosophy. Students from other departments who wish to apply for a joint PhD in Linguistics may do so only after completing the six foundational courses (Phonological Analysis 1, 2; Syntactic Analysis 1, 2; and Semantics and Pragmatics 1, 2).

## APPLICATION AND ADMISSION

Completed applications for admission and aid, along with all supporting materials, are due in mid-December for the academic year that starts in the following Autumn.

Four parts of the application are critically important and should accompany the application: the student’s academic record, letters of recommendation submitted by persons

able to describe the student’s achievements and promise, the student’s statement of purpose, which describes the intellectual issues and subjects which they hope to explore at Chicago, and a sample of pertinent written work that demonstrates the applicant’s research interests or capabilities. The sample may consist of published essays, class term papers, or a B.A. or M.A. thesis. In addition, applicants must submit Graduate Record Examination (GRE) scores which are not more than five years old. Students whose first language is not English must submit scores from the Test of English as a Foreign Language (TOEFL) or the International English Language Testing System (IELTS). Information about these tests may be obtained from the Educational Testing Service, Princeton, NJ 08540.

When completing the application form, it is of benefit to the applicant to be as specific as possible in describing his or her research interests. General comments are of relatively little use; applicants are encouraged to discuss specific linguistic subject matters that they are interested in.

If an applicant knows faculty members with whom he or she might work, the latter’s names should be given as well. The faculty of the Linguistics Department would be happy to answer any questions that prospective students may have. Please contact them individually regarding their research or classes, or contact the Chair for more general and/or administrative questions.

The application process for admission and financial aid for all graduate programs in Humanities is administered through the divisional Office of the Dean of Students. The Application for Admission and Financial Aid, with instructions, deadlines and department specific information is available online at: <http://humanities.uchicago.edu/prospective/#admissions>.

Questions pertaining to admissions and aid should be directed to [humanitiesadmissions@uchicago.edu](mailto:humanitiesadmissions@uchicago.edu) or (773) 702-1552. All correspondence and materials sent in support of applications should be mailed to:

The University of Chicago  
Division of the Humanities  
Walker, Suite 111  
1115 East 58th Street  
Chicago, IL 60637

## COURSES

The following are courses offered in the Department by our regular faculty. Every now and then new courses are added when needed or requested by students.

Phonological Analysis-1

30101. This course is an introduction to the general principles of phonology as a discipline. The course begins with an introduction to the study of the speech sounds used in the world’s languages with an emphasis on their articulatory, acoustic, and perceptual structures. Building upon this foundation, the principles of phonological analysis are illustrated with emphasis on fundamental notions that transcend differences between theoretical approaches: contrast, neu-

tralization, natural classes, distinctive features, and basic phonological processes (e.g., assimilation). We focus on generative phonology, both “classical” and autosegmental models, with brief discussion of optimality theory.

#### Phonological Analysis-2

30102. PQ: 30101. Continuation of Phonological Analysis 1 focusing on topics of current interest in phonological theory. Topics vary.

#### Language and Communication

30150. This course is a complement to the Introduction to Linguistics sequence. It can also be taken as an alternative to it by those students who are not majoring in Linguistics but are interested in learning something about language. It covers a selection from the following topics: What is the position of spoken language in the usually multimodal forms of communication among humans? In what ways does spoken language differ from signed language? What features make spoken and signed language linguistic? What features distinguish linguistic means of communication from animal communication? How do humans communicate with animals? From an evolutionary point of view, how can we account for the fact that spoken language is the dominant mode of communication in all human communities around the world? Why cannot animals really communicate linguistically? What do the terms language “acquisition” and “transmission” really mean? What factors account for differences between “language acquisition” by children and by adults? What does it mean to be a bilingual? Are children really perfect “language acquirers”? What factors bring about language evolution, including language loss and the emergence of new language varieties? What is language contact and what are its manifestations? This is a general education course without any prerequisites.

#### Syntactic Analysis-1

30201. PQ: Consent of instructor. This course is an introduction to basic goals and methods of current syntactic theory through a detailed analysis of a range of phenomena, with emphasis on argumentation and empirical justification. Major topics include phrase structure and constituency, selection and subcategorization, argument structure, case, voice, expletives, and raising and control structures.

#### Syntactic Analysis-2

30202. PQ: Ling 30201. The primary focus of the course is the syntax of long distance dependencies: empirical properties cross-linguistically, theoretical analysis, and implications for the theory of grammar. Topics include the syntax of interrogatives, relative clauses, and comparatives; island constraints; wh-in-situ; multiple wh-movement; partial wh-movement; wh-expletives; resumptivity; reconstruction effects; intervention effects; and the nature of successive cyclic movement.

#### Semantics and Pragmatics-1

30301. This is the first in a two-course sequence designed to provide a foundation in the scientific study of all aspects of linguistic meaning. The first quarter focuses primarily on pragmatics: those aspects of meaning that arise from the way that speakers put language to use, rather than through the formal properties of the linguistic system itself, which is the domain of semantics. However, a central goal of the course will be to begin to develop an understanding of the relation between pragmatics and semantics, by exploring empirical phenomena in which contextual and conventional aspects of meaning interact in complex but regular and well-defined ways, and by learning analytical techniques that allow us to tease these two aspects of linguistics meaning apart.

#### Semantics and Pragmatics-2

30302. This is the second in a two-course sequence designed to provide a foundation in the scientific study of all aspects of linguistic meaning. The second quarter focuses on the syntax-semantics interface and cross-linguistic semantics. The class will introduce in detail a theory of the way in which the meaning of complex linguistic expressions is formed compositionally from the meaning of constituent parts, and the interaction of semantic and syntactic composition. This theory will form the basis for exploring some empirical questions about the systematicity of cross-linguistic variation in the encoding of meaning.

#### Morphology

31000. (=ANTH 37500) This course deals with linguistic structure and patterning beyond the phonological level. We focus on analysis of grammatical and formal oppositions, as well as their structural relationships and interrelationships (morphophonology).

#### Language in Culture I, II

31100-31200 (=ANTH 37201-37202) Must be taken in sequence. This two quarter course presents the major issues in linguistics of anthropological interest. Among topics discussed in the first half of the sequence are the formal structure of semiotic systems, the ethnographically crucial incorporation of linguistic forms into cultural systems, and the methods for empirical investigation of functional semiotic structure and history. The second half of the sequence takes up basic concepts in sociolinguistics and their culture. We then discuss topics such as the linguistic analysis of publics, performance and ritual, and language ideologies.

#### Historical Linguistics

31300. PQ: LING 30600 &, LING 30800 or consent of instructor. This course deals with the issue of variation and change in language. Topics include types, rates, and explanations of change; the differentiation of dialects and languages over time; determination and classification of historical relationships among languages, and reconstruction of ancestral stages; parallels with cultural and genetic

evolutionary theory; and implications for the description and explanation of language in general.

#### Languages of the World

33900. A nontechnical general survey of human languages, examining their diversity and uniformity across space and time. Major topics include language families and historical relationships, linguistic typology and language universals, sound and structural features of the world's languages, and writing systems.

#### Dialect Voices in Literature

34500. (=ENGL 34600) In this course we use linguistic techniques to analyze literary texts, especially to assess how adequately and successfully dialect is represented, whether it matches the characters and cultural contexts in which it is used, and what effects it produces. Authors addressed may include Toni Morrison, Zora Neale Hurston, Mark Twain, William Faulkner, and Richard Wright, but the list is by no means closed.

#### Introduction to Slavic Linguistics

36400. (=SLAV 30100) The main goal of this course is to familiarize students with the essential facts of the Slavic linguistic history and with the most characteristic features of the modern Slavic languages. In order to understand the development of Proto-Slavic into the existing Slavic languages and dialects, we focus on a set of basic phenomena. The course is specifically concerned with making students aware of factors that led to the breakup of the Slavic unity and the emergence of the individual languages. Drawing on the historical development, we touch upon such salient typological characteristics of the modern languages such as the rich set of morphophonemic alternations, aspect, free word order, and agreement.

Language, Power, and Identity in Southeastern Europe: A Linguistics View of the Balkan Crisis.

37200. (=ANTH 37400/SLAV 33000) This course familiarizes students with the linguistic histories and structures that have served as bases for the formation of modern Balkan ethnic identities and that are being manipulated to shape current and future events. The course is informed by the instructor's thirty years of linguistic research in the Balkans as well as his experience as an adviser for the United Nations Protection Forces in Former Yugoslavia and as a consultant to the Council on Foreign Relations, the International Crisis Group, and other organizations. Course content may vary in response to ongoing current events.

#### A Linguistic Introduction to Swahili

38355. This course proposes a survey of sound patterns and grammatical relations in Swahili, in comparison with other Bantu languages, as well as a discussion of specific issues in Swahili linguistics. Students will be able to decode and discuss complex morphologic interactions and complex sentence structures in Swahili. They will also be able to understand and produce elementary sentences in Swahili,

through a variety of translation and sentence building exercises.

#### Computational Linguistics

38600. This is a course in the Computer Science department, intended for upper-level undergraduates, or graduate students, who have a good C++ background. We will look at several current topics in natural language processing, dividing our time between discussing material in the textbook and material in current research papers, and getting our hands dirty with code and corpora. In line with most current work, our emphasis will be on systems that draw conclusions from training data rather than relying on the encoding of generalizations obtained by humans studying the data. As a consequence of that, in part, and also because we will stand to learn more about natural language if we do so, we will make an effort not to focus on English, but to look at a range of human languages in our treatments.

#### Research Seminar

47900. The course aims to guide students on their research in a structured way and to present professionalization information crucial to success in the field. The course is organized largely around working on the research paper, with the goal of making it a conference presentable and journal publishable work. Topics covered include abstracts, publishing, handouts, presentation skills, course design, creating and maintaining a cv, cover letters, webpages, and in general everything that is required for you to successfully compete for jobs in linguistics.

## LANGUAGES IN LINGUISTICS (LGLN)

#### Introductory Modern Hebrew I, II, III

30100-30200-30300. (=JWSG 35000-35100-35200) This course introduces students to reading, writing, and speaking modern Hebrew. All four language skills are emphasized: comprehension of written and oral materials; reading of nondiacritical text; writing of directed sentences, paragraphs, and compositions; and speaking. Students learn the Hebrew root pattern system and the seven basic verb conjugations in both the past present tenses, as well as simple future. At the end of the year, students can conduct short conversations in Hebrew, read materials designed to their level, and write short essays.

#### Intermediate Modern Hebrew I, II, III

30400-30500-30600. (=JWSG 35300-35400-35500) PQ: 30300 or equivalent. This course is devised for students who had previously taken either modern or biblical Hebrew courses. The main objective is to provide students with the skills necessary to approach modern Hebrew prose, both fiction and nonfiction. To achieve this formidable task, students are provided with a systematic examination of the complete verb structure. Many syntactic structures are introduced, including simple clauses, and coordinate and compound

sentences. At this level, students not only write and speak extensively, but are also required to analyze grammatically and contextually all of the materials assigned.

#### Elementary Georgian 1-2-3

32100-32200-32300. This course introduces students to Modern Georgian grammar primarily through reading exercises that relate to Georgian historical, social, and literary traditions. Supplemental activities that encourage writing, speaking, and listening skills are also included in this course.

#### Intermediate Georgian 1-2-3

32400-32500-32600. PQ: LGLN 32300. This course reviews and reinforces the grammar principles presented in Elementary Georgian through the reading and analysis of selected texts written by influential Georgian authors and poets. Additional class exercises are provided to strengthen listening and speaking skills.

#### Advanced Georgian 1-2-3

32700-32800-32900. PQ: LGLN 32600. This course emphasizes advanced language skills and vocabulary building through independent reading and writing projects as well as class exercises involving media such as newspaper and magazine articles, videoclips, radio programs, movies, and additional sound recordings and online materials.

#### Advanced Modern Hebrew I, II, III

33000-33100-33200. (=HEBR 30501-30502-30503, JW5G 35600-35700-35800) PQ: LGLN 30600 or equivalent. This course assumes that students have full mastery of the grammatical and lexical content at the intermediate level. However, there is a shift from a reliance on the cognitive approach to an emphasis on the expansion of various grammatical and vocabulary related subjects. Students are introduced to sophisticated and more complex syntactic constructions, and instructed how to transform simple sentences into more complicated ones. The exercises address the creative effort on the part of the student, and the reading segments are longer and more challenging in both style and content. The language of the texts reflects the literary written medium rather than the more informal spoken style, which often dominates the introductory and intermediate texts.

#### Old Church Slavonic

35100. (=SLAV 32000) PQ: Knowledge of another Slavic language or good knowledge of one or two other old Indo European languages required; SLAV 30100 recommended. This course is an introduction to the language of the oldest Slavic texts. It begins with a brief historical overview of the relationship of Old Church Slavonic to Common Slavic and the other Slavic languages. This is followed by a short outline of Old Church Slavonic inflectional morphology. The remainder of the course is spent in the reading and grammatical analysis of original texts in Cyrillic or Cyrillic transcription of the original Glagolitic.

#### Elementary Yiddish I, II, III.

37200-37300-37400. This course is an introduction to Yiddish language and culture. All four language skills – speaking, listening, comprehension, reading and writing – are stressed to insure that students acquire a basic command of Yiddish. Additionally, the course introduces the cultural and historical context for the Yiddish language through film, music (klezmer), and song. Yiddish conversation skills will be developed through role plays and listening to native speakers on CD in language lab and/or at home.

#### Structure of Albanian

39700. (=SLAV 30900) This is a rare opportunity to get a functional grasp of one of the least studied national languages of Europe. Albanian is of relevance for Indo Europeanists, Balkanists, Classicists, Islamicists, and any social scientist with an interest in Southeastern Europe. In addition to being the majority language in Albania, it is spoken by compact populations in all neighboring countries, as well as by old enclaves in Italy, Croatia, Bulgaria, Turkey, Romania, and Ukraine, and by more recent émigré groups in Western Europe, North America, and Australia. The course focuses on giving students an understanding of the grammatical structure of Albanian as well as sufficient reading knowledge for the independent development of the ability to pursue research.

### AMERICAN SIGN LANGUAGE (ASLG)

#### American Sign Language I, II, III

10100-10200-10300. American Sign Language is the language of the deaf in the United States and much of Canada. It is a full fledged autonomous language, unrelated to English or other spoken languages. This introductory course teaches the student basic vocabulary and grammatical structure, as well as aspects of deaf culture.

#### Intermediate American Sign Language I, II, III

10400-10500-10600. PQ: LGLN 10300. In this course we continue to increase grammatical structure, receptive and expressive skills, conversational skills, basic linguistic convergence, and knowledge of idioms. Field trip required.

### SWAHILI (SWAH)

#### Swahili I, II, III

35200-35300-35400. This course is designed to help students acquire communicative competence in Swahili and a basic understanding of its structures. Through a variety of exercises, students develop both oral and writing skills.

#### Intermediate Swahili I,II

36800-36900. PQ: SWAH 35400 or consent of instructor. This course is focused on broadening students' listening, speaking, reading and writing skills. Students are trained in using sophisticated sentence structures and expression of complex ideas in Swahili. They are assigned advanced readings and essay writing based on their own interests.

## DEPARTMENT OF MUSIC

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### *Chair*

Robert L. Kendrick

### *Professors*

Philip V. Bohlman

Thomas Christensen

Martha Feldman

Philip Gossett

Robert L. Kendrick

Marta Ptaszynska

Shulamit Ran

Anne Walters Robertson

### *Associate Professors*

Berthold Hoeckner

Travis A. Jackson

Lawrence Zbikowski

### *Assistant Professors*

Steven Rings

Kotoka Suzuki

Senior Lecturers

Howard Sandroff

Barbara Schubert

### *Lecturer*

Ilya Levinson

### *Emeritus Faculty*

Easley R. Blackwood

John Eaton

## PROGRAMS OF STUDY

The Department of Music at the University of Chicago offers both the degree of Master of Arts and the degree of Doctor of Philosophy in three areas: composition, ethnomusicology and the history and theory of music.

The program in composition is designed to develop students' creative and technical abilities at writing new music. Students take individual composition lessons with faculty members, often studying with more than one faculty member in the course of their residence. Students also receive training in a wide variety of related areas and skills, including score reading and conducting, orchestration, musical analysis, twentieth century styles, historical periods and (optionally) computer generated sound synthesis. A portion of this training will lead to the development of a minor field in ethnomusicology, musicology, theory and analysis or research in computer music. There is a weekly seminar for all of the students in the composition program, designed to broaden the perspectives and address the problems of aspiring composers.

The program in ethnomusicology prepares students to carry out scholarship and writing about the place of music in various cultures. Students receive grounding in cultural theory, anthropology, ethnographic methods, problems in cross-cultural musical analysis, and a variety of world and popular musics. They also conduct fieldwork on some of these musics. The program is interdisciplinary, drawing upon course offerings in music, anthropology and a variety of area studies.

The program in music history and theory prepares students to carry out various kinds of scholarship and writing about music, especially (but not solely) in traditions of European and American repertoires. Students may emphasize either the historical or theoretical side of scholarship, according to their interests, and may also choose to pursue a minor field in composition. Students emphasizing music history typically concentrate on varieties of musicology that include cultural history, textual criticism, stylistic studies, institutional history, hermeneutics and critical theory. Students emphasizing music theory typically concentrate on detailed analysis of individual works, clusters of works (by genre or composer, for example), theoretical systems and the history of theory. Most students who complete the Ph.D. in music history and theory seek academic employment, but others have gone on to work in fields such as publishing, operatic production, and commercial editing.

## COURSES

The following provides a general outline of educational opportunities and degree requirements in the programs, but in no way replaces the detailed information given to all prospective students and enrolled students in the department. Up to date information about academic programs and courses is available on the website of the Music Department at <http://music.uchicago.edu>.

During the first two years of study students take a number of required offerings (numbered between 30000 and 39900) including analysis courses, proseminars in historical periods and in ethnomusicology, courses on particular skills and individual composition lessons, depending on their programs of study. At the same time they take seminars (numbered above 41000), which tend to be more specialized and more advanced. About half of a student's schedule consists of electives, which may include non-required courses in the department, courses given outside the department and reading courses (i.e. independent studies).

Students entering the program without a master's degree in music from another institution take fifteen courses during the first two years of scholastic residence (before taking comprehensive exams). Those entering with a master's degree from another institution normally take nine courses

in the first year of scholastic residence (before taking comprehensive exams).

In addition to courses and other requirements (listed below), students who wish to obtain an M.A. must submit two seminar papers, or a composition of at least eight minutes, for approval by the faculty.

Students who continue in the program beyond the first half of scholastic residence enter the remainder of scholastic residence (through the fourth year), during which students in the scholarly programs are required to take three seminars, and students in composition are expected to develop a minor field of four courses. Standard minors for composition students include ethnomusicology, musicology, theory and analysis, or computer music research. In addition, students in the second part of scholastic residence (after the comprehensive exams) fulfill remaining requirements and begin work on the dissertation (see below).

Thus students entering their program of study without a master's degree in music can expect to complete their course work in three or four years. Those entering with a master's can expect to complete their course work in two or three years.

### COMPREHENSIVE EXAMINATIONS

Students ordinarily take comprehensive exams just prior to the beginning of the third year in the program. Students entering with a master's degree in music from another institution have the option of taking their exams at the beginning of their second year.

Students in composition take three comprehensive examinations: (1) the composition of a work based on a set of given guidelines; (2) an oral examination on ten compositions from the repertory; (3) a close analysis of a single work or movement.

Students in ethnomusicology take five comprehensive exams: (1) a close analysis of a single piece of music; (2) the identification, from notation and by ear, of music from both European historical and world music traditions; (3) essays covering (a) the conceptual foundations of musical scholarship; (b) a broad area of world music (e.g. Middle East, Africa); and (c) a historical period of European music corresponding to one of the three given to students in history and theory (see below).

Students in history and theory take five of the following eight examinations (within some distribution guidelines): (1) analysis of tonal music; (2) analysis of atonal music; (3) the identification of music scores of from all periods of music in the European tradition; (4) historical essays on music before 1600; (5) historical essays on music from 1600 to 1800; (6) historical essays on music since 1800; (7) essays on the conceptual foundations of musical scholarship, including ethnomusicology; (8) essays in music theory.

While course work helps prepare students for comprehensive exams, students are expected to be enterprising in

their efforts to determine both areas of weakness that they need to work on, and ways to synthesize and interrelate knowledge about history, repertory, theory, and so forth. Students should expect to spend an extended period of time engaged in intensive individual study in preparation for comprehensive exams, particularly during the summer before taking them.

### SPECIAL FIELD EXAMINATION/DISSERTATION PROPOSAL

After having passed the comprehensive exams, students in music history and theory and in ethnomusicology also take a two-part oral exam at some time during the remainder of scholastic residence. For students in ethnomusicology, the first part of the oral tests the student's knowledge of, and ability for, synthetic thought within a selected area of world music. For all students, the exam is a defense of the dissertation prospectus, demonstrating the propriety and feasibility of the topic and the student's knowledge of the existing literature about it. Normally students take this exam in the third or fourth year. The exam is administered by the student's dissertation committee (often including a person from outside the department), with additional faculty members sometimes attending as well.

### DISSERTATION

For students in music history and theory and in ethnomusicology the dissertation for the Ph.D. consists of a book length study that makes an original contribution to research and thought. Students in composition must complete a large scale composition that shows professional competence, as well as a paper demonstrating ability to do advanced work in an area of musical scholarship (ordinarily the student's minor field), normally 30–50 pages in length. All students are required to defend the dissertation before receiving the degree.

### LANGUAGE EXAMINATIONS

Language requirements are fulfilled through examinations testing the student's ability to translate about 400 words of a passage of medium difficulty from source materials or other musicological literature, using a dictionary. Three times per year the department administers examinations in French, German, Italian, and Latin. The department arranges for students to take other languages related to their research or compositional interests.

For the Ph.D. program in composition, one foreign language is required. (This requirement cannot be met by the composer's language of origin.) For the Ph.D. program in ethnomusicology and music history, three languages are required, one of which must be German. Students concentrating in theory are examined in German and one additional language. All master's degrees require one language.

## MUSICIANSHIP EXAMINATIONS

Examinations in practical musicianship skills are administered by the Department of Music. These include examinations in basic musicianship skills and advanced musicianship skills. Examinations in basic musicianship include musical dictation, sight singing, and sight reading at the piano or another instrument in the Western musical tradition. Advanced musicianship skills include three skills to be realized at the piano (for students with advanced keyboard skills) or realized in written form (for students with no advanced keyboard skills): figured bass, reading of open vocal scores in old clefs and orchestral score reading (with a 24-hour preparation period). Other advanced musicianship skills are atonal dictation, transcription of music from oral or improvisatory traditions, improvisation in an improvisatory tradition, and playing in a University ensemble for at least one year concluding with a public concert. Students may petition to play in a recognized performing group other than official University ensembles. Students may also petition to fulfill the ensemble requirement through a solo performance in a university concert.

The number and kind of musicianship examinations for composition, ethnomusicology, history, and theory vary according to the respective programs as specified in the department's Graduate Curriculum. Musicianship examinations are given during each of the three quarters. There is no limit to the number of examinations a student may take at a single sitting, and no limit to the number of times that a student may retake a musicianship examination. The Department offers free, informal, non-credit instruction in these skills. Instruction will be offered on an individual basis. The Department is not obligated to offer instruction in the area chosen by the student.

All departmental master's degrees require successful completion of two musicianship examinations, except composition, which requires successful completion of three.

## COLLOQUIUM

The Department sponsors a colloquium series that typically includes four or five presentations each quarter, normally on Friday afternoons. Colloquium presentations are made by students and faculty in the Department and by visiting scholars or composers from elsewhere. As the most regular departmental occasion for intellectual dialogue and one of the most important opportunities for outside professional contact, colloquium is viewed as an important part of academic life in the Department. It is normally taken for credit during the second part of Scholastic Residence.

## GRADUATE TEACHING

There exist a number of opportunities for teaching during students' graduate careers. The various teaching opportunities range from assistantships to individual course assignments for which students have virtually full responsibility. The kinds of courses taught or assisted by graduate students

include those in history, appreciation, theory, ear training, and world music. In addition to these assignments, students may be nominated for Stuart Tave Teaching Fellowships in the Humanities Collegiate Division, which allow advanced graduate students in the humanities to teach upper level undergraduate courses in their own areas of research.

*Music Theory Mentoring Partnership.* This program provides opportunities for graduate students in the Department of Music to serve as part time faculty at colleges and universities in the Chicago area. Participants will be hired by the institution to teach or assist in an undergraduate course in music theory or aural skills, and will be compensated at that institution's pay scale for part time faculty. Participants will be assigned a mentor who is a permanent member of the institution's theory faculty, and whose role will be to orient participants to the culture of the institution, and to provide guidance and feedback on syllabi, classroom presentations, grading, and so forth. Eligibility requirements for this program are two years of course work at U of C (one year if you entered with an MA); AND prior service as a Lecturer or a Course Assistant in a music course at the University of Chicago, or comparable experience at another institution. The program is open to students in ethnomusicology, composition, and historical musicology, as well as to those who are specializing as theorists. In addition to the music theory mentoring program, Advanced students frequently secure part time teaching at other local institutions, or in the Graham School of General Studies.

## PERFORMING ACTIVITIES

Candidates for degrees are encouraged to perform in one of the many groups sponsored by the department or in one of its recital venues. Performing organizations include the University Symphony Orchestra, the University Chamber Orchestra, the University Wind Ensemble, the New Music Ensemble, the University Chorus, the Motet Choir, the Jazz X-tet, the Central Javanese Gamelan and the Middle East Music Ensemble. Abundant professional and semi-professional opportunities exist throughout the metropolitan area for students who are accomplished performers. Recent departmental students have performed in the University's Rockefeller Chapel Choir, the Civic Orchestra of Chicago, the Chicago Sinfonietta, the Newberry Consort, and Contempo (the University of Chicago Chamber Players), among others.

## WORKSHOPS

Students in the department frequently attend one of the many interdisciplinary workshops that are organized throughout the University as forums for intensive intellectual exchange between faculty and graduate students. Those that have recently attracted students in music have included (for example) the workshops on Medieval Art, Liturgy, and Music; the Renaissance; Music and Language;

African American Studies; Chicago Public Spaces; History and Philosophy of Science, Economics of the Senses, and the Ethnomusicology Workshop (Ethnoise).

### APPLICATION

Applicants to the programs in music history and theory and in ethnomusicology will be asked to submit two papers as samples of their previous works in addition to the usual application forms, transcripts, letters of recommendation, and GRE scores. Applicants in composition will be asked to submit scores, preferably three, and tapes when they are available.

In addition to their scholastic skills, students need at least a modicum of proficiency in fundamental musical skills in order to succeed in the program. It is expected that entering students have competence in playing a musical instrument or singing, as well as possess basic skills in ear training and music theory.

Prospective applicants seeking more detailed information about the course requirements, exams, etc. than is given here should write to the chair of the admissions committee in the Department of Music for a copy of the Graduate Curriculum. The address is: Department of Music, 1115 E. 58th Street, Chicago, IL 60637, telephone: (773) 702-8484. We will also send more detailed materials on faculty interests and activities and (upon request) on performing groups.

Further information about the various aspects of the graduate program, such as course descriptions, the Graduate Curriculum, and the Graduate Student Handbook, can also be obtained from the Department of Music's home page on the World Wide Web, <http://music.uchicago.edu>. Students interested in the program can apply online.

The application process for admission and financial aid for all graduate programs in Humanities is administered through the divisional Office of the Dean of Students. The Application for Admission and Financial Aid, with instructions, deadlines and department specific information is available online at: <http://humanities.uchicago.edu/prospective/#admissions|the-application>

International students must provide evidence of English proficiency by submitting scores from either the Test of English as a Foreign Language (TOEFL) or the International English Language Testing System (IELTS). Questions pertaining to admissions and aid should be directed to [humanitiesadmissions@uchicago.edu](mailto:humanitiesadmissions@uchicago.edu) or (773) 702-1552.

All correspondence and materials sent in support of applications should be mailed to:

The University of Chicago  
Division of the Humanities  
Walker, Suite 111  
1115 East 58th Street  
Chicago, IL 60637

### Courses

0000. Reading Course  
Staff

30900. Music Theory Pedagogy  
Christensen, Zbikowski

31000. Introduction to Analysis  
Christensen, Zbikowski

31100, 31200. Analysis of Tonal Music I, II  
Christensen, Zbikowski

31300. Analysis of Twentieth Century Music  
Zbikowski

31400. Topics in Theory and Analysis  
Bohlman, Christensen, Zbikowski

31500. Analysis of Non-Western Music  
Bohlman, Jackson

31600. Analysis of Music Since 1950  
Ptaszynska

31900. Cognitive Science and Music Analysis  
Zbikowski

32100. Proseminar in History and Notation of Monophonic Music  
Robertson, Kendrick

32200. Proseminar in History and Notation of Polyphonic Music to 1300  
Robertson

32300. Proseminar in History and Notation of Music from 1300 to 1450  
Robertson

32400. Proseminar in Music from 1450 to 1600  
Feldman

32500. Proseminar in Music from 1600 to 1700  
Kendrick

32600. Proseminar in Music from 1700 to 1800  
Christensen, Feldman

32700. Proseminar in Music from 1800 to 1900  
Gossett, Hoeckner

32800. Proseminar in Music since 1900  
Hoeckner

33000. Proseminar in Ethnomusicology  
Bohlman, Jackson

33100. Jazz  
Jackson

33200. Rock  
Jackson

33400. Folk Music  
Bohlman

33500. Introduction to World Music  
Bohlman, Jackson
33600. Music of the Mediterranean  
Bohlman
33700. Music of South Asia  
Bohlman
33800. Ethnographic Methods  
Bohlman, Jackson
33900. Anthropology of Music  
Jackson
34000. Composition  
Ptaszynska, Ran, Suzuki
34100. Composition Seminar  
Ptaszynska, Ran, Suzuki
34200. Contemporary Opera  
Ptaszynska
34300. Multimedia Composition  
Suzuki
34400. The Musical Language of Messiaen and  
Stockhausen  
Ptaszynska, Suzuki
- 34500, 34600. Instrumentation and Orchestration I, II  
Ptaszynska, Blackwood
- 34700, 34800. Introduction to Computer Music  
Sandroff
36800. Studies in Computer Music  
Sandroff
- 37100, 37200. Proseminar in the History of Music Theory  
Christensen, Zbikowski
38000. Score Reading and Conducting  
Schubert
41000. Colloquium  
Staff
- SAMPLE SEMINARS**
41100. The Concept Album  
Jackson
41200. Jewish Music and Modernity  
Bohlman
41300. Jazz Historiography  
Jackson
42600. The Courtesan's Voice  
Feldman
43000. Music and Dance  
Zbikowski
43200. Receptions of Bach  
Christensen
43500. Music, Ritual, and Place in the Middle Ages  
Robertson
43600. L'incoronazione di Poppea  
Kendrick
43700. Petrarchan Wit  
Feldman
43800. Propering the Ordinary  
Robertson
43900. Music and Memory  
Hoeckner
44000. Music in the New Europe  
Bohlman
44200. Science and Music in the 17th Century  
Christensen
44300. Conceptual Blending and Music Theory  
Zbikowski
44400. Gender and Characterization in Baroque Opera and  
Oratorio  
Kendrick
44700. The Castrato  
Feldman
44900. Film Music  
Hoeckner
46000. Ottocento Opera: History, Sources, Performance,  
Reception  
Gossett
46100. Textual Theory  
Gossett

## DEPARTMENT OF NEAR EASTERN LANGUAGES AND CIVILIZATIONS

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### *Chair*

Theo P. van den Hout, Oriental Institute

### *Professors*

Fred M. Donner  
Walter T. Farber, Oriental Institute  
Cornell Fleischer  
McGuire Gibson, Oriental Institute  
Norman Golb  
Janet H. Johnson, Oriental Institute  
Heshmat Moayyad  
Dennis G. Pardee  
Robert K. Ritner, Oriental Institute  
Martha T. Roth, Oriental Institute  
Gil Stein, Oriental Institute  
Matthew W. Stolper, Oriental Institute  
Theo P. van den Hout, Oriental Institute  
John E. Woods, History

### *Associate Professors*

Hakan Karateke  
Franklin D. Lewis  
Tahera Qutbuddin  
David Schloen, Oriental Institute  
Ada Holly Shissler  
Christopher Woods, Oriental Institute  
K. Aslihan Yener, Oriental Institute

### *Assistant Professors*

Orit Bashkin  
Petra Goedegebuure, Oriental Institute  
Rebecca Hasselbach, Oriental Institute  
Nadine Moeller, Oriental Institute  
Seth Richardson, Oriental Institute  
Na'ama Rokem  
Andrea Seri, Oriental Institute  
Professorial Lecturer  
Farouk Mustafa

### *Senior Lecturers*

Ariela Finkelstein  
Saeed Ghahremani

### *Lecturers*

Osama Abu-Eledam  
Kagan Arik  
Stuart Creason  
Muhammad Eissa  
Noha Forster  
Hripsime Haroutunian

Kay Heikkinen  
Amina Mohamed

*Research Associates (Associate Professors)*  
W. Raymond Johnson, Oriental Institute  
Donald S. Whitcomb, Oriental Institute

*Research Associate (Assistant Professors)*  
Scott Branting

### *Emeritus Faculty*

Lanny D. Bell, Oriental Institute  
Robert D. Biggs, Oriental Institute  
Menachem Brinker  
John A. Brinkman, Oriental Institute  
Richard L. Chambers  
Miguel Civil, Oriental Institute  
Robert Dankoff  
Peter F. Dorman, Oriental Institute  
Gene B. Gragg, Oriental Institute  
Harry A. Hoffner, Oriental Institute  
Halil Inalcik, History  
Wadad Kadi  
Carolyn G. Killian  
John R. Perry  
Jaroslav Stetkevych  
William Sumner, Oriental Institute  
Edward F. Wente, Oriental Institute

The work of the department encompasses the ancient civilizations of the Near East, Near Eastern Judaica, and the Islamic civilizations of the Middle East, including Egypt and North Africa, and the history, languages, and literatures of the modern Middle East.

The fields of study in which A.M. and Ph.D. programs are currently offered are, in the Ancient Section: Ancient Near Eastern History, Comparative Semitics, Cuneiform Studies (Assyriology, Hittitology, Sumerology), Egyptology, Hebrew Bible and the Ancient Near East, Near Eastern Art and Archaeology (Anatolian, Egyptian, Iranian, Islamic, Mesopotamian, Syro-Palestinian), Near Eastern Judaica, and Northwest Semitic Philology; and in the Medieval and Modern Section: Arabic Language and Literature, Islamic History and Civilization, Islamic Thought, Medieval Judaica and Judeo-Arabic, Modern Hebrew Language and Literature, Persian Language and Literature, and Turkish Language and Literature. The department also has a joint program with Linguistics and offers courses in Armenian and Central Asian studies in collaboration with other departments at the University.

The department has two main objectives. First, it strives to provide the specific course work and training needed for its own students to develop into outstanding scholars in their chosen fields. Second, it offers more general courses that provide its own students a broader background in areas outside their specific fields while presenting students in

other departments the opportunity to incorporate relevant Middle Eastern material into their own studies. The department also publishes the *Journal of Near Eastern Studies*, one of the leading academic journals in ancient Near Eastern and Islamic studies.

### THE ORIENTAL INSTITUTE

The department is associated with the Oriental Institute, a research institute dedicated to the study of the origin and development of civilization in the ancient Near East. The Institute maintains several expeditions in the field, and research projects are carried on in its headquarters at the University. Its research archives, manuscript collection, documents from Oriental Institute excavations, and similar materials are resources for the students in the department. The department's office is housed in the Oriental Institute building, and many of its members belong to the faculty of the Oriental Institute.

### THE CENTER FOR MIDDLE EASTERN STUDIES

The department is also associated with the Center for Middle Eastern Studies, which offers a master's degree in Middle Eastern studies and coordinates activities at the University dealing with the Middle East in the Islamic and modern periods. Many members of the department faculty are also members of the Center's executive committee; and the workshops, lectures, language circles, and similar activities of the Center are, like those of the Oriental Institute, a resource for the students in the department.

### THE DEGREE OF DOCTOR OF PHILOSOPHY

Students with an undergraduate degree may apply directly to the department's Ph.D. program; a master's degree in a related field is not prerequisite. The department does not admit students for a terminal A.M. degree, although work done in the first two years of the Ph.D. program qualifies students to receive an A.M. degree. This interim A.M. normally requires the completion of 18 courses, of which 15 must be taken for a quality grade while three may be taken on a pass/fail basis. All students must high pass one of the two required modern research language reading exams (French and German) before the beginning of their second year and complete an M.A. thesis in the second year.

At the end of the second year, all students are reviewed and a determination made as to whether they will be allowed to continue in the Ph.D. program. Students who do continue build upon the work used for the A.M. degree; normally the completion of additional 9-18 courses is required, depending on the field, before embarking upon research for the doctoral dissertation. Exact requirements vary by field, but all students must high pass their second modern research language reading exam before the

beginning of their third year and pass a battery of comprehensive exams, usually at the end of their fourth year. A dissertation proposal of original research to be undertaken is presented to the faculty at a public hearing, usually in the fifth year; acceptance allows the student to be admitted to candidacy and to continue the research that will lead to the completed dissertation. A formal dissertation defense is required before the Ph.D. degree is awarded.

Because the department believes that firsthand knowledge and experience of the Middle East are an essential part of a student's training, advanced students are encouraged to apply for grants to support study in a Middle Eastern country, whether for language acquisition, archaeological field work, or dissertation research.

### INQUIRIES

Specific information about the department and its programs may be obtained from our website (<http://humanities.uchicago.edu/depts/nelc/>), by e-mail ([ne-lc@uchicago.edu](mailto:ne-lc@uchicago.edu)), or from the departmental office, 1155 East 58th Street, Room 212, Chicago, IL 60637. Within the framework outlined above, individual requirements are established for each student in consultation with the faculty adviser and the section counselor.

### APPLICATION

The application process for admission and financial aid for all graduate programs in the Division of the Humanities is administered through the divisional Office of the Dean of Students. The Application for Admission and Financial Aid, with instructions, deadlines and department-specific information is available online at <http://humanities.uchicago.edu/prospective/#admissions|the-application>

Questions pertaining to admissions and aid should be directed to [humanitiesadmissions@uchicago.edu](mailto:humanitiesadmissions@uchicago.edu) or (773) 702-1552. All correspondence and materials sent in support of applications should be mailed to

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Division of the Humanities  
Walker, Suite 111  
1115 East 58th Street  
Chicago, IL 60637

Foreign students must provide evidence of English proficiency by submitting scores from either the Test of English as a Foreign Language (TOEFL) or the International English Language Testing System (IELTS).

We encourage you to check our website at <http://humanities.uchicago.edu/depts/nelc/> particularly with regard to your application. The application form has a place to indicate the department/program; from the pull down menu choose Near Eastern Languages and Civilizations. For field of specialization, please be sure to enter one of the fields of study exactly as listed on NELC's web page. We need these fields to sort information in our database. You

may wish to specify your area of interest further in your statement of purpose.

### *Courses*

**Modern Languages:** Language acquisition is taught at the elementary and intermediate levels in modern Arabic, Armenian, Hebrew, Kazakh, Persian, Turkish, and Uzbek with advanced level courses in Arabic (academic year) and Turkish (summer). A wide variety of literature courses are taught in the various languages.

**Ancient Languages:** Courses are offered in the fundamentals of Akkadian, Ancient Anatolian Languages, Egyptian, Ge'ez, Classical Hebrew, Samaritan, and Ugaritic, while more advanced courses cover specific genres of ancient texts dealing with religion, medicine, law, government, history, etc.

**Near Eastern Art and Archaeology:** Courses in Anatolian, Egyptian, Islamic, Mesopotamian, and Syro-Palestinian art and archaeology offer grounding in site archaeology and the material culture of the ancient Near East and include instruction on archaeological method and theory, landscape archaeology, computer applications, etc.

**Near Eastern History and Civilization:** A wide variety of courses cover the history, religion, law, literature (in translation), culture, and thought of the many ancient and modern civilizations of this region.

Please see the University's *Time Schedules* for specific course offerings in a given quarter.

## DEPARTMENT OF PHILOSOPHY

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### *Chair*

James Conant

### *Director of Graduate Studies*

Candace Vogler

### *Professors*

Ted Cohen

James Conant

Arnold Ira Davidson

Michael N. Forster

John Haugeland

Michael Kremer

Gabriel Richardson Lear

Jonathan Lear, Social Thought

Martha C. Nussbaum, Law

Robert Pippin, Social Thought

Robert J. Richards, History

Josef J. Stern

Candace A. Vogler

### *Associate Professors*

Jason Bridges

Daniel Brudney

David Finkelstein

### *Assistant Professors*

Agnes Callard

Kevin Davey

Anton Ford

### *Emeritus Faculty*

Leonard Linsky

Ian B. Mueller

Howard Stein

William W. Tait

William C. Wimsatt

### *Full-time Lecturer and Philosophy/MAPH Coordinator*

Benjamin Callard

The programs in philosophy are designed to develop skill in philosophical analysis, to enable the student to think clearly, systematically, and independently on philosophical issues, and to achieve a thorough acquaintance with major classics and contemporary works in philosophy. Philosophy classes are conducted so that students may develop philosophical skills by class discussions and by the writing of carefully directed papers.

The following is an outline of the main features of the graduate program. For full details, please write the Department of Philosophy directly.

## GRADUATE DEGREES

The graduate program in philosophy is primarily a doctoral program. Admission as a graduate student normally implies that, in the opinion of the department, the student is a promising candidate for the Ph.D. degree. The Master of Arts degree, however, may be awarded to students in the program who desire it and who meet the requirements specified below.

### THE DEGREE OF MASTER OF ARTS

The Philosophy Department does not admit students directly into an M.A. program. Master's degrees are awarded only to students who are enrolled in a Ph.D. program at the University of Chicago. These can be either (i) doctoral students in another discipline who seek a "secondary" M.A. in Philosophy, in conjunction with their doctoral studies in that other discipline; or (ii) doctoral students in Philosophy who want an M.A.

The requirements for the degree are the same in either case. The requirements can be satisfied entirely by coursework; no thesis is required. They are specified in five clauses:

- **Quality:** No course for which the student received a grade lower than a B+ will satisfy any requirement for the M.A.
- **Level:** Only courses taken at the graduate level (that is, with a course-number of 30000 or higher) can satisfy any requirement for the M.A.
- **Quantity:** The student must complete at least eight courses in Philosophy at the University of Chicago. (Reading and research courses do not count toward satisfying this requirement, nor do courses taken pass/fail—except the first-year seminar, which counts as one course if passed.)
- **Distribution:** The student must have taken at least one designated course in each of the Philosophy Department's five "areas" — namely:
  - o Area I: Value theory
  - o Area II: Philosophy of science and logic
  - o Area III: Epistemology and metaphysics
  - o Area IV: Ancient or Medieval philosophy
  - o Area V: Modern philosophy (17th-19th centuries)
- **Elementary Logic:** The student must demonstrate competence in elementary logic. This can be achieved by an interview in which the candidate satisfies one of the Department's logicians that he or she has the required competence, or by taking the Elementary Logic course (Philosophy 30000), or any more advanced logic course offered by the Department. Philosophy 30000 can count as one of the minimum eight courses, but it does not satisfy the Area II requirement. A more advanced logic class does both.

**Application Procedure:** Doctoral Students in the Dept. of Philosophy may apply for the M.A. at any time after they have completed the requirements. Students in a Ph.D.

program at the University of Chicago in a department other than Philosophy who wish to receive a "secondary" M.A. in Philosophy must first apply for admission to the M.A. program in the Dept. of Philosophy. No student can apply unless she has taken at least three Philosophy courses, and it is expected that the student will apply soon after completing that number of courses. To initiate the application process, the student should set up an appointment with the Dean of Students in the Division of Humanities who will direct the student through the required paperwork and obtain

- (1) the applicant's transcript of courses taken for the B.A.,
- (2) her GRE scores, and
- (3) a transcript of the applicant's courses at the University of Chicago taken up to the time of the application. In addition, the applicant must submit
- (4) A sample of her best philosophical writing. This may but need not be a paper written for one of the applicant's already completed Philosophy courses at the University.
- (5) A brief letter from the chair or director of graduate studies of the applicant's home department supporting the application. The letter should explain why the student is seeking an M.A. in philosophy to complement her doctoral studies.
- (6) Names of two faculty in the Dept. of Philosophy who can comment on work done by the applicant and on her philosophical potential.
- (7) A statement by the applicant that explains why she is seeking an M.A. in Philosophy.

### THE DEGREE OF DOCTOR OF PHILOSOPHY

The divisional and University requirements for the Ph.D. degree must be fulfilled. Departmental requirements are as follows:

#### 1. *Course Requirements*

The Course Requirement has six parts concerning: (a) the number of required courses, (b) the distribution of required courses, (c) the logic requirement, (d) required progress, (e) policies concerning incompletes, and (f) grades.

##### *a. Number of required courses*

Students must complete at least thirteen courses in their first two years of study: the first year seminar and twelve graduate courses.

First-year students must enroll in the first-year seminar. This is a year-long course that has met four or five times a quarter, although its exact organization and scheduling varies from year to year according to the instructor's discretion. It is graded on a pass-fail basis.

In addition, twelve graduate courses must be completed with a grade of B or better.

- at least ten of these courses must be in the Philosophy Department listings;
- reading and research courses do not count among these twelve classes
- at least one must be a graduate seminar in Philosophy

#### *b. Distribution of required courses*

Students are required to take one course in each of the following three areas of contemporary philosophy:

- Value theory (listed in the course descriptions as I)
- Philosophy of science and logic (listed in the course descriptions as II)
- Epistemology and metaphysics (listed in the course descriptions as III)

and three courses on the history of philosophy as follows:

- A figure or movement in either Ancient or Medieval Philosophy (listed in the course descriptions as IV)
- A figure or movement in Modern Philosophy from the 17th through 19th centuries (listed in the course descriptions as V)
- One additional course on a figure or movement in either IV or V.

It should be noted that not all graduate courses satisfy a field distribution requirement; those not classified in the published course descriptions as belonging to I-V cannot be used to satisfy the distribution requirement. Nor can Philosophy 30000 (Elementary Logic) be used to satisfy a field distribution requirement.

#### *c. Logic requirement*

There is a requirement in logic that can be satisfied in several ways.

- By passing Philosophy 30000 (Elementary Logic) with a grade of B or higher.  
Philosophy 30000 is offered every Autumn quarter. It counts toward the twelve course requirement but does not satisfy the field II distribution requirement.
- By passing a course equivalent to or better than Philosophy 30000 (Elementary Logic), at another institution or in another department at Chicago, with a grade of B+ or higher. The equivalence of the course in question to Philosophy 30000 will be determined by the instructor in Philosophy 30000 in the year in question, on the basis of an interview with the student, and such evidence as the syllabus for the course, the textbook for the course, and any other course materials which the student can provide. Note that satisfying the logic requirement in this way will count neither towards one of the twelve required courses nor towards satisfying the field II distribution requirement.
- By passing an advanced graduate course in logic with a grade of B or higher.

Passing an advanced graduate course in logic would both satisfy the logic requirement and count towards the field II distribution requirement.

#### *d. Required progress*

Courses must be completed, with a grade of B or better, according to the following timetable.

- two courses should be completed by the beginning of the Winter Quarter of the first year
- four courses (at least three in the Philosophy Department) should be completed by the beginning of the third quarter
- six courses should be completed by 30 September of the second year
- ten courses should be completed by the end of the fifth quarter
- all thirteen courses (twelve plus the first year seminar) must be completed by 30 September following the sixth quarter.

In addition to this timetable, students should keep in mind that because they are expected to be working on their Preliminary Essay over the summer following their sixth quarter, they would be ill-advised not to have completed their course requirements by the early part of the summer or earlier.

#### *e. Incompletes*

At the discretion of the instructor, coursework not completed on time may be regarded as an "incomplete." This means that the instructor will permit a student to complete the work for a course after the normal deadline.

The instructor sets the time period for completion of the incomplete, subject to the following limitation: all coursework must be submitted by September 30th following the quarter in which the course was taken in order to count toward fulfillment of the requirements for the M.A. and Ph.D. This date is an absolute deadline and is not subject to further extensions by individual faculty members.

#### *f. Grades*

Satisfactory grades for work toward the Ph.D. in philosophy are A, A-, B+, and B.

For Philosophy faculty, those grades mean the following. A: pass with distinction; A-: high pass; B+: pass; B: low pass.

#### *2. Foreign Language Exam*

All students must pass an examination in French, German, Latin, or Greek by the end of Spring Quarter of the fourth year or before the topical examination, whichever comes first. (There is a special rule for students who wish to write theses on ancient Greek or Roman philosophy; this is detailed below).

There are two kinds of language examinations: those administered by the Department and those administered by the University. Departmental language exams will be given twice a year and may not be taken more than twice.

Students who take the University language examination must receive a "High Pass." These are offered every quarter and there is a fee for taking them.

#### Ancient Greek or Roman philosophy

There is a special requirement for those working in ancient philosophy, since work in these fields depends heavily on one's ability to use the relevant languages.

Any student intending to write a thesis on ancient philosophy must pass the Departmental or University exam in Greek (the latter with a "High Pass"). Any student intending to write a thesis on Hellenistic or Roman philosophy must also pass the Departmental or University exam in Latin (the latter with a "High Pass").

Such students may take the Departmental exam in Greek or Latin a maximum of three times (as opposed to two times, which is the rule for other languages).

### 3. Preliminary Essay

In the Spring Quarter of their second year students will register for the first quarter of a two-quarter (Spring, Autumn) workshop on the preliminary essay. The workshop involves discussion of general issues in writing the essay and student presentations of their work. Although students do not register for the Summer quarter, they are expected to make significant progress on their preliminary essay over the summer.

By the end of the eighth week of the Spring Quarter at the latest each student will submit to the Director of Graduate Studies a proposed topic and a ranked list of possible readers in the Philosophy Department. The Graduate Program Committee will evaluate proposed topics along the following lines:

- is the topic philosophically interesting?
- can a paper on the topic be completed within the given time?
- can a committee be formed to supervise an essay on the topic?

If the topic is approved, the Committee will form a preliminary essay committee consisting of two equal readers, both of whom students are expected to consult regularly. The committee will supervise the writing of the essay which should be no longer than 8,000 words, not including the bibliography and, in historical essays, not including long quotations.

The final draft of the Preliminary Essay must be submitted by the first day of the Winter quarter of the student's third year. Essays submitted late are penalized as follows: One third of a grade is deducted if the essay is submitted after the deadline but before the first day of the sixth week of the Winter quarter. Two-thirds of a grade is

deducted if the essay is submitted after the first day of the sixth week of the Winter quarter but by the end of Exam Week of the Winter Quarter. Essays submitted after the end of the Winter quarter do not count toward satisfaction of the requirement.

### 4. Topical Examination

Following the Preliminary Essay, students begin work toward their dissertations. During the winter and spring quarters, they should be meeting with various faculty members to discuss and refine possible dissertation topics, and possible dissertation committees; and, by the ninth week of spring quarter, each student should submit a "dissertation sketch" to those faculty and to the Graduate Program Committee. The character of that sketch will vary from case to case; but, in any case, is not expected to be long or elaborate. Some sketches may be more definitive than others; some may be seriously disjunctive; some students may submit more than one sketch. The point of the sketch and preliminary meetings is to provide some faculty guidance for the more independent research that begins over the summer.

At the beginning of the following fall (fourth year), students will again meet with their (prospective) advisors, to discuss progress and developments over the summer, and make concrete plans for the Dissertation Topical (to be held later that quarter, or, if necessary, the first week of the winter quarter). Those plans will include a tentative timetable, a determination of the dissertation committee, and the expected character of the materials to be submitted by the student, and on which the exam/discussion will be based. Though the details will vary (depending on the subject matter, the state of the research, individual work habits, and so on), these materials must include a substantial piece of new written work by the student (something on the order of twenty-five double-spaced pages)-perhaps a draft of a chapter, an exposition of a central argument, a detailed abstract (or outline) of the whole dissertation, or whatever the committee as a whole agrees upon. (It is expected that students will abide by these agreements; but, if there are unanticipated problems, they may petition their advisors and the Director of Graduate Studies, in writing, for a revision.)

Students must finish their language exams by the end of their fourth year in the program (independently of their status with regard to any other requirements).

The Department requires that each student submit a written progress report on his or her progress by the end of the winter quarter of each year, beginning with his or her fourth year in the program. The report should be submitted to the Director of Graduate Studies and (after the Topical) to the student's dissertation committee. If the student is making satisfactory progress, he or she will be so notified; if there has not been satisfactory progress, a meeting will be

scheduled with the student and committee to discuss the problems impeding progress.

It is very much in each student's own interest to be well along with his or her dissertation early in the fifth year, for several related reasons. First, of course, students with Century Fellowships are obligated to teach a stand-alone course that year, which is inevitably time and energy consuming. Second, all of those fellowships run out at the end of that year; and many (probably most) students will not get any more support from the University. And, finally, such sixth-year support as there is from the University is systematically directed to those applicants whose work is not only of the best quality, but also the furthest along (as documented not only by faculty testimonials but also by submitted chapters). Keep in mind also that so-called "dissertation-year fellowships" are awarded competitively on a Division-wide basis, and there are not enough to go around. Though Philosophy students have often done well in this competition, there is no guarantee for the future; and, in any case, not all applications will be successful.

To be sure, supporting oneself without aid, while finishing up a dissertation, is a time-honored academic tradition. But, for most students, the available opportunities are far from deluxe (either inside or outside the University), and it is clearly wise to minimize one's dependence on them, if possible.

### 5. *Dissertation and Final Oral Exam*

When the Dissertation Committee judges that the dissertation is ready, it requests a final oral examination. Before taking the final exam, a student should submit:

- 15 copies of a 10-page abstract of the dissertation and
- one copy of the complete dissertation

The final oral examination should take place by the end of the sixth year at the latest. An exam cannot be scheduled for at least two weeks after the Dissertation Committee's formal request and the candidate's materials have been submitted.

### *Courses*

The following are a representative sample of the kinds of courses that will be offered in an academic year:

30000. Elementary Logic

J. Bridges

30610. Goethe: Literature, Science, Philosophy

R. Richards

30109. Introduction to Sartre's Being and Nothingness

J. Benoist

30209. Film Aesthetics: Agency and Fate in Film Noir

R. Pippin; J. Conant

30601. Goethe: Literature, Science, and Philosophy

R. Richards

30705. German Philosophy of Language

M. Forster

31009. Aesthetics

T. Cohen

31109. Topics in Philosophy of Science: Mechanism and Causation

B. Fogel

31209. Contemporary European Philosophy and Religion

A. Davidson

31210. Philosophy and Literature

T. Cohen

31414. Contemporary Analytic Philosophy

B. Callard

31600. Human Rights I

S. Fleischacker

32500. Biological and Cultural Evolution

W. Wimsatt, S. Mufwene

32900. Philosophy of Social Sciences

W. Wimsatt

32909. Relevance and Meaning: Philosophical and Empirical Issues in Pragmatics

D. Sperber

33801 Theory of Reference

J. Stern

33900. Austin & Grice

T. Cohen

34300. Evolutionary Theories of Mind and Morality: 19th-21st Century

R. Richards

34715. Nietzsche on Psychology and Morality

R. Pippin

34801. 18th & 19th Century Philosophy of Religion

D. Brudney

34209. Cicero's De Officiis (On Duties)

M. Nussbaum

35209. Emotion, Reason, and Law

M. Nussbaum

36109. Plato's Phaedo

G. Lear

37109. Plato on Desire

A. Callard

38209. Psychoanalysis & Philosophy

J. Lear; C. Vogler

39109. The Philosophy of Wilfrid Sellars

J. Conant

39600. Intermediate Logic I: Incompleteness

W. Tait

49700. Workshop: Preliminary Essay  
Director of Graduate Studies
49900. Reading and Research
50100. First Year Seminar  
J. Bridges
50009. Contemporary French Philosophy: The Final Foucault  
A. Davidson
50209. Heidegger: The Basic Problems of Phenomenology  
J. Haugeland
50309. Rawls on Justice  
M. Nussbaum
51109. Skepticism  
B. Callard
51209. Weakness of Will  
A. Callard
51309. From Individuality to Selfhood  
V. Descombes
51400. Self-Conscious/Unconscious  
J. Lear; S. Rödl
51200. Law and Philosophy Seminar  
M. Nussbaum
51509. Knowing-how and Knowing-that  
A. Ford
52300. Education and Moral Psychology  
M. Nussbaum
52909. Husserl on the Intentionality of Perception  
J. Benoist
53900. Wittgenstein Workshop  
J. Conant
53909. Hegel's Phenomenology of Spirit  
M. Forster
55410. Modern Sociological Theory  
H. Joas
51200. Law and Philosophy Workshop  
M. Nussbaum; B. Leiter
54909. 18th Century Moral Thought: Hutcheson, Hume, Smith  
D. Brudney
55909. Aristotle on Justice & Political Friendship  
A. Ford; G. Lear
56909. Kant's Critique of Pure Reason  
J. Conant; R. Pippin
59000. Contemporary Philosophy Workshop
59909. Practical Philosophy Workshop  
Ford; A. Callard; D. Brudney
59910. Ancient Greek and Roman Philosophy Workshop  
G. Lear, E. Asmis
53300. Semantics and Philosophy of Language Workshop  
J. Stern
- Modern Philosophy Workshop  
M. Forster

## DEPARTMENT OF ROMANCE LANGUAGES AND LITERATURES

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*Chair*

Philippe Desan

*Professors*

Frederick A. de Armas

Philippe Desan

Armando Maggi

Françoise Meltzer

Robert J. Morrissey

Thomas Pavel

Rebecca West

*Associate Professors*

Daniel Desormeaux

Agnes Lugo-Ortiz

Larry F. Norman

Mario Santana

Justin Steinberg

*Assistant Professors*

Kelly Austin

Daisy Delogu

Ryan Giles

Alison James

Alfredo Cesar Melo

Rocco Rubini

*Senior Lecturers*

Nadine Di Vito, College

Claude Grangier, College

Ana Maria Fiuza Lima, College

Maria C. Lozada, College

Janet Sedlar, College

Veronica Vegna, College

*Lecturers*

Antoni Bernadó i Mansilla

Lidwina Van den Hout-Huijben, College

*Emeritus Faculty*

Paolo Cherchi

René de Costa

Peter F. Dembowski

George Haley

James Lawler

Elissa Weaver

## PROGRAM

The Department of Romance Languages and Literatures offers undergraduate and graduate programs leading to a B.A., M.A. or Ph.D. in French, Italian, and Spanish literatures. These programs include the study of literary history, established and current critical methodologies, literary theory and analysis, Romance philology, the sociology of literature, literature and history, literature and art, literature and film, cultural studies, and foreign language acquisition and pedagogy. An innovative program was developed to increase the number of graduate-level courses co-taught by experts from different languages who are investigating topics that extend beyond traditional disciplinary boundaries. This initiative led to the establishment of the Department's Renaissance and Early Modern Studies program, which began accepting graduate candidates in 2008-2009.

The Department has developed a unique program of theoretical and practical teacher training in Romance languages and literatures. All Ph.D. students are funded with fellowships that allow them to gain teaching experience in the undergraduate language program - first as course assistants (lectors), then as autonomous lecturers once their own course work is completed. This system allows for a high degree of professional training and competitive funding, without distracting students from their graduate studies. Our one-year Master's program is designed to familiarize students with the literary history and major works of one or more of the Romance languages, and to provide the critical tools for literary and cultural analysis. Students with an M.A. degree from another institution generally enter the Ph.D. program directly. Ph.D. students enjoy a wide range of specialized department seminars on literature, literary theory, Romance linguistics, and bibliographic research.

Students in the Department are provided opportunities to broaden their knowledge in a variety of ways. Each language program offers students several programs for study and research abroad, and the Department invites distinguished scholars and writers from the United States and abroad to lecture and to teach. The France-Chicago Center—a Franco-American research institution dedicated to fostering contact among French and American students, professors, and professionals—organizes and sponsors conferences and colloquia, provides fellowships and travel grants, funds visiting faculty members from France, and organizes lectures. The Fulbright Distinguished Chair in Modern Italian Studies enables the Department to invite a prominent visitor from Italy each year; past visiting professors have included Roberto Antonelli, Laura Barile, Gianni Celati, and Gianpiero Brunetta. Each year, the Edward Larocque Tinker Visiting Professorship in Latin American and Iberian Studies brings prominent scholars and other professionals to the University for research and teaching.

We have brought poets, playwrights, novelists, and distinguished critics such as Jorge Edwards (Chile), Luciano Garcia-Lorenzo (Spain), Javier Lasarte (Venezuela), Graciela Montaldo (Venezuela), Nicanor Parra (Chile), and Anthony Stanton (México). Romance Languages and Literatures also benefits from faculty collaboration in the Department of Cinema and Media Studies, the committees on the History of Culture, Interdisciplinary Studies in the Humanities, and Social Thought, along with the centers for Gender Studies, Latin American Studies, and Race, Politics and Culture.

Students are also encouraged to participate in and coordinate graduate workshops. Some of the current workshops include Anthropology of Latin America and the Caribbean; European and American Avant-Gardes; Gay and Lesbian Studies; Gender and Society; Latin American History; Mass Culture; Medieval Studies; Modern France; Poetics Workshop; Renaissance Workshop; Reproduction of Race and Racial Ideologies Workshop; and Theater: Text, Society, and Performance. The Department features its own workshop on Western Mediterranean Culture.

Upon completion of the Ph.D., students have had great success in finding tenure-track positions at such institutions as Wesleyan University, The University of Pennsylvania, The University of Colorado, The University of Oregon, The State University of New York at Buffalo, Syracuse University, Victoria University of Wellington (New Zealand), and other excellent colleges and universities.

Further details regarding programs of instruction in each of the literatures or in combined degrees in Romance and other fields (Latin American Studies or Comparative Literature, for example), residency requirements, examinations, etc., can be found online at: <http://rll.uchicago.edu>.

The application process for admission and financial aid for all graduate programs in Humanities is administered through the divisional Office of the Dean of Students. The Application for Admission and Financial Aid, with instructions, deadlines and department specific information is available online at: <http://humanities.uchicago.edu/prospective/#admissions|the-application>.

Questions pertaining to admission and aid should be directed to [humanitiesadmissions@uchicago.edu](mailto:humanitiesadmissions@uchicago.edu) or (773) 702-1552. All correspondence and materials sent in support of applications should be mailed to:

The University of Chicago  
Division of the Humanities  
Walker, Suite 111  
1115 East 58th Street  
Chicago, IL 60637

### Courses

The listing below is a sampling of past departmental offerings. Courses are generally taught in the program language. However, certain classes are taught in English, either because they are required of all students in the

department or because they are more broadly conceived and appeal to a wider audience.

#### French

La Stylistique

L'écriture autobiographique au moyen âge

Topographie du classicisme

Diderot et l'atelier du roman

Baudelaire

Montaigne

Montesquieu and the Enlightenment

Georges Perec et l'Oulipo

Mallarmé

Rabelais

#### Italian

Saint Francis of Assisi and Franciscan Movement

Dante's Divine Comedy 1: Inferno

Dante: Opere minori

Dante's Divine Comedy 3: Paradiso

Dante's Divine Comedy 2: Purgatorio

Boccaccio: Opere minori

Boccaccio's Decameron

Italian Women Mystics

Il tardo Quattrocento fiorentino: il circolo di Lorenzo

Il poema epico-cavalleresco: Pulci

Il poema epico-cavalleresco: Ariosto

Petrarchismo

Torquato Tasso

Bruno and Campanella

Renaissance Love Treatises

European Fairytales and their Modern Rewritings

Il Seicento

Venetian Women Writers and the Woman Question

Settecento

Manzoni

Inventing Italy: From Romanticism to the Threshold of the Global Age

La Prosa del Tardo Ottocento e del Primo Novecento

Pinocchio's Afterlife in Modern and Contemporary Literature, Culture and Film

Gender and Genre in Contemporary Prose Fiction and Poetry

Montale's Cities: Genoa, Florence, Milan

Creative Couples and Collaboration in Twentieth-Century Literature and Film

Pasolini

**Portuguese**

Books of Disquiet

Fernando Pessoa

Gentle Peoples

Introduction to Brazilian Film

**ROMANCE LANGUAGES & LITERATURES**

Romance Philology

Theory of Literature

Foreign Language Acquisition and Training

Renaissance and Early Modern Studies

Don Quixote

Renaissance and Baroque Fairy Tales and their Modern  
Rewritings

Renaissance Philosophy of Love

**SPANISH**

Introducción al análisis literario

El teatro en la Corte de Felipe IV

Ekphrasis from Terence to Calderón

Literatura y crimen

Ficción y representación: el discurso realista

Introducción al cine español

Narrativas de la Transición española

Literatura de las Americas: Whitman en Hispanoamérica

Poesía hispanoamericana escrita por mujeres

Introducción a la novela picaresca

Cervantes e Italia: sus primeras obras

Teatro y teatralidad medieval y preloquista

El mester de clerecía: 1200-1400

Literaturas del Caribe hispánico

Cultura y esclavitud en la América Hispana

El cautiverio en el imperio español

Mestizo Historiography

**DEPARTMENT OF SLAVIC  
LANGUAGES AND LITERATURES**

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*Chair*

Robert Bird, 2009-10

Lenore Grenoble, 2010-11

*Professors*

Victor A. Friedman

Lenore Grenoble

*Associate Professors*

Robert Bird

Bozena Shallcross

Malynne M. Sternstein

*Assistant Professors*

Lina Steiner

Senior Lecturers

Steven Clancy

Joanna Kurowska-Mlynarczyk

Valentina Pichugin

*Lecturers*

Yaroslav Gorbachov

Angelina Ilieva

Viktora Ivleva

Nada Petkovic Djordjevic

*Instructor & Mellon Postdoctoral Fellow*

Daria Khitrova

*Emeritus Faculty*

Howard I. Aronson

Bill Darden

Norman Ingham

Samuel Sandler

Frantisek Svejksky

Edward Wasiolek

*Associate Faculty*

Sheila Fitzpatrick, History

Paul Friedrich, Anthropology (emeritus)

Eric Hamp, Linguistics (Emeritus)

Matthew Jesse Jackson, Art History & Visual Arts

Boris Maslov, Comparative Literature

Mark Slouka, English Language and Literature

Yuri Tsivian, Art History, Comparative Literature &

Cinema and Media Studies

Adam Zagajewski, Social Thought

Tara Zahra, History

## PROGRAM DESCRIPTION

### THE GRADUATE PROGRAM

The A.M. and Ph.D. programs provide rigorous professional training in Slavic Languages and Literatures in a supportive and interdisciplinary atmosphere. Students study to become generalists in Slavic Languages and Literatures, while at the same time choosing from a variety of more specific areas within the broader field. Many students also take advantage of close ties with specialists in Russian History, Linguistics, Comparative Literature, Cinema & Media Studies, and Anthropology. The Department's academic program, faculty student mentoring, training in language pedagogy, and support for early publications have consistently produced fine scholars who have succeeded in the highly competitive academic job market.

### RUSSIAN LITERATURE

Courses in Russian literature and the arts are taught by internationally renowned faculty with a broad variety of specializations, from the classic Russian novel and symbolist poetry to Soviet cinema. In particular, the department aims to offer detailed coverage of the classical Russian literary tradition, from the eighteenth century to modernism and postmodernism, while developing innovative approaches to aesthetic works, informed in equal measure by contemporary theory and Russian intellectual history, from the Slavophiles and Westernizers to the Russian Formalist and Bakhtin. In the best traditions of the University of Chicago, the department seeks to bring the distinctive claims of Russian culture into a broader intellectual and cultural context.

### SLAVIC LINGUISTICS AND LANGUAGES

In addition to general courses and concentrations in East, West, and South Slavic Linguistics, the Department has tracks in Balkan Linguistics and Eurasian Linguistics. Language and linguistics oriented courses are available in Russian, Czech, Polish, Bosnian/Croatian/Serbian, Macedonian, and Bulgarian as well as Albanian, Georgian, Lak, Lithuanian, and Romani. Other Slavic and Eurasian languages are also covered in various linguistics courses. The option to pursue a joint degree in the Department of Linguistics broadens the opportunities for students in Slavic Linguistics.

### INTERDISCIPLINARY STUDIES

This cutting edge program offers broad preparation in the relationships among the visual arts, cinema, media, folk and popular culture, as well as Slavic and Balkan languages and literatures. The main thrust of the program is the study of the history and criticism of interdisciplinary approaches to literature and the visual arts. Other emphases include anthropology, and intellectual history.

### POLISH & CZECH AND SLOVAK STUDIES

Since its creation in 1962, the Department's Polish Studies Program has served as one of the eminent academic centers for Polish literature, culture, and linguistics in the United States. Like the Polish Studies Program, the Czech and Slovak Studies Program was founded in 1962. It has attracted prestigious speakers, lecturers and students since its inception, including Tomas Garrigue Masaryk and Edvard Benes. The program offers A.M. and Ph.D. degrees in Polish and Czech literature and linguistics. Support for Czech and Slovak language study is provided by annual awards from the Department's Procházka Funds.

## DEGREE REQUIREMENTS

The following is an abbreviated account of department requirements.

### LITERATURE:

**A.M.:** Nine quarter courses (including: proseminar SLAV 46000 Literary and Interdisciplinary Studies; Introduction to Slavic Linguistics; and at least three courses in the literature of specialization) and a comprehensive examination in the literature of specialization, based on a department reading list. This exam also serves as a Qualifying Examination for admission to the Ph.D. program. Students who intend to go on to the Ph.D. degree are encouraged to obtain reading knowledge of a second Slavic language.

**Ph.D.:** In addition to the courses required at the Master's level, students must take one course in the history of their language of specialization and one course in its structure. Remaining required courses will be those needed to prepare for the comprehensive examination. Before taking the comprehensive examination, students in literature must demonstrate a reading knowledge of one Slavic language in addition to their language of specialization; they must also have successfully completed at least one advanced seminar. The comprehensive examination is given in the following areas: (1) History of the literature in the principal language of specialization and (2) the literature of the second Slavic language or Slavic Linguistics. In exceptional circumstances the department will consider petitions to substitute for this requirement another field which is shown to be particularly relevant to the student's plan of work.

### LINGUISTICS:

**A.M.:** Nine quarter courses (including: Introduction to Slavic Linguistics; Structure of the major Slavic language; History of the major Slavic language, or Comparative Slavic Phonology; and two courses in literature or interdisciplinary studies), a demonstrated proficiency in reading a second Slavic language (this second requirement may be met by satisfactorily completing all work of a one year language course), and a comprehensive examination based on a departmental reading list. This exam serves also

as a Qualifying Examination for admission to the Ph.D. program.

**Ph.D.:** In addition to Slavic Linguistics, students may specialize in Balkan linguistics and can petition for a joint degree with the Department of Linguistics. Students must take one course beyond the two required for the M.A. in a Slavic literature or interdisciplinary studies. Students will also be expected to demonstrate knowledge of the principles of general linguistics. Successful passing of the Linguistics Department A.M. core courses will meet this requirement. Students may substitute a sequence of three additional courses in a Slavic literature or in interdisciplinary studies for the requirement in general linguistics. Students in Slavic linguistics will be required to demonstrate a reading knowledge of two additional Slavic languages, so that East, West, and South Slavic languages are all represented. Students with a field in Balkan linguistics may substitute a non Slavic Balkan for one of the Slavic languages. Remaining required courses will be those needed to prepare for the comprehensive examination. The comprehensive examination is given in the following areas: (1) Comparative Slavic and history and structure of the second Slavic language, or for students with special programs, a Balkan language. (2) The history and structure of the major Slavic language.

#### INTERDISCIPLINARY STUDIES:

**A.M.:** Nine quarter courses (including: proseminar SLAV 46000 Literary and Interdisciplinary Studies; Words and Images: Introduction to Interdisciplinary Approaches; and three additional courses in a Slavic or East European Literature, art and/or culture). In consultation with the program advisor, at the end of their first year, students will submit an A.M. paper (ordinarily based on a term paper) in partial fulfillment of the requirements for the degree. The paper also serves as a Qualifying Paper for admission to the Ph.D. program.

**Ph.D.:** Students must develop a plan of study by the end of their first year of study, to be approved by their A.M. Paper Committee, and in addition to the courses required at the master's level must take the following courses: one course in Slavic linguistics (i.e., Introduction to Slavic Linguistics, or a course in the history or structure of a Slavic or Balkan language); the advanced research seminar in Slavic and East European literatures; five approved courses in Slavic or East European arts and cultures; and a second Slavic Department language (1 year of study or reading knowledge). The comprehensive examination is given in the following manner. The field of the exams and their reading lists will be determined in consultation with the examining committee. 1) The major field examination, which covers the history of Slavic and East European arts and cultures as it pertains to the area of the student's dissertation project. 2) Their minor field in Slavic and East European arts and cultures.

#### REQUIREMENTS FOR ALL TRACKS:

**A.M.:** Reading knowledge of French or German, one quarter of Old Church Slavonic, and a test for advanced proficiency in speaking and writing the principal Slavic language.

**Ph.D.:** Reading knowledge of both French and German. Each candidate must write an acceptable dissertation that makes an original contribution to the advancement of knowledge in the field. Reading knowledge of a second Slavic language.

#### ADMISSIONS/FINANCIAL AID

The prerequisites for admission are a bachelor's degree or its equivalent and knowledge of written and spoken Russian or of another Slavic language in which the department offers advanced courses sufficient for graduate work, usually equivalent to four years of college study. Entering students are required to take a placement examination in their major Slavic language and to make up any deficiency in their preparation. Foreign students must provide evidence of English proficiency by submitting scores from either the Test of English as a Foreign language (TOEFL) or the International English Language Testing System (IELTS).

The application process for admission and financial aid for all graduate programs in Humanities is administered through the divisional Office of the Dean of Students. The Application for Admission and Financial Aid, with instructions, deadlines, and department specific information is available at: <http://humanities.uchicago.edu/prospective/#admissions|the-application>

Questions pertaining to admission and aid should be directed to [humanitiesadmissions@uchicago.edu](mailto:humanitiesadmissions@uchicago.edu) or (773) 702-1552. All correspondence and materials sent in support of applications should be mailed to:

The University of Chicago  
Division of the Humanities  
Walker, Suite 111  
1115 East 58th Street  
Chicago, IL 60637

#### CONTACT INFORMATION

For additional information about the Department of Slavic Languages and Literatures, please see <http://slavic.uchicago.edu/> or call (773) 702- 8033 or e-mail <[slavic-department@uchicago.edu](mailto:slavic-department@uchicago.edu)>.

#### *Courses*

Note: The following is sample listing of graduate courses that have been offered in the department.

The actual offerings for the year will be found in the quarterly Time Schedules (<http://timeschedules.uchicago.edu/>).

**General Slavic (SLAV)**

30100. Introduction to Slavic Linguistics  
Grenoble
30300. Intro: History and Culture of Central Asia  
Arik
30400. Contemporary Central Asia  
Arik
30600. Contact Linguistics  
Grenoble
30902. Intro to History and Culture of Armenia  
Haroutunian
31000. Comparative Slavic  
Gorbachov
31100. Comparative Slavic Morphology
31400. Oral Proficiency Testing  
Staff
31500. Teaching of Slavic Languages  
Clancy
31700. Introduction to Cognitive Linguistics  
Clancy
32000. Old Church Slavonic  
Friedman
32200. Linguistic Analysis of Old Slavic Texts  
Staff
32001. From Proto-Indo-European to Old Church Slavonic  
Gorbachov
32400. History of East Slavic Linguistics  
Gorbachov
33000. Language, Power, and Identity in Southeastern Europe  
Friedman
34000. Comparative South Slavic  
Friedman
34100. Comparative West Slavic Linguistics.  
Clancy
35100. The Individual Form and The Novel  
Steiner
36700. Left-Wing Art and Soviet Film Culture of the 1920's  
Tsivian
35500. Practicum in Teaching Slavic Literatures  
Staff
35900. Words & Images: Introduction to Interdisciplinary Approaches  
Shallcross
36100. Theories of Vision.  
Shallcross
36900. Narratives of Suspense in Russian/European Literature and Film  
Bird
37200. Modern Central European Novel  
Sternstein
38500. Slavic Critical Theory: from Jakobson to Zizek  
Sternstein
38600. Kitsch  
Sternstein
39800. The Idea of Europe in Realist Prose  
Steiner
40100. Seminar: Slavic Linguistics  
Gorbachov
40200. Translating Theory  
Kruger; Bird
46000. Pro-Seminar: Literary and Interdisciplinary Studies  
Steiner; Bird
- 30102/30202/30302. Advanced Russian Through Media - 1, 2, 3  
Pichugin  
Russian Languages and Literature (RUSS)
- 30100, 30200, 30300. Advanced Russian  
Pichugin
31500. Methods of Teaching Russian  
Staff
32201. Tolstoy's Late Works  
Bird
32302. War and Peace  
Steiner
32902. Classic Yiddish Fic: Sholem-Aleichem & Diasporic  
Schwarz
33001. Structure of Modern Russian  
Grenoble
33800. Mandel 'shtam and Celan  
Dolak
33900. Vladimir Nabokov's Lolita  
Sternstein
34300. Brothers Karamazov /Russian Culture  
Friedrich
34301. The Brothers Karamazov and the Bible  
Friedrich
34403. Russian Popular Culture  
Larsen
34405. Recent Russian Culture: 1985-Present  
Larsen
34500. Soviet Culture After Stalin: 1953 – 1968  
Larsen

35100. East Slavic Literature To 1300  
Gorbachov
35200. Early East Slavic Literature 1300-1600  
Gorbachov
- 35500/35600/35700. Introduction to Russian Literature I  
Staff
35501. Word, Image, Ritual: Early Russian Literature in Its  
Historical and Cultural Context  
Gorbachov
35700. Russian Lit from Modernism to Postmodernism  
Hill
36701. The Soviet Imaginary  
Bird
37001. Romanticism in Russia  
Steiner
37101. Gogol and Fantastic Realism  
Steiner
37500. Dostoevsky  
Bird
37702. 20th Century Russian Theater  
Larsen
37801. Dostoevsky's The Idiot  
Steiner
37900. Chekhov's Modernity  
Steiner
38400. Russian Symbolism  
Bird
38710. Russian Formalism  
Steiner
38901. Reading Russian  
Larsen
38902. War Stories: Violence in Russian Film & Fiction  
Larsen
39001. Poetic Cinema  
Bird
39600. Pale Fire  
Sternstein
39601. Narrative, Image, Thought  
Bird
45200. Seminar: Symbolism and Film  
Tsivian
47700. Bakhtin and Literature  
Staff
- Czech and Slovak Languages and Literatures (CZEC)**
- 10100, 10200, 10300. Elementary Czech  
Staff
- 20100, 20200, 20300. Second Year Czech  
Staff
32200. History of Czech and Slovak  
Staff
34500. Jaroslav Hasek's The Good Soldier Svejk  
Sternstein
36700. Czech New Wave Cinema  
Sternstein
37701. Franz Kafka: The Diaries  
Sternstein
37900. Jan Svankmajer and Contemporary Surrealism  
Sternstein
- Polish Language and Literature (POLI)**
- 10100, 10200, 10300. Elementary Polish  
K Mlynarczyk
- 20100, 20200, 20300. Second Year Polish  
K Mlynarczyk
- 30100, 30200, 30300. Advanced Polish  
K Mlynarczyk
32100. Structure of Polish  
Staff
32200. History of Polish  
Staff
35301. Gombrowicz: The Writer as Philosopher  
Shallcross
- 36000/36100/36200. Introduction to Polish Literature I, II,  
III  
Shallcross
39201. Traumatic Everyday; Holocaust in Polish Literature  
Shallcross
38101. Modern Polish Novel  
Shallcross
38600. Reading the Arch Text: Adam Mickiewicz's Master  
Taeuesz  
Shallcross
39000. Moments of Happiness  
Shallcross
39201. The Traumatic Everyday: The Holocaust in Polish  
Literature  
Shallcross
39400. Bodies, Things, Objects: An Interdisciplinary  
Inquiry  
Shallcross
- South Slavic Languages and Literatures (SOSL)**
30400. Comparative South Slavic  
Friedman

32200. History of SerboCroatian  
Staff

33100/33200. South Slavic I, II  
Grenoble/Gorbachov

34202/34302. Advanced Macedonian Language and  
Linguistics II, III  
Friedman

36500. Literature of the Balkan Non-Slavs in Twentieth  
Century  
Ilieva

36800. Balkan Folklore  
Ilieva

37200. Returning the Gaze: The Balkans and Western  
Ilieva

37300. The Burden of History  
Ilieva

37400. Magic Realist and Fantastic Writings from the  
Balkans  
Ilieva

37600. Cinema from the Balkans  
Ilieva

37610. Gender in the Balkans Through Literature and Film  
Ilieva

#### **Bosnian/Croatian/Serbian (BCSN)**

10100, 10200, 10300. Elementary Bosnian/Croatian/  
Serbian  
Petkovic

20100, 20200, 20300. Intermediate Bosnian/Croatian/  
Serbian  
Petkovic

30100, 30200, 30300. Advanced Bosnian/Croatian/Serbian  
Petkovic

#### **East European (EEUR)**

31000. Romani Language and Linguistics  
Friedman

34600. Structure of Lak  
Friedman

## DEPARTMENT OF SOUTH ASIAN LANGUAGES AND CIVILIZATIONS

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#### *Chair*

Gary Tubb

#### *Professors*

Muzaffar Alam  
Dipesh Chakrabarty  
Steven Collins  
Wendy Doniger  
Ulrike Stark  
Gary Tubb

#### *Visiting Professors:*

Velcheru Narayana Rao  
David Shulman

#### *Assistant Professors*

Yigal Bronner  
Thibaut d'Hubert  
Sascha Ebeling  
Rochona Majumdar

#### *Senior Lecturers*

Elena Bashir  
Philip Engblom  
Jason Grunebaum  
James Lindholm

#### *Lecturers:*

Mandira Bhaduri  
Nisha Kommattam

#### *Emeritus Faculty*

Kali Charan Bahl  
Ronald B. Inden  
Colin P. Masica  
C. M. Naim  
Frank E. Reynolds  
Clinton B. Seely  
Norman H. Zide

The following pages briefly describe the requirements of the Department's Ph.D. degree program, sources of financial aid for graduate students, and resources for the study of South Asia at the University of Chicago. Please also refer to the Departmental web pages for updated information. Degree requirements are set out in detail, but the notes on other topics found here are intended to provide only general introductions. Names, and phone numbers, e-mail and office addresses of Departmental and other University personnel mentioned in this Handbook will be found on the University websites.

## THE DEPARTMENT

The Department of South Asian Languages and Civilizations is a multidisciplinary department comprised of faculty with expertise in the languages, literatures, histories, philosophies, and religions of South Asia. The examination of South Asian texts, broadly defined, is the guiding principle of our Ph.D. degree, and the dissertation itself. This involves acquaintance with a wide range of South Asian texts and their historical contexts, and theoretical reflection on the conditions of understanding and interpreting these texts. These goals are met through departmental seminars and advanced language courses, which lead up to the dissertation project.

### ADVISERS

Students develop and pursue their individual programs in active consultation with members of the faculty. To advise students on their programs and progress overall, one faculty member acts as the Departmental Graduate Student Adviser (for name and contact details, see the Departmental web pages). Students are required to meet the Departmental Graduate Student Adviser regularly in order to have their academic program choices approved. The main advisory function will eventually be assumed by the dissertation chairperson. Students are encouraged to actively seek a faculty member of the Department of South Asian Languages and Civilizations to fill this role as soon as possible, at the latest before the preparation of the dissertation proposal. It is the responsibility of students to familiarize themselves with the requirements of the degree program. If they have any doubts regarding the requirements in general, or their specific applicability to their particular program, it is important to resolve them promptly in consultation with the Departmental Graduate Student Adviser. Students should also remember that advising is a joint process: they can only receive guidance when they ask for it.

### THE DEGREE OF DOCTOR OF PHILOSOPHY

To receive the degree of Ph.D. in South Asian Languages and Civilizations, a student must complete a minimum of 18 courses (the actual number of course may be higher depending on the language proficiency of the student). These include the required language courses, the 3 required Departmental seminars, and other courses relevant to the student's chosen specialty. The latter may include courses offered in other departments as well as in SALC. Students may not receive a grade of 'R' in any of the courses counted among the required 18 courses, and none of these may be an informal reading course.

Students with prior graduate work in South Asian languages and civilizations or those holding a relevant Master's degree may petition at the end of their first year to satisfy a portion of the 18-course requirement. Only courses

taken at accredited institutions will be accepted, and the petition will have to be approved by the Departmental Graduate Student Adviser.

Before being admitted to candidacy, Ph.D. students must, in addition to completing at least 18 courses, also fulfill the following requirements which are given in further detail below:

- meet general language requirements
- submit two qualifying papers
- formulate two reading lists and pass an oral examination based on them during the third year of study
- write and defend a dissertation proposal.

The Ph.D. is awarded following approval and successful defense of the completed dissertation.

Students normally take 3 to 5 years to complete all pre-dissertation. In no case will students be allowed to submit their dissertation after more than 12 years.

### LANGUAGE REQUIREMENTS

The Department encourages varied research devoted to the ancient, medieval, modern, and contemporary cultures of South Asia. All research in the department has as its main prerequisite suitable advancement in the languages appropriate to a student's chosen field of specialization. The languages in which the department offers concentrations are Bangla, Hindi, Malayalam, Marathi, Pali, Sanskrit, Tamil, Telugu, Tibetan, and Urdu. Persian and Arabic are also available through the Department of Near Eastern Languages and Civilizations. Courses may occasionally be offered in other languages; special arrangements must be made in advance with the instructors of these languages, and students must petition the Department in order to count these languages for their requirements.

Three languages are required: (i) the South Asian language of concentration (the major language); (ii) a second South Asian language relevant to the student's program of study (the minor language); and (iii) a third language of scholarship (e.g. French, German, Hindi, Japanese, etc.).

Students are required to achieve highest proficiency in their major language. Students who already possess knowledge of their major language should contact the language instructor for placement at the appropriate level. Two years of advanced language courses in the Department of South Asian Languages and Civilizations have to be attended regardless of the student's level of language competence.

In their minor language, students are required to achieve a proficiency equivalent to at least 2 years of formal study at the University of Chicago. Again, students who already possess knowledge of their minor language should contact the language instructor to determine the level of proficiency. Students who already possess a proficiency level equivalent to 2 years of formal study at the University of Chicago may

fulfill the requirement by taking an exam without prior coursework.

The student's selection of the major and minor language will have to be approved by the Departmental Graduate Student Adviser. While the choice of the major language will obviously depend on the student's research projects, students are strongly encouraged to consider for their minor language one that opens up new perspectives and that will help to gain a broader knowledge of South Asia. Students are expected to demonstrate satisfactory progress each quarter in the required language courses.

For the third language, the language of scholarship, students should choose a language on the basis of how useful it will be for their chosen field of study. They should be able to show that a significant body of scholarship has been or is being produced in that language. The choice of the language of scholarship has to be approved by the Departmental Graduate Student Adviser. Proficiency in reading the language of scholarship is assessed by an examination administered by the University Office of Test Administration or by the Department of South Asian Languages and Civilizations, as appropriate to the language in question. A High Pass is required.

#### REQUIRED DEPARTMENTAL SEMINARS

Competence in South Asian languages and civilizations is demonstrated as much by close familiarity with South Asian texts as by a broad knowledge of the plurality of South Asian practices and traditions. To this end the Ph.D. program includes three required departmental seminars. These seminars are taught in a two year cycle.

##### 1. & 2. Research Themes in South Asian Studies I and II (SALC40100/40200)

These two seminars will each approach a broad theme in South Asian studies from a perspective transcending any narrow focus on a specific language or region. The objective is to introduce students to current research themes and methods pertinent but not exclusive to the study of South Asia. Seminar topics could include South Asian court cultures, genres, material aspects of textual culture, poetic theories, political thought, translation practices, region in South Asia, etc. The two seminars will be offered in sequence every two years.

##### 3. South Asia as a Unit of Study (SALC40000)

This course aims to acquaint students with major historical and methodological questions pertaining to the field of South Asian languages and civilizations. Topics could include the history of Orientalism, colonial forms of knowledge, South Asia in a global context, etc. This course will be offered in alternate years.

#### QUALIFYING PAPERS

In their first year of study, students are required to submit a qualifying paper on a subject agreed upon with a faculty member. This paper should demonstrate the student's ability to write scholarly prose, to formulate a clear research argument, and to situate it within the context of secondary literature relevant to the topic. It must be submitted during the third week of the Spring quarter of the first year. The length of this paper is a maximum of 20 pages not including bibliography (12 pt font, double-spaced, with 1 inch margins). There are two grade categories for this first qualifying paper:

- No Pass
- Pass

In their second year of study, students are required to submit a second qualifying paper on a subject agreed upon with a faculty member. This paper should demonstrate the student's ability to formulate a research topic involving primary materials, to argue its importance and to situate it within a history of scholarship, to articulate the principal questions of theory and method relevant to this topic, and to present conclusions in a clear and precise manner. It must be submitted in the third week of the Spring quarter of the second year. The length of this second paper is a maximum of 40 pages (formatted as specified above). There are four grade categories for the second qualifying paper:

- No Pass
- Pass (with progress beyond the M.A. degree not permitted)
- Pass
- High Pass
- There are two readers for each of the qualifying papers. The second reader is appointed by the Chair of the Department. Upon successful completion of the two qualifying papers, students may apply for the M.A. degree. For the degree to be awarded, students must have completed, in addition to the qualifying papers, (1) at least two years of the major language; (2) the three-quarter sequence of departmental courses. There can be no outstanding Incomplete grades. It is very strongly recommended that students avoid Incomplete grades at all times.

#### READING LISTS AND ORAL EXAMINATIONS

While the program asks students to pursue specialized research in their area of concentration, it is essential that they do this in relation to a broad understanding of the cultural and historical context in which their objects of specialized study are situated. The Department therefore requires oral examinations on the basis of two reading lists in (1) a major area of study, and (2) a minor area of study.

The student's two reading lists are to be designed in consultation with one or more SALC faculty in a given area, and tailored to his or her individual needs. The first must deal with the literary, cultural or other history of the

student's major language. The second must pertain to an area of South Asian studies other than his or her field of concentration. The reading lists should not exceed twenty books and should constitute a serious, deep, and broad set of readings in important issues in the area of study. The relative weight of primary as opposed to secondary texts should be a matter of consultation between the student and the faculty member(s) concerned.

The two reading lists in their final form must be approved and signed by the faculty member(s) who supervised their preparation. An approved and signed copy of each will be deposited in the student's permanent file. These signed copies must be submitted to the departmental office by the end of the student's second year or the end of the fall quarter of the third year. It is the student's responsibility to ensure that the reading lists are filed in time.

The faculty members who approve the reading lists serve as examiners for the oral examinations, which are normally taken in the fall or winter quarter of the student's third year. The two exams are administered in one session; each is approximately 45 minutes long. One composite grade – 'No Pass', 'Pass', or 'High Pass' – is awarded for the oral examinations.

#### DISSERTATION PROPOSAL AND ADMISSION TO CANDIDACY

In order to be admitted to Ph.D. candidacy, a student must write and orally defend a detailed dissertation proposal prepared under the supervision of the dissertation chairperson. Students must have completed all requirements: at least 18 courses, including the three required departmental seminars, the language requirements, and the qualifying papers. All Incompletes and blanks on the student's transcript for required courses must have been removed and the new grade recorded in the Registrar's Office prior to the date of the proposal defense.

Note that, in accordance with Divisional and Departmental requirements, students must pass the examination in the language of scholarship before being admitted to candidacy. Furthermore, most of the grants which are available to support dissertation research require that a student be admitted to candidacy before taking up the grant.

The proposal should demonstrate a student's awareness of broad theoretical issues and a detailed knowledge of the chosen area of specialization. The dissertation proposal should be 20-25 pages in length. It should provide a clear statement of the scholarly problem to be addressed by the dissertation; the student's theoretical orientation to this problem; a review of previous scholarly work; a provisional outline of the dissertation as a whole; a plan of research, including archives to be consulted, research sites chosen, a timetable, and a bibliography of no more than two pages.

Prior to the proposal defense, the student and the dissertation chairperson (who must be a member of the

Department of South Asian Languages and Civilizations) select the two additional members of the student's dissertation committee. One of the two may be, with the approval of the Departmental chair, from outside the University. The third member must be a University faculty member but need not be a member of SALC. The proposal must be deposited in the form of a printed paper copy in the departmental office **at least two weeks prior** to the date of the defense, and an abstract of it must be circulated to all SALC faculty. It is the responsibility of the student to ensure that the proposal and the abstract are deposited by this deadline. The proposal is defended orally before the committee and the Department, with the Chair of the Department presiding; these proceedings are open to students and faculty of the University. One purpose of the proposal defense is to familiarize all the members of the Department with a student's research agenda, and provide an opportunity for them to offer guidance. With successful completion of the dissertation proposal defense, the student is admitted to Ph.D. candidacy.

#### THE DISSERTATION

It is expected that the dissertation will represent a substantial and original contribution to the study of South Asian languages and civilizations. Upon completion of the dissertation, the student defends it orally before the members of the dissertation committee, a Divisional Representative, and the Department, with the Chair of the Department presiding. Students will follow the guidelines of the University's Dissertation Office in planning the date of their defense, and in formatting the dissertation. See <http://www.lib.uchicago.edu/e/phd/>.

**Two weeks before** the scheduled defense, the student must submit a hard copy of the dissertation to each member of his/her committee and the departmental administrator. This task is solely the responsibility and expense of the student. This copy will be a complete, formatted dissertation, with the preliminary pages, main body of work, and end matter included in their entirety, and properly formatted. This copy of the dissertation should conform in every way to the requirements outlined by the University's Dissertation Office, with the single exception that it may be submitted to the Department and committee members on standard white paper, instead of the archival quality paper the Dissertation Office requires. The defense will be cancelled if these standards are not met.

The defense proceedings are open only to the University community. Grades awarded for the dissertation are "No Pass," "Conditional Pass," "Pass," and "Pass with Distinction." The "Conditional Pass" requires the student to make revisions and obtain the committee's final approval before the Departmental Approval Form will be signed. A vote of "Distinction" requires the unanimous recommenda-

tion of the dissertation committee and a majority vote of the faculty in attendance at the defense.

#### SOURCES OF FUNDING

The information given below lists the most common sources of fellowships and grants for graduate students in the Department. Students may also be eligible for other funding administered by the University, private foundations, or other agencies. For information on the full range of sources of support, contact the following:

##### *Office of Graduate Affairs*

Administration Bldg., Rm. 221-A

graduate-affairs@uchicago.edu

<http://grad-affairs.uchicago.edu/programs/index.shtml>

##### *Humanities Dean of Students Office*

Walker Museum, Ste. 111

humanitiesadmissions@uchicago.edu

<http://humanities.uchicago.edu/current/#grants>

#### FUNDING DURING COURSEWORK

##### *University-based Support*

**University funds** are awarded and administered by the Humanities Division. The Department faculty makes its recommendations to the Division based upon the student's record. There is no separate application for these funds beyond the initial application to the Department. The amount and duration of University-based support varies. As of 2007-08, many students will also have teaching service included in their funding packages. Questions concerning University-based support should be directed to the Departmental Graduate Student Advisor and/or the Humanities Dean of Students.

**FLAS Fellowships (Foreign Language and Area Studies Fellowships)** are another important source of funding. Recipients must be U.S. citizens or permanent residents, enrolled in at least one language course in the language of the award per quarter, and enroll in at least one course in an appropriate area or international studies subject during the academic year in which they hold a FLAS. Additional details regarding FLAS Fellowships may be found at the Office of Graduate Affairs web site. Qualifying languages taught in the Department are Bengali, Hindi, Malayalam, Marathi, Tamil, Telugu, Tibetan, Urdu, and when offered, Khowar and Panjabi. These fellowships currently cover tuition, health clinic fees, student activities fees, and carry a stipend of \$15,000 for three quarters. A competition for Summer FLAS fellowships for language study takes place concurrently; summer fellowships currently cover program tuition up to \$4000 and provide a stipend of \$2500. Summer FLAS fellowships may be used for eligible programs in the United States and abroad.

Contact Sally Noble, Assoc. Dir., South Asia Language and Area Center (snoble@uchicago.edu), for information.

Note that Summer FLAS Fellowships also may be available from the institution offering instruction (e.g., SASLI at UW, see below). Contact the institution sponsoring the program for information. Winter Quarter deadline.

#### LANGUAGE STUDY FELLOWSHIPS

**We strongly encourage all SALC students** to participate in a language study program in South Asia, and/or in the summer at the South Asian Summer Language Institute (SASLI) at the University of Wisconsin, at some time in their graduate career. Receipt of a fellowship for participation in a language program does not affect the total amount of your University funding; rather, the University postpones the funding until you return from your language study fellowship year or summer.

**The American Institute of Indian Studies (AIIS)** offers fellowships for its intensive nine-month language programs in India. See <http://www.indiastudies.org/AIIS.html> for details and a current list of the languages offered. AIIS summer language programs offer no funding for participants; students often obtain a summer FLAS fellowship through their home university. COSAS funding is also available for this purpose (see below). UC-Berkeley funds special fellowships for the AIIS Urdu program. See [http://southasia.berkeley.edu/fellowship\\_berkeley.php](http://southasia.berkeley.edu/fellowship_berkeley.php). For information, contact Elise Auerbach, Administrator for AIIS, (aiis@uchicago.edu). Winter Quarter deadline.

**The American Institute of Sri Lankan Studies (AISLS)** offers some minimal funding for language study in Sri Lanka. See <http://www.aisls.org/fellowship.html>. Rolling deadline.

**The Committee on Southern Asian Studies (COSAS).** Although primarily awarded for dissertation write-up (see below), COSAS fellowship support is also available for summer language study. For application information contact the Committee Office (Kelly 104, tel. 702-8637, snoble@uchicago.edu). Spring Quarter deadline.

**Critical Language Scholarships** are available for summer intensive language study with AIIS (see above) and the American Institute of Bangladesh Studies, for U.S. citizens. See <https://clscholarship.org/home.php>. Winter and Spring Quarter deadlines.

**The South Asia Summer Language Institute (SASLI)** at the University of Wisconsin-Madison offers FLAS fellowships through UW, with the usual FLAS citizenship restrictions, and Fee Remission Scholarships for which all students are eligible. See <http://sasli.wisc.edu/funding/index.htm>. Winter Quarter deadline.

#### PRE-DISSERTATION RESEARCH SUPPORT

**The Social Science Research Council (SSRC)**, despite its name, funds humanities projects as well, and offers a Dissertation Proposal Development Fellowship. See <http://www.ssrc.org/programs/dpdf/>. Winter Quarter deadline.

**The American Institute of Bangladesh Studies (AIBS)** offers a pre-dissertation fellowship for U.S. citizens or permanent residents. See <http://www.aibs.net/predisfel-lowship.html>. Contact AIBS for deadline.

**The American Institute of Sri Lankan Studies (AISLS)** offers a dissertation planning grant. See <http://www.aishs.org/diss-plan.html>. Fall Quarter deadline.

**The Committee on Southern Asian Studies (COSAS).** Although primarily awarded for dissertation write-up (see below), COSAS fellowship support is also available for pre-dissertation research. For application information contact the Committee Office (Kelly 104, tel. 702-8637, so-asian@uchicago.edu). Spring Quarter deadline.

### FUNDING FOR OVERSEAS DISSERTATION RESEARCH

These fellowships are for students admitted to Ph.D. candidacy. The following are the most common fellowships received by our students, and some South Asia-specific fellowships (as well as one Southeast Asia fellowship). There are several other fellowships for which graduate students in SALC are possibly eligible; see the Office of Graduate Affairs and the Humanities Dean of Students Office for complete databases and application information. Students should apply to as many relevant funding sources as possible.

**The American Institute of Bangladesh Studies (AIBS)** funds dissertation research in Bangladesh. See <http://www.aibs.net/juniorfellowship.html>. Winter Quarter deadline.

**The American Institute of Indian Studies (AIIS)** funds dissertation research in India. Note that the July 1 application deadline is approximately one year to one-and-a-half years prior to the time when a grant recipient would begin residence in India. See <http://www.indiastudies.org/>.

**The American Institute of Pakistan Studies (AIPS)** offers a fellowship for research on materials related to the history and culture of Pakistan in any country EXCEPT Pakistan and the U.S. See <http://www.pakistanstudies-aips.org/English/fellowships.htm>. Winter Quarter deadline.

**The Center for Khmer Studies (CKS)** offers a Ph.D. Dissertation Research Fellowship for work in Cambodia and neighboring countries. See <http://www.khmerstudies.org/fellowships/senior.htm>. Fall Quarter deadline.

**The Council of American Overseas Research Centers (CAORC)** offers a Multi-Country Research Fellowship for research of regional or trans-regional significance. Fellowships require scholars to conduct research in more than one country, at least one of which hosts a participating American overseas research center. See <http://www.caorc.org/fellowships/multi/>. Winter Quarter deadline.

**Fulbright-Hays Dissertation Fellowship** for research in non-Western countries. See <http://www.ed.gov/programs/iegpsddrap/index.html>. Students apply through the University Office of Graduate Affairs. See [\[grad-affairs.uchicago.edu/programs/fulbright.shtml\]\(http://grad-affairs.uchicago.edu/programs/fulbright.shtml\). Fall Quarter deadline.](http://</a></p>
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**Fulbright U.S. Student Program (through IEE).** This program funds U.S. citizens conducting research abroad. See <http://www.iese.org/Template.cfm?section=fulbright1>. Students apply through the University Office of Graduate Affairs. Contact Advisor Brooke Noonan, brookec@uchicago.edu. Fall Quarter deadline.

**The Nicholson Center for British Studies, University of Chicago.** This Center offers a short-term graduate fellowship for UC graduate student research in the British Isles and Ireland, generally for three months or fewer. Those who research the former British Empire are eligible. Applicants have to demonstrate their need to conduct research in the British Isles and/or Ireland. See <http://british.uchicago.edu/fellowships.html#gradtravel>. Spring Quarter deadline.

**The Social Science Research Council (SSRC),** despite its name, funds humanities research and offers an International Dissertation Research Fellowship. See <http://www.ssrc.org/programs/idrf/>. Fall Quarter deadline.

### DISSERTATION WRITE-UP FELLOWSHIPS

Please consult the Office of Graduate Affairs and the Humanities Dean of Students Office for information about external fellowships for the dissertation write-up period.

The University offers several fellowships for dissertation write-up which our students have received in recent years, namely, the **Franke Institute**, the **William Rainey Harper**, the **Mellon Foundation**, and the **Whiting** dissertation-year fellowships. These are residential fellowships which require presence on campus. The Department nominates students for these fellowships, and the competitions are administered by the Humanities Dean of Students Office. **Note that students are not eligible for the Franke, Harper, and Whiting Fellowships beyond the tenth year of their program. For the Mellon, students beyond their sixth year are ineligible.** See <http://humanities.uchicago.edu/current/#grants> for information.

**The Martin Marty Center** at the Divinity School offers a dissertation fellowship that may interest SALC students. See [http://divinity.uchicago.edu/martycenter/fellowships/marty\\_dissertation.shtml](http://divinity.uchicago.edu/martycenter/fellowships/marty_dissertation.shtml) for application information.

### EXTERNAL FELLOWSHIPS

Please consult the Office of Graduate Affairs and the Humanities Dean of Students Office for information about external fellowships for the dissertation write-up period. In recent years some SALC students have received the following fellowship:

**The American Association of University Women Dissertation Fellowship.** Available to U.S. citizen/permanent resident women who will complete their dissertation writing during the fellowship period. Scholars

engaged in researching gender issues are encouraged to apply. See [http://www.aauw.org/fga/fellowships\\_grants/american.cfm](http://www.aauw.org/fga/fellowships_grants/american.cfm). Fall quarter deadline.

**The Andrew W. Mellon Foundation/ACLS Dissertation Completion Fellowships.** Awardees can generally hold this Fellowship no later than their seventh year. See <http://www.acls.org/ecfguide.htm#text2>. Fall quarter deadline.

#### CONFERENCE GRANTS

SALC students are encouraged to organize panels and present papers at annual conferences such as the University of Wisconsin Annual Conference on South Asia, the annual meetings of the Association of Asian Studies, the American Academy of Religion, the American Historical Association, and the Modern Language Association, and their regional conferences, and conferences abroad, if possible. The following are some funding sources for travel to conferences for students presenting papers.

**The American Institute for Sri Lankan Studies** offers travel stipends for two annual conferences. See <http://www.aisls.org/fellowship.html>

**The Division of the Humanities** offers a Conference Grant. See <http://humanities.uchicago.edu/current/#grants|conference-travel>.

**The Office of Graduate Affairs** offers the Harrison-Doolittle Conference Grant. See <http://grad-affairs.uchicago.edu/programs/doolittle.shtml>.

### TEACHING OPPORTUNITIES FOR GRADUATE STUDENTS IN THE DEPARTMENT

As of 2007-08, many students will be required at some point to hold three Teaching Assistantships and two Lectureships, usually beginning in their third year. For Lectureships, preference is given to Ph.D. candidates. Students should discuss these arrangements with the GSA and the student's committee chair, but an overview of teaching opportunities and teaching development resources is given below.

**Departmental courses** provide the major venue for teaching. The two-quarter undergraduate course "Introduction to South Asian Civilizations" regularly involves the participation of one or more graduate students as Teaching Assistants, and sometimes as Lecturers. The T.A.s and Lecturer/s are selected by the faculty coordinators for the course, usually late in the spring quarter of the preceding academic year. Departmental faculty teaching language courses also sometimes hire graduate students as Teaching Assistants and Lecturers. Students may teach a course of their own devising as a Lecturer; this arrangement must be coordinated and approved by the Department Chair, who will contact students about proposals for such.

Students may teach a course of their own devising through competitive "prize seminars" offered by the **Stuart Tave Teaching Fellowships** and **Whiting Undergraduate**

**Teaching Fellowships.** The Department nominates students for these fellowships. Students can also apply for the Tave through The Center for Gender Studies (see <http://gender-studies.uchicago.edu/grad/teaching.shtml>).

Students are also encouraged to pursue teaching opportunities not directly related to South Asian studies, such as positions in the **University Writing Program** (see <http://writing-program.uchicago.edu/jobs/index.htm>). We especially encourage students to pursue the position of Writing Intern in the Humanities Common Core courses through this program. Being a Writing Intern (functionally a T.A.) in these courses provides valuable generalist experience for the job market.

Consult the Humanities Division Dean of Students for information about other teaching opportunities in the University's Graham School and Chicago generally.

For students teaching beyond their service requirements for their funding, or students who enrolled in the Ph.D. program before 2007, the T.A. positions currently offer a quarterly stipend of \$1500; Lectureships offer a quarterly stipend of \$3500.

The University sponsors workshops and forums designed to help graduate students develop pedagogically. Contact the **Center for Teaching and Learning** (see <http://teaching.uchicago.edu/>). The **South Asian Language Research Center**, housed at the University, also offers workshops on South Asian language pedagogy targeted towards advanced graduate students interested in language instruction (see <http://salrc.uchicago.edu/>).

#### LIBRARY RESOURCES

Over 610,000 volumes of books, journals, government documents, maps, pamphlets, films, and sound recordings from all parts of the South Asian subcontinent are housed in the University of Chicago Library system. Publications are available on all aspects of South Asian life and culture, in all major western languages as well as in over thirty languages from all the nation-states of the subcontinent.

In addition to the Library's on-line catalog ([www.lib.uchicago.edu](http://www.lib.uchicago.edu)), area-specific informational resources can be found at the Southern Asia Collection website, [www.lib.uchicago.edu/e/su/southasia](http://www.lib.uchicago.edu/e/su/southasia). A subpage of this site offers cataloging for the 21,000 volumes of Official Publications of the Government of India, deposited with the Regenstein by the British Library: [www.lib.uchicago.edu/e/su/southasia/off-pubs.html](http://www.lib.uchicago.edu/e/su/southasia/off-pubs.html).

Office of the Southern Asia Collection, Regenstein Library, Room 560. Bibliographer: James H. Nye, [jnye@uchicago.edu](mailto:jnye@uchicago.edu). Southern Asia Collection staff members are available for consultation in Regenstein 560 Monday through Friday from 9:00 a.m. to 5:00 p.m. You are encouraged to consult with the South Asia Librarian, Jim Nye, or one of his staff members, to discuss research needs for your dissertation project.

Following is a list of South Asia-related materials in the Regenstein Library and elsewhere on and near campus:

South Asia Reference Collection, Regenstein Fifth Floor Reading Room (RR5) on the far east side. This collection includes some 4,000 reference tools for most South Asian subjects (bibliographies, indexes, census volumes, gazetteers, atlases, dictionaries, standard histories, etc.), plus a selection of current journals, and daily newspapers.

South Asia Pamphlet Collection, housed on the south wall of RR5 in vertical files for which a key is available in Room 560 during office hours; collection includes several thousand pamphlets, off prints, unpublished conference papers, reading lists and other ephemera; holdings are listed in special catalog drawers marked by yellow tape in the fifth floor South Asia card catalog.

Map Collection, JRL 370, includes thousands of maps of all parts of South Asia at various scales, and from various periods.

Audio-visual materials. These include 16-mm films, videos, audio cassettes, DVDs, etc. Many are in the Regenstein collection catalogue, especially audio recordings of a wide variety of South Asian music. A few South Asian film resources are available at the Film Studies Center. A small library of audio-visual materials is available for check out to graduate students from the South Asia Outreach Office in Kelly Hall.

The nearby Center for Research Libraries (<http://catalog.crl.edu/>) holds multiple resources, including films from the important South Asia Microform Project. These can be obtained through Interlibrary Loan, or at the CRL Reading Room itself, at 6050 S. Kenwood Avenue (see <http://www.crl.edu/content.asp?l1=1&l2=2>).

#### *Courses:*

Bangla (BANG)

10100, 10200, 10300

First-Year Bangla - Mandira Bhaduri

20100, 20200, 20300

Second-Year Bangla - Mandira Bhaduri

30100, 30200, 30300

Third-Year Bangla - Thibaut D'Hubert

40100, 40200, 40300

Fourth-Year Bangla - Thibaut D'Hubert

47900, 48000, 481000

Readings: Advanced Bangla -Thibaut D'Hubert

#### **Hindi (HIND)**

10100, 10200, 10300

First-Year Hindi - Jason Grunebaum

20100, 20200, 20300

Second-Year Hindi – Jason Grunebaum

30100, 30200, 30300

Third-Year Hindi – Ulrike Stark

40100, 40200, 40300

Fourth-Year Hindi – Ulrike Stark

47900, 47901, 47902

Readings: Advanced Hindi – Ulrike Stark

#### **Malayalam (MALA)**

10100, 10300, 10300

First-Year Malayalam - Nisha Kommattam

20100, 20200, 20300

Second-Year Malayalam - Nisha Kommattam

#### **Marathi (MARA)**

10100, 10200, 10300

First-Year Marathi - Philip Engblom

20100, 20200, 20300

Second-Year Marathi - Philip Engblom

#### **Pali (PALI)**

10100, 10200, 10300

First-Year Pali - Steven Collins

20100, 20200, 20300

Second -Year Pali - Steven Collins

#### **Sanskrit (SANS)**

10100, 10200, 10300

First-Year Sanskrit – Yigal Bronner

20100, 20200, 20300

Second-Year Sanskrit – Gary Tubb, Wendy Doniger, Daniel Arnold

30100, 30200, 30300

Third-Year Sanskrit - Yigal Bronner, Gary Tubb

40100, 40200, 40300

Fourth-Year Sanskrit - Yigal Bronner, Gary Tubb

47900, 47901, 47902

Readings: Advanced Sanskrit - Yigal Bronner, Gary Tubb

#### **Tamil (TAML)**

10100, 10200, 10300

First-Year Tamil - James Lindholm

20100, 20200, 20300

Second-Year Tamil - James Lindholm

30100, 30200, 30300

Third-Year Tamil - Sascha Ebeling

40100, 40200, 40300

Fourth-Year Tamil - Sascha Ebeling

47900, 47901, 47902

Readings: Advanced Tamil - Sascha Ebeling

**Telugu (TLGU)**

10100, 10200, 10300

First-Year Telugu – Velcheru Narayana Rao

30100, 30200, 30300

Third-Year Telugu – Velcheru Narayana Rao

30400. Classical Telugu – Velcheru Narayana Rao

**Tibetan (TBTN)**

10100, 10200, 10300

First-Year Tibetan – Staff

20100, 20200, 20300

Second-Year Tibetan - Staff

**Urdu (URDU)**

10100, 10200, 10300

First-Year Urdu - Elena Bashir

20100, 20200, 20300

Second-Year Urdu - Elena Bashir

30100, 30200, 30300

Third-Year Urdu – Muzaffar Alam

40100, 40200, 40300

Fourth-Year Urdu – Muzaffar Alam

47900, 47901, 47902

Readings: Advanced Urdu – Muzaffar Alam

**SALC (General)**20100. Introduction to the Civilization Of South Asia-I -  
Muzaffar Alam20200. Introduction to the Civilization of South Asia-II-  
Rochona Majumdar20400. The *Mahabharata* in English Translation - Wendy  
Doniger

30500. Film in India - Rochona Majumdar

33101. Love, Intimacy, and Conjuality in South Asia and  
Africa – Rochona Majumdar, Jennifer Cole35400. Introduction to the Study of Tibetan Religion –  
Matthew Kapstein37701. Mugal India: Tradition and Transition - Muzaffar  
Alam37702. Greco-Arabic Thought in the Persian and Indo-  
Muslim Worlds, Muzaffar Alam, Vasileios Syros37905. Love (Sacred and Profane) in India (Ancient and  
Modern) - Wendy Doniger

38305. Hindu Mythologies of Evil - Wendy Doniger

40100. Critics of Inequality and Power in Modern India -  
Rochona Majumdar

42603. Telugu Literature - Velcheru Narayana Rao

48300. Issues in India Esoteric Buddhism - Christian  
Wedemeyer

48310. Mahayana Sutra Literature - Christian Wedemeyer

48400 Seminar: Buddha Nature - Matthew Kapstein

48402. Yogacara Texts: The *Mahayanasamgraha* - Daniel  
Arnold

50200. Subaltern Studies - Dipesh Chakrabarty

50401. Postcolonial Theory and Beyond - Dipesh  
Chakrabarty, Leela Gandhi

50405 Difficult Pasts - Dipesh Chakrabarty

60100. Teaching South Asia - Steve Collins

39900. Informal Reading Course: South Asia - SALC  
Faculty

49900. Thesis Research: South Asia - SALC Faculty

## DEPARTMENT OF THE VISUAL ARTS

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### *Chair*

Elizabeth Helsinger, English, Art History

### *Professors*

Charles Cohen, Art History

Laura Letinsky, Cinema and Media Studies

### *Assistant Professors*

Tania Bruguera

Matthew Jesse Jackson, Art History

Jason Salavon, Computation Institute

David Schutter

Catherine Sullivan

### *Harper Schmidt Fellow*

Geof Oppenheimer

### *Senior Lecturer*

Judy Hoffman, Cinema and Media Studies

### *Affiliates*

Bill Brown, English

Darby English, Art History

W.J.T. Mitchell, English, Art History

Rebecca Zorach, Art History

### *Associates*

Susanne Ghez, Renaissance Society

Stephanie Smith, Smart Museum

### *Emeritus Faculty*

Herbert George

Vera Klement

Thomas Mapp

Robert C. Peters

The University of Chicago offers a Master of Fine Arts degree through the Department of Visual Arts, located at Midway Studios. Our MFA student body comprises artists working in sculpture, photography, painting, print making, installation, performance, video and new media. Our faculty has expertise across all these specific areas and students work with all faculty. We admit students to the program based on the quality of their art and their interest in working in an interdisciplinary program within a university environment. We believe that art is not an isolated activity and that students/artists benefit from the cross fertilization of daily contact with others dealing with similar sets of issues across different disciplines and media. Art is a cultural product and, as such, we encourage students to explore not only the artistic issues pertinent to their work, but the theoretical, social and historical ones as well.

During the eighteen course program, which normally requires two years in residence (six quarters), students will pursue individual courses of study under the guidance of their advisors.

Although registration and the recording of courses and grades will conform to standard University practices, the program is designed to provide a flexible structure. Studio investigations will continue through the entire period, augmented by quarterly course selections in other academic disciplines. Individual programs will be formulated with advisors and with the concurrence of the Graduate Student Advisor. But programs may well change in method, media and advisors as students develop their focus of inquiry.

In their two year program of study, MFA students take three specially designed seminars that facilitate the investigation of their own artistic language and the development of community. First and second year students work together to sharpen their skills of critical thinking and writing, and to examine the social and economic aspects of contemporary artistic practice, as well as its theoretical, critical and art historical contexts. Students come to the program with diverse intellectual, cultural and artistic backgrounds as well as different practices. They work together to articulate a common language with which to discuss and make art in a critical and supportive community. Through the examination of their own visual vocabulary and intellectual underpinnings, students develop their analytical and creative skills. As a component of students' intellectual and creative research they are required to take classes in areas other than DOVA. This includes class offerings through the College which are listed in the undergraduate course catalog as well as other relevant advanced seminars listed both through DOVA and other departments including: Early Video Art 1968 1979, The Skyscraper, Frankfurt School on Cinema, Modernity, and Mass Culture, Kitsch, and Sound Theory/Sound Practice.

Throughout the academic year we have a lively schedule of visiting artists. These visitors come to Midway Studios anywhere from a few days to a whole quarter and speak about their own work as well as critique student work. The University of Chicago provides an enormously rich intellectual environment and students will find engaging lectures and workshops on a daily basis, especially in some of the interdisciplinary programs such as the Center for Gender Studies, the Center for the Study of Race, Politics, and Culture, the Mass Culture Studies Workshop, the Department of Cinema and Media Studies, the Department of Art History, and so on. Workshops that focus on professional and pedagogical issues are also offered periodically both by DOVA and by Career and Placement Services to assist students in everything from preparing to find a teaching job to pursuing artistic representation in galleries and museums. Exhibiting one's work and curating are strong topics of interest and courses are offered that examine alternative, traditional,

and critical practices. Each spring, DOVA helps support a faculty led weekend tour of museums, galleries and studios in New York City.

Students meet individually with all resident faculty throughout each quarter to discuss his or her practice. This discussion varies from specific technical, formal, and conceptual issues to more general dialogue as suggested by the student and the work. In addition to these weekly meetings each student participates in two quarterly group critiques that bring faculty, students, and invited guests together to look at, question, and offer constructive criticism. In this public forum, faculty and fellow students offer fresh perspectives and try to bring new insight to the work. This combination of individual and public critiques facilitates students' understanding of their own and others practice and are part of a supportive critical atmosphere that characterizes the Midway experience.

## CURRICULUM

Listed below are the basic requirements for the degree of Master of Fine Arts. A more detailed description of these requirements is available from the department. The choice of these courses will be determined by the student and his/her advisor, with the concurrence of the Graduate Student Advisor.

1. Studio courses (9). Students are not required to concentrate in any particular medium. However, their selection of studio art courses should reflect a central focus and a continuous development during their course of study. Entering students will meet as a class during the first quarter. This presents an opportunity to present work in progress and begin to develop a common critical language.

2. **GRADUATE SEMINAR** (3). In order to provide a core of common intellectual experience, each student is required to take a specially designed series of three seminar courses which will focus on perception, the social context of practice, and issues in contemporary theory and criticism.

3. Electives (6). These courses may include any combination of art history, other University, or studio courses, although no more than three may be studio based.

4. Standards of performance. Each graduate student must maintain high standards of studio and academic performance, including evidence of substantial growth in their work. The faculty will review performance on a quarterly basis.

In the final quarter of the two year program degree candidates

Select a committee to assist with the preparation of a final project and artist talk. Exhibitions take place at the University gallery or an alternate location proposed by the student. This exhibition will be defended orally and requires approval of a majority of the faculty committee chosen to review it. A Master of Fine Arts statement that clearly articulates a position on issues central in importance

to each student's life in the creative arts must be submitted and approved by a faculty committee.

Admission to the program is highly selective. Candidates must demonstrate well developed abilities in dealing with ideas in the visual arts. A broad preparation in the history of art is required as well as a clear indication of the candidate's capacity to participate in the academic aspects of the program.

For additional information, please email: [dova@uchicago.edu](mailto:dova@uchicago.edu) or see us online: <http://dova.uchicago.edu>.

## INFORMATION ON HOW TO APPLY

The application process for admission and financial aid for all graduate programs in the Humanities is administered through the divisional Office of the Dean of Students. The Application for Admission and Financial Aid, with instructions, deadlines and department specific information is available online at: <http://humanities.uchicago.edu/prospective/#admissions> | [the-application](#)

Questions pertaining to admissions and aid should be directed to The University of Chicago.

## THE DIVISION OF THE SOCIAL SCIENCES

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*Dean*  
John Mark Hansen

*Deputy Dean and Master of the Collegiate Division*  
Elisabeth Clemens

*Dean of Students*  
Patrick Hall

*Associate Dean of Students*  
Don Dunbar

*Assistant Dean of Students*  
Kelly Pollock

The Division of the Social Sciences includes the departments, committees and programs which are engaged particularly in the study of human beings in social and temporal contexts; the origins, development, and structure of institutions and ideas, and the relationships between individuals and among groups of individuals. Research and instruction, which are strongly interdisciplinary, focus on interpreting the complexity of human experience through time and explore the interactions between diverse peoples and the world in which they live.

The division welcomes as students potential researchers, scholars, and teachers, as well as those who seek in the social sciences the enrichment of their cultural preparation for the appreciation of life. The division awards the degrees of Master of Arts and Doctor of Philosophy. The division also cooperates in the undergraduate programs leading to the degree of Bachelor of Arts awarded by the College. Students seeking the Bachelor of Arts degree should consult the College's publication, *Courses and Programs of Study*.

Programs leading to the Ph.D. are offered by the Departments of Anthropology, Comparative Human Development, Economics, History, Political Science, Psychology, and Sociology, as well as the Committees on Social Thought and the Conceptual and Historical Studies of Science Programs leading to the A.M. are offered by the Committee on International Relations, the Program in Latin American and Caribbean Studies, the Program in Middle Eastern Studies, and the Master's Program in the Social Sciences.

### ADMISSION TO THE DIVISION

The Division of the Social Sciences considers for admission to its graduate programs students who have a minimum of a bachelor's degree from an accredited college, or equivalent training. Students apply for admission to the division

through the Office of the Dean of Students in the Division of the Social Sciences; applications are subsequently evaluated by the faculties of the various programs.

### DEGREES

#### MASTER OF ARTS

The degree is awarded for competence in a field of study, not solely for satisfactory completion of a set number of courses.

The general requirements for the master's degree are as follows:

1. In programs that recommend only the awarding of the master's degree, at least nine courses and three quarters of residence in the division. In departments and committees that recommend the awarding of the Ph.D. degree, at least three full time quarters (or their part time equivalent) of Scholastic Residence.
2. Completion of the program of study and other requirements prescribed by the student's department or committee.
3. In almost all departments and committees, presentation of an acceptable master's research paper or thesis.
4. In certain departments and committees, satisfactory performance on a final comprehensive examination.
5. Any additional requirements set by the separate departments or committees.

#### DOCTOR OF PHILOSOPHY

The degree of Doctor of Philosophy is awarded for mastery of subject matter and demonstration of research capacity, not solely for completion of a set number of requirements.

The general requirements for the Doctor of Philosophy degree are:

1. Residence requirement and program requirements. Students in all Ph.D. degree programs must be registered in accordance with the University Doctoral Residence System. Students must complete the requirements set by their particular academic programs (including courses, seminars, research work, and examinations). These requirements vary from program to program within the division. Portions of the program requirements may sometimes be satisfied on the basis of equivalent work done at other institutions or in other units of the University. The student's department or committee determines whether previously earned academic credit and degrees will be accepted as partial fulfillment of program requirements.
2. Admission to candidacy at least eight months before the date the degree is to be conferred. The student is admitted to candidacy by the dean of students upon the recommendation of the student's depart-

ment or committee after completion of the following requirements:

- (a) Completion of the work required for a master's degree even if the formal A.M. degree is not taken.
  - (b) Successful performance on the departmental preliminary examination(s), if required. Ordinarily, this is taken after the completion of the first year of work.
  - (c) Approval by the department or committee of a dissertation proposal and a program of research.
  - (d) Satisfactory completion of any additional requirements set by the separate departments or committees.
3. Doctoral dissertation. The candidate is expected to submit to the department or committee an acceptable doctoral dissertation which makes an original contribution to knowledge within the field of inquiry. This step is necessary before the final oral examination is scheduled.
  4. The final oral examination and defense of the dissertation.

## MASTER OF ARTS PROGRAM IN THE SOCIAL SCIENCES

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### *MAPSS Executive Committee Director*

John J. MacAloon, Social Sciences

### *Associate Director*

Chad Cyrenne, Social Sciences

Ralph Austen, History

Dipesh Chakrabarty, South Asian Languages and  
Civilization

Elisabeth Clemens, Sociology

Bertram J. Cohler, Human Development

Jean Comaroff, Anthropology

Michael P. Conzen, Geographical Studies

Raymond D. Fogelson, Anthropology

Morris Fred, Social Sciences

Rachel Fulton, History

Alan Kolata, Anthropology

Susan Goldin Meadow, Psychology

Gary Herrigel, Political Science

Bruce Lincoln, Divinity

Omar McRoberts, Sociology

Howard Nussbaum, Psychology

Richard Taub, Human Development and Sociology

### *Earl S. Johnson Instructors*

Barnaby Riedel, Human Development

Avinash Sharma, History

### GENERAL INFORMATION

The Master of Arts Program in the Social Sciences (MAPSS) is a one year program of graduate studies leading to the A.M. (Masters of Arts) degree. MAPSS offers a wide variety of disciplinary and interdisciplinary opportunities for advancing academic or career goals, while allowing flexibility unusual among graduate programs. MAPSS makes the resources of a great university available for student-centered and highly individualized programs of graduate study. Each student works closely with the director and an assigned preceptor on all aspects of the program, from designing a customized curriculum, to defining the area of scholarly research, to writing the master's paper. MAPSS provides every student with a vibrant and collaborative intellectual community and core course training in social science theory and methodology. Students choose seven additional courses from the full range of regular doctoral and graduate professional offerings of the departments and committees of the Division of the Social Sciences and of the other divisions and professional schools of the University. A dual A.M./M.A. degree with the University of Chicago Harris School of Public Policy is also available.

The program is well suited for those who wish either to take advantage of the resources of several disciplines to study a problem or area of interest, or to strengthen their training and achievement in a single discipline. Some MAPSS students acquire skills and knowledge for careers that make use of the social sciences; others prepare for further graduate work or professional training. The program further provides students an opportunity to explore fields in the social sciences in which they may have little background before making a major professional or educational commitment.

MAPSS offers sophisticated counseling and application support to students who confirm their vocations for doctoral or professional school study. MAPSS graduates have received and presently pursue doctorates in all of Chicago's social science departments and committees, as well as Ph.D., J.D., and M.D. degrees in the various professional schools. They are likewise welcomed into advanced study at other major research institutions in the U.S. And abroad.

Graduates of the program also enter or return to a wide range of careers for which the A.M. is increasingly the entry level degree. Such careers include community organizing, contract research, business consulting, teaching, counseling, publishing, health care, government service, public affairs, nonprofit administration, arts and museum curation. A national network of MAPSS alumni, in concert with the University's office of Career Counseling and Placement Services, enthusiastically assists current students in identifying career possibilities and securing challenging positions.

### PRECEPTORS

Students work closely with one of the preceptors in the Master of Arts Program in the Social Sciences. Preceptors guide students in defining their areas of academic specialization as well as in choosing courses. Preceptors also assist students in selecting faculty sponsors for their A.M. papers and take an active role in guiding and evaluating the research and writing of these papers.

#### Program Requirements and Course Work

Students in the Master of Arts Program in the Social Sciences are expected to complete nine graduate level courses with a minimum grade average of B, and a master's paper that must be approved by both a faculty sponsor and a MAPSS preceptor.

#### Course Work

The nine courses must include the core course and meet the methods requirement, as described below. The core course, *Perspectives in Social Science Analysis*, provides a critical understanding of the major theoretical approaches used by professional social scientists. It supplies all MAPSS students with a common technical vocabulary and evens out their foundational preparations across the various disciplines. Because *Perspectives* is offered only in the Autumn

Quarter, students may not begin the MAPSS program in any other quarter.

Students must also fulfill a social sciences methods requirement. MAPSS offers courses in historical, ethnographic and political theory methods. Survey research methods courses are sponsored by the Division of Social Sciences. Dozens of other methods courses from statistics and policy methods to interview and case study methods are available to fulfill the requirement in any given year. Students may also fulfill the requirement by demonstrating prior methods course work.

Courses are selected with the guidance and approval of a MAPSS preceptor and the MAPSS director. The full time graduate student registers for three courses each quarter, and completes the nine course requirement in three quarters.

### THE MASTER'S PAPER

Students write the paper under the supervision of a regular faculty member in the University and a preceptor, both of whom provide a written evaluation and a letter grade upon its completion. The Master's paper may be based upon: empirical research testing a social science hypothesis or deploying a specified social science perspective; a theoretical critique of existing social science literature on a selected topic; systematic survey or evaluation research; or any other topic acceptable to the faculty sponsor, the preceptor, and the program director. During the winter quarter, preceptors hold regular thesis proposal writing workshops. Any faculty member from any school, division, or department of the University may serve as the thesis paper sponsor. In any two academic years, as many as 240 individual faculty members supervise MAPSS papers.

A selection of M.A. paper titles may further suggest the range of research interests accommodated within the MAPSS program.

"Democratic Leadership in Athens and its Role in Thucydides Political Thought."

"Holocaust Representation and Memory: The United States Holocaust"

"Memorial Museum, Washington, D.C. And the Belt Hashoah Museum of Tolerance, Los Angeles."

"The Cloning Debate: A Cultural Psychology of Morality."

"Joint Attention, Attention, and Word Learning."

"Queer Nation and the Use of Culture and Symbolism in Contemporary Social Movements."

"Mothers of Capital: the Intersection of Globalization, Naturalization, and Indian Immigrants in Chicago's South Asian Diaspora."

"Learning to Listen: An Investigation into Variables that Augment Perceptual Learning."

"The Gift Horse: International Post Disaster Aid Reconstruction and its Hidden Consequences."

- "Everyday Work: The Moral Economy of a Bosnian Black Market."
- "Post Philosophical Politics in a Literary Culture: A Critique of Richard Rorty's Twenty first Century Narrative."
- "Multinationals, Labor, and the Chinese State: A Comparative Case Study of Motorola and McDonald's in China."
- "Sacred Travel Sites in Cyberspace."
- "Resolving Trauma Through the Truth and Reconciliation Commission."
- "What Does Neuroscience Reveal About the Phenomenon of Freud's Compulsion to Repeat?"
- "Chinese and Creole, an Identity in Transition: The Chinese community and Associations in Jamaica, West Indies."
- "To Make Georgia Howl: Just War Theory and the Strategy and Tactics of William Tecumseh Sherman, 1861 65."
- "Toward the Eradication of the Trafficking of Women: Rectifying Rights and Rescue in Theory and Practice."
- "Beyond the Pale of Sovereignty: the Problem of Indigenoussness as the Basis of Citizenship in the Post Colonial African State."
- "Truman, MacArthur and the Untold Story: 1949 1951."
- "Vertebral Wedging of the Lumbar Vertebrae in Primates: Possible Evolutionary Implications for Bipedal Locomotion."
- "The Application of UN Refugee Policy: A Case Study of Tanzanian Refugee Policy toward Burundian Refugees from 1993 2002."
- "Labor Unions in a Global Economy: Changes, Challenges, and Opportunities."
- "Psychological Distress and its Relation to Ethnic Identity among Korean American Youth in Chicago."
- "British Public Opinion and Open Diplomacy During the Greek War of Independence, 1821 1829."
- "The Public Housing Reform Act of 1998: A Case Study in the Creation of Public Policy in America."
- "Mourning, Memory and Memorialisation: Gender and First World War Commemoration in Britain and France, 1918 1929."
- "Lost Souls the Persistence of Traditional Belief in Haitian Immigrants Perceptions of Mental Illness."
- "The Political Economy of Finance and Corporate Reform in East Asia."
- "American Indian Powwows in the 21st Century: Creating Cultural and Ethnic Identity and Community through Dance."

## ADMISSION

Applicants for the Master of Arts Program in the Social Sciences are expected to meet the graduate admissions requirements of the division. Submission of Graduate Record Examination (GRE) scores is required. Applicants from non- English speaking countries must provide evidence of English proficiency by submitting scores from either the Test of English as a Foreign Language (TOEFL) or the International English Language Testing System (IELTS).

MAPSS is designed to be completed in one academic year (three or four quarters on a full time basis). All financial aid is merit based, and the MAPSS program offers partial tuition scholarships on a highly competitive basis. Persons with flexible daytime schedules may make part time arrangements, but such students will not be eligible for financial aid.

## HOW TO APPLY

The application process for admission and financial aid for all Social Sciences graduate programs is administered through the divisional Office of the Dean of Students. The Application for Admission and Financial Aid, with instructions, deadlines and department specific information is available online at: <https://grad-application.uchicago.edu/>

Questions pertaining to admissions and aid should be directed to [admissions@ssd.uchicago.edu](mailto:admissions@ssd.uchicago.edu) or (773) 702-8415. All correspondence and materials sent in support of applications should be mailed to:

The University of Chicago  
 Division of the Social Sciences  
 Admissions Office, Foster 105  
 1130 East 59th Street  
 Chicago, IL 60637.

For additional information about the program, contact the MAPSS departmental office at: 773-702-8316, visit the MAPSS webpage at: <http://mapss.uchicago.edu> or send an e-mail to [mapss@uchicago.edu](mailto:mapss@uchicago.edu).

You may also contact E.G. Enbar, Student Affairs Administrator at: 773-702-8312 or [egenbar@uchicago.edu](mailto:egenbar@uchicago.edu).

## MASTER OF ARTS IN LATIN AMERICAN STUDIES

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### *Director*

Dain Borges

### *Associate Director*

Josh Beck

Please see entry for Center for Latin American Studies for the list of the Latin American Studies faculty committee, also available at <http://clas.uchicago.edu>.

The Center for Latin American Studies administers a Master of Arts degree Program in Latin American Studies. The Master of Arts Program is a one year program of graduate studies that provides students with thorough knowledge of the cultures, history, politics, and languages of the region. Students benefit from various resources that put the University of Chicago at the forefront of research and scholarship on Latin America, including world renowned faculty, top quality library resources, graduate workshops, and field research grant opportunities. Please see the Center for Latin American Studies entry in the Graduate Announcements for full details on Center resources. The Center also administers a Bachelor of Arts (major and minor) in Latin American Studies (for details please see <http://clas.uchicago.edu/programs/>).

The master's program attracts students who benefit from interdisciplinary training in a highly individualized and flexible program. Each student works closely with faculty and the program advisor to design a customized curriculum, define an area of scholarly research, and write a master's paper. Students take advantage of the program's flexibility to advance their academic and/or career objectives before making a major professional or educational commitment. Some students approach a research interest from a multi disciplinary perspective. Others strengthen their training in a single discipline as it relates to Latin American Studies, or explore new fields.

Through the Masters Proseminar, the required common core of the master's program, students gain a critical understanding of the major theoretical approaches, principal research methods, and current trends in Latin American Studies. During the winter quarter of the Proseminar students develop the proposal for their master's paper. The master's paper is meant to demonstrate the student's ability to apply formal training in Latin American Studies toward a specific and original research problem. Primary Latin Americanist faculty at the University of Chicago serve as guest lecturers in the Proseminar to introduce students to their research.

The master's program provides students with the opportunity to develop and enhance skills and knowledge appro-

priate for careers related to Latin America or as preparation for further graduate work or professional training. Graduates of the program enter or return to careers for which the master's degree is increasingly an entry level requirement, including secondary and higher education, government, business, and various cultural organizations and nonprofit agencies. Others enter doctoral and professional degree programs with support and advice from Latin American Studies staff and faculty.

### ADMISSION TO THE MASTER'S PROGRAM

Prospective students to the Master of Arts Program in Latin American Studies may apply to the Program through the Division of the Social Sciences or the Division of the Humanities and will receive the degree from the division through which they have been admitted.

### INFORMATION ON HOW TO APPLY

The application process for admission and financial aid for all Social Sciences graduate programs is administered through the divisional Office of the Dean of Students. The Application for Admission and Financial Aid, with instructions, deadlines and department specific information is available online at: <https://grad-application.uchicago.edu/>

Questions pertaining to admissions and aid should be directed to [admissions@ssd.uchicago.edu](mailto:admissions@ssd.uchicago.edu) or (773) 702-8415. All correspondence and materials sent in support of applications should be mailed to:

The University of Chicago  
Division of the Social Sciences  
Admissions Office, Foster 105  
1130 East 59th Street  
Chicago, IL 60637

Foreign students must provide evidence of English proficiency by submitting scores from either the Test of English as a Foreign Language (TOEFL) or the International English Language Testing System (IELTS).

Students who wish to earn a Ph.D. degree should apply to a degree program in one of the graduate departments or committees in the Division of the Humanities or the Division of the Social Sciences. Foreign students should be advised that, in the United States, completion of a master's degree program is generally not a required prerequisite to entering a Ph.D. program.

### PROGRAM REQUIREMENTS

Upon entering the program, students will work under academic direction of the CLAS Associate Director to develop a specific program of study, cultivate their research interests, and identify a faculty advisor for their master's paper. The basic components of the master's program are described below.

## LANGUAGES

A fundamental requirement of the program is proficiency in one of the spoken languages (other than English) of Latin America and the Caribbean. This requirement normally will be met in Spanish or Portuguese. However, substitution of an Amerindian language (such as Aymara, Yucatec Maya or Nahuatl) or a language spoken in the Caribbean, such as French, is permissible with the approval of the program advisor. Petitions for substitution will be evaluated in light of the student's prior competency and curricular program and the adequacy of instructional resources in the substitute language. Proficiency examinations will be administered to evaluate the entering student's language skills. Students usually meet the language requirement through the proficiency examination in Spanish or Portuguese.

## COURSE REQUIREMENTS

The standard course requirement is nine quarter courses, to be met as follows: the M.A. Proseminar in Latin American Studies; five courses in Latin American and Caribbean Studies, and three elective courses. Students are expected to fulfill the language requirement through proficiency examination, and complete the master's program in three quarters of course work. In consultation with the program advisor, the student will select three elective courses suited to individual curricular interests. These courses may be selected from the offerings in the divisions and professional schools of the University. Non degree graduate level courses at the University completed prior to admission to the master's program may be used in fulfillment of elective requirements, upon approval of the program advisor.

Credits towards the Master of Arts in Latin American Studies must be taken at the graduate level (courses designated as 30000 or above). However, certain lower level courses may be accepted, at the discretion of the program advisor. All course requirements can be met in three academic quarters.

## THE MASTER'S PAPER

In addition to the course requirements outlined above, every master's degree candidate is required to submit a master's paper. This paper is meant to demonstrate the student's ability to apply formal training in Latin American and Caribbean studies toward a specific research problem developed over the course of the program. The research and writing of this paper will be conducted under the guidance of a faculty advisor. A student may register for the course Master's Paper Preparation, which is arranged on an individual basis with the faculty advisor for the project. This course, while optional, may be counted as one of the five required Latin American Studies core courses.

### *Courses*

Courses pertinent to the Latin American area are offered through the individual departments and committees of the

Divisions of the Social Sciences and the Humanities, and through the University's professional schools. Please refer to the listings in these Announcements and in the quarterly Time Schedules for specific offerings. Additionally, special courses are offered by senior visiting Latin Americanist faculty through the Center's Tinker Visiting Professorship. Each quarter the Center compiles a comprehensive list of Latin American and Caribbean courses to be offered at the University available at <http://clas.uchicago.edu/courses.shtml>.

For additional information about the Master of Arts in Latin American Studies program, please see <http://clas.uchicago.edu> or call (773) 702-8420.

## MASTER OF ARTS IN MIDDLE EASTERN STUDIES

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*Director*

Fred Donner

*Associate Director*

Rusty Rook

*Project Assistant*

Traci Lombré

*Public Education Project Director*

Alexander Barna

Please see entry for Center for Middle Eastern Studies for the list of Middle Eastern Studies faculty, also available at <http://cmes.uchicago.edu>.

The Center for Middle Eastern Studies offers an interdisciplinary Master of Arts program designed for students who wish to use their knowledge of the Middle East in careers other than university teaching and research. The program is also suitable for students considering an academic career who have not had the appropriate academic background for direct entrance into a doctoral program. Language and area studies preparation may be supplemented by relevant course work in a professional school or department. Students may be admitted to the Master of Arts program in either the Division of the Social Sciences or the Humanities and will receive the degree from the division through which they have registered. Students with significant previous training in Middle Eastern or Islamic studies who wish to earn a doctoral degree leading to careers in research and college or university teaching should apply for admission directly to one of the graduate doctoral departments or committees of the University.

### ADMISSION

Applicants for the Master of Arts in Middle Eastern Studies are expected to meet the graduate admission requirements of the University and of the division to which they apply. In addition, applicants to the Middle Eastern Studies program must submit an academic writing sample. Foreign students must provide evidence of English proficiency by submitting scores from either the Test of English as a Foreign Language (TOEFL) or the International English Language Testing System (IELTS).

Students are encouraged to enter the program in the autumn quarter. Although the program is designed for full time students, applications from those who can attend only on a part time basis will be considered.

## HOW TO APPLY THROUGH THE DIVISION OF THE SOCIAL SCIENCES

The application process for admission and financial aid for all Social Sciences graduate programs is administered through the divisional Office of the Dean of Students. The Application for Admission and Financial Aid, with instructions, deadlines and department specific information is available online at: <https://grad-application.uchicago.edu/>

Questions pertaining to admissions and aid should be directed to [admissions@ssd.uchicago.edu](mailto:admissions@ssd.uchicago.edu) or (773) 702-8415. All correspondence and materials sent in support of applications should be mailed to:

The University of Chicago  
Division of the Social Sciences  
Admissions Office, Foster 105  
1130 East 59th Street  
Chicago, IL 60637.

### PROGRAM REQUIREMENTS

Only courses taken for a quality grade count toward fulfilling the requirements. No P or R grades will be accepted.

The requirements are satisfactory completion of:

- Six quarters of a Middle Eastern language (through at least two year proficiency);
- One quarter core colloquium, Approaches to the Study of the Middle East;
- Three quarters of an approved integrated Middle Eastern survey course such as Introduction to Islamic Civilization, or History of the Islamic Middle East, 600 to the Present;
- Seven courses in relevant electives;
- One course in thesis preparation, or reading and research;
- A master's thesis.

The Master of Arts program (including the core methodology course and a three quarter survey course, six quarter language courses and three or four relevant electives) offers a joint degree option with the Harris School of Public Policy Studies or the Graduate School of Business. A student may earn the M.P.P. in Public Policy or the M.B.A. along with the A.M in Middle Eastern Studies in an integrated joint program normally requiring a total of three years of study.

### LANGUAGE

Placement examinations will be given so that entering students may register for courses at the appropriate level of instruction.

Students who elect to study Arabic will concentrate on the modern literary language. Students who elect to study Persian, Turkish, or Hebrew will concentrate on the modern and contemporary idiom.

## MIDDLE EASTERN STUDIES

All students in the A.M. program are required to take the core colloquium Approaches to the Study of Middle East (Center for Middle Eastern Studies 30001; History 58001). Students must enroll in one of the two following three quarter sequences: Introduction to Islamic Civilization (Near Eastern History and Civilization 31000, 31100, 31200) or History of the Islamic Middle East (History 35700, 35800, 35900; Near Eastern History and Civilization 30621, 30622, 30623). Those with previous work in Islamic studies will be advised to substitute, where appropriate, more advanced and specialized courses in the field.

## ELECTIVES

In consultation with advisers, students select courses providing instruction in skills related to their future careers. These courses may be in research methodology; statistics; cross cultural, demographic, or economic analysis; or computer training. They may be selected from the offerings of departments in the graduate divisions, such as the Departments of Economics, Statistics, or Sociology; or of the professional schools, such as the Graduate School of Business, the Law School, the Harris School of Public Policy Studies or the School of Social Service Administration.

Students are strongly encouraged to consider participating in the University Writing Program (Little Red Schoolhouse).

## MASTER'S THESIS

Students are required to submit a master's thesis that should deal with a problem relevant to the student's intended career and should give evidence of the specialized disciplinary aspects of his or her training. The student's program adviser and a faculty member with special interest in the subject of the paper will guide the research and writing of the paper and judge whether it exhibits proof of competence in the field. During the writing of the paper, the student will register for a thesis preparation or reading and research course. The thesis title will be listed on the student's transcript.

## COURSES

Consult in these Announcements and in the quarterly Time Schedules the listings of the Departments of Art History, Anthropology, English Language & Literature, History, Music, Near Eastern Languages & Civilizations, Political Science, Sociology, South Asian Languages & Civilizations, and the Committee on Geographical Studies.

## DEPARTMENT OF ANTHROPOLOGY

---

### *Chair*

Judith B. Farquhar

### *Professors*

Jean Comaroff  
 John L. Comaroff  
 Judith B. Farquhar  
 Raymond D. Fogelson  
 Susan Gal  
 John D. Kelly  
 Karin Knorr Cetina, Sociology  
 Alan L. Kolata  
 Kathleen D. Morrison  
 Michael Silverstein  
 Russell H. Tuttle

### *Associate Professors*

Michael Dietler  
 Joseph P. Masco  
 William T.S. Mazzarella  
 Stephan Palmié  
 Adam T. Smith

### *Assistant Professors*

Hussein Ali Agrama  
 Julie Y. Chu  
 Shannon Dawdy  
 Kesha D. Fikes  
 François G. Richard  
 Robin A. Shoaps

### *Lecturer*

Maria Cecilia Lozada Cerna  
 Mark Lycett

### *Emeritus Faculty*

Manuela Carneiro da Cunha  
 James W. Fernandez  
 Leslie G. Freeman  
 Paul Friedrich  
 McKim Marriott  
 Nancy D. Munn  
 Ralph W. Nicholas  
 Marshall D. Sahlins  
 Raymond T. Smith  
 George W. Stocking, Jr.  
 Michel Rolph Trouillot  
 Terence S. Turner

Anthropology seeks an understanding of human nature, society, and culture in the widest comparative and historical framework. The department's teaching program

provides Ph.D. training for research workers and teachers in the various branches of anthropological science. Lectures, tutorial guidance, laboratory instruction, and research seminars provide opportunities for advanced study in sociocultural and linguistic anthropology and archaeology. Course work, but not a graduate degree program, is also offered in physical anthropology.

The purpose of the department is the advancement of anthropological research; this goal is achieved in the graduate program by the development of creative scholars and scientists. The various educational guidelines that are established from time to time by the department as a whole as well as by the particular specialized fields are intended to aid in this development. All programs, however, are designed to be adaptable to the specific needs and research interests of individual students. Graduate students are encouraged to go forward as rapidly as previous preparation and special powers permit. The identification of specific research problems and the pursuit of these problems through the writing of original papers are skills that are emphasized and fostered as early as possible. This experience develops gradually into the substantial research project that is undertaken for the doctorate.

Graduate students and faculty in the department regularly participate in a large number of interdisciplinary workshops. Some are regional (e.g., African Studies; Anthropology of Europe; Anthropology of Latin America and the Caribbean; Art and Politics of East Asia; East Asia: Society, Politics and Economy; East Asia: Transregional Histories; Interdisciplinary Approaches to Modern France; Latin American History; Middle East History and Theory; Rethinking Traditional China; and Theory and Practice in South Asia; Visual and Material Perspectives on East Asia), some thematic (e.g., Interdisciplinary Archaeology; Ancient Societies; Built Environment; Clinical Ethnography; Comparative Colonialisms; Culture, Life Course, and Mental Health; Education; EthNoise: The Ethnomusicology Workshop; Gender and Sexuality Studies; Human Rights; Interdisciplinary Christianities; Mass Culture; Political Communication and Society; Race and Religion: Thought, Practice, and Meaning; Reproduction of Race and Racial Ideologies; Science, Technology, Society and the State; Semiotics: Culture in Context; Social Processes and Institutions in Urban Space; Social History; and Sociologies and Cultures of Globalization), and some theoretically oriented (e.g., Contemporary Philosophy; History, Philosophy and Sociology of Science; Political Theory; Social Theory).

Graduate students beyond the first year may serve as course or laboratory assistants, and later, as lecturers in College programs. The department also awards Starr Lectureships each year, on a competitive basis, to advanced graduate students. Starr Lecturers teach courses on their

areas of specialization in the anthropology concentration in the College.

For additional information about the Department of Anthropology and the interests of its faculty members, please see: <http://anthropology.uchicago.edu>

## HOW TO APPLY

The application process for admission and financial aid for all Social Sciences graduate programs is administered through the divisional Office of the Dean of Students. The Application for Admission and Financial Aid, with instructions, deadlines and department specific information is available online at: <http://grad-application-e.uchicago.edu>

Questions pertaining to admissions and aid should be directed to [admissions@ssd.uchicago.edu](mailto:admissions@ssd.uchicago.edu) or (773) 702-8415. All correspondence and materials sent in support of applications should be mailed to:

The University of Chicago  
Division of the Social Sciences  
Admissions Office, Foster 105  
1130 East 59th Street  
Chicago, IL 60637.

Foreign students must provide evidence of English proficiency by submitting scores from either the Test of English as a Foreign Language (TOEFL) or the International English Language Testing System (IELTS).

## PROGRAMS OF STUDY

### SOCIOCULTURAL AND LINGUISTIC ANTHROPOLOGY

Sociocultural anthropology is concerned with the investigation of human society, culture, and the human relation to nature through intensive ethnographic investigation and wide ranging comparison. It is closely related to the other generalizing social sciences and to the interpretive disciplines of the humanities. Cross disciplinary study is encouraged; graduate students in anthropology often include courses from related fields in their programs.

The Ph.D. program in sociocultural and linguistic anthropology has three prefield phases, each normally designed as one year's work, although under certain circumstances accelerated progress through the later phases is possible.

Phase I introduces the student to the development of social and cultural theory and to the scholarly interests of the faculty in the department. First year students also take courses in particular specialist areas of ethnography and theory in order to frame research interests in preparation for the dissertation project. Course requirements in the first year include The Development of Social and Cultural Theory (two double courses) and Introduction to Chicago Anthropology. In addition students take four other courses dealing with their areas of interest selected in consultation with the first year advisor. The requirements of Phase I apply to all entering graduate students, regardless of

whether they hold a master's degree in anthropology from another institution.

Phase II training is directed toward acquiring a deeper knowledge of the special area and theoretical topics on which research will be focused, as well as toward obtaining a broader anthropological understanding in preparation for the Ph.D. qualifying examination. With the exception of those whose master's theses from elsewhere are approved by the department, every second year student completes a master's paper during that year. The Ph.D. qualifying examination is normally taken during the spring of the second year or the autumn of the third year. The department also requires all students in sociocultural and linguistic anthropology to take the course in Anthropological Research Methods and to demonstrate competence in a foreign language by achieving a High Pass on a University foreign language reading examination, preferably by the end of the second year. The language will be specified by the student's advisory committee.

Phase III is a pre research training period during which the student hones a dissertation proposal and grant applications and develops advanced research skills. Upon fulfillment of all pre dissertation academic requirements and the acceptance of the dissertation proposal at a hearing in the department, the student is admitted to candidacy for the Ph.D. degree and proceeds to research and/or field work and the writing of the dissertation.

The linguistic anthropologist is concerned with phonetic, phonological, grammatical, semantic, and paralinguistic systems and with their relations to social, cultural and personal ones. A student who chooses linguistic anthropology as the major sub field within the Department of Anthropology should prepare at least one sub field each in linguistics and anthropology and satisfy the language requirement. Students of linguistic anthropology are generally advised to take at least six courses in technical linguistics.

### JOINT DEGREE IN ANTHROPOLOGY AND LINGUISTICS

In addition to linguistic anthropology as a sub field within the Department of Anthropology, there is also a joint Ph.D. program available to students who are admitted first to the Department of Anthropology and subsequently to the Department of Linguistics. Joint degree students complete the requirements of both departments, including distinct introductory and advanced courses stipulated by each, the departmental qualifying examinations in appropriate special fields, and the language requirements, including additional foreign languages for the Linguistics Ph.D. The student's dissertation advisory committee consists of three or more members of the faculty; at least one must be a member of the Department of Anthropology but not the Department of Linguistics, and at least one in Linguistics

but not in Anthropology. After approval for hearing by the advisory committee, the student's dissertation proposal must be approved in a hearing open to the faculty of both departments, and similarly for the final defense of the single doctoral dissertation that the student writes.

Admission to the Joint Degree Program in Anthropology and Linguistics cannot be approved until at least the second year, after successful completion of the core (first year) coursework and examinations in Linguistics, although students should declare interest in the joint program on the graduate application and to the chair of the Department of Anthropology and to the linguistic anthropologists soon after arriving on campus.

### ARCHAEOLOGY

The archaeology program emphasizes the comparative study of complex societies throughout the world grounded in a close articulation of archaeology, history and sociocultural anthropology. The program stresses the integration of social and cultural theory in the practice of archaeology and, in particular, forges strong links with the historical anthropology that is one of the recognized strengths of the department. In addition to preparing archaeology students for anthropologically informed fieldwork and interpretation, an important element of this interdisciplinary approach is the inauguration of a training program offering students the methodological skills and theoretical grounding necessary to undertake innovative ethnoarchaeological research.

Current faculty strengths include archaeology of Latin America (focusing on the later prehistory and colonial periods of the Andes and Mesoamerica), the United States (focusing on the historical/urban archaeology of New Orleans and Birmingham, creole societies, race and ethnicity, material culture), Europe (from the Paleolithic to the Celtic Iron Age), the Near East (from the Neolithic through the conquests of Alexander), Eurasia (from the early bronze age through the Scythian era), South Asia and Oceania (state formation in South India, agricultural intensification, precolonial and early colonial periods), and southwest Asia (from late prehistory to late antiquity) as well as ethnoarchaeology in Africa and experimental archaeology in South America. Associated faculty at the Oriental Institute and in other University departments specialize in complex societies of the Near East, Egypt, Greece, Rome, and China.

Research interests include: urbanism, state formation, imperialism, colonial interaction, industrialization, art and symbolism, spatial analysis, politics, ritual and religion, human environment interactions, agricultural systems, material culture, economic anthropology, political economy and the socio historical context and politics of archaeology. Faculty members in archaeology have major, ongoing field research projects in Armenia, Bolivia, Peru, France, India,

Spain, Syria, and the southern & southeastern United States and also have research interests in Kenya and Hawaii.

The archaeology program requires that students complete a total of 18 courses to qualify for the Ph.D., some of which may be reading and research in the field of specialization. Students normally enroll in nine courses per year during their first two years in the program. Within the first two years, students will complete five required courses that are designed to provide a comprehensive grounding in social and cultural theory, as well as the theory and specific methods of archaeology.

In the first year, course requirements include The Development of Social and Cultural Theory offered over the autumn and winter quarters. The two quarter sequence is equivalent to four course credits. In the spring archaeology students take Theory and Method in Archaeology, also a double credit course. The remaining course requirements in the program, to be met in the first or second year, are Introduction to Chicago Anthropology, and a quantitative methods course approved by the faculty. For the rest of their course work, students enjoy a broad range of elective courses in archaeology, sociocultural anthropology, history, physical anthropology, Classical or Near Eastern studies, statistics, computer science and geophysical sciences. In addition, archaeology students are strongly encouraged to gain technical experience in one of the university's regular summer field schools or other research excavations.

By the end of the first year in residence, the archaeology student must form an advisory committee of three faculty members. The committee will be chaired by the faculty member of the student's choice. With the exception of those students with A.M. theses from other institutions which are approved by the department, each student will complete an A.M. paper during the second year. In addition, by the end of year two, each student takes an oral examination from the members of his/her advisory committee in the areas of chosen specialization. The oral examination, lasting roughly an hour and a half, is designed to test basic command of the literature and methods necessary to pursue Ph.D. research in a chosen area. In the third year, having passed the qualifying exam, archaeology students are required to take the archaeological research design seminar. By the end of the third year, students must defend a dissertation proposal before the faculty and interested students. Upon fulfillment of all academic requirements and the acceptance of the dissertation proposal, students are admitted to candidacy for the Ph.D. degree.

### PHYSICAL ANTHROPOLOGY

Courses in physical anthropology, mainly directed towards evolutionary anthropology and primatology, are offered in the department; but applications for graduate study in Physical Anthropology are no longer accepted.

### Courses

The department website offers descriptions of graduate courses scheduled for the current academic year: <http://anthropology.uchicago.edu/courses/graduate.shtml>.

## DEPARTMENT OF COMPARATIVE HUMAN DEVELOPMENT

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### *Chair*

John A. Lucy

### *Professors*

Bertram J. Cohler  
Raymond Fogelson  
Susan Goldin Meadow  
Don Kulick  
John A. Lucy  
Martha K. McClintock  
David E. Orlinsky  
Richard Shweder  
Margaret Beale Spencer  
Nancy Lou Stein  
Richard P. Taub

### *Associate Professors*

William Goldstein  
Dario Maestriperi  
Jennifer Cole  
Jill Mateo

### *Assistant Professors*

Guanglei Hong  
Micere Keels  
Eugene Raikhel

### *Faculty Associates*

Kathleen Cagney  
Jean Comaroff  
Judith Farquhar  
Sarah Gehlert  
Sydney Hans  
Susan Levine  
David McNeil  
Salikoko Mufwene  
Terry Regier  
Linda Waite

### *Emeritus Faculty*

R. Darrell Bock  
Mihaly Csikszentmihalyi  
Irene Elkin  
Eugene T. Gendlin  
Philip W. Jackson  
Susan B. Stodolsky

The Department of Comparative Human Development was originally named the Department on Child Development and then in 1940 the name was changed to Human Development. Ralph Tyler (education) was named chairman of the new department; Robert J. Havighurst (sociologist)

and W. Lloyd Warner (anthropologist) added interdisciplinary dimensions to the program. At the end of WW II, Carl Rogers (psychologist), joined the faculty. In October of 1991, the committee celebrated its 50th anniversary of the department as a Ph.D. training program and interdisciplinary research undertaking, making it the oldest unit of its type. The department offers programs of research and graduate study in life course development (including child and adolescent development, adult development and aging, and philosophy of development), personality, emotions and psychopathology, cross cultural studies (including psychological anthropology and cultural psychology), biosocial psychology (including behavioral biology and social neuroscience), language and cognition. The research interests of the faculty represent various disciplines within the social sciences. The primary objectives of the department are to provide education for innovative careers in research and teaching and to contribute to the interdisciplinary understanding of human behavior. Students in the department pursue careers in anthropology, human development, psychology, and sociology.

The program stresses the integration of theoretical interpretations and empirical findings bearing upon human development: the elaboration of the biological potential of the individual during growth; maturity and aging; socialization and adjustment to temporal and environmental changes; psychological change; personality development and psychological functioning in various cultural settings; and reflective consideration of the assumptions of social science theory and research. Emphasis is upon the interrelations of biological, psychological, and sociocultural forces at different points in the life cycle.

Applicants should be prepared to work on the critical edge of thought and research in the social sciences.

## PROGRAMS

Students in consultation with faculty advisors develop an area of specialization (program) appropriate to their professional goals and research interests. Some of the department's central areas of specialization are described below.

*Comparative Life Course.* The Department of Comparative Human Development has long had a focus on development throughout the life span. Indeed, one of the unifying principles that cuts across the department is that there is a deep interest, not merely in charting change over time, but in understanding the mechanisms and principles that underlie that change at all levels. Faculty and students in the department conduct developmental research in a wide variety of domains (cognitive, social, emotional, physical) and species (humans, primates, rodents). Ongoing projects include: ethnological studies of biosocial development from infancy through adulthood and aging; effects of psychosocial deprivation on psychological state and risk for disease; parent child relationships across the life course; risk and

resilience in development; social emotional development in early childhood; social class and ethnic differences in socialization; genetic and developmental factors in psychosocial development; naturalistic studies of children in school environments; language development as a creative process; studies of how children and adults understand and tell narratives; the role of nonverbal behavior in learning and cognitive development; the role of the linguistic and cultural environment in the child's acquisition of language; language socialization; the role of sociocultural context in cognitive development.

*Clinical Ethnography and Mental Health.* This program is designed for students interested in combining normative social science inquiry with focused study in the area of mental health, as preparation for a career of research and teaching. This course of study involves multidisciplinary inquiry into the processes and determinants of personality, social and cognitive development throughout the life course, and the comparative study of suffering and healing systems. Program faculty are presently involved with mental health research in three interrelated fields: (1) The study of psychopathology, vulnerability and resilience across the life course; (2) the study of psychotherapy and comparable systems of personal change; (3) the study of health and optimal functioning, coping strategies and creativity. Research in the personality area encompasses both traditional perspectives on the study of persons and social life and emerging perspectives focusing on such areas as the interplay of cognition and emotion in personal life and in culture, and language and discourse as relevant in understanding personality and social life. The program includes faculty working from the disciplinary perspectives of personality, social and clinical psychology, anthropology, political science, and biology. Relevant faculty and resources of the University outside the Department of Comparative Human Development will also be available to students. Students requiring clinical expertise for their research should consult with program faculty about relevant professional training opportunities.

*Cultural Psychology and Psychological Anthropology.* The Department of Comparative Human Development is a leading center for training in psychological anthropology, cultural psychology, the study of culture and mental health, and the cross cultural study of human development. The aim of the program is to document and explain ethnic and cultural sources of diversity in emotional and somatic functioning, self organization, moral evaluation, social cognition and human development. Ethnographic field work both in the United States and abroad is an important component of this program, although multiple methods (qualitative and quantitative, observational, clinical and experimental) are applied to the study of similarities and differences in psychological functioning across human populations.

Members of the faculty and students have conducted field studies of child socialization practices in the nations of the Pacific; of culture specific and universal structures in cognitive development; identity and self concept of Native American youth; of moral development, conceptions of the life course, and explanations of suffering in India and the United States; of modes of thought and their relationship to linguistic structures in contemporary Mayan communities in Mexico, and among various ethnic groups in the city of Chicago. The program encourages comparative study of psychological functioning (mentalities) in cultures including India, Japan, China, Russia, and the Middle East, as well as research on psychological topics in local communities around the world.

*Comparative Behavioral Biology.* This program investigates behavioral processes at the social, psychological and biological levels of organization in both humans and nonhuman animals. Current research is concentrated in three main areas. In the area of behavioral and reproductive endocrinology, research conducted with rodents and humans investigates the social and behavioral control of fertility and reproduction and the role of hormone behavior interactions in development throughout the life span. Specific topics of interest include mechanisms and function of estrous and menstrual synchrony, facultative adjustment of sex ratios, pheromonal communication, reproductive senescence, psychosomatics in obstetrics and gynecology, and the behavioral modulation of the immune function. In the area of comparative development, we use nonhuman primate models of parenting and development to investigate social, emotional, and endocrine aspects of mother infant attachment and infant development, with particular emphasis on interindividual variability both within and outside the normal range. Other topics of interest include affiliative and aggressive behavior, mating strategies, nonverbal communication and social cognition in primates and humans. In the area of social neuroscience, one topic of interest is evaluative processes, e.g., affective, attitudinal, or emotional operations by which individuals discriminate hostile from hospitable environments. Of interest as well is in the role of social and autonomic factors in individuals' endocrine and cellular immune response to stress and illness vulnerability. Throughout, the research approach is characterized by the integration of social and biological levels of analysis.

*Language, Communication and Cognition.* This program area supports research and training on how language and other forms of communication relate to cognition. Particular emphases are on the role of language in thinking and the use of comparative perspectives to address this issue. Among the more important comparisons are those across different languages, institutional settings, cultures, ages, and species drawing in each case on the relevant disciplines concerned with those areas.

## WORKSHOPS

The Department of Comparative Human Development sponsors faculty student workshops, currently the Culture, Life Course, and Mental Health Workshop and a Clinical Ethnography Workshop.

## ADMISSION

Students are eligible for admission if they have received a Bachelor of Arts or Science degree or have completed an undergraduate program equivalent to such a degree. Admission depends upon strength in the general undergraduate record, scores on the Graduate Record Examination, letters of recommendation, personal statement and interests, and relevant research experiences.

## HOW TO APPLY

The application process for admission and financial aid for all Social Sciences graduate programs is administered through the divisional Office of the Dean of Students. The Application for Admission and Financial Aid, with instructions, deadlines and department specific information is available online at: <https://grad-application-e.uchicago.edu>

Questions pertaining to admissions and aid should be directed to [admissions@ssd.uchicago.edu](mailto:admissions@ssd.uchicago.edu) or (773) 702-8415. All correspondence and materials sent in support of applications should be mailed to:

The University of Chicago  
Division of the Social Sciences  
Admissions Office, Foster 105  
1130 East 59th Street  
Chicago, IL 60637.

Foreign students must provide evidence of English proficiency by submitting scores from either the Test of English as a Foreign Language (TOEFL) or the International English Language Testing System (IELTS).

For additional information about the Human Development program, please see <http://humdev.uchicago.edu>.

## REQUIREMENTS

### COURSES

Every student is required to take the following courses for a quality grade:

Human Development Concepts  
Five HD area courses: the area clusters are defined as  
Comparative Behavioral Biology  
Comparative Life Course  
Cultural Psychology and Psychology Anthropology  
Clinical Ethnography and Mental Health  
Language, Communication, and Cognition

### *Intermediate Statistics*

One additional methods course (not introductory statistics)  
Two trial research seminars (may be taken pass/fail)  
Two additional HD courses in area of specialization

Students are not required to complete all these requirements by the end of their second year. However, they must have five quality grades toward these requirements by the spring of their first year, and ten quality grades by the end of the second year. On average a graduate student should take at least two courses from the required list for quality grades in each quarter of their first two years.

In addition, students will participate in elective courses and workshops in the department, and the University in consultation with their advisors. The HD Concepts course will introduce students to the history, theoretical bases, and concepts of the field of human development, and to the major areas of inquiry in the Department of Comparative Human Development. This is taken during the fall quarter of the first or second year.

The trial research seminars will launch students into their research projects and will guide them from the beginning to the completion of those projects. The trial research seminar is taken in the spring quarter of the first year and the fall quarter of the second year. Trial research papers are due by spring quarter of the second year.

### TRIAL RESEARCH

All students are required to enroll in a Trial Research Seminar in the spring quarter of the first year and the autumn quarter of the second year. The trial research project must be completed and formally approved by the faculty during the spring quarter of the student's second year. Students are expected to report regularly on the progress of their research to the Trial Research Seminars. The trial research is carried out under the direction of the research advisor and is read by two other faculty members.

### EVALUATIONS

All students are evaluated each year in the program. To be considered in good standing and for continuation of financial aid, first and second year students must have earned at minimum five quality grades (B or better) over autumn and winter quarters by the time of the spring review, with satisfactory spring grades expected to follow. The evaluation at the end of the second year is particularly important, as it determines whether a student will be permitted to conduct dissertation research.

### ADVISORS

Each student is assigned a faculty member at the beginning of the first year of study to serve as a research advisor. Students may change research advisors as their needs and interests evolve, but students are expected to be affili-

ated with one or more research advisors throughout their graduate careers.

*Courses*

The department website offers descriptions of graduate courses scheduled for the current academic year: <http://humdev.uchicago.edu/>.

## COMMITTEE ON CONCEPTUAL AND HISTORICAL STUDIES OF SCIENCE

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*Chair*

Adrian Johns

*Professors*

Lorraine Daston, Social Thought

Arnold Davidson, Philosophy

Michael Foote, Geophysical Sciences

Robert P. Geroch, Physics

Jan Goldstein, History

John Haugeland, Philosophy

Adrian Johns, History

Leo Kadanoff, Physics and Mathematics

Karin Knorr Cetina, Sociology and Anthropology

John Lantos, Pediatrics and Maclean Center for Clinical Medical Ethics

Robert J. Richards, History

Stephen M. Stigler, Statistics

Leigh Van Valen, Ecology & Evolution

*Associate Professors*

Alison Winter, History

*Assistant Professors*

Kevin Davey, Philosophy

James Evans, Sociology

Joseph Masco, Anthropology

*Emeritus Faculty*

Robert Perlman, Pediatrics

George Stocking, Anthropology

William C. Wimsatt, Philosophy

The Committee on Conceptual and Historical Studies of Science (CHSS) is an interdisciplinary graduate program dedicated to advancing social, historical, and philosophical perspectives on science. Its areas of interest are broad, extending across the sciences and from the ancient world to the present day. Its faculty derive from many departments in the University, but particularly from History, Sociology, Anthropology, and Philosophy. We currently have major strengths in the study of evolutionary biology, psychology, and medicine, and in issues of the social activity of science, such as those relating to scientific authority, credibility, communication, and intellectual property. Students in the Ph.D. program have an opportunity to investigate such aspects of the scientific enterprise in depth, within its many rich historical, social, and philosophical contexts. They are also encouraged to grapple with the practices and approaches of science itself.

A brief description of the Committee's degree requirements is provided below, along with a representative list of courses that have been taught in recent years. For more complete information, you are encouraged to consult the website at <http://chss.uchicago.edu/>. This site contains an up to date description of faculty research interests, a complete statement of degree requirements, descriptions of individual courses being taught this year, a calendar of events (including meetings of the Committee's regular Workshop in the History, Philosophy, and Sociology of Science), a list of students who have received Ph.D.s from the Committee with the titles of their dissertations, and more.

Those with questions about the Committee should write to the Secretary, The Committee on Conceptual and Historical Studies of Science, The University of Chicago, 1126 East 59th Street, Chicago, IL 60637 (bbmackev@uchicago.edu).

## APPLICATION

New students are admitted to the Committee through the Division of the Social Sciences. Applicants will be expected to submit undergraduate transcripts, scores from the general Graduate Record Examination, three letters of recommendation, short descriptions of their interests and/or reasons for wanting to study in CHSS, and a writing sample.

The application process for admission and financial aid for all Social Sciences graduate programs is administered through the divisional Office of the Dean of Students. The Application for Admission and Financial Aid, with instructions, deadlines and department specific information is available online at: <https://grad-application.uchicago.edu/>

Questions pertaining to admissions and aid should be directed to [ssd-admissions@uchicago.edu](mailto:ssd-admissions@uchicago.edu) or (773) 702-8415. All correspondence and materials sent in support of the applications should be mailed to:

The University of Chicago  
Division of the Social Sciences  
Admissions Office, Foster 105  
1130 East 59th Street  
Chicago, IL 60637

## DEGREE REQUIREMENTS

Every new student in CHSS is assigned an advisor, with whom he or she designs an individual program of study. Because the interests of students within CHSS vary widely, so too do these programs. Yet all students are expected to fulfill certain common requirements. Full and up to date details are given on the website, but the main elements are described here.

Students choose one of the following options:

1. SCIENCE OPTION: The student may earn a master's degree in a science (here understood to include mathematics, statistics, and social science).
2. PHILOSOPHY OPTION: The student may earn a master's degree in philosophy.
3. HISTORY OPTION: The student may earn a master's degree in history.

All students must complete a total of at least eighteen courses at the University for a grade of B or better, including at least seven CHSS courses. They must maintain at least a B+ average every quarter. Those selecting the philosophy or history options must take a coherent series of six courses in a scientific area at the University, approved by the committee and of an appropriately advanced nature. This will normally mean that students must take at least some portion of their science work at a graduate level. Note that if a student enters the program with a master's degree in an appropriate area, the committee determines what level of credit is given for it.

The expected timetable is that students entering with a master's degree will complete coursework by the end of the second year, and those entering without will complete it by the end of year three (see the website for this and other details of the expected timetable).

Among the coursework of the first two years, students should take three courses offered by the committee: Philosophy of Science, History of Science, and Introduction to Science Studies.

Students must then pass two oral examinations. Each student has the option of taking the exams in history of science, philosophy of science, sociology of science, or anthropology of science; but at least one of the exams must be in either history of science or philosophy of science. These exams are, in part, designed by the students themselves.

At this point the student writes a dissertation proposal, and defends it at a hearing before his or her dissertation committee. He or she is then considered to have advanced to Ph.D. candidacy, and proceeds to write the dissertation itself.

Representative courses offered in recent years

### *Courses*

The department website offers descriptions of graduate courses scheduled for the current academic year: <http://chss.uchicago.edu/courses.html>

## DEPARTMENT OF ECONOMICS

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### *Chair*

Harald Uhlig

### *Professors*

Fernando Alvarez  
 Gary S. Becker  
 Robert W. Fogel  
 David W. Galenson  
 Lars Peter Hansen  
 James J. Heckman  
 Ali Hortaçsu  
 Samuel Kortum  
 Steven Levitt  
 John List  
 Robert E. Lucas, Jr.  
 Casey Mulligan  
 Kevin M. Murphy  
 Roger B. Myerson  
 Derek A. Neal  
 Philip J. Reny  
 Susan M. Schennach  
 Robert Shimer  
 Hugo F. Sonnenschein  
 Nancy L. Stokey  
 Harald Uhlig

### *Assistant Professors*

Thomas Chaney  
 Jeremy Fox  
 Rafael Lopes de Melo  
 Azeem Shaikh

### *Instructors*

Ronald Wolthoff

### *Research Associates*

Robert Townsend

### *Visiting Professors*

Steven Durlauf  
 Kenneth Judd  
 Balázs Szentes

### *Visiting Assistant Professors*

Jeremy Lise  
 Marciano Siniscalchi

### *Senior Lecturers*

Victor O. Lima  
 Allen R. Sanderson  
 Grace Tsiang

### *Lecturers*

Peter Bondarenko

Phillip Braun

Sebastien Gay

### *Emeritus Faculty*

Arnold C. Harberger

Larry A. Sjaastad

Lester G. Telser

George S. Tolley

Chicago is a particularly innovative department of economics. The proportion of new ideas in economics that have emanated from or become associated with Chicago over the last forty years is astonishing. Any definition of the Chicago School would have to find room for the following ideas (in chronological order from the 1940s to the present): the economic theory of socialism, general equilibrium theory, general equilibrium models of foreign trade, simultaneous equation methods in econometrics, consumption as a function of permanent income, the economics of the household, the rationality of peasants in poor countries, the economics of education and other acquired skills (human capital), applied welfare economics, monetarism, sociological economics (entrepreneurship, racial discrimination, crime), the economics of invention and innovation, quantitative economic history, the economics of information, political economy (externalities, property rights, liability, contracts), the monetary approach to international finance, rational expectations in macroeconomics, and mechanism design. The unifying thread in all this is not political or ideological but methodological, the methodological conviction that economics is an incomparably powerful tool for understanding society.

The Department of Economics offers a program of study leading to the Ph.D. degree. A general description of the program is given below. For a more detailed explanation of the program requirements, as well as complete course descriptions and faculty bios, see the information for current students on our website at: <http://economics.uchicago.edu/graduate.shtml>.

The Department of Economics has no master's-level courses and does not admit students who intend to do only a master's degree. Ph.D. students may apply for and receive a master's degree after completion of a set of courses and examinations that they have taken as part of the doctoral program.

## ADMISSIONS AND FINANCIAL AID

### PREREQUISITES AND PREPARATION FOR GRADUATE STUDY

Each autumn, the Department of Economics enrolls an entering class of approximately twenty-five to thirty-five graduate students who come from many countries around the world, and have been selected from a large and diverse group of applicants. Admission to graduate study

requires a bachelor's degree (or equivalent). This degree need not be in economics, although some background in economics is certainly desirable. There are no formal course requirements for admission, but a strong background in mathematics is important. At the Ph.D. level, the study of economics requires an absolute minimum of one year of college calculus and a quarter (or semester) each of both matrix algebra and mathematical statistics (that is, statistics using calculus, as distinct from introductory statistics for social science). Prospective students who lack this preparation and have remaining free time in their undergraduate schedules are urged to take these courses before beginning graduate study.

Beyond these basic prerequisites, many of our applicants have taken other advanced mathematics courses, such as real analysis, have completed some graduate-level classes in economics or related fields, or have had some other significant exposure to research in economics. Many strong applicants have ranked at or near the top of their graduating class.

#### ADMISSIONS PROCESS

Given the year long sequence of courses, all new students must begin their study in the Autumn Quarter. The application process for admission and financial aid for Economics and all Social Sciences graduate programs is administered through the divisional Office of the Dean of Students. The Application for Admission and Financial Aid, with instructions, deadlines, and department specific information is available online at: <https://grad-application.uchicago.edu/>

Questions pertaining to admissions and aid should be directed to [admissions@ssd.uchicago.edu](mailto:admissions@ssd.uchicago.edu) or (773) 702-8415. All correspondence and materials sent in support of applications should be mailed to: The University of Chicago

Division of Social Sciences Admissions Office,  
Foster 1051130 East 59th Street Chicago, IL 60637.

All applicants are required to submit scores from the Graduate Record Examination (GRE) General Test. Foreign applicants whose native language is not English must provide evidence of English proficiency by submitting scores from either the Test of English as a Foreign Language (TOEFL) or the International English Language Testing System (IELTS). The current University minimum score requirements are provided with the application.

#### CRITERIA FOR ADMISSIONS

The Committee on Admissions takes account of a wide range of factors to evaluate each applicant: the previous educational record, letters of recommendation, writing sample, previous research experience, the applicant's scores on the GRE (General Test) and the TOEFL or IELTS, the compatibility of the applicant's research interests with the program strengths in the department, and any special factors that the applicant may bring to the committee's

attention. The committee evaluates each applicant on the basis of all material available; no arbitrary cut-offs in terms of a student's grade point average or test scores are used. Applications must be complete for the January review, including scores from the GRE and TOEFL or IELTS if appropriate. These exams should be taken no later than November 1. In deciding when to register for the exams, applicants should particularly note our yearly cycle in order to assure that their applications receive full consideration.

#### PROGRAM OF STUDY

The program of study for the Ph.D. degree in Economics includes courses and comprehensive examinations in the three "Core" subjects of Price Theory; the Theory of Income, Employment, and the Price Level; and Quantitative Methods. In addition to the Core, Ph.D. requirements include demonstration of competence in two Specialized Fields of concentration, courses in three elective Fields for the General Distribution requirement, a Research Paper, the approval of a Thesis Proposal, and the completion of the Doctoral Thesis.

The usual load is three courses per quarter for two years; this permits completion of nine courses during the regular academic year of three quarters. The comprehensive examination for the Core subjects is given in the Summer Quarter. An examination in each Specialized Field of concentration is given once a year.

Ph.D. students may request permission to choose electives outside the Department of Economics for Field or General Distribution requirements. Satisfactory grades on course work done at the graduate level at another institution may also be used to satisfy part of the course requirements for General Distribution by petition to the Director of Graduate Studies.

With good preparation, students normally take five years to complete the Ph.D. Students who begin with the intention of obtaining the Ph.D. but who change their plans or fail to satisfy the Ph.D. requirements will in most cases be eligible for a M.A. degree.

The program of a typical Ph.D. student consists of the following sequence: in the first year, courses in price theory, the theory of income, and quantitative methods prepare the student for the Core examinations which are taken in the following summer; in the second year, courses and participation in workshops prepare the student for certification in two Specialized Fields (one by exam and one by GPA or exam) and help the student identify a Research Paper topic; in the third and fourth years, the student completes his/her Research Paper and General Distribution requirements, participates in workshops, formulates a thesis topic, and presents a Thesis Proposal Seminar at which the faculty formally approves the topic and admits the student to candidacy; in the fifth year, the student completes his/her Doctoral Thesis and gives a Public Lecture.

## COURSES

The department website offers descriptions of graduate courses scheduled for the current academic year: [http://economics.uchicago.edu/graduate\\_courses.shtml](http://economics.uchicago.edu/graduate_courses.shtml)

## JOINT PH.D. PROGRAM IN FINANCIAL ECONOMICS

The joint Ph.D. program in Financial Economics was established in the 2006-07 academic year and is run jointly by the Department of Economics in the Division of the Social Sciences and by the University of Chicago Booth School of Business (formerly the GSB). The aim of this program is to exploit the strengths of both sponsors in training Ph.D. students interested in financial economics. Core economics training is valuable for students seeking to do research in financial economics, and advances in financial economics have important spillovers to other areas of economics. It has long been a tradition in the Department of Economics to feature core economics training for their Ph.D. students, and the Booth School has a well recognized excellence in finance. Students in the joint program benefit from broad sets of instructors and classmates in both the Economics Department and the Booth School. They also hold an official status and are able to utilize resources in both Economics and the Booth School.

Upon completion of this program, students will be awarded a Doctor of Philosophy degree in Economics and Finance jointly from the Division of the Social Sciences and the Booth School.

## PROGRAM ELEMENTS

Students must satisfy the requirements for the Ph.D. degree in both programs. This is viable because of the considerable overlap in what the two programs expect of their students.

## ADMISSIONS

Admission to the joint program requires admission to both the doctoral program in the Department of Economics and to the doctoral program in the Booth School, but interested parties need only apply to one or the other program. Students may enter the joint program at the beginning of their doctoral studies. Those seeking admission to the joint program should apply online to either the Ph.D. program in the Department of Economics or the Booth School.

Students enrolled in doctoral studies in either the Economics Department or the Booth School may apply to the joint program at any time within their first two years in residence. Such students will still have to meet all of the requirements of both programs.

Enrollment and financial aid throughout a student's matriculation in the joint program will be administered by either the Division of the Social Sciences or the Booth School, as arranged by the two units. This designation will be for administrative purposes only and will not have programmatic implications. If a student's interests change,

the Director of the Ph.D. program in the Booth School and the Dean of Students for the Social Sciences will facilitate transfers out of the joint program and into the doctoral program in Economics or Business.

## DEPARTMENT OF HISTORY

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### *Chair*

Bruce Cumings

### *Professors*

Leora Auslander  
John W. Boyer  
Mark P. Bradley  
Dipesh Chakrabarty  
Kathleen Conzen  
Bruce Cumings  
Constantin Fasolt  
Sheila Fitzpatrick  
Cornell Fleischer, Near Eastern Languages and Civilizations  
Michael E. Geyer  
Jan Ellen Goldstein  
Ramón Gutiérrez  
Jonathan Hall  
James Hevia, College  
Thomas Holt  
Adrian D.S. Johns  
Walter E. Kaegi  
James Ketelaar  
David Nirenberg, Committee on Social Thought  
Moishe Postone, College  
Robert J. Richards  
Christine Stansell  
Mauricio Tenorio  
Bernard Wasserstein  
John E. Woods

### *Associate Professors*

Guy S. Alitto  
Dain Borges  
Susan Burns  
Edward M. Cook  
Jane Dailey  
Rachel Fulton  
Adam Green  
Emilio H. Kourí  
Julie Saville  
Amy Dru Stanley  
Alison Winter

### *Assistant Professors*

Fredrik Albritton Jonsson  
Paul Cheney  
Cameron Hawkins  
Rachel Jean-Baptiste  
Jonathan Lyon  
Emily Osborn  
James Sparrow

Tara Zahra

### *Assistant Professors*

Fredrik Albritton Jonsson  
Paul Cheney  
Rachel Jean-Baptiste  
Jonathan Lyon  
Emily Osborn  
James Sparrow  
Tara Zahra

### *Visiting Professor*

James Grossman, Newberry Library  
Visiting Assistant Professors  
Tamara Griggs

### *Associate Faculty*

Muzaffar Alam, South Asian Languages and Civilizations  
Michael Allen, Classics  
Clifford Ando, Classics  
Catherine Brekus, Divinity School  
Jean Comaroff, Department of Anthropology  
John Craig, Social Sciences Division  
Fred Donner, Near Eastern Languages and Civilizations  
Robert W. Fogel, Graduate School of Business  
James Hevia, International Studies  
Dennis Hutchinson, Master New Collegiate Division  
Rochona Majumdar, South Asian Languages and Civilizations  
Paul Mendes Flohr, Divinity School  
Lucy Pick, Divinity School  
A. Holly Shissler, Near East Languages

### *Emeritus Faculty*

Ralph A. Austen  
Allen G. Debus  
T. Bentley Duncan  
John Hope Franklin  
Charles Gray  
Hanna H. Gray  
Harry Harootunian  
Ping Ti Ho  
Halil Inalcik  
Ronald B. Inden  
Barry D. Karl  
Friedrich Katz  
Julius Kirshner  
Emmet Larkin  
William H. McNeill  
Tetsuo Najita  
Peter Novick  
William Sewell  
Ronald Suny

From its 1892 establishment as one of the founding departments of the University of Chicago, the History Department

has fostered programs leading to the Ph.D. degree in a broad range of fields. Theoretically sophisticated comparative and interdisciplinary approaches are a hallmark of our program. Along with graduate fields organized by traditional regional, national, and chronological boundaries (African, Ancient Greek and Roman, British, Byzantine, Caribbean Atlantic, Chinese, Early Modern and Modern European, French, Iranian and Central Asian, Islamic and Ottoman, Japanese, Latin American, Medieval, Modern Middle Eastern, Modern Jewish, Russian/Soviet, South Asian, United States), the Department offers a comprehensive range of interdisciplinary, theoretical, and comparative fields of study. Included are such fields as cultural studies in history, intellectual history, legal history, race and ethnicity, gender and sexuality, modern international history, social practices, and the history of science and medicine.

The History Department expects to welcome about thirty to thirty five new graduate students each year. They are broadly distributed by field and back grounds; perhaps a fifth arrive from outside the United States. Faculty members work in close concert with students in the small graduate seminars, colloquia, and tutorials that form the core of advanced training at Chicago. It is here, in intense interaction with faculty and fellow students, that individual interests and the professional skills of the historian are honed. As in any history program, a student is expected to learn to read critically, to search out and analyze primary materials with skill, and to write with rigor. At Chicago, we also expect that students will demonstrate through their own creativity a significant advancement in the field itself.

Students are strongly encouraged to take courses outside of History and to compose one of their three oral fields in a comparative or theoretical discipline. There are extensive opportunities to develop ancillary fields with faculty in other social science and humanities programs, and in the University's professional schools of Business, Divinity, Law, Medicine, Public Policy, and Social Service Administration. Through consortia arrangements, students can also supplement their Chicago studies with work at Stanford, Berkeley, or any of the Ivy League or Big Ten Midwestern universities, where they can earn credit for courses while registered at the University of Chicago.

Central to our program are interdisciplinary workshops and special conferences that bring together students and faculty from throughout the University for intellectual exchange. Some recent workshops involving Department members include African Studies, American Cultures, Early Modern, East Asia Gender and Sexuality Studies, History of the Human Sciences, Human Rights, Interdisciplinary Approaches to Modern France, Late Antiquity and Byzantium, Latin American History, Medieval Studies, Middle East History and Theory, Modern European History, Paris Center, Race and Religion, Reproduction of Race and Racial Ideologies, Russian Studies, and Social

History. Workshops insure dissertation writing students a supportive intellectual community within which both students and faculty are able to present and comment upon research in progress.

For more detailed information on History Department faculty and the graduate program, please visit the Department's website at <http://history.uchicago.edu/>.

#### ADMISSION

Requirements for admission are: (1) the degree of Bachelor of Arts or its equivalent; (2) a distinguished undergraduate record; and (3) high competence in the foreign language.

Four parts of the application are critically important: the student's academic record, letters of recommendation submitted by persons able to describe the student's achievements and promise, a significant example of the student's work, (bachelor's essay, master's thesis, research or course paper) and, finally, the student's statement of purpose which describes the intellectual issues and historical subjects to be explored at the University of Chicago. Although many graduate students change their focus in the course of their studies, it is helpful to have the clearest possible idea of applicants' interests and any research experience to date.

In addition, applicants are required to submit Graduate Record Examination aptitude scores that are not more than five years old (the History subject test is not required). It is advisable, especially for aid applicants, to take the GRE no later than October so that scores will arrive on time. Applicants whose first language is not English must submit scores from the Test of English as a Foreign Language (TOEFL) or the International English Language Testing System (IELTS).

#### INFORMATION ON HOW TO APPLY

The application process for admission and financial aid for all Social Sciences graduate programs is administered through the divisional Office of the Dean of Students. The Application for Admission and Financial Aid, with instructions, deadlines and department specific information is available online at: <https://grad-application.uchicago.edu/>.

Questions pertaining to admissions and aid should be directed to [admissions@ssd.uchicago.edu](mailto:admissions@ssd.uchicago.edu) or (773) 702-8415. All correspondence and materials sent in support of applications should be mailed to:

The University of Chicago  
Division of the Social Sciences  
Admissions Office, Foster105  
1130 East 59th Street  
Chicago, IL 60637

## PROGRAM FOR THE FIRST YEAR

Normal registration the first year is eight graded courses. Among the eight courses taken, the curriculum for the first year prescribes (1) a two quarter seminar, (2) six other courses, including two in an area outside their major field. These courses are taken for letter grades and must be completed by the end of the spring quarter. Students receive the master's degree upon completing the first year curriculum.

Students are also required to take a foreign language reading examination during their first term. A few general comments on these hurdles may be in order. Students are required to secure a high pass on one University of Chicago Office of Test Administration foreign language reading examination in their first year. Each field will specify the language(s) to be used and the degree of proficiency required if beyond the minimum results mentioned above. The fields will also determine whether students have met the requisite standards.

Near the end of the spring quarter a faculty committee will decide whether a student is qualified to proceed toward the Ph.D. degree. Evidence for the judgment will be (1) evaluation of the seminar paper, (2) autumn and winter quarter course grades, and (3) a high pass in a foreign language reading examination.

## AFTER THE FIRST YEAR

Students who are recommended for the Ph.D. continue their formal study and will be expected to complete another year of graded course work including another graded seminar, unless they petition for credit for previous graduate work. The Ph.D. field examination is taken no later than the autumn quarter of the third year. Students are examined in three Ph.D. fields in a two hour oral examination. Within two quarters of passing the field examination, the student presents the dissertation proposal at a formal public hearing such as a workshop, and it must be approved by the dissertation committee. The student is then admitted to candidacy for the doctoral degree after the hearing.

## PRE-DISSERTATION FELLOWSHIPS

The Freehling, Kunstadter, and Sinkler families and friends have made funds available for summer research fellowships, averaging about \$2,000, to support travel to archival collections. Two Eric Cochrane Traveling Fellowships of \$3,000 each are awarded annually to assist graduate students in western European history in making a summer research trip to Europe. The Arthur Mann Fellowship was created to award an Americanist in summer research. Other fellowships may be available each year. Awards of up to \$300 for travel to present papers at scholarly conferences are available.

### Work On The Dissertation

Following approval of the dissertation proposal and subsequent admission to candidacy for the Ph.D. degree,

students are expected to devote their time to dissertation research. Each year the Division of Social Sciences and the department awards a number of dissertation write up fellowships. Formal defense of the completed dissertation, written with the guidance of a three or four member dissertation committee, concludes the degree requirements. All requirements for the Ph.D. degree including the final defense must be completed within ten calendar years from the date of matriculation, although most students graduate in six to eight years.

### Teaching Opportunities

Students serve as assistants and lecturers in introductory History courses, Social Sciences and Humanities core sequences, the College writing program, and various civilizations sequences. The History Department's von Holst Prize Lectureships permit four students to design undergraduate courses centered on their dissertation research. The five students who receive the Bessie L. Pierce Prize Preceptorship Award guide third and fourth year History undergraduates in A.B. essay seminars. Students acquire initial teaching experience through an internship program in which they assist faculty with the design, teaching, and grading of courses. Numerous students also gain valuable college teaching experience in other Chicago area institutions.

### Courses

The department website offers descriptions of graduate courses scheduled for the current academic year: <http://history.uchicago.edu/courses/index.html>.

## COMMITTEE ON INTERNATIONAL RELATIONS

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### *Chair*

Duncan Snidal

### *Professors*

Ralph A. Austen, History (Emeritus)  
 John W. Boyer, History  
 Dipesh Chakrabarty, South Asian Languages and  
 Civilization  
 Terry Clark, Sociology  
 Bruce Cumings, History  
 Prasenjit Duara, History (Emeritus)  
 Jean Bethke Elshtain, Divinity  
 Michael E. Geyer, History  
 Andreas Glaeser, Sociology  
 Susan Gzesh, Law  
 Gary B. Herrigel, Political Science  
 Patrick Heuveline, Sociology  
 Friedrich Katz, History (Emeritus)  
 Charles Lipson, Political Science  
 Joseph P. Masco, Anthropology  
 John J. Mearsheimer, Political Science  
 Robert Pape, Political Science  
 William L. Parish, Sociology  
 Eric Posner, Law  
 Martin Riesebradt, Sociology  
 Alberto Simpser, Political Science  
 Daniel Slater, Political Science  
 Nathan Tarcov, Social Thought  
 Bernard Wasserstein, History  
 Lisa Wedeen, Political Science  
 Dali Yang, Political Science  
 Malika Zeghal, Divinity  
 Dingxin Zhao, Sociology  
 Marvin Zonis, Business

### *Instructors*

Michael Reese, International Relations  
 Qiang Zhou, International Relations

### GENERAL INFORMATION

The Committee on International Relations (CIR) offers a one year program of graduate studies leading to the A.M. (Master of Arts) degree; admitted students may apply for a one-year extension during their first year of study to allow for further specialization. CIR makes the resources of a great university available to students seeking a firm grounding in the theory and practice of international relations. An A.M. from CIR will prepare students for a wide range of careers for which the masters is increasingly the entry level degree, as well as for further academic or professional training in

political science, law, and business administration. Students interested in combining a CIR A.M. with an M.B.A. can apply to a joint degree program with the University of Chicago Booth School of Business. A dual A.M./M.A. degree with the Harris School of Public Policy or an A.M. /J.D. with the University of Chicago Law School is also available.

CIR provides students with a vibrant intellectual community and core course training in international relations theory. CIR's interdisciplinary faculty and curriculum encourage students to explore a wide range of topics spanning the economic, political, security and social factors shaping international life. Students will learn to craft critical and creative responses to the challenges of the present, including globalization, terrorism, and human rights. Throughout the academic year, each student works closely with an assigned preceptor on all aspects of the program, from selecting courses to designing and writing the master's paper.

CIR offers dedicated counseling and application support to students pursuing further academic study in doctoral or professional school programs. CIR graduates have received and presently pursue doctorates in Political Science as well as degrees in the various professional schools, including law and business administration, at both the University of Chicago and other major research institutions in the U.S. and abroad. An international network of CIR alumni, in concert with the University's office of Career Counseling and Placement Services, assists current students in identifying career possibilities and applying for positions.

### Preceptors

Students work closely with one of the preceptors in the CIR. Preceptors guide students in defining their areas of academic specialization as well as in choosing courses. Preceptors also assist students in selecting faculty sponsors for their A.M. papers and take an active role in guiding and evaluating the research and writing of these papers.

### PROGRAMS AND REQUIREMENTS

Students pursuing the Committee on International Relations' Master of Arts degree are expected to complete nine graduate level courses with a minimum GPA of 3.0 and a thirty-five to fifty page master's thesis that must be approved by both a faculty sponsor and a CIR preceptor. In addition, students must successfully complete the introductory seminar *Perspectives in International Relations* (offered in the Autumn Quarter) and participate in the master's thesis workshop throughout the academic year. Master's workshops are led by CIR preceptors and give students the opportunity to present and discuss their research projects as they develop from proposal to final draft.

Students may apply for a second year of study A.M. with specialization. This second year requires an additional three quarters of residence during which the student takes an additional nine courses. Students apply for the second year with specialization during their first year in residence.

The joint degree program with the Chicago Booth School of Business is administered through the Division of the Social Sciences. Students pursuing a joint degree must fulfill all the requirements of the CIR degree in addition to the requirements of the respective professional degree, though there are some exceptions. Students enrolled in the dual J.D. /A.M. program with the Law School take nine courses in their fourth year of study, three of which are typically law-school courses and the remaining six from the CIR list of approved courses. Students enrolled in the joint M.B.A./A.M. take a reduced course load of 14 courses in the Booth School of Business and the full nine courses in CIR. Students interested in the dual A.M./M.A. degree program should contact the Harris School of Public Policy for more information.

#### ADMISSION

Applicants to the Committee on International Relations are expected to meet the graduate admissions requirements of the division. Submission of Graduate Record Examination (GRE) scores is required, except for the joint CIR and Booth School of Business degree program, where the Graduate Management Admission Test (GMAT) is accepted. Applicants from non-English speaking countries must provide evidence of English proficiency by submitting scores from either the Test of English as a Foreign Language (TOEFL) or the International English Language Testing System (IELTS).

CIR is designed to be completed in one academic year (three or four quarters on a full time basis). All financial aid is merit based, and the CIR program offers partial tuition scholarships on a highly competitive basis.

#### HOW TO APPLY

The application process for admission and financial aid for all Social Sciences graduate programs is administered through the divisional Office of the Dean of Students. The Application for Admission and Financial Aid, with instructions, deadlines and department specific information is available online at: <http://grad-application-e.uchicago.edu>

Questions pertaining to admissions and aid should be directed to [admissions@ssd.uchicago.edu](mailto:admissions@ssd.uchicago.edu) or (773) 702-8415. All correspondence and materials sent in support of applications should be mailed to:

The University of Chicago  
Division of the Social Sciences  
Admissions Office, Foster 105  
1130 East 59th Street  
Chicago, IL 60637.

Applicants interested in the dual J.D./A.M. program must apply separately to both the Law School (1111 East 60th Street, Chicago, IL 60637) and the Committee on International Relations. Applicants interested in the joint M.B.A./A.M. program must submit their application to the

Graduate School of Business, which then refers the application to CIR. Please contact the Harris School of Public Policy regarding the application procedure for the dual A.M./M.A. degree.

#### FURTHER INFORMATION

Additional program information may be found at the Committee's website, <http://cir.uchicago.edu>. You can contact the CIR preceptors at (773) 702-8073, and E.G. Enbar, Student Affairs Administrator, at (773) 702-8312 or [egenbar@uchicago.edu](mailto:egenbar@uchicago.edu).

## DEPARTMENT OF POLITICAL SCIENCE

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*Chair*

Lisa Wedeen

*Professors*

John J. Brehm  
 Cathy Cohen  
 Michael Dawson  
 Robert Gooding-Williams  
 J. Mark Hansen  
 Bernard Harcourt, Law  
 Charles Lipson  
 John McCormick  
 John J. Mearsheimer  
 J. Eric Oliver  
 John F. Padgett  
 Robert Pape  
 Bernard S. Silberman  
 Nathan Tarcov, Social Thought  
 Lisa Wedeen  
 Dali Yang  
 Linda Zerilli

*Associate Professors*

Gary B. Herrigel  
 Patchen Markell  
 Sankar Muthu  
 Jennifer Pitts  
 Gerald N. Rosenberg  
 Duncan Snidal, Public Policy

*Assistant Professors*

Julie Cooper  
 Jeffrey Grynviski  
 Stanislav Markus  
 Jong Hee Park  
 Alberto Simpser  
 Betsy Sinclair  
 Dan Slater

*Emeritus Faculty*

Leonard Binder  
 Joseph Cropsey  
 David Easton  
 Morton A. Kaplan  
 Norman H. Nie  
 Lloyd Rudolph  
 Susanne Rudolph  
 Ronald Suny  
 William Sewell

*Associate Members*

Elisabeth Clemens  
 Jean Bethke Elshtain  
 William Howell  
 Roger Myerson  
 Martha Nussbaum  
 Moishe Postone

The Department of Political Science offers a course of study leading to the Ph.D. degree. A departmental faculty committee makes admission decisions based on an assessment of all the material required in the University application: biographical data, statement of interests and goals in graduate school, transcripts of grades, letters of recommendation, Graduate Record Examination aptitude scores, and a brief writing sample. Committee members want to know what applicants find intellectually exciting and why applicants want to study at the University of Chicago.

The department is committed to training doctoral students in political science broadly conceived. We believe that the best work in political science often crosses subfields and disciplines. Our aim is to help students develop and pursue their intellectual interests while grounding them in the various approaches and methodologies that characterize the discipline. The program requirements mix research papers, coursework, and exams so that students can achieve these goals as they proceed expeditiously towards the Ph.D. degree.

### THE GRADUATE PROGRAM

For purposes of course distribution and comprehensive exams, the department offers courses and exams in five fields. At present, they are theory, American politics, comparative politics, international relations, and methodology. To meet the course distribution requirement, students must complete three courses in each of three fields. Overall, twelve courses taken for quality grades are required by the end of the sixth quarter.

In the first year students are required to take PLSC 30500 Introduction to Data Analysis and write a research paper as part of the normal writing requirement of a class. The most important project in the first two years is the master's paper, a piece of original research that is modeled on a journal article and addresses an important research question or debate.

Students are required to pass comprehensive exams in two fields. The exams are offered twice a year (with the exception of the comparative politics exam, which is scheduled on an individual basis) and they may be taken at any point but the final deadline by which the exams must be taken is the ninth quarter (normally spring quarter of the third year).

Practical pedagogical experience is a program requirement. To satisfy the requirement, students can serve as teaching assistants in undergraduate lecture courses and in

the department's methodology sequence. A few advanced graduate students, selected as Grodzins Prize Lecturers, offer their own undergraduate courses. There are also opportunities to serve as teaching interns and instructors in the College's undergraduate core curriculum and as preceptors who assist the undergraduate majors with the writing of B.A. papers.

After completing courses and exams, students turn to the Ph.D. dissertation. The first step is a dissertation proposal that briefly outlines the research question, significance, argument, and method of the dissertation. The department offers a faculty-led seminar to assist students in writing their proposal, typically taken by students in the winter quarter of the third year. The proposal must be approved by a committee of three faculty who agree to supervise the dissertation research and present the proposal for departmental approval.

Although advanced graduate research and writing is often a solitary enterprise, students in the department also typically continue to participate in one or more workshops, which are mainly devoted to students' presentation of research in progress for discussion and constructive criticism. Political science students participate in workshops devoted to American Politics, Comparative Politics, East Asia, Political Economy, Political Psychology, Political Theory, International Relations, and International Security Policy to name just a few. There are many other interdisciplinary workshops throughout the University ranging from Law and Economics, to Gender and Sexuality, to Russian Studies, all of which are open to political science students.

Upon receiving final approval of the dissertation by the members of the dissertation committee, the candidate gives a formal presentation based on the dissertation. Following the presentation, which is open to the public, the candidate is questioned by an examining committee of three faculty members.

For more information about current faculty, students, requirements, and courses, consult the department webpage at <http://political-science.uchicago.edu/>.

### INFORMATION ON HOW TO APPLY

The application process for admission and financial aid for all Social Sciences graduate programs is administered through the divisional Office of the Dean of Students. The Application for Admission and Financial Aid, with instructions, deadlines, and department specific information is available online at: <https://grad-application.uchicago.edu/>.

Questions pertaining to admissions and aid should be directed to [admissions@ssd.uchicago.edu](mailto:admissions@ssd.uchicago.edu) or (773) 702-8415. All correspondence and materials sent in support of the applications should be mailed to:

The University of Chicago  
Division of the Social Sciences

Admissions Office, Foster 105  
1130 East 59th Street  
Chicago, IL 60637

### Courses

For teaching purposes the subject matter of political science has been divided into the following fields of advanced study: political theory, American politics, comparative politics, international relations, and methodology. These fields are thought of not as separate compartments but as broad and flexible areas of specialization. Ph.D. candidates with interest in the governments of particular geographical areas may specialize in those areas by combining work in political science with relevant courses from other departments.

#### *Field I. Political Theory*

The field of political theory deals with the basic problems of politics with respect to both substance and method. It is therefore regarded as the foundation for work in all other areas of political science. It is concerned with three orders of problems: with alternative theories relating to the way people act in political affairs; with alternative standards in terms of which policy may be judged; and with alternative kinds of models and methods for pursuing political research.

#### *Field II. American Politics*

The field of American politics deals with the organization, distribution, and orientation of political power in American society. The major items of emphasis are the development of American political thought, the political behavior of individuals, groups, and governmental institutions, elections, and the formation and execution of public policy. Attention is paid both to the present state of the American political system and to its historical roots.

#### *Field III. Comparative Politics*

The field of comparative politics examines phenomena such as state formation, democracy, nationalism, economic organization, revolution, and social movements across time and space. One approach to these phenomena is to develop expertise in a particular era or area, and then to interpret the distinctive political processes and outcomes coming from that context. Another approach is to examine a set of cases in the search for valid generalizations about political phenomena that span across regions or historical eras. A third approach is to rely on formal theory to specify universal mechanisms or processes, and then to use data from a variety of sources to give credence to the models. All approaches share an assumption that the systematic study of political experience beyond that of the United States is a key ingredient for a discipline that seeks high levels of generality and abstraction.

*Field IV. International Relations*

The field of international relations is concerned with theoretical and empirical examination of international politics, especially international security and international political economy. Methodological approaches represented by the faculty include historical, case study, quantitative, and mathematical analysis. Workshops provide a common forum within the department for interchange between different questions about and approaches to international politics. In addition, there are important connections to other areas of political science including comparative and American politics, methodology, and political theory. International relations further engages other social science disciplines including international economics, political geography, public policy, and diplomatic history. Students are encouraged to take courses in these and other disciplines, although the department assumes responsibility only for those approaches to the study of international relations which develop the assumptions and utilize the methods employed in the fields of political science. For this field of political science, students are expected to acquire fundamental knowledge of international politics, with special emphasis on international relations theory and research approaches.

*Field V. Methodology*

The field of methodology is concerned with the quantitative and model building skills required for the study of political phenomena. It consists of introductory sequences of courses in both statistical and mathematical analysis, in addition to a variety of more advanced offerings focusing on specific topics. Applications of these methods in particular research areas will be encountered in a number of courses listed under the appropriate substantive fields. The department offers a comprehensive exam in Methodology by petition only; however, students can meet the requirements for course distribution automatically.

*Courses*

The department website offers descriptions of graduate courses scheduled for the current academic year: <http://political-science.uchicago.edu/courses.shtml>.

## DEPARTMENT OF PSYCHOLOGY

*Chair*

Howard C. Nusbaum

*Professors*

John T. Cacioppo

Bertram J. Cohler, Human Development

Jean Decety

Susan Goldin Meadow

Boaz Keysar

Susan Cohen Levine

John A. Lucy, Human Development

Daniel Margoliash, Organismal Biology and Anatomy

Martha K. McClintock

Howard C. Nusbaum

Steven K. Shevell

Richard Shweder, Human Development

Michael Silverstein, Anthropology

Steven K. Small, Neurology

Nancy Lou Stein

*Associate Professors*

Sian Beilock

William Goldstein

Leslie M. Kay

Brian Prendergast

Terry Regier

Penelope S. Visser

*Assistant Professors*

Josh Correll

David Gallo

Katherine Kinzler

*Emeritus Faculty*

R. Darrell Bock

Abraham Bookstein, Humanities Division

Norman M. Bradburn

Robert A. Butler, Surgery

Mihaly Csikszentmihalyi

Eugene T. Gendlin

Sebastian P. Grossman

Eric P. Hamp, Linguistics

Janellen Huttenlocher

Philip W. Jackson, Education

Jerre Levy

Frederick F. Lighthall, Education

David McNeill

Joel M. Pokorny, Ophthalmology and Visual Science

Allan Rechtschaffen, Psychiatry

Milton J. Rosenberg

Vivianne Smith, Ophthalmology and

Visual Science

Benjamin D. Wright  
Victor H. Yngve, Linguistics

The primary focus of the study of psychology is on the individual. Thus, its scope includes the biological processes of brain growth, development and functioning; the perceptual and cognitive processes by which information is acquired, stored, used and communicated; the comprehension, production, and use of language from a psychological viewpoint; the social, cultural, and emotional processes by which experience is interpreted and organized; and the developmental processes that underlie change from infancy through adulthood. Training emphasizes the conceptual theories that describe and explain these processes, and the variety of methods that are used to study them.

Originally founded as the Laboratory of Psychology in 1893, the Department of Psychology has been for a century a leading center of scholarship, research and teaching in psychology and related fields. Among its distinguished faculty and students have been James Rowland Angell, John Dewey, George Herbert Mead, John B. Watson, the founder of behaviorism, L. L. Thurstone, a pioneer in psychological measurement, Karl Lashley, Klüver and Bucy, Kleitman, discoverer of REM sleep, Frank Beach, founder of behavioral endocrinology, W. C. Allee who viewed biology as a social phenomenon, and Roger Sperry, Nobel Prize winner for his work in cerebral lateralization. The present Department of Psychology is conscious of its distinguished intellectual forebears and continues to reflect its heritage in its commitment to research, the scope of its inquiry, and the diversity of its programs of graduate study.

Moreover, consistent with the interdisciplinary traditions of the University of Chicago, the Department of Psychology maintains close connections with other departments in the University. The department's faculty and students actively participate in courses, colloquia, workshops and joint research ventures with scholars in related departments, including, but not confined to, anthropology, biology, computer science, computational neuroscience, linguistics, neurobiology, and philosophy, and in the University's professional schools of business, public policy, law, medicine, and social service administration.

The Department of Psychology is organized into specialized training and research programs that reflect the contemporary state of the discipline as well as wide ranging interests of its own faculty. They are currently the Cognition Program, the Developmental Psychology Program, the Integrative Neuroscience Program, the Perception Program, and the Social Psychology Program. The interdisciplinary character of the University and the Department of Psychology is reflected in the fact that many faculty members serve on more than one of the department's programs.

## DEGREES

The course of study offered by the Department of Psychology is designed primarily to prepare students for careers in research and teaching and for whatever professional work is necessary as an adjunct to these career objectives. Programs of graduate study offered by the department lead to the Ph.D. degree in the Division of the Social Sciences. In order to qualify for the Ph.D. degree, students must satisfy (1) the University's residency requirements; (2) the requirements of the Division of the Social Sciences; and (3) the requirements of the particular program of the Department of Psychology.

The Department of Psychology does not offer courses of study leading to the degree of Master of Arts. However, students admitted to doctoral study may take the Master of Arts degree as an optional step in the doctoral program. Similarly, a student admitted who must leave the program, for whatever reason, may apply for a terminal Masters of Arts degree, providing the student has met the University's residency requirements, the requirements of the Division of the Social Sciences, and the program requirements of the particular program of the Department of Psychology.

## PSYCHOLOGY LINGUISTICS JOINT PH.D. PROGRAM

A joint Ph.D. degree program in psychology and linguistics exists for those students who are interested in completing degree requirements in both fields. Psychology students in the Language area of the Cognition Program may apply to the joint degree program in the second year and beyond, but are not required to do so.

## CERTIFICATE IN SOCIAL PSYCHOLOGY

Students who have already been admitted to a Ph.D. program in the Division of the Social Sciences may pursue a Certificate in Social Psychology upon application to the Social Psychology area and approval by the Social Psychology area chair. The certificate will be awarded upon successful completion of the following requirements.

1. Three graduate courses in the Social Psychology Program taken for qualitative grades.
2. A teaching assistantship in a course on a topic related to Social Psychology under the supervision of a faculty member in the Social Psychology Program. (Faculty members in the Social Psychology Program include affiliate faculty whose primary appointment falls outside the Department of Psychology.)
3. A dissertation on a topic related to Social Psychology under the direction of a member of the Social Psychology Program.

Completion of these requirements will result in the notation Certificate in Social Psychology posted to the student's transcript.

Upon application and approval, as described above, Ph.D. students in other units who are working with affiliated Social Psychology faculty members may also pursue a Certificate in Social Psychology.

#### ADMISSION

Students are admitted by application to the Department of Psychology to pursue courses of study in doctoral programs that are formulated by the individual programs. Applicants must specify the program to which they are applying. Applicants will be considered for admission only if they have earned a bachelor's degree or its equivalent. Admission depends upon the strength of the general undergraduate record, scores on the Graduate Record Examination, letters of recommendation, personal statement and interests, and relevant laboratory or field research experience. Please refer to the Office of International Affairs web site: <https://internationalaffairs.uchicago.edu/students/prospective/toefl.shtml>. Foreign language students must provide evidence of English proficiency by submitting scores from either the Test of English as a Foreign Language (TOEFL) or the International English Testing System (IELTS). Candidates for admission are expected to have some background in psychology as well as mathematics and statistics. Candidates with backgrounds in anthropology, history or sociology are encouraged to apply to Psychology, (the Social Psychology Program); those with strong biological training and interests are encouraged to apply to Psychology, (the Integrative Neuroscience Program or the Social Program).

Students are admitted through the Division of the Social Sciences. Students already enrolled in the Department of Linguistics of the Division of the Humanities who wish to work toward the joint Ph.D. in Psychology, (the Language area of the Cognition Program) and in Linguistics must be admitted as well to the Department of Psychology through the Division of the Social Sciences.

#### HOW TO APPLY

The application process for admission and financial aid for all Social Sciences graduate programs is administered through the divisional Office of the Dean of Students. The Application for Admission and Financial Aid, with instructions, deadlines and department specific information is available online at: <https://grad-application.uchicago.edu/>

Questions pertaining to admissions and aid should be directed to [admissions@ssd.uchicago.edu](mailto:admissions@ssd.uchicago.edu) or (773) 702-8415. All correspondence and materials sent in support of applications should be mailed to:

The University of Chicago  
Division of the Social Sciences  
Admissions Office, Foster 105  
1130 East 59th Street  
Chicago, IL 60637.

For additional information about the Psychology program, please see: <http://psychology.uchicago.edu> or call 773-702-8861.

#### GENERAL REQUIREMENTS FOR DOCTORAL STUDENTS

All doctoral students in the Department of Psychology must complete the common graduate curriculum. In addition, each student must complete the course requirements specified by one of the department's specialized training and research programs. In exceptional cases, a student may design an individual sequence of courses. This sequence must be approved by the curriculum and student affairs committee before the student undertakes it. Completion of these course requirements is a prerequisite for Ph.D. candidacy.

#### COMMON GRADUATE CURRICULUM

The common curriculum consists of a maximum of 10 courses. Other requirements for graduate students will be set by the areas of specialization.

Statistics requirement: Three courses: (1) Statistics 22000: Statistical Methods and Applications, or a more advanced Statistics course. (2) Psychology 37300: Experimental Design I, (3) Psychology 37900: Experimental Design II. These courses must be passed with a grade of B or better.

Trial research seminar: All graduate students are required to take the trial research seminar in the spring of the first year. The purpose of this seminar is to help students formulate and complete their trial research projects.

Core courses: Five core courses will be offered each year. These courses will be Psyc 30300: Biological Psychology; Psyc 30400: Cognitive Psychology; Psyc 30500: Developmental Psychology; Psyc 30600: Social Psychology and Psyc 30700: Sensation and Perception. Students will be required to take three of these five courses. These courses must be passed with a grade of B or better.

Minor area: Students must take three graduate courses that provide coherent coverage of a discipline outside of psychology that complements a student's course of study within psychology (e.g., computer science, neurobiology, linguistics, philosophy, anthropology, mathematics, statistics beyond the courses required, etc.). These courses should be chosen in consultation with the student's advisor, and they may be taken pass/fail.

#### COGNITION PROGRAM

Research on cognition lies at the core of the study of many basic psychological mechanisms (e.g., recognition, attention, categorization, memory, inference) and in recent years, neuroimaging methods have been used to make enormous strides grounding these mechanisms in the brain. Work on cognitive mechanisms has been important in a number of other areas of psychology (e.g., Social Psychology and Developmental Psychology) and provides an important

theoretical foundation for understanding higher order cognition including language use, reasoning, and problem solving.

**Goals of the Cognitive Psychology Area.** The goal of the Cognitive Psychology area is to provide training that is grounded in the basic principles and theories of cognitive psychology. The focus of training in this area is on behavioral research methods and theories of human information processing and computational modeling. Research topics include categorization, learning, attention, long term memory, working memory use, visual perception, speech perception, and motor behavior.

**Goals of the Language Area.** The psychological study of language is central to psychology, and is strongly represented in our department. This area offers graduate study investigating human language from several perspectives. There are four major research topics that comprise this area: (i) language and thought, (ii) modalities of linguistic expression, (iii) language acquisition, and (iv) discourse and pragmatics. Specific topics of research include: linguistic meaning and its relation to non linguistic cognition, speech perception, the study of gesture and other forms of nonverbal communication, vocabulary acquisition, syntax acquisition, the social bases of language use, discourse and narrative structure, and pragmatics. Methods used include experimentation, observational study, and computational modeling.

There are three elements in the graduate curriculum of the Cognition Program.

1. Departmental curriculum. Students must complete the departmental core graduate curriculum. Within this curriculum, there are two requirements specific to Cognition students.

They must take Cognitive Psychology as one of their three core psychology classes.

They must fulfill the departmental minor area requirement by taking three courses that provide a coherent grounding in some aspect of cognition or cognitive neuroscience. These courses are to be decided on in consultation with the student's advisor, prior to actually taking the courses. It is recommended that students fulfill this requirement through cognitively oriented courses in anthropology, computer science, human development, linguistics, or neurobiology. Other courses are also acceptable as long as they are relevant to the study of cognition.

2. Basic courses. Students must complete three basic courses. Pre approved courses are:

- Psych 31200: Systems neuroscience
- Psych 32600: Speech perception
- Psych 33200: Introduction to language development
- Psych 34214: Cognitive neuroscience
- Psych 34400: Computational neuroscience III
- Psych 34700: Social cognition
- Psych 37400: Human memory

Psych 37500: Introduction to the psychology of language

Psych 38300: Attention

Psych 38500: Cognitive neuropsychology

Psych 39000: Vision

Students may also propose other courses, based on course offerings in a given year. Such proposals should be approved by the curriculum committee prior to enrollment in the courses.

3. Advanced courses and seminars. Students are strongly encouraged to participate in advanced courses and seminars, particularly in their area of interest.

### THE DEVELOPMENTAL PSYCHOLOGY PROGRAM

There is a strong history of work in developmental psychology at the University of Chicago. The goal of this program is to foster the continuing development of this area by providing a program of study for graduate students and a community of researchers who share an interest in how development occurs. The Developmental Psychology program offers graduate study which investigates child psychology from a variety of perspectives. Four major research areas make up the program: cognitive development, social and emotional development, language and communicative development, and biological development. Specific topics of research specialization include: vocabulary acquisition, the development of gesture and other forms of nonverbal communication, the development of discourse abilities, mathematical and number knowledge in infants and children, the effects of early brain damage on development, social cognitive development in infancy and early childhood, early emotional understanding, the development of autobiographical memory, parent child interaction, language socialization, cultural influences on development, and environmental effects on language development and school achievement. The emphasis is on the use of experimental and observational methods for the study of development.

1. General course: Psyc 40500. Psyc 40500 is required of all students in the program except those who have already taken it as undergraduates at the University of Chicago. This course will also fulfill part of the core course requirements for the common graduate curriculum.

2. An advanced course in each of four areas of Developmental Psychology. The offerings may change from year to year. Certain seminars may also fulfill these requirements.

*Cognitive/Intellectual Development:* Psyc 32500: Cognitive Development (Huttenlocher); Psyc 33300: Cognition, Development and Learning (Stein)

*Biological Development:* Psyc 31700: Developmental Biopsychology (McClintock); Psyc 33100: Introduction to Developmental Neuropsychology (Levine); Psyc 34900: Biopsychology of Attachment (Maestripiერი)

*Language/Communicative Development:* Psyc 33200: Language Development (Goldin-Meadow); Psyc 35500: Language Socialization (Lucy); Psyc 38000: Language and Thought in Development (Huttenlocher)

*Language/Communicative Development:* Psyc 33200: Language Development (Goldin Meadow); Psyc 35500: Language Socialization (Lucy); Psyc 38000: Language and Thought in Development (Huttenlocher)

*Social/Emotional Development:* Psyc 34700: The Development of Social Understanding (Stein); Psyc 33650: The Development of Social Cognition (Kinzler).

3. It is suggested that the three minor area courses required by the common graduate curriculum be chosen from one of the following areas: linguistics, computer science, computational neuroscience, neurobiology, statistics, sociology, anthropology, public policy, or human development. The minor area courses must form a cohesive unit that relates to the student's program of study.

4. Students are strongly encouraged to take advanced courses and seminars, particularly in their area of interest.

#### INTEGRATIVE NEUROSCIENCE

The notion that 100 billion neurons give rise to human behavior proved daunting up through the 20th Century because neuroscientists were limited by existing technologies to studying the properties of single neurons or small groups of neurons. Characterizing simple neural circuits has led to an understanding of a variety of sensory processes, such as the initial steps in vision, and motor processes, such as the generation of locomotion patterns. However, unraveling the neural substrates of more complex behaviors, such as the ability to pay attention to relevant events in its surroundings or the ability to understand the likely events going through the mind of another, remains one of the major challenges for the neurosciences in the twenty-first century. In contrast to simple behaviors, these complex behaviors depend on interactions within a network of different brain structures. Studying the neural bases of complex behaviors, thus, requires an integrative neuroscience approach.

The Integrative Neuroscience graduate program at the University of Chicago is designed to provide the training and research opportunities for the next generation of behavioral, cognitive, and social neuroscientists. Behavioral, cognitive, and social neuroscience represent three complementary and partially overlapping aspects of this integrative neuroscience of mind and behavior. Behavioral neuroscience places an emphasis on the biological mechanisms underlying basic behavioral processes; cognitive neuroscience places an emphasis on the biological mechanisms underlying cognition, with a specific focus on the neural substrates of mental processes and their behavioral manifestations; and social neuroscience places an emphasis on the biological mechanisms underlying social processes and behavior, including the ability to perceive and communi-

cate mental states including the beliefs and desires of others and to form and maintain interpersonal and group relationships. The University of Chicago is optimally positioned to meet this challenge because its unique academic structure facilitates interactions across disciplinary perspectives.

#### *Integrative Neuroscience Requirements:*

In addition to the common graduate requirements, an I.N. area requirement is that the common graduate minor area requirement must be in the Neuroscience Cluster courses. a. Cellular Neurobiology (Nurb 31800); b, Survey of Systems Neuroscience (Nurb 31600), c. Behavioral Neuroscience (Psyc 40107).

The I.N. Program offers the following advanced courses:

- A. Behavioral Neuroscience: Psyc 35150 Biological Rhythms and Behavior; Psyc 37150 Neural Oscillations; Psyc 36901 Neuropsychopharmacology.
- B. Cognitive Neuroscience: Psyc 38300 Attention, Psyc 38660. Cognitive Neuroscience, Psyc 36100 Developmental Cognitive Neuroscience,, Psyc 37400 Human Memory Or Psyc 37450 LM&C Skill Learning & Performance, 35750 Spoken Language Processing .
- C. Perception: Psyc 38300 Attention, Psyc 32000 Color Vision, Psyc 33700 Perception and Action, Psyc 39000 Vision.
- D. Social Neuroscience. Psyc 46100 Attitudes and Persuasion, Psyc 34700 Social Cognition, Psyc 33300 Social Neuroscience of Empathy, Psyc 35950 Stereotyping and Prejudice

A Ph.D. Qualifying Examination is given at the beginning of the third year.

#### The Social Psychology Program

The general philosophy of the curriculum is to provide students with the requisite knowledge and skills to excel in mainstream, academic social psychology. In addition to Departmental requirements, graduate students in the University of Chicago Social Psychology Program must fulfill the following course requirements:

1. General Courses:
  - a. Psyc 40600: Social Psychology: Introductory course in experimental social psychology. This course will also fulfill part of the core course requirements of the common graduate curriculum.
  - b. Proseminar in Social Psychology: One quarter course in which faculty members in the Chicago Program (but not in the Department of Psychology) give summaries of ongoing research.
2. Topics in Experimental Social Psychology: An ongoing seminar taught collectively by the Core Faculty each quarter.
3. An advanced course or seminar in at least four of the following Areas of Emphasis:
  - a. Self
  - b. Social Cognition

- c. Social and Cognitive Neuroscience
  - d. Decision Making
  - e. Attitudes and Affect
  - f. Stereotyping and Prejudice
  - g. Communication and Language Processes
  - h. Interpersonal Relations and Group Processes
  - i. Political Psychology
  - j. Cultural Psychology
4. The Advanced Methods in Experimental Social Psychology course plus two additional courses in advanced methods and statistics.
  5. Finally, students are expected to take advanced courses and seminars in their area of interest.

#### *Research Requirements*

##### *Trial Research Project*

Each student in the Department of Psychology will complete a trial research project under the guidance of a faculty advisor or advisors by the end of the seventh week of the spring quarter of the second year. Each student's trial research committee consists of the advisor and two other faculty members.

##### *Dissertation*

Each student in the Department of Psychology will complete a dissertation under the guidance of a faculty advisor or advisors. The committee consists of the advisor, two other members of the faculty, and an outside reader.

##### *Evaluations*

All students in the Department of Psychology are evaluated at the end of the spring quarter each year. The evaluation at the end of the second year is particularly important, as it determines whether a student will be admitted to candidacy and permitted to conduct dissertation research.

##### *Courses*

The department website offers information on graduate courses: <http://psychology.uchicago.edu/academics/doctoral/index.shtml>.

## COMMITTEE ON SOCIAL THOUGHT

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##### *Chair*

Robert Pippin

##### *Professors*

Lorraine Daston  
 Vincent Descombes  
 Wendy Doniger  
 Hans Joas  
 Leon R. Kass  
 Jonathan Lear  
 Jean Luc Marion  
 Heinrich Meier  
 Glenn W. Most  
 David Nirenberg  
 Thomas Pavel  
 Robert B. Pippin  
 James M. Redfield  
 Laura Slatkin  
 Nathan Tarcov  
 Ralph Ubl  
 David Wellbery  
 Adam Zagajewski

##### *Emeriti*

Paul Friedrich  
 Leszek Kolakowski  
 Joel Kraemer  
 Ralph Lerner  
 Charles W. Rosen  
 David Tracy  
 Anthony C. Yu

The Committee on Social Thought was established as a degree granting body in 1941 by the historian John U. Nef (1899-1988), with the assistance of the economist Frank Knight, the anthropologist Robert Redfield, and Robert M. Hutchins, then President of the University. The Committee is a group of diverse scholars sharing a common concern for the unity of the human sciences. It accepts qualified graduate students seeking to pursue their particular studies within this broader context, and aims both to teach precision of scholarship and to foster awareness of the permanent questions at the origin of all learned inquiry.

The primary themes of the Committee's intellectual life have continued to be literature, religion, philosophy, politics, history, art and society. Inevitably, the faculty of the Committee does not encompass within itself the full range of intellectual disciplines necessary for these studies, and the fields represented by the faculty have changed substantially during the Committee's history. Students apply to work with the faculty who are here at any particular time

and, where appropriate, with other faculty at the University of Chicago. Although it offers a variety of courses, seminars, and tutorials, it does not require specific courses. Rather, students, with the advice of Committee faculty, discover the points at which study in established disciplines can shape and strengthen their research, and they often work closely with members of other departments. Through its several lecture and seminar series, the Committee also seeks to draw on the intellectual world beyond the University.

Students admitted to the Committee work toward the Ph.D. There are three principal requirements for this degree: the fundamentals examination, the foreign language examination and the dissertation. Study for the fundamental exam centers on twelve to fifteen books, selected by the student in consultation with the faculty. Each student is free to draw from the widest range of works of imaginative literature, religious thought, philosophy, history, political thought, and social theory and ranging in date from classical times to the twentieth century. Non Western books may also be included. Study of these fundamental works is intended to help students relate their specialized concerns to the broad themes of the Committee's intellectual life. Some of the student's books will be studied first in formal courses offered by faculty, though books may also be prepared through reading courses, tutorials, or independent study.

Preparation for the fundamentals examination generally occupies the first two or three years of a student's program, together with appropriate philological, statistical, and other disciplinary training.

After successful completion of the fundamentals examination, the student writes a dissertation under faculty supervision on an important topic using appropriately specialized skills. A Committee on Social Thought dissertation is expected to combine exact scholarship with broad cultural understanding and literary merit. In lieu of an oral defense, a public lecture on an aspect of their research of general interest to the scholarly community is to be given.

As a partial guide, and to suggest the variety of possible programs, there follows a list of titles of some of the dissertations accepted by the Committee since 1994:

Heidegger's Polemos: From Being to Politics

Nature's Artistry: Goethe's Science and *Die Wahlverwandtschaften*

Nietzsche's Schopenhauer: The Peak of Modernity and the Problem of Affirmation

Feminism and Liberalism: The Problem of Equality

A Hesitant Dionysos: Nietzsche and the Revelry of Intuition

Conrad's Case Against Thinking

Reading the Republic as Plato's Own Apology

Cartesian Theodicy: Descartes Quest for Certitude

Plato's Gorgias and the Power of Speech and Reason in Politics

World Government and the Tension between Reason and Faith in

Dante Alighieri's *Monarchia*

A House Divided: The Tragedy of Agamemnon

Eros and Ambition in Greek Political Thought

Natural Ends and the Savage Pattern: The Unity of Rousseau's Thought Revisited

A Sense of Place. Reading Rousseau: The Idea of Natural Freedom

Churchill's Military Histories: A Rhetorical Study

A Nation of Agents: The Making of the American Social Character

The Problem of Religion in Spinoza's *Tractatus Theologico Politicus*

A Great Arrangement of Mankind: Edmund Burke's Principles and Practice of Statesmanship

The Dance of the Muses

Tocqueville Unveiled: A Historian and his Sources in *L'Ancien Régime et la Révolution*

The Search for Biological Causes of Mental Illness

War, Politics, and Writing in Machiavelli's *Art of War*

Plato's Laws on the Roots and Foundation of the Family

The Philosophy of Friendship: Aristotle and the Classical Tradition on Friendship and Self Love

Regions of Sorrow: Spaces of Anxiety and Messianic Tome in Hannah Arendt and W.H. Auden

Converting the Saints: An Investigation of Religious Conflict using a Study of Protestant Missionary Methods in an Early 20th Century Engagement with Mormonism

The Significance of Art in Kant's *Critique of Judgment*

Historicism and the Theory of the Avant Garde

Human Freedom in the Philosophy of Pierre Gassendi

Taking Her Seriously: Penelope and the Plot of Homer's *Odyssey*

Karna in the Mahabharata

Hegel on Mind, Action, and Social Life: The Theory of Geist as a Theory of Explanation. Liberalism in the Shadow of Totalitarianism: The Problem of Authority and Values Since World War Two

Nietzsche's *Problem of Socrates and Plato's Political Psychology*

Tocqueville's *New Political Science: A Critical Assessment of Montesquieu's Vision of a Liberal Modernity*

Magnanimity and Modernity: Self Love in the Scottish Enlightenment

Hegel's Conscience: Radical Subjectivity and Rational Institutions

Religious Zeal, Political Faction and the Corruption of Morals: Adam Smith and the Limits of Enlightenment

This Distracted Globe: Hamlet and the Misgivings of Early Modern Memory

Teaching the Contemplative Life: The Psychagogical Role of the Language of Theoria in Plato and Aristotle

The Allegory of the Island: Solitude, Isolation, and Individualism in the Writings of Jean Jacques Rousseau

The Convergence of Homer's *Odyssey* and Joyce's *Ulysses*

The Curiosity of the Idle Reader: Self Consciousness in Renaissance Epic

Bacon on Virtue: The Moral Philosophy of Nature's Conqueror

Picturing the Path: The Visual Rhetoric of Barabudur

Collecting Objects/Excluding People: Chinese Subjects and the American Art Discourse 1870-1900

From Religionskrieg to Religionsgesprach: The Theological Path of Boden's Colloquium Heptaplomeris

The Problem of Autonomy in the Thought of Montaigne

The Virtue of the Soul and the Limits of Human Wisdom: The Search for SÔPHROSUNÊ in Plato's Charmides

Nietzsche's "Fantastic Commentary": On the Problem of Self-Knowledge

Erotic Uncertainty: Towards a Poetic Psychology of Literary Creativity

Cruelty: On the Limits of Humanity

Hamletian Romanticism: Social Critique and Literary Performance from Wordsworth to Trollope

Hamlet's Arab Journey: Adventures in Political Culture and Drama 1952-2002

Acquiring "Feelings that do not Err": Moral Deliberation and the Sympathetic Point of View in the Ethics of Dai Zhen

The Contest of Regimes and the Problem of Justice: Political Lessons from Aristotle's Politics

Socrates and the Second Person: The Craft of Platonic Dialogue

In the Grip of the Future: The Tragic Experience of Time

Thucydides on the Political Soul: Pericles, Love of Glory, and Freedom

Connecting Agency and Morality in Kant's Moral Theory

Tocqueville and the Question of the Nation

Pierre Bayle's "Machiavellianism"

The Burial of Hektor: The Emergence of the Spiritual World of the Polis in the Iliad

Hegel's Defense of Moral Responsibility

Dostoevsky, Madness, and Religious Fervor: Reason and its Adversaries

The Uses of Boredom

Two Loves, Two Cities: Intellectus and Voluntas in Augustine's Political Thought

Power and Goodness: Leibniz, Locke and Modern Philosophy

Soren Kierkegaard and the Very Idea of Advance Beyond Socrates

Between City and Empire: Political Ambition and Political Form in Plutarch's Parallel Lives

## AREAS OF STUDY

Work with the Committee is not limited as to subject matter. Any serious program of study, based on the Fundamentals Examination, culminating in a scholarly doctoral dissertation, and requiring a framework wider than that of a specialized department, may be appropriate. In practice, however, the Committee is unwilling to accept a student for whom it is unable to provide competent guidance in some special field of interest, either from its own ranks or with the help of other members of the University.

## ADMISSION

Students in the Committee have unusual scope for independent study, which means that successful work in Social Thought requires mature judgment and considerable individual initiative. Naturally, the Committee wishes to be reasonably confident of an entering student's ability to make the most of the opportunities the Committee offers and to complete the program of study. Hence, we request that the personal statement required by the University application should take the form of a letter to the Committee which addresses the following questions: What intellectual interests, concerns, and aspirations lead you to undertake further study and why do you want to pursue them with the Committee? What kind of work do you propose to do here? (If you can, include your intentions for the Fundamentals requirement, further language study, and dissertation research.) How has your education to date prepared you? In addition, you should include a sample of your best written work, preferably relevant to the kind of work you propose to do at the Committee, though you may also include a short sample of fiction or poetry in addition. We will return your papers if they are accompanied by a stamped, self addressed envelope. Should we consider the evidence submitted to be insufficient, we may ask you to add to it. Applicants are also required to take the Graduate Record Examination.

## HOW TO APPLY

The application process for admission and financial aid for all Social Sciences graduate programs is administered through the divisional Office of the Dean of Students. The Application for Admission and Financial Aid, with instructions, deadlines and department specific information is available online at: <https://grad-application.uchicago.edu/>.

Questions pertaining to admissions and aid should be directed to [ssd-admissions@uchicago.edu](mailto:ssd-admissions@uchicago.edu) or (773) 702-8415. All correspondence and materials sent in support of applications should be mailed to:

The University of Chicago  
Division of the Social Sciences  
Admissions Office, Foster 105  
1130 East 59th Street  
Chicago, IL 60637.

Foreign students must provide evidence of English proficiency by submitting scores from either the Test of English as a Foreign Language (TOEFL) or the International English Language Testing System (IELTS).

For additional information about the Social Thought program, please call 773-702-8410.

### *Courses*

The department website offers descriptions of graduate courses scheduled for the current academic year: <http://socialthought.uchicago.edu/program/courses/index.shtml>. Or you may email the Committee directly [com-soc-tht@uchicago.edu](mailto:com-soc-tht@uchicago.edu) and request a copy of the current course schedule.

## DEPARTMENT OF SOCIOLOGY

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### *Chair*

Kazuo Yamaguchi

### *Professors*

Andrew Abbott

Gary S. Becker, Economics

Terry N. Clark

Elisabeth S. Clemens

John L. Comaroff, Anthropology

Karin Knorr Cetina, Anthropology

Edward O. Laumann

John Levi Martin

Stephen W. Raudenbush

Martin Riesebrodt, Divinity

Mario Luis Small

Ross M. Stolzenberg

Richard P. Taub, Comparative Human Development

Linda Waite

Kazuo Yamaguchi

Dingxin Zhao

### *Associate Professors*

Andreas Glaeser

Omar M. McRoberts

### *Assistant Professors*

James A. Evans

Ryon Lancaster

Cheol-Sung Lee

Kristen Schilt

Yang Yang

### *Visiting Professor*

Hans Joas

### *Emeritus Faculty*

Charles E. Bidwell

Donald J. Bogue

Donald N. Levine

William L. Parish

Gerald D. Suttles

### *Associated Faculty:*

Ronald S. Burt, Business

Kathleen A. Cagney, Health Studies

James A. Davis

Bernard E. Harcourt, Law School

Susan E. Mayer, Public Policy

Damon Phillips, Business

### *Research Associate:*

Barbara Schneider (Professor)

The Department of Sociology, established in 1893 by Albion Small and Charles A. Henderson, has been centrally involved in the history and development of the discipline in the United States. The traditions of the Chicago School were built by pioneers such as W. I. Thomas, Robert E. Park, Ernest W. Burgess, and William F. Ogburn. It is a tradition based on the interaction of sociological theory with systematic observation and the analysis of empirical data; it is interdisciplinary, drawing on theory and research from other fields in the social sciences and the humanities; it is a tradition which seeks to fuse together concern with the persistent issues of social theory and attention to the pressing social and policy problems of modern society.

Continuous developments in social research have marked the department's work in recent years. The department has pursued a balance in effort between individual scholarship and the development of group research approaches. Faculty members have been engaged in the development of systematic techniques of data collection and in the statistical and mathematical analysis of social data. Field studies and participant observation have been refined and extended. There has been an increased attention to macrosociology, to historical sociology, and to comparative studies. The staff is engaged in individual and large scale group projects which permit graduate students to engage in research almost from the beginning of their graduate careers. The student develops an apprenticeship relation with faculty members in which the student assumes increasing amounts of independence as he or she matures.

## RESEARCH

The study of sociology at the University of Chicago is greatly enhanced by the presence of numerous research enterprises engaged in specialized research. Students often work in these centers pursuing collection and study of data with faculty and other center researchers. Students have the opportunity for experience in the following research enterprises: the William F. Ogburn/Samuel A. Stouffer Center for the Study of Population and Social Organizations; the Population Research Center; the Committee on Demographic Training; NORC Research Centers; the Center for the Study of Politics, History, and Culture; the Center for Health Administration Studies; the Rational Choice Program; and the Center on Demography and Economics of Aging. These provide an opportunity either for field work by which the student brings new primary data into existence or for the treatment of existing statistical and other data. The city of Chicago provides opportunities for a variety of field investigations, and the department also encourages cross national and foreign studies.

The faculty have research interests in Europe, Asia, and Africa. Faculty and students may take advantage of an extensive computer system dedicated to research and teaching activities. The department participates fully in

the Social Sciences Research Computing Center, which is a fully articulated network of personal computers, mini-computers and small mainframes. Access to the system is available through many work stations on campus. A large library of social science programs and data sets has been collected, with applied demographic routines being an area of particular strength.

## ADMISSION

The Department of Sociology offers a program of studies leading to the Ph.D. degree. It does not have a master's degree program. Students may ordinarily earn a master's degree as part of the Ph.D. program. The department welcomes students who have done their undergraduate work in other social sciences and in fields such as mathematics, biological sciences, and the humanities. The department also encourages students who have had work experience, governmental or military service, or community and business experience to apply.

All applicants for admission are required to submit Graduate Record Examination (GRE) General Test scores. Foreign students must provide evidence of English proficiency by submitting scores from either the Test of English as a Foreign Language (TOEFL) or the International English Language Testing System (IELTS). A writing sample is required for all applications.

The application process for admission and financial aid for all Social Sciences graduate programs is administered through the divisional Office of the Dean of Students. The Application for Admission and Financial Aid, with instructions, deadlines, and department specific information is available online at <http://grad-application-e.uchicago.edu>

Questions pertaining to admissions and aid should be directed to [admissions@ssd.uchicago.edu](mailto:admissions@ssd.uchicago.edu) or (773) 702-8415. All correspondence and materials sent in support of applications should be mailed to:

The University of Chicago  
Division of the Social Sciences  
Admission Office, Foster 105  
1130 East 59th Street  
Chicago IL 60637

For additional information about the Sociology program, please see <http://sociology.uchicago.edu/> or call (773) 702-8677.

## THE DEGREE OF DOCTOR OF PHILOSOPHY

The doctoral program is designed to be completed in five to seven years of study by a student entering with a bachelor's degree. Satisfactory completion of the first phase of the Ph.D. program also fulfills the program requirements for the M.A. degree.

*Common core course requirements.* To complete the requirements for the A.M. and Ph.D. degrees, students are required

to complete for credit a two quarter sequence, Sociological Inquiry 1 & 2, as well as History of Social Theory, during the first two years of residence.

*Methodology and statistics requirement.* For the Ph.D. degree, also during the first year, students are required to complete for credit Statistical Methods of Research I and II. For students entering with a strong quantitative background, the department may approve alternative sequences.

*Preliminary examination.* This is an M.A. final/Ph.D. qualifying written examination designed to demonstrate competence in several major subdisciplines of sociology. The examination is based on the first-year common core courses, Sociological Inquiry 1 and History of Social Theory, and a special supplementary bibliography. The preliminary examination is normally taken at the beginning of the second year of residence. On the basis of the student's performance on this examination and in course work during the first year, the department determines whether the student is allowed to continue for the Ph.D.

*The Qualifying paper.* This paper should represent an original piece of scholarship or theoretical analysis and must be written in a format appropriate for submission to a professional publication. Note that the requirement is "publishable," not "published." The paper is to be prepared under the direct supervision and approval of a faculty member and may be written or revised in connection with one or more regular courses. Students entering with M.A. papers may submit an appropriate revision to meet the qualifying paper requirement. Students should formulate a proposal for the paper by the time of the progress review in spring of their second year. The qualifying paper should be completed before the end of the third year of study.

*Special field examinations.* Ph.D. students are required to demonstrate competence in two special fields. The Special Field Requirement is generally met during the third and fourth years of graduate study. Students must pass the Preliminary Examination at the Ph.D. level before meeting the Special Field Requirement. An examination or review essay is prepared on an individual basis in a field of sociology in which the student wishes to develop research competence. One special field is ordinarily closely related to the subject matter of the subsequent dissertation. The examination will cover both theoretical and substantive materials and the methods required for effective research in those fields. Preparation takes the form of specialized courses and seminars, supplemented by independent study and reading. The fields most commonly taken are community structure; demography; economics and work institutions; culture; educational institutions; family and socialization; formal organizations; mathematical sociology; methodology; modernization; political organization; race and ethnic relations; social change and social movements; social stratification; and urban sociology. One of the two Special

Field requirements may be met with an approved sequence of methodology courses.

*Dissertation.* The student prepares a research plan under the guidance of a specially appointed committee. The plan is subject to review by a faculty committee appointed for each student to determine whether the project is feasible and to assist in the development of research. Upon approval of the dissertation proposal and completion of the other requirements listed above, the department recommends that the Division of the Social Sciences formally admit the student to candidacy for the Ph.D. degree. When the dissertation is completed, an oral examination is held on the dissertation and the field to which it is related. The Ph.D. dissertation is judged by its contribution to sociological knowledge and the evidence it shows of ability to carry out independent research.

## TEACHING OPPORTUNITIES

The Department of Sociology provides teaching opportunities which give graduate students increasing responsibility for classroom instruction. After completing the second year of study, students apply to become course assistants with the opportunity to discuss course design, teach under supervision of a faculty member, and review student work. After completion of the A.M. portion of the program students who have served as course assistants may apply to become teaching interns with increased responsibility for course design and student evaluation in addition to leading class sessions. Students who have completed an internship are eligible for consideration as independent instructors of College level courses.

## GRADUATE WORKSHOPS

Students in sociology are invited to participate in the program of Graduate Workshops in the Humanities and Social Sciences, a series of interdepartmental discussion groups that bring faculty and advanced graduate students together to discuss their current work. At the workshops, Chicago faculty and students or invited guests present portions of books or other projects in which they are currently engaged. Workshops in which students and faculty in the department participate include those addressed to the following topics: Demography; East Asia: Politics, Economy, and Society; Education, Gender and Sexuality Studies; Money, Markets, and Consumption; Political Economy; Politics, Communication, and Society; Reproduction of Race and Racial Ideologies; Science, Technology, Society, and the State; Semiotics: Culture in Context; and Social Theory and Evidence.

### *Courses*

The department website offers descriptions of graduate courses scheduled for the current academic year: <http://sociology.uchicago.edu/graduate/course-catalog.shtml>.

## THE MORRIS FISHBEIN CENTER FOR THE HISTORY OF SCIENCE AND MEDICINE

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### *Director*

Robert J. Richards

### *Faculty*

Jean Comaroff, Anthropology

Arnold Ira Davidson, Philosophy

Jan Ellen Goldstein, History

Adrian Johns, History

Robert J. Richards, History

Joel M. Snyder, Art History

Stephen M. Stigler, Statistics

Russell H. Tuttle, Anthropology

Alison Winter, History

### *Emeritus Faculty*

Donald N. Levine, Sociology

Ian B. Mueller, Philosophy

George W. Stocking, Jr., Anthropology

William C. Wimsatt, Philosophy

The Morris Fishbein Center for the History of Science and Medicine was inaugurated at the University of Chicago in 1970. Its mission is to facilitate studies in the history of science and medicine by students, post doctoral scholars, and faculty with interest in this field. It lends particular support to Ph.D. students pursuing the history of science. It maintains close cooperative relations with the Department of History and the Committee on the Conceptual and Historical Studies of Science.

Graduate study in the history of science and medicine can lead to a Ph.D. degree through either the Department of History or the Committee on Conceptual and Historical Studies of Science. An extremely flexible program enables students to draw on a wide range of formal courses and seminars. At the same time it is possible to define programs of individual study that can accommodate the specific needs of persons with quite different backgrounds and interests. Arrangements are normally made with science departments when further technical training or supervision seems advisable. Additional training and supervision are available through the co-operation of historians of science and medicine at other universities throughout the nation.

Programs are designed for those who wish to investigate the sciences and medicine in their religious, philosophical, literary and technological contexts, and to relate them to broad questions of social structure and cultural change. Requirements are listed under the Department of History and the Committee on Conceptual and Historical Studies of Science. Additional information describing the

program and the types of financial aid available to students may be obtained on the center's web site: <http://social-sciences.uchicago.edu/fishbein/index.html> or by writing the Secretary of the Center, 1126 East 59th Street, Chicago, IL 60637.

### *Courses*

A listing of courses representative of those offered by members of the center is available at our website: <http://fishbein.uchicago.edu/courses.html>

## COMMITTEE ON GEOGRAPHICAL STUDIES

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### *Professors*

Michael P. Conzen  
Neil Harris, History  
Marvin W. Mikesell

### *Associate Faculty*

Virginia Parks, Social Service Administration  
Saskia Sassen, Sociology  
Todd Schuble, GIS  
Specialist, Social Science Computing

### *Emeritus Faculty*

Donald Bogue, Sociology  
Norton S. Ginsburg  
Gerson M. Rosenthal, Biology  
Gerald Suttles, Sociology

The Committee on Geographical Studies offers course work and research opportunities for graduate students in the University. Students from many degree programs in different divisions work through the committee for specialized training. The committee does not admit students for degree work.

Unique resources for geographical research exist both at the University and in the Chicago area. On campus, the Joseph Regenstein Library contains a geography monograph collection considered one of the four best in the world; a main map collection of over a quarter of a million maps covering all regions of the globe; and over 1,000 geography serial titles from all over the world. Among the holdings in the distinguished John Crerar Science Library are significant materials on the environment in general, agriculture, land use, housing, social welfare, and urban growth in Europe and the United States. Area research centers at the University devoted to the Middle East, East Asia, South Asia, Slavic regions, and Latin America provide further specialist interdisciplinary research opportunities, some including additional library collections.

Among the major libraries and museums in the Chicago area, the Newberry Library has special strength in American local materials and is home to the Hermon Dunlap Smith Center for the History of Cartography with its world class collection of antique and historical maps. Research and policy organizations, such as the Northeastern Illinois Planning Commission and Chicago Area Transportation Study, maintain specialized libraries and data repositories, and from time to time offer internship opportunities.

Students who wish to inquire further about the Committee on Geographical Studies should write or call: Chair, Committee on Geographical Studies, The University

of Chicago, 5828 South University Avenue, Chicago, IL 60637, telephone: (773) 702-8301.

### FIELDS OF STUDY

The principal objectives of the committee are the investigation of the organization of area, exploration of the earth environment and of its interactions with human life, and inquiry into the geographical dimensions of cultures and societies. The research interests of the committee's faculty include:

*Urban organization and change:* Urban origins; the evolution of urban networks and systems of cities, ancient and modern, western and non western; the changing spatial structure, social organization, and morphology of urban areas; problems of urban allocation and planning; regionalism in American urban life; emergence of new metropolitan and non metropolitan settlement patterns in advanced societies.

*Regional studies:* Historical and thematic approaches to regional structure, particularly of North America and the Middle East; theory of the region; the origin and development of regional character; locality and place making; nature and culture in regional settings; comparative study of regions.

*Cultural foundations of nation building:* The ethno religious bases of the nation state; evolving regionalism and culture; the geographical significance of territoriality; national and regional boundary conflicts; minorities and cultural autonomy; linguistic policies of the state; multi-cultural development strategies; international and transnational management of ethnic conflict; cultural roots of self determination.

*Landscape studies:* Landscape as an embodiment and shaper of social values and attitudes towards environment; theories of landscape structure and change; the historical development and regional construction of landscapes; thematic landscapes; the role of institutions in environmental design and management; aesthetic landscape values; landscape and the sense of place; comparative landscape analysis.

### *Courses*

The following list is representative of courses which have been offered by committee faculty members in recent years. Individualized reading and research courses on topics of faculty expertise may be arranged as well. The committee also maintains information on related courses in other disciplines.

30100. Cultural Geography  
Mikesell

A survey of problems having to do with the relationship of culture and nature as well as culture and nationality.

31900. Historical Geography of the United States  
Conzen

Examination of the spatial dynamics of frontier settlement, regional development, the social character of settlement patterns, and evolution of the cultural landscapes of America from pre European times to 1900. Includes an all day field trip.

32000. United States in Geographical Perspective  
Conzen

Systematic analysis of contemporary regional organization of American society and its economy, emphasizing the dynamics that explain the locational distribution of people, resources, and economic activity and the settlement pattern; examines regional restructuring of industry and services, transportation, city growth, and cultural consumption.

33500. Urban Geography  
Conzen

Examination of the spatial organization and current restructuring of modern cities in light of the economic, social, cultural, and political forces that shape them.

35300. Seminar: Problems in the Human Geography of the Middle East  
Mikesell

Review and cartographic demonstration of habitat types, modes of livelihood, and ethnic distribution followed by student reports on selected aspects of human geography.

36100. Roots of the Modern American City  
Conzen

The economic, social, and physical development of the city in North America from early industrialization to the present. Emphasis is on evolving urban systems and the changing spatial organization of people and land use.

39400. Seminar: Relationship of Nature and Culture  
Mikesell

Research and discussion on the logic and pathology revealed in evidence of the human use and misuse of the earth.

39500. Seminar: Culture and Nationality  
Mikesell

Examination of the role of language and religion in the integration of nation states and of examples of cultural dissidence and cultural conflict.

41000, 41100. American Landscapes I: 1850 1904  
Harris

Changes in the natural and manmade environment, focusing on the settings American builders, architects, and their clients developed for work, housing, education, recreation, worship, and travel. Lectures and slides relate physical changes to social values, technological skills, and social structure.

41700. Seminar: History of Geography  
Mikesell

42400. Urban Landscapes as Social Text  
Conzen

In relation to the fundamental approaches in the analytical literature on landscapes (normative, historical, and communication modes of conceptualization), the course explores the meanings to be found in varieties of urban landscapes, both in the context of individual elements and composite structures.

42500. Seminar: The Geography of American Urbanization  
Conzen

Advanced graduate research seminar for students interested in any aspect of urbanism and urban processes in North America, either contemporary or historical.

47000. Seminar: Problems in Teaching Geography  
Mikesell

## NORC

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NORC is an independent, not for profit research center that has been affiliated with the University for more than fifty years. NORC's international reputation as a technically innovative and high quality survey research organization is based upon an extensive program of research into human behavior and attitudes, including policy studies and evaluations of social experiments. NORC has pioneered methodological investigations which advance the science of survey research. As an active presence in the research and teaching life of the Divisions of the Social Sciences and Biological Sciences, as well as the Pritzker School of Medicine, the Harris Graduate School of Public Policy Studies, and the School of Social Service Administration, NORC houses several research centers in which many of the University's faculty and advanced graduate students engage in empirical research. NORC also conducts nationwide surveys that are used as data resources for social scientists and social policy analysts throughout the world. NORC's Survey Operations Center maintains a national field staff of over 1,000 trained interviewers and conducts more than 30 surveys each year on such topics as the costs and practices of health care, environmental studies, substance abuse, education, labor, family, and the social fabric. NORC conducts the General Social Survey (GSS), which is used in college and university teaching programs across the nation.

The seven academic research centers at NORC provide a collegial, interdisciplinary environment in which University of Chicago faculty can conduct social science research. The Population Research Center, funded by the National Institute of Child Health and Human Development, facilitates interdisciplinary population research by economists, sociologists, and other population sciences from the University. The Committee of Demographic Training of the University of Chicago administers a training program that funds five to seven postdoctoral fellows each year, along with pre-doctoral fellows from various units of the University of Chicago. The Center on Demography and Economics of Aging is funded by the National Institute on Aging. Like the Population Research Center, faculty Research Associates come from across the University community, with members housed in the Division of Social Sciences, the Harris School of Public Policy, the Graduate School of Business and the Pritzker Medical School, as well as other University units. The Ogburn Stouffer Center for the Study of Social Organizations houses and supports social organization research and the sociology of education. Fostering methodological innovation in survey research is the focus of the Center for Excellence in Survey Research. Two other centers are the Political and Social Research Center, which houses NORC's General Social Survey, the trend study that has been tracking Americans attitudes

toward important social issues and demographic characteristics for more than thirty years, and the new Joint Education Research Center, which will add collaborative opportunities for scholarship and draw on the increasing body of research in education conducted at the University of Chicago. Another new research center, the Data Research and Development Center, receives funds from the National Science Foundation to bring to scale educational interventions that have been shown to improve student performance in reading, mathematics and science.

University students participate in NORC's activities in several ways. NORC offers a summer intern program open to graduate and undergraduate students. In addition, some students are hired by faculty members as research assistants; some are provided support through NORC for their own research in the writing of dissertations; many attend conferences and weekly workshops that are sponsored by and held at NORC. NORC employs many University graduates at professional career levels.

# THE DIVISION OF THE BIOLOGICAL SCIENCES AND THE PRITZKER SCHOOL OF MEDICINE

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EVERETT VOKES, M.D.

*Interim Dean of the Division of the Biological Sciences and the Pritzker School of Medicine, Chief Executive Officer of the University of Chicago Medical Center, John E. Ulmann Professor*

NANCY B. SCHWARTZ, Ph.D.

*Professor of Biochemistry and Molecular Biology  
Professor of Pediatrics  
Dean for Graduate and Post Doctoral Affairs*

HOLLY J. HUMPHREY, M.D.

*Professor of Medicine  
Dean for Medical Education*

The Division of the Biological Sciences is unique in that it encompasses both a medical school and graduate programs in biological sciences. Faculty in the division teach biology in the undergraduate College, but the organization and administration of baccalaureate programs in the biological sciences is the responsibility of the College, through the office of the Master of the Collegiate Division of the Biological Sciences. The departments and faculty within the division are not identified as those providing instruction to medical, graduate or College students, but rather all serve the entire curricular needs of the students in the University. This organizational structure makes possible a wide range of contacts and interactions among students and faculty in the basic and clinical science areas and affords many unique study and research opportunities for students regardless of their program of study.

## DEGREES AND REQUIREMENTS

The Division of the Biological Sciences offers the degrees of Master of Science, Doctor of Philosophy, Doctor of Medicine, or Doctor of Medicine with Honors. Combined degrees (A.B./S.M. or M.D./Ph.D.) are available within certain special programs.

Recommendation for any of these degrees is conditional on the satisfactory completion of the academic requirements for the degree and the maintenance of proper conduct by the student while in the University.

## MASTER OF SCIENCE

At this time, only the Department of Health Studies offers a program leading specifically to the Master of Science degree. Otherwise, this degree is generally awarded in only two circumstances.

- (a) Those individuals not continuing in their Ph.D. program of study may be awarded a terminal masters degree.
- (b) Some students who are continuing their Ph.D. programs specify a desire to receive a transitional Master of Science degree.

## DOCTOR OF PHILOSOPHY

A general statement of the conditions under which this degree is awarded is presented here. The more specific departmental requirements are described in the sections outlining the offerings of each department.

- (a) Bachelors degree from an accredited undergraduate institution.
- (b) A minimum of three years of graduate work beyond the level of the bachelors degree. Credit for graduate work done in other institutions may be given if recommended by the department concerned and approved by the Dean for Graduate Affairs.
- (c) Completion of nine, letter graded courses at the University of Chicago, with a B average in course grades. This is a minimum; individual units may have more stringent requirements.
- (d) Preliminary examinations testing the candidates qualifications for candidacy.
- (e) Fulfillment of the divisional teaching requirement. Before the Ph.D. can be awarded, students are required to teach twice (two quarters) for credit in preapproved teaching assistant positions in the biological sciences.
- (f) Fulfillment of the divisional ethics requirement. All students are required to successfully complete a course in scientific integrity and the ethical conduct of research, usually in the first year of study.
- (g) Formal admission to candidacy for the degree, recommended by a department or committee, and approved by the Dean for Graduate Affairs at least eight months before the degree is granted. Students are not admitted to candidacy until they have passed their departmental preliminary examination.
- (h) A program of work for the degree, definitively formulated, approved by the department or committee concerned, and filed in the Office of Graduate Affairs along with the candidacy application at least eight months before the degree is granted. It must include the equivalent of at least three full quarters (9 course credits) devoted to research. (It may not include more than 9 course credits which are also submitted

by the student toward the degree of Doctor of Medicine.)

- (i) Acceptance of a dissertation submitted by the student to the department or committee having jurisdiction over the student's program.
- (j) A successful final examination given by the department or committee concerned.

#### COMBINED BACHELOR'S/MASTER'S

Students who have completed at least three years of undergraduate study in the College of the University of Chicago but have not completed their bachelor's degree may sometimes qualify for admission to a special A.B./S.M. program leading directly to the master's degree. Acceptance into such a program depends on a student's qualifications and on departmental policy. Only a few departments currently offer such a combined program. Inquiries should be made to the appropriate departments or the College office.

#### DOCTOR OF MEDICINE

This degree is normally awarded after fourteen quarters of satisfactory full time work at the University of Chicago Pritzker School of Medicine. To qualify for the M.D. degree, students must have completed at least the last eight academic quarters of medical studies in the School. Please see the Pritzker School of Medicine section (page 334) for additional information on this degree.

#### DOCTOR OF MEDICINE WITH HONORS

Each year during the spring, the committee on honors and awards entertains nominations from individual departments of senior medical students to be awarded graduation with honors. It is the purpose of this committee to select those students who have demonstrated leadership qualities, outstanding scholastic performance, and significant research abilities and accomplishments. Membership in Alpha Omega Alpha is taken into consideration, but is not a prerequisite for the award. The names of students so honored appear in the convocation program followed by the notation with Honors. This notation also appears both on the official academic records and on the diplomas of such students.

#### M.D./PH.D. DEGREES

In addition to the regular degree programs in medicine (M.D.) and the basic sciences (Ph.D.), the Division of the Biological Sciences administers a few special joint degree programs, such as the Medical Scientist Training Program, Growth and Development M.D./Ph.D. Program and the MD-PhD program in Medicine, the Social Sciences and Humanities.

## PROGRAMS OF GRADUATE STUDY IN THE BASIC BIOLOGICAL SCIENCES

The Division of the Biological Sciences offers a variety of graduate programs leading to the Ph.D. degree. Joint programs also may be devised with departments, such as chemistry and psychology, in other divisions of the University. Graduate programs are offered under the aegis of divisional departments as well as interdepartmental committees composed of faculty members with a common interest in a broad but definable area of advanced study. Recent years have seen a trend in graduate study in the biological sciences away from strict separations of disciplines and toward interdisciplinary approaches to research. Toward a similar goal in the Division of the Biological Sciences, several degree granting units have joined together in clusters, with a common admissions process and a core basic curriculum. The cluster arrangement offers students greater flexibility in their choice of department or committee, while enhancing interdisciplinary research opportunities. The fundamentals of graduate education in the division are not altered by these provisions. Students still complete their degrees in individual departments and committees.

The goal of all the programs, whether offered by clusters or individual departments or committees, is the creation and dissemination of fundamental knowledge of life processes and the education and training of outstanding young scholars in these disciplines. To this end, the Division of the Biological Sciences has assembled a dedicated and talented faculty, strong in research and teaching, and has developed laboratory and other facilities of the first rank that allow the faculty and graduate students to pursue their goals at the highest level of excellence.

The clusters in the division that offer programs of study leading to the Ph.D. degree are:

Biomedical Sciences: Cancer, Immunology, Microbiology, Molecular Metabolism and Nutrition, and Pathology

The Committee on Cancer Biology

The Committee on Immunology

The Committee on Molecular Metabolism and Nutrition

The Committee on Microbiology

The Department of Pathology

(Graduate Program in Molecular Pathogenesis and Molecular Medicine)

Darwinian Sciences: Ecological, Integrative, and Evolutionary Biology

The Department of Ecology and Evolution

The Committee on Evolutionary Biology

The Department of Organismal Biology and Anatomy

Molecular Biosciences: Biochemistry, Genetics, and Cell and Developmental Biology

The Department of Biochemistry and Molecular Biology

The Committee on Developmental Biology  
 The Department of Human Genetics  
 The Committee on Genetics  
 (Graduate Program in Genetics, Genomics, and Systems Biology)  
 The Department of Molecular Genetics and Cell Biology  
 (Graduate Program in Cell and Molecular Biology)  
 Neurosciences: Computational Neuroscience,  
 Neurobiology and Integrative Neuroscience  
 The Committee on Computational Neuroscience  
 Program in Integrative Neuroscience (Psychology)  
 The Committee on Neurobiology  
 These degree granting units have not entered into a cluster arrangement and provide separate admission. They are:

The Committee on Cell and Molecular Physiology  
 The Department of Health Studies (Master's and Ph.D.)  
 Interdisciplinary Scientist Training Program  
 The Committee on Medical Physics  
 The Committee on Biophysical Sciences (Joint with the Division of Physical Sciences)

### ADMISSION PROCEDURES

The following requirements and procedures apply to those students wishing to follow a course of study leading to the Doctor of Philosophy degree in the division. Students may apply to a cluster or individual units within a cluster, indicating their choices in order of preference. Students may not apply to more than two clusters or units on one application. According to their own schedules, the units applied to will communicate directly with the student as needed. Final decision letters are issued by the BSD Office of Graduate Affairs. If admitted to more than one program, applicants will have the option of accepting the program of their choice.

### APPLICATION MATERIALS

Information about graduate programs and application materials is available on the World Wide Web at <http://gradprogram.bsd.uchicago.edu>. We recommend that you apply online.

### DEADLINES

Applications are due December 1st in the Office of Graduate Affairs of the Division of the Biological Sciences (address above). Late applications will be reviewed only at the discretion of the Dean for Graduate and Post Doctoral Affairs. Incomplete applications will be evaluated on the basis of materials received at the time of the regular review process. Interviews are often required and students will be notified to setup visits, generally during February. On or about March 1 the process of notification of acceptance or rejection of applicants begins. Responses by students to offers of admission are due in the Office of Graduate and Post Doctoral Affairs by April 15.

### CREDENTIALS

An applicant who holds an undergraduate degree from an accredited institution is considered for admission on the basis of (1) an excellent undergraduate record, (2) the Graduate Record Examination, (3) a demonstrated interest in a research career, (4) recommendations from three college faculty members acquainted with the scientific abilities and potential for graduate studies of the applicant, and (5) proof of English proficiency for foreign students whose native language is not English; either the Test of English as a Foreign Language (TOEFL) or the International English Language Testing System (IELTS).

Certain departments and committees of the division require additional credentials. Details concerning these additional credentials or requirements may be ascertained by contacting the individual department or committee.

### FUNDING

Most graduate students in the BSD working toward the Ph.D. degree are fully funded (regular tuition and fees and prevailing competitive stipend). Funds for this support are derived from numerous sources, including Federal or private training grants, institutional funds, endowed funds, research grants and individual awards to students. During a student's course of study, support mechanisms may vary. Funds for international students are limited to non federal sources.

## DEPARTMENT OF BIOCHEMISTRY AND MOLECULAR BIOLOGY

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### *Chair*

Anthony A. Kossiakoff

### *Professors*

Francisco Bezanilla

Glyn Dawson, Pediatrics

Godfrey S. Getz, Pathology

Geoffrey Greene, Ben May Department for Cancer Research

Robert B. Haselkorn, Molecular Genetics and Cell Biology

Stephen B. H. Kent

Anthony A. Kossiakoff

Marvin W. Makinen

Steve Meredith, Pathology

Keith Moffat

Tao Pan

Eduardo Perozo

Benoit Roux

Nancy B. Schwartz, Pediatrics

James A. Shapiro

Tobin R. Sosnick

Ira G. Wool

### *Associate Professors*

Shohei Koide

Joseph A. Piccirilli

Phoebe A. Rice

### *Assistant Professors*

Erin J. Adams

Sean D. Crosson

Robert J. Keenan

David Kovar, Molecular Genetics and Cell Biology

Ronald S. Rock

### *Emeritus Faculty*

Wolfgang Epstein

Herbert C. Friedmann

Eugene Goldwasser

Alvin Markovitz

Theodore L. Steck

Donald F. Steiner

Edwin W. Taylor

Robert B. Uretz

John L. Westley

The Biochemistry and Molecular Biophysics graduate program is a highly interdisciplinary program that forges a scientific culture of collaboration across the physical and biological sciences disciplines and among diverse laboratories. In this environment, students will have the oppor-

tunity to engage in research that aims to understand biological processes at the molecular level. The program is designed to encourage students to pursue research interests at the biological-physical sciences interface using diverse approaches such as structural and chemical biology, molecular and single molecule biophysics, combinatorial mutagenesis, protein engineering and RNA and DNA protein recognition.

### ADMISSION

For information about applying to our graduate program, please visit our website at <http://molbio.uchicago.edu>.

### DEGREES

#### DOCTOR OF PHILOSOPHY

A Ph.D. program requires generally 4 to 6 years of study. The first year is spent in course work and small research projects in several laboratories to become acquainted with the department. Also during the first year there are many opportunities to attend and participate in departmental invited seminars and the Graduate Student Seminar Series. After the qualifying exam at the end of the first year, students choose a research advisor, carry out their Ph.D. research, write and orally defend a thesis.

Each student is required to take a minimum of 9 graded courses. One research rotation (BCMB 39900) will count as one of the 9 courses. Of the nine courses only 30400, 32300, 31600 and 31200 are required. Two additional courses (BCMB 31900 – Introduction to Faculty Research, affectionately called “Faculty All Stars” and BCMB 31800 – Current Seminar Topics in Biochemistry and Molecular Biology) are required. BCMB 31900 is not for credit; however, BCMB 31800 is for ½ a credit. Each student is required to be a Teaching Assistant for a total of two quarters in their second and third years of residence.

The Qualifying Examination consists of a written research proposal that is prepared and submitted during the summer quarter of the first year. Students will be permitted to take the Qualifying Examination only after all course and grade requirements have been met. Two outcomes are possible: Pass or Revisions Needed. If revisions are required, the student will have the opportunity to respond to the committee’s concerns and either revise portions of the proposal or re-write the entire proposal as indicated by the committee. Inadequate performance on a second exam is grounds for dismissal from the program. For continuation in the program, students must successfully pass the qualifying exam by the end of the fifth quarter of full-time residence as a graduate student in Biochemistry and Molecular Biophysics.

During the second year, students select a thesis advisor and begin laboratory research. To complete the Ph.D. degree, they must prepare, under the general direction of an appointed doctoral committee, a dissertation based upon

their original research. A public seminar describing the results of the dissertation research must be presented and the dissertation must be successfully defended before the doctoral committee.

### Courses

#### 30400. Protein Fundamentals

The Physical chemical phenomena that define protein structure and function. Topics include 1) the interactions/forces that define polypeptide conformation; 2) the principles of protein folding, structure and design; and 3) the concepts of molecular motion, molecular recognition, and enzyme catalysis.

#### 30500. Fundamentals of Structural Biology

This course emphasizes the basic principles of protein structure determination by x-ray crystallography and NMR spectroscopy. The underlying physical concepts of these methods will be introduced and the capabilities of each will be discussed and compared in context of their uses in de novo structure determination and protein engineering studies.

#### 30600. Nucleic Acid Structure and Function

This course focused on the biochemistry of nucleic acids. Topics include nucleic acid structure, folding, and chemistry, protein-nucleic acid interactions, non-coding RNAs, and the enzymology of key processes such as DNA repair and recombination. A special emphasis is placed on primary literature.

#### 30700. Genes, Networks, and Cells

The first half of this course will focus on building basic UNIX command line skills, PERL programming skills, and a fundamental understanding of the algorithms underlying some common bioinformatic tools. In the second half of the course, we will utilize Matlab and Mathematica for conducting simulations of genetic control systems and for quantitative cell image analysis.

#### 30800. Introduction to Single Molecule Methods

This course presents a series of advanced case studies designed to familiarize students with current single molecule research. Topics include: motor proteins and the cytoskeleton, nucleic acid processing enzymes, ion channels, and force spectroscopy and macromolecule folding.

#### 31000. Fundamentals in Molecular Biology (=MGCB 31000)

The course covers nucleic acid structure and DNA topology, recombinant DNA technology, DNA replication, DNA damage, mutagenesis and repair, Transposons and site specific recombination, prokaryotic and eukaryotic transcription and its regulation, RNA structure, splicing and catalytic RNAs, protein synthesis, and chromatin.

#### 31200. Molecular Biology I (=MGCB 31200)

Nucleic acid structure and DNA topology; methodology; nucleic-acid protein interactions; mechanisms and regulation of transcription in eubacteria, and of replication in eubacteria and eukaryotes; mechanisms of genome and plasmid segregation in eubacteria.

#### 31300. Molecular Biology II: Eukaryotic Gene Expression. Transcription and Posttranscriptional Regulation. (=MGCB 31300)

The content of this course will cover the mechanisms and regulation of eukaryotic gene expression at the transcriptional and post-transcriptional levels. Our goal is to explore research frontiers and evolving methodologies. Rather than focusing on the elemental aspects of a topic, the lectures and discussions highlight the most significant recent developments, their implications and future directions.

#### 31400. General Principles of Genetic Analysis (=MGCB 31400)

Fundamental principles of genetics discussed in the context of current approaches to mapping and functional characterization of genes. The relative strengths and weaknesses of leading model organisms are emphasized via problem-solving and critical reading of original literature.

#### 31500. Genetic Mechanisms (=MGCB 31500)

Advanced coverage of mechanisms involved in promoting genome stability and genome evolution. A variety of experimental systems are explored from bacteriophage to humans. Topics include the genetics of mutagenesis, DNA repair, homologous and site specific recombination, transposition and chromosome segregation.

#### 31600. Cell Biology I (=MGCB 31600)

Eukaryotic protein traffic and related topics, including molecular motors and cytoskeletal dynamics, organelle architecture and biogenesis, protein translocation and sorting, compartmentalization in the secretory pathway, endocytosis and exocytosis, and mechanisms and regulation of membrane fusion.

#### 31700. Advanced Cell Biology (=MGCB 31700)

This course covers the mechanisms with which cells execute fundamental behaviors. Topics include signal transduction, cell cycle progression, cell growth, cell death, cancer biology, cytoskeletal polymers and motors, cell motility, cytoskeletal diseases, and cell polarity. Each lecture will conclude with a dissection of primary literature with input from the students. Students will write and present two short research proposals, providing excellent preparation for preliminary exams.

#### 31800. Current Seminar Topics in Biochemistry and Molecular Biology

This course will expose students to current research topics in biochemistry and molecular biology by highlighting a selection of speakers from the weekly seminar series.

Prior to each highlighted seminar, we will discuss relevant papers and subsequently, we will review the seminar. This is a required ½ credit course for all BMB first year students and will be graded as Pass/Fail.

31900. Introduction to Faculty Research (=MGCB 31900)  
Introduction to scientific literature, scientific writing, and the development of ideas in laboratory research by departmental and other invited speakers.

Lectures on current research by departmental faculty and other invited speakers. A required course for all first-year graduate students.

32200. Molecular Biophysics: Theory and Applications  
Exposes students to modern biophysical methods and provides background for use of existing facilities at the University of Chicago. Topics include the measurement of physical properties of biological molecules including structure, thermodynamics, and kinetics. The primary focus is on practical aspects but covers a sufficient amount of theoretical background for the proper understanding of the technique.

32300. Structure and Function of Membrane Proteins  
This course will be an in depth assessment of the structure and function of biological membranes. In addition to lectures, directed discussions of papers from the literature will be used. The main topics of the courses are: (1) Energetic and thermodynamic principles associated with membrane formation, stability and solute transport (2) membrane protein structure, (3) lipid-protein interactions, (4) bioenergetics and transmembrane transport mechanisms, and (5) specific examples of membrane protein systems and their function (channels, transporters, pumps, receptors). Emphasis will be placed on biophysical approaches in these areas. The primary literature will be the main source of reading.

39800. Selected Topics in Biochemistry and Molecular Biology  
Subject matter for individual tutorial based study is selected through prior consultation and is given under the guidance of a faculty member. The student and faculty member must indicate at time of registration whether the course will be taken on a letter grade or pass/fail basis.

39900. Introduction to Research  
The student participates in one of the research programs of the department. Prereq: Consent of Department Chair and individual faculty member.

40100. Research in Biochemistry and Molecular Biology  
The student conducts original investigation under the direction of a faculty member. Prereq: Completion of course requirements and qualifying examination at the Ph.D. level and approval of the chair of the department.

## COMMITTEE ON CANCER BIOLOGY

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### *Chair*

Geoffrey Greene, Ben May Department for Cancer Research

### *Professors*

Habibul Ahsan, Health Studies

Eric Beyer, Pediatrics

Douglas Bishop, Radiation and Cellular Oncology

Marcus Clark, Medicine

Susan Cohn, Pediatrics

Nancy Cox, Medicine

Glyn Dawson, Pediatrics

M. Eileen Dolan, Medicine

Richard Fehon, Molecular Genetics and Cell Biology

Edwin Ferguson, Molecular Genetics and Cell Biology

David Grdina, Radiation and Cellular Oncology

Elizabeth Grove, Neurobiology, Pharmacology and

Physiology

Howard Halpern, Radiation and Cellular Oncology

Gregory Karczmar, Radiation and Cellular Oncology

Bruce Lahn, Human Genetics

Stephen Kron, Molecular Genetics and Cell Biology

Michelle Le Beau, Medicine

Shutsung Liao, Ben May Department for Cancer Research

Anning Lin, Ben May Department for Cancer Research

Terence Martin, Molecular Genetics and Cell Biology

Olufunmilayo Olopade, Medicine

Marcus Peter, Ben May Department for Cancer Research

Marsha Rosner, Ben May Department for Cancer Research

Janet Rowley, Medicine

Benoit Roux, Biochemistry and Molecular Biology

Ravi Salgia, Medicine

Hans Schreiber, Pathology

Walter Stadler, Medicine

Ursula Storb, Molecular Genetics and Cell Biology

Mitchel Villereal, Neurobiology, Pharmacology and

Physiology

Ralph R. Weichselbaum, Radiation and Cellular Oncology

### *Associate Professors*

Suzanne Conzen, Medicine

Wei Du, Ben May Department for Cancer Research

Nathan Ellis, Medicine

Thomas Gajewski, Pathology & Medicine

Tong Chuan He, Surgery

Akira Imamoto, Ben May Department for Cancer Research

Barbara Kee, Pathology

Rick Kittles, Medicine

Ernst Lengyel, Obstetrics and Gynecology

Maciej Lesniak, Surgery

Mark Lingen, Pathology  
 Kay Macleod, Ben May Department for Cancer Research  
 Clifford Ragsdale, Neurobiology, Pharmacology and  
 Physiology  
 Ilaria Rebay, Ben May Department for Cancer Research  
 Carrie Rinker-Schaeffer, Surgery  
 Stephen Skapek, Pediatrics  
 Wei-Jen Tang, Ben May Department for Cancer Research  
 Michael Thirman, Medicine  
 Amittha Wickrema, Medicine  
 Yingming Zhao, Ben May Department for Cancer Research

#### *Assistant Professors*

Kenneth Cohen, Medicine  
 Nickolai Dulin, Medicine  
 Karen Frank, Pathology  
 Lucy Godley, Medicine  
 Kathleen Goss, Surgery  
 Yu-Ying He, Medicine  
 Richard Jones, Ben May Department of Cancer Research  
 Deborah Lang, Medicine  
 Andy Minn, Radiation and Cellular Oncology  
 Piers Nash, Ben May Department for Cancer Research  
 Kenan Onel, Pediatrics  
 Dorothy Sipkins, Medicine  
 H. Rosie Xing, Pathology  
 Mirjam Zegers, Surgery

Committee on Cancer Biology offers a graduate program of study leading to the Doctor of Philosophy degree in Cancer Biology, and is supported by a National Cancer Institute sponsored training grant for predoctoral and postdoctoral trainees in cancer biology. The program provides multidisciplinary training for students interested in pursuing a research career in any aspect of Cancer Biology, focusing on mammalian (particularly human) biology as well as the study of genes and processes in other eukaryotic organisms. The program provides doctoral students with the most up to date knowledge and research training in molecular and cellular aspects of Cancer Biology and prepares the students for leadership positions in the academic community. The broad range of interests and expertise of the 67 faculty members of the Committee on Cancer Biology enables students to concentrate in multiple areas of cancer biology, including angiogenesis, animal models of cancer, apoptosis and cell survival, cancer genetics, cell cycle regulation, carcinogenesis, chromosome damage and repair, drug discovery/development, hormone action, metastatic progression, radiation biology, signal transduction, and tumor biology and immunology.

The Committee on Cancer Biology is a member of the Biomedical Sciences Cluster, which also includes graduate programs from the Committee on Immunology, the Committee on Microbiology, the Committee on Molecular Metabolism and Nutrition, and the Department of Pathology

Molecular Pathogenesis and Molecular Medicine Graduate Program. The five academic units share several common courses and additional common events for students and faculty within the cluster. The goal of the cluster system is to encourage interdisciplinary interactions among both trainees and faculty, and to allow students flexibility in designing their particular course of study.

In addition to formal course work, the program sponsors a student led journal club, a Student/Postdoctorate Research Presentation group, and an annual cluster retreat in which students and trainees present their research findings. In addition, the program co-sponsors the Ben May Symposium with the Ben May Department for Cancer Research. This symposium brings speakers of international renown to campus. Students and trainees also have the opportunity to attend national meetings and cancer biology workshops off campus. Through the auspices of the Ben May Department for Cancer Research, the Section of Hematology/Oncology, and the University of Chicago Cancer Research Center (an NCI designated Cancer Center), there are several additional seminar series and a Clinical Cancer Research/Basic Science Research Translational conference. Thus, there is a thriving, interactive community of cancer researchers.

### ADMISSION

Students interested in obtaining the Ph.D. in Cancer Biology should apply directly to the Committee on Cancer Biology by December 1st of each year and indicate Cancer Biology as their field of specialization.

### THE DEGREE OF DOCTOR OF PHILOSOPHY

Ph.D. requirements include: (1) completion of 9.5 course credits consisting basic science, cancer biology and elective courses; (2) a preliminary exam in the form of a mock NIH-style grant proposal; (3) a dissertation based on original research; and (4) a final thesis examination.

#### *Courses*

CABI 30800. Cancer Biology I: Introduction to Cancer Biology

Lingen, Conzen

Overview of cancer biology, including epidemiology, pathology, diagnosis and staging, the basis for various therapeutic strategies, and the conduct of Phase I, II, and III clinical trials. Also covered are experimental models for cancer, including the generation and validation of animal models. The course emphasizes several tumor models, such as breast cancer, hematological malignancies, cervical carcinoma, colon carcinoma, and sarcomas.

CABI 30900. Cancer Biology II: Molecular Mechanisms in Cancer Biology (=MPMM 30900)

Macleod

Examines our current understanding of the processes leading to malignant cell transformation. Topics include comparative properties of normal cells and cells transformed spontaneously or by chemicals, radiation, or viruses; multistage mechanisms of carcinogenesis; genetic basis of cancer; oncogenes and tumor suppressor genes; metabolic activation of chemical carcinogens; DNA adduct formation; repair of DNA damage; metastasis/invasion; and mechanisms of cancer therapeutics.

CABI 31200. Cancer Biology III: Signal Transduction and Model Organisms (=NPHP 32100, CPHY 31200)

Du, Lin

Topics include receptor ligands, membrane receptor tyrosine kinases and phosphatases, G protein-coupled receptors, signaling pathways, cytoplasmic protein kinases and phosphatases, receptor-nucleus signaling, nuclear proto-oncogenes, cell growth suppression, cell proliferation, interplay of cell cycle regulators, cell cycle progression and apoptosis.

CABI 31300, 31500. Cancer Biology IV: Frontiers in Cancer Research

Rinker Schaeffer, Lingen

This is a lecture discussion course on selected topics in Cancer Biology that will vary from year to year but may include such subjects as metastatic progression, experimental animal models and systems, DNA mediated gene transfer, cancer cytogenetics, chromosome damage and repair, growth factors, and cancer therapy.

CABI 39000. Cancer Biology V: Introduction to Experimental Cancer Biology

Peter, Onel

This course is linked to the Committee on Cancer Biology Seminar Series and incorporates seminars of interest from other Cluster programs. Typically, students meet to discuss research papers published by the following week's seminar speaker, attend the seminar, and then meet with the speaker afterward. The goal of the course is to broaden the student's exposure to current research and to encourage discussion of scientific ideas among peers.

CABI 39900. Readings in Cancer Biology

Staff

Reading course on various topics in cancer biology.

CABI 40100. Research: Cancer Biology

Greene and Staff

## COMMITTEE ON CELLULAR AND MOLECULAR PHYSIOLOGY

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### *Chair*

Eric Beyer

### *Professors*

Eric Beyer, Pediatrics

Francisco Bezanilla, Pediatrics

Eugene Chang, Medicine

Aaron Fox, Neurobiology, Pharmacology and Physiology

Benjamin Glick, Molecular Genetics and Cell Biology

Steve Goldstein, Pediatrics

Christopher Gomez, Neurology

William Green, Neurobiology

Dorothy A. Hanck, Medicine

Ratnesh Lal, Medicine

Alan Leff, Medicine

Karl Matlin, Surgery

Jeffrey Matthews, Surgery

Elizabeth McNally, Medicine

Deborah J. Nelson, Neurobiology, Pharmacology and Physiology

H. Clive Palfrey, Neurobiology, Pharmacology and Physiology

Eduardo Perozo, Pediatrics

Louis H. Philipson, Medicine

Nanduri Prabhakar, Medicine

Marsha Rosner, Ben May Dept of Cancer Research

Eric A. Schwartz, Neurobiology, Pharmacology and Physiology

Julian Solway, Medicine

Wei Jen Tang, Ben May Dept of Cancer Research

F. Gary Toback, Medicine

Jerrold Turner, Pathology

Mitchel Villereal, Neurobiology, Pharmacology and Physiology

### *Associate Professors*

James Brorson, Neurology

Mahesh Gupta, Surgery

Akira Imamoto, Ben May Dept of Cancer Research

Stephen Kron, Molecular Genetics and Cell Biology

Philip E. Lloyd, Neurobiology, Pharmacology and Physiology

Jeremy Marks, Pediatrics

James Mastrianni, Neurology

Daniel McGehee, Anesthesia and Critical Care

Gopal Thinakaran, Neurobiology

Aaron Turkewitz, Molecular Genetics and Cell Biology

### *Assistant Professors*

Konstantin G. Birukov, Medicine

Matthew Brady, Medicine  
Nikolai Dulin, Medicine  
Kathleen Goss, Surgery  
James Holaska, Medicine  
Richard Baker Jones, Ben May Dept for Cancer Research  
Piers Nash, Ben May Dept of Cancer Research  
Jalees Rehman, Medicine  
Martin ter Beest, Surgery  
Mirjam Zegers, Surgery

#### *Emeritus Faculty*

Harry A. Fozzard, Neurobiology, Pharmacology and Physiology

Today's cell physiologist is motivated by the need to understand how cells work in the context of organs and organisms. The intricate interactions within and between cells provide a fascinating framework and countless unanswered questions. Thanks to recent advances in technology and experimental approaches, we are identifying fundamental cellular processes that were only theorized just a few years ago. In today's research environment, quality training in cell physiology requires interdisciplinary approaches using state of the art techniques. The graduate training program in Cellular and Molecular Physiology at the University of Chicago provides a supportive research community that fosters cooperation while encouraging individual excellence and creativity. In short, this program is an ideal training environment for individuals interested in joining this exciting field. The program provides training and instruction for students over a wide range of topics, leading to the Ph.D. degree, which is granted through the Department of Neurobiology, Pharmacology and Physiology. Major research areas in which training can be received include electrophysiology of ionic channels in excitable and nonexcitable cells; membrane transport systems; signal transduction and second messenger systems; regulation of cell growth in normal and transformed cells; biophysics and biochemistry of muscle contraction; molecular biology of muscle proteins and ionic channels; and mechanisms of endocytosis and secretion. A common focus of this committee is the interest in the integration of the specific phenomena in the behavior of the whole cell.

The program in Cellular and Molecular Physiology includes faculty with diverse research interests who are dedicated to graduate education. All students receive concentrated attention from faculty mentors, advisory committee members and course instructors. The research interests of the program faculty range from cell development and structure to signal transduction across the plasma membrane.

Cell physiology students are required to take 9 courses, selecting at least one course from each of the following categories: biochemistry, cell biology, molecular biology and physiology. In addition, students take two courses

in genetics. Elective courses are offered in neurophysiology, membrane transport, ionic channels, control of cell growth, neuropharmacology, and psychopharmacology. In addition to this didactic course work, all first year students are required to attend a course in scientific ethics and integrity in research, usually offered in Spring Quarter. Before completion of the degree program, students in the Biological Sciences are required to be a teaching assistant in two courses without remuneration in order to gain experience in organizing and leading a class.

#### *Laboratory Rotations*

Students are required to complete two lab rotations, which together will receive a total of one course credit. Additional rotations may be taken, but will not receive credit.

#### *Preliminary Exams*

Students will submit a written thesis proposal before the start of the third year. Successful students will be admitted to candidacy for the Ph.D.

#### *Thesis Proposal*

Submitted before the start of the third year.

#### *Frequency of Thesis Committee Meetings*

Bi annual thesis committee meetings.

The Committee welcomes medical students interested in a Ph.D. There are two M.D./Ph.D. programs available to Pritzker School of Medicine students. Interested students are encouraged to apply for the Medical Scientist Training Program at the same time they file their application with the Pritzker School of Medicine. Interested MSTP students, would follow the medical school curriculum for two years and then enter the Cellular and Molecular Physiology research program for their dissertation research. After the completion of the Ph.D., the students return to medical school to complete the work required for the M.D. Another combined degree program is available after matriculation to medical school. Medical students are allowed elective research courses during the third quarter of the first year during which time many discover an interest in scientific research. Application to the Cellular and Molecular Physiology Program may be made during the second year of medical school. Once accepted to the program and after securing funding from the several fellowship sources available to medical students within the University, the student takes a leave of absence for the length of time required to complete the Ph.D.

More information on the combined M.D./Ph.D. degree programs is available from the Dean of Students Office of the Biological Sciences Division.

## ADMISSION INFORMATION

Students initially are admitted to the Biological Sciences Division and must meet divisional requirements. The application consists of a statement of interest, three letters of recommendation; transcripts from all post secondary institutions attended; official notification of GRE general examination scores; and official notification of TOEFL if the applicant's native language is not English.

## FINANCIAL AID

Fellowship support is provided by means of University and endowed fellowships, federal training grants, and programmatic support awarded to the individual laboratory. In most cases, this support includes a full stipend, the required student supplemental health insurance and health center fee, and full tuition which varies according to the number of quarters a student has been in registration. Notification of fellowship support is sent with the admissions packet. Highly qualified applicants are also encouraged to apply for fellowships from outside agencies such as the Howard Hughes Medical Institute and the National Science Foundation.

Funding is guaranteed to each student for the first four years and traditionally has been continued through the completion of the Ph.D. as long as satisfactory progress is certified. The student is responsible for reporting and paying applicable state and federal income taxes.

### *Courses*

#### *Biochemistry*

CPHY 31200. Signal Transduction and Cell Cycle Regulation (=CABI 31200). Spring

Du, Lin

Topics include receptor ligands, receptor tyrosine kinases and phosphatases, G protein coupled receptors, signaling pathways, cytoplasmic protein kinases and phosphatases, receptor nucleus signaling, nuclear proto oncogenes, cell growth suppression, tumor suppressors, regulation of cell cycle progression, modulation of cell cycle progression and apoptosis.

CPHY 31900. Molecular Mechanisms of Cell Signaling (=NURB 31900)

Tang

Cells in the body communicate with each other by a variety of extracellular signals (e.g., hormones, neurotransmitters) and processes such as vision and olfaction, as well as diseases such as cancer, all involve aspects of such signaling processes. The subject matter of this course considers molecular mechanism of the wide variety of intracellular mechanisms that, when activated, change cell behavior. Both general and specific aspects of intracellular signaling are covered in the course, with an emphasis on the structural basis of cell signaling. Offered alternate years.

CPHY 33600. Endocrinology I: Cell Signaling Autumn

Brady and Staff

Cells in the body communicate with each other by a variety of extracellular signals (e.g., hormones and neurotransmitters) that are disseminated locally or in the bloodstream to distant targets. What happens when these signals are received by the target cells? The subject matter of this course considers the wide variety of intracellular mechanisms that, when activated, change cell behavior. Both general and specific aspects of intracellular signaling are covered in the course, the latter including detailed discussions of receptors, G proteins, cyclic nucleotides, calcium and calcium binding proteins, phosphoinositides, protein kinases, and phosphatases. C. Prereq: BIOS 20200 and 20181, or BIOS 20191.

BCMB 30100. Basic Biochemistry and Molecular Biology. Autumn

Meredith, Philipson

The course is intended as an introduction to biochemistry and molecular biology for first year graduate students, first year medical students, and advanced undergraduates. It has three sections. The first is the structure and function of macromolecules (proteins, including enzymes, and nucleic acids) and supramolecular aggregates such as biological membranes. The second section is on cellular metabolism, emphasizing enzymatic mechanisms, cellular compartmentalization, and integration of metabolic systems. The third is the beginning of molecular biology of the gene, emphasizing DNA replication, transcription, and translation. Prereq: Two quarters of organic chemistry. BCMB

BCMB 30400. Protein Fundamentals. Autumn

Piccirilli, Corell

The physico chemical phenomena that define protein structure and function. Topics include 1) the interactions/forces that define polypeptide conformation; 2) the principles of protein folding, structure and design; and 3) the concepts of molecular motion, molecular recognition, and enzyme catalysis. Prereq: BCMB 30100.

39900. Readings in Cell Physiology

Staff

Reading courses on various topics in cell physiology.

40100. Research in Cell Physiology

Staff

Research credit (varied units) for research undertaken by graduate students under the guidance of a faculty member of the Committee on Cell Physiology.

#### *Cell Biology*

MGCB 31600. Cell Biology. Autumn

Turkewitz, Glick

Eukaryotic protein traffic and related topics, including molecular motors and cytoskeletal dynamics, organelle architecture and biogenesis, protein translocation and sorting, compartmentalization in the secretory pathway,

endocytosis and exocytosis, and mechanisms and regulation of membrane fusion.

NURB 31800. Cellular Neurobiology. Autumn

Lloyd

The cell biology of neurons is considered, with emphasis on intracellular and intercellular communication and regulation. Simple neuronal systems, especially those of invertebrates, are analyzed from a functional viewpoint.

### *Molecular Biology*

MGCB 31000. Fundamentals in Molecular Biology. Winter  
Storb, Staley

The course covers nucleic acid structure and DNA topology, recombinant DNA technology, DNA replication, DNA damage, mutagenesis and repair, Transposons and site specific recombination, prokaryotic and eukaryotic transcription and its regulation, RNA structure, splicing and catalytic RNAs, protein synthesis, and chromatin.

MGCB 31200. Molecular Biology I. Winter

Rothman Denes

Nucleic acid structure; methodology; nucleic-acid protein interactions; mechanisms of transcription and replication. Regulation of transcription in prokaryotes and of DNA replication in prokaryotes and eukaryotes.

MGCB 31300. Molecular Biology II. Spring

Singh, Staley

Transcription and posttranscriptional regulation. Analysis of regulatory pathways and mechanisms involved in the control of eukaryotic gene activity.

### *Physiology*

CPHY 30300. Cell and Organ Physiology Autumn.

Staff

Membrane and cell physiology; muscle, cardiovascular, and gastrointestinal physiology.

CPHY 30400. Organ Physiology and Endocrinology, Winter.

Chang and Staff

Renal, respiratory, endocrine and reproductive physiology and the regulation of metabolism.

CPHY 31600. Survey of Systems Neuroscience(=NURB 31600). Autumn

Ragsdale and Staff

This lab centered course teaches students the fundamental principles of mammalian neuroanatomy. Students learn the major structures and the basic circuitry of the CNS and PNS. Somatic, visual, auditory, vestibular and olfactory sensory systems are presented in particular depth.

### *Genetics*

MGCB 31400. Genetic Analysis of Model Organisms. Autumn

Preuss, Bishop, Lahn

Fundamental principles of genetics discussed in the context of current approaches to mapping and functional characterization of genes. The relative strengths and weaknesses of leading model organisms are emphasized via problem-solving and critical reading of original literature.

MGCB 31500. Genetic Mechanisms. Autumn

Bishop

Advanced coverage of genetic mechanisms involved in genome stability and rearrangement. Topics include genetics of transposons, site specific recombination, geneconversion, reciprocal crossing over, and plasmid and chromosome segregation.

HGEN 46900. Human Genetics II. Human Variation and Disease. Autumn

DiRienzo, Hudson, Pritchard

This course focuses on principles of population genetics and complex trait mapping as they apply to humans. It will include the discussion of genetic variation and disease mapping data.

HGEN 47000. Human Genetics I. Mechanisms of Human Disease. Spring

Ober, Millen, Lese Martin, McNally, Carlson

This course covers classical and modern approaches to studying cytogenetic, Mendelian, and complex human diseases. Topics include chromosomal structure, human gene discovery for single gene and complex diseases, non Mendelian inheritance, mouse models of human disease, cancer genetics, and human population genetics. The format includes lectures and student presentations.

### *Other courses of interest:*

31900. Molecular Mechanisms of Cell Signaling (=CPHY 31900)

Tang

Cells in the body communicate with each other by a variety of extracellular signals (e.g., hormones, neurotransmitters) and processes such as vision and olfaction, as well as diseases such as cancer, all involve aspects of such signaling processes. The subject matter of this course considers molecular mechanism of the wide variety of intracellular mechanisms that, when activated, change cell behavior. Both general and specific aspects of intracellular signaling are covered in the course, with an emphasis on the structural basis of cell signaling. Offered alternate years.

## COMMITTEE ON COMPUTATIONAL NEUROSCIENCE

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*Chair*

Nicholas Hatsopoulos

*Professors*

Yali Amit, Statistics

Jack Cowan, Mathematics

John Ebersol, Neurology

Jay Goldberg, Neurobiology, Pharmacology and Physiology

John Goldsmith, Linguistics

Steve Goldstein, Pediatrics

Dorothy Hanck, Medicine

Daniel Margoliash, Organismal Biology and Anatomy

Martha McClintock, Psychology

Robert McCrea, Neurobiology

Partha Niyogi, Computer Science

Howard Nusbaum, Psychology

Richard Penn, Surgery

Eduardo Perozo, Pediatrics

S. Murray Sherman, Neurobiology

Steven Shevell, Psychology

Steven L. Small, Neurology

V. Leo Towle, Neurology

*Associate Professors*

Melina Hale, Organismal Biology and Anatomy

Nicholas Hatsopoulos, Organismal Biology and Anatomy

Leslie Kay, Psychology

Terry Regier, Psychology

Paul Vezina, Psychiatry

*Assistant Professors*

Sliman Bensmaia, Organismal Biology and Anatomy

David Biron, Physics

David Freedman, Neurobiology

Jason MacLean, Neurobiology

Wim van Drongelen, Pediatrics

Emeritus

Joel Pokorny, Ophthalmology and Visual Science

Philip S. Ulinski, Organismal Biology and Anatomy

The University of Chicago has a long tradition of innovative research in the neurosciences. K. C. Cole developed the voltage clamp here, Stephen Polyak and C. J. Herrick did pioneering work on the anatomy of the retina and brain, and Jack Cowan and Hugh Wilson were among the first to develop mathematical analyses of the dynamics of cortical neurons using non linear dynamics. This tradition is continued in the Committee on Computational Neuroscience, which draws on faculty from many depart-

ments in all four graduate divisions in the University to create a multidisciplinary program in neuroscience. Computational neuroscience is a relatively new area of inquiry that is concerned with how components of animal and human nervous systems interact to produce behaviors. Using quantitative and modeling methods, the interdisciplinary approach of computational neuroscience seeks to understand the function of the nervous system, natural behaviors and cognitive processes and to design human made devices that duplicate behaviors. Course work in computational neuroscience prepares students for research in neurobiology, psychology, or in the mathematical or engineering sciences. Graduates from this program move to traditional academic careers, to careers in biomedical research or engineering, or to opportunities in the corporate world.

### GRADUATE DEGREES

Students with undergraduate degrees in biology or psychology, any of the quantitative sciences or any of the engineering disciplines are welcome to apply for graduate study. Computational neuroscience is inherently interdisciplinary, and most students doing graduate work in this area will have strengths in one of the relevant areas and weaknesses in others. Program requirements in the committee are designed to correct background deficiencies, so students with uneven backgrounds should not hesitate to apply. A year of college level calculus is an absolute prerequisite. Ideally, applicants should have some collegiate level course work in biology (optimally including an introductory neurobiology course), an introductory psychology course, and some mathematics (such as linear algebra and elementary differential equations) beyond calculus. Students who have not had prior exposure to linear algebra and differential equations may be asked to take appropriate courses in these areas before taking the mathematics sequence within the computational neuroscience curriculum.

#### MASTER OF SCIENCE

Most students in the program are pursuing the Ph.D. However, students interested in obtaining an M.S. are considered on an individual basis. Interested students should contact the graduate program administrator at (773) 702-6371.

#### DOCTOR OF PHILOSOPHY

Students seeking the Ph.D. in Computational Neuroscience must take the nine formal courses in the Computational Neuroscience curriculum, and enroll for nine quarters of research. The formal courses are typically taken in the first year and arranged into three themes. The neuroscience theme presents the basic concepts and phenomena in neuroscience. The mathematics theme presents the quantitative techniques required for a modern analysis of the nervous system and behavior. The courses in this theme have prior

exposure to linear algebra and differential equations as a prerequisite. The computational neuroscience theme illustrates how quantitative methodologies are used to understand neurons and behavior. The courses in this theme have completion of a year of calculus as a prerequisite. Students must complete two laboratory rotations which can be started in the first year. Students can also take graduate courses offered by the Departments of Computer Science, Linguistics, Mathematics, Psychology and Statistics, or from any of the graduate programs in the Division of the Biological Sciences. Please consult the listings elsewhere in these Announcements or on the University of Chicago web page for current lists of such courses. Courses in engineering applications of computational neuroscience are also available through a limited reciprocal course arrangement with the Department of Biomedical Engineering at the Illinois Institute of Technology. Students must pass a preliminary examination with both written and oral components at the end of their second year. In addition to satisfying course requirements, students must write and defend a dissertation based on original and publishable research. Students are expected to participate in the ongoing Computational Neuroscience seminar series, as well as occasional workshops, that are conducted during their stay in the program.

#### M.D./PH.D. PROGRAM

Students interested in earning both an M.D. and a Ph.D. in Computational Neuroscience at the University of Chicago can follow one of two routes. The first is to apply to the Medical Science Training Program (MSTP) within the Pritzker School of Medicine. The MSTP training grant provides support for both the M.D. and Ph.D. components of the training. Second, a student in the Pritzker School of Medicine may take a leave of absence from the School of Medicine after the first two, preclinical years of medical training and apply to the Ph.D. program in the normal fashion. The student would then return to finish the two clinical years of medical studies after completing the Ph.D. Several of the preclinical medical school courses may be used as electives in the Computational Neuroscience Ph.D. program. Students with an undergraduate degree in one of the engineering disciplines can earn an M.D. through the Pritzker School of Medicine and a Ph.D. in Biomedical Engineering through the Department of Biomedical Engineering at the Illinois Institute of Technology (which is located approximately three miles north of the University of Chicago Campus). They are able to emphasize neural engineering in the Biomedical Engineering Ph.D. program and take courses in the Committee on Computational Neuroscience.

#### ADMISSION TO GRADUATE PROGRAMS

Admission to the Committee on Computational Neuroscience is coordinated through the Neuroscience Cluster within the Division of the Biological Sciences. The most recent admissions policies, including an on line application, can be viewed at <http://gradprograms.bsd.uchicago.edu/>. Students preparing an application must submit transcripts of their undergraduate and prior graduate work, recent test scores from the general Graduate Record Exam, and three letters of recommendation under separate cover. Foreign applicants from non English speaking nations must also submit TOEFL scores with their application materials. Applications are due by December 28 for students beginning their studies in the following autumn quarter.

#### FINANCIAL AID

Students enrolled in the Ph.D. program receive financial support in the form of a stipend and tuition payments as long as they remain in good standing. Students are encouraged to apply for individual fellowships from the National Science Foundation or other sources.

#### RESEARCH OPPORTUNITIES

Unparalleled research opportunities and facilities are available through the facilities and faculty on the University of Chicago campus, at the Argonne National Laboratory, the Illinois Institute of Technology campus and corporate partners. Research interests of faculty in the Committee on Computational Neuroscience can be accessed through the committee web page at <http://cns.bsd.uchicago.edu>. Ongoing research topics range from work at the molecular level to studies in cognitive neuroscience. These projects involve modern methods of recording and imaging the activities of individual neurons, populations of neurons and human brain regions. Quantitative approaches currently utilized by faculty and students include those derived from non-linear dynamics, large scale simulations of neural activity, time series analysis, and pattern recognition. Research projects address basic problems in neuroscience using approaches that range from molecular neurobiology to cognitive neuroscience, biomedical applications such as the construction of neural prostheses and the control of epilepsy, and technological applications to computational vision and language.

#### Courses

##### *Neuroscience Theme*

This three quarter sequence introduces the basic concepts that relate the structure and function of the nervous system to behavior.

30000. Cellular Neurobiology (= NURB 31800)

Staff

This course is concerned with the structure and function of the nervous system at the cellular level. The cellular and sub-cellular components of neurons and their basic membrane and electrophysiological properties are described. Cellular and molecular aspects of interactions between neurons are studied. This leads to functional analyses of the mechanisms involved in the generation and modulation of behavior in selected model systems.

30107. Neuroethology  
Margoliash

This course is concerned with the structure and function of systems of neurons, and how these are related to behavior. Common patterns of organization are described from the anatomical, physiological, and behavioral perspectives of analysis. The comparative approach is emphasized throughout. Laboratories include exposure to instrumentation and electronics, and involve work with live animals. A central goal of the laboratory is to expose students to in vivo extracellular electrophysiology in vertebrate preparations. Laboratories will be attended only on one day a week but may run well beyond the canonical period.

30116. Survey of Systems Neuroscience(=NURB 31600)  
Ragsdale and Mason

This lab-centered course teaches students the fundamental principles of vertebrate nervous system organization. Students learn the major structures and the basic circuitry of the brain, spinal cord and peripheral nervous system. Somatic, visual, auditory, vestibular and olfactory sensory systems are presented in particular depth. A highlight of this course is that students become practiced at recognizing the nuclear organization and cellular architecture of many regions of brain in rodents, cats and primates

#### *Mathematics Theme*

This three quarter sequence introduces mathematical and statistical ideas and techniques used in the analysis of brain mechanisms. Students entering these courses should have some background in linear algebra and ordinary differential equations.

32000. Mathematical and Statistical Methods for Neuroscience I  
van Drongelen

This course deals with application of linear systems theory and signal processing to issues in neuroscience. It emphasizes data analysis using the *Matlab* software package.

32100. Mathematical and Statistical Methods for Neuroscience II  
van Drongelen

This course deals with the application of non-linear methods in signal processing and dynamical systems theory to issues in neuroscience. Data analysis with *Matlab* is again emphasized.

32200. Mathematical and Statistical Methods for Neuroscience III  
Mogul

This course deals with the application of linear and on-linear control theory to issues in neuroscience. The *Simulink* program within *Matlab* is introduced.

#### *Computational Neuroscience Theme*

This three quarter sequence brings together the concepts from the neuroscience theme with the quantitative methods from the mathematical theme to discuss current issues in computational neuroscience. Students entering these courses should have completed a one year sequence in calculus.

33000. Computational Neuroscience I: Single Neuron Computation  
Ulinski and Staff

This course briefly reviews the historical development of computational neuroscience and discusses the functional properties of individual neurons. The electrotonic structure of neurons, functional properties of synapses, and voltage gated ion channels are discussed.

33100. Computational Neuroscience II: Circuits and Systems  
Bensmaia and Staff

This course examines how neural circuits and systems are functionally organized with a focus on how they encode and compute relevant information. The course will begin by investigating how relatively simple invertebrate circuits generate meaningful behavior and will continue with more complex cortical networks responsible for sensory-motor integration and object recognition. Statistical, graph theoretic, and information-theoretic approaches to analyzing networks of neurons will be introduced.

33200. Computational Neuroscience III: Cognitive Neuroscience  
Hatsopoulos

This course is concerned with the relationship of the nervous system to higher order behaviors such as perception and encoding, action, attention and learning and memory. Modern methods of imaging neural activity are introduced, and information theoretic methods for studying neural coding in individual neurons and populations of neurons are discussed.

#### *Reading and Research Courses*

39900. Readings in Computational Neuroscience  
Staff

Reading courses on various topics in computational neuroscience.

40100. Research in Computational Neuroscience  
Staff

Research credit (varied units) for research undertaken by graduate students under the guidance of a faculty member of the Committee on Computational Neuroscience.

Elective Courses

31000 Mathematical Methods for the Biological Sciences I  
Kondrashov

31100 Mathematical Methods for the Biological Sciences II  
Kondrashov

31200 Mathematical Methods for the Biological Sciences III  
Kondrashov

32607 Advanced Topics in Theoretical Neuroscience  
Cowan

32609. Neurodynamics  
Arbanel

This course brings issues of nonlinear dynamics to neurobiological questions working with detailed biophysical models of individual neurons and small neural circuits, synaptic plasticity and its implications for synchronization and learning, and data analysis from a nonlinear perspective and in a neurobiological context.

34600 Neurobiology of Disease I  
Gomez and Staff

34700 Neurobiology of Disease II  
Gomez and Staff

*Neural Engineering Courses Available through the Illinois Institute of Technology*

These courses are offered on a semester basis.

35204 Neuroprosthetics  
Troyk

35106 Neuromechanics of Human Movement  
Kamper

35305 Electronics

32505 Neuroimaging  
Arfanakis

35106 Neuromechanics of Human Movement  
Kamper

35305 Electronics  
Troyk

## COMMITTEE ON DEVELOPMENTAL BIOLOGY

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*Chair*

Victoria E. Prince

*Professors*

John Cunningham, Pediatrics

Glyn Dawson, Pediatrics

Richard Fehon, Molecular Genetics & Cell Biology

Edwin L. Ferguson, Molecular Genetics & Cell Biology

Elizabeth Grove, Neurobiology, Pharmacology & Physiology

Robert Haselkorn, Molecular Genetics & Cell Biology

Robert K. Ho, Organismal Biology & Anatomy

Bruce Lahn, Human Genetics

Elizabeth McNally, Medicine

Daphne Preuss, Molecular Genetics & Cell Biology

Victoria E. Prince, Organismal Biology & Anatomy

Marsha Rosner, Ben May Institute for Cancer Research

Nancy B. Schwartz, Pediatrics

Neil H. Shubin, Organismal Biology & Anatomy

Harinder Singh, Molecular Genetics & Cell Biology

Kevin White, Human Genetics

*Associate Professors*

Wei Du, Ben May Institute for Cancer Research

Michael Glotzer, Molecular Genetics and Cell Biology

William Green, Neurobiology, Pharmacology & Physiology

Akira Imamoto, Ben May Institute for Cancer Research

Barbara Kee, Pathology

Kay MacLeod, Ben May Institute for Cancer Research

Jocelyn Malamy, Molecular Genetics & Cell Biology

Kathleen J. Millen, Human Genetics

Clifton Ragsdale, Neurobiology, Pharmacology & Physiology

Ilaria Rebay, Ben May Institute for Cancer Research

Urs Schmidt Ott, Organismal Biology & Anatomy

Kamal Sharma, Neurobiology, Pharmacology & Physiology

Physiology

Stephen X. Skapek, Pediatrics

Eric C. Svensson, Medicine

*Assistant Professors*

James Holaska, Medicine

Sally Horne-Badovinac, Molecular Genetics and Cell Biology

David Kovar, Molecular Genetics and Cell Biology

Christopher Lowe, Organismal Biology & Anatomy

Ivan Moskowitz, Pediatrics, Pathology

Ilya Ruvinsky, Ecology & Evolution

*Emeritus Faculty*

Eugene Goldwasser, Biochemistry and Molecular Biology  
 Martin Gross, Pathology  
 Anthony Mahowald, Molecular Genetics & Cell Biology  
 Manfred D.E. Ruddat, Ecology & Evolution

## PROGRAM OF STUDY

*First Year.* The first year of graduate study is spent in coursework, independent reading, and exploratory research. The number of courses constituting a full schedule for each quarter of the first year will vary, but typically includes three lecture courses or two lecture courses and a research rotation. Students are required to undertake laboratory rotations in at least two different laboratories before beginning their dissertation research. Three rotations are encouraged. These rotations can be performed during the first academic year or during the Summer Quarter.

Seminars given by invited speakers are regularly offered and students are strongly urged to attend. A separate series of meetings is presented in the fall and winter quarters by faculty to introduce students to their research. Before beginning their second year, students complete Part I of the candidacy examinations, which consists of an oral examination covering the core courses in developmental, cell, and molecular biology, and genetics.

*Second year.* While coursework can continue during the second year, students spend much of their time developing a research project. Students have generally chosen research advisors at the beginning of the second year. By the end of the Winter Quarter of the second year, each student's doctoral committee is named. The student then prepares a written proposal for dissertation research and defends this proposal before the doctoral committee. This defense constitutes Part II of the candidacy examination. This examination must be completed by the end of the Spring Quarter of the second academic year.

*Advanced years.* After the qualifying exam, the student works full time on thesis research, although the faculty urges students to continue to take advantage of the advanced courses and seminars that are offered. Finally, each graduating student writes a dissertation describing his or her research, presents the work in a public seminar, and defends it before their doctoral committee.

*Evaluation.* Throughout their term as graduate students, students are expected to have frequent informal conversations with professors in their courses, their research advisor, and members of their doctoral committees. In this way, students can obtain frequent appraisals of their progress and constructive advice.

Formal evaluation of each student's progress continues every academic year. In the first and second years, the evaluation is based on the student's performance in courses, laboratory rotations and the qualifying examination. In later years, the research advisor and doctoral committee

oversee the student's dissertation research progress; a report is submitted after the yearly meeting that becomes part of the student's permanent file and is reviewed by the Curriculum Committee. If the committee is apprised of any deficiencies in performance, the student will receive a letter describing those deficiencies and making suggestions about how to remedy them.

## ADMISSIONS

For information about applying to our graduate program, please visit our website at <http://molbio.uchicago.edu>.

## REQUIREMENTS FOR THE PH.D. DEGREE

A Ph.D. candidate must fulfill certain formal course work requirements, pass the qualifying examination, and present a satisfactory dissertation describing the results of original research.

The committee expects a knowledge of and proficiency in contemporary developmental biology as well as auxiliary fields of molecular biology, cell biology, and genetics. This requirement will normally be met by fulfilling the formal course work listed below. However, courses taken at other institutions, in other departments, or as part of the medical school curriculum may substitute for required committee courses with the approval of the curriculum committee.

## FORMAL COURSE WORK

The Division of the Biological Sciences requirement of nine graded course units may be met by registering for a combination of formal courses and research credits. During the first year of graduate work students ordinarily complete one course in molecular biology, one in cell biology, one in genetics, and three courses in developmental biology.

*Courses*

DevBio 35400. Advanced Developmental Biology.

This course provides an overview of the fundamental questions of developmental biology, with particular emphasis on the experimental approaches used in the field. Topics covered will include primary body axis formation, the role of local signaling interactions in regulating cell fate, the cellular basis of morphogenesis, and stem cells.

DevBio 35500. Developmental Genetics of Non-vertebrate Model Systems

This course explores the use of genetics in three different model systems, *C. elegans*, *Drosophila melanogaster* and *Arabidopsis thaliana*, to elucidate developmental mechanisms. The class will focus on a series of interrelated topics: for each topic, introductory material presented by the lecturer will be followed by student led discussions of individual papers. Not offered in 2009-10.

DevBio 35600. Vertebrate Developmental Genetics

This advanced level course combines lectures and student presentations. It covers major topics in the developmental biology of vertebrate embryos (e.g., formation of the germ

line, gastrulation, segmentation, nervous system development, limb patterning, organogenesis) The course makes extensive use of the current primary literature and emphasizes experimental approaches including embryology, genetics, and molecular genetics. Not offered in 2009-10.

#### Dev Bio 35800. Developmental Neurobiology

Topics include neural induction, early patterning of the central nervous system, axon guidance and neuronal migration, the development of brain activity, and the mechanisms of plasticity that fine tune brain function. Approaches will range from molecular to cellular to systems neurobiology. Focus will be on the vertebrate CNS but attention will be given to important lessons from invertebrate systems.

#### Dev Bio 36100. Plant Development and Molecular Genetics

This advanced course offers a discussion of internal and external factors that are important in plant development. We will emphasize the use of developmental mutants, signal transduction pathways, and gene expression in developmental processes that are currently in the forefront of research.

#### Dev Bio 32500. Evolutionary Aspects of Gene Regulation

This advanced level course focuses on reading and participation. Each meeting period is dedicated to a new Topic, several of which make up a Module. Typical modules are:- Transcription factors and cis-regulatory elements, Functional consequences of regulatory changes and RNAi as an alternative mechanism of gene regulation. Students present and discuss several papers from the primary literature during this course.

#### 31000. Fundamentals in Molecular Biology

The course covers nucleic acid structure and DNA topology, recombinant DNA technology, DNA replication, DNA damage, mutagenesis and repair, Transposons and site specific recombination, prokaryotic and eukaryotic transcription and its regulation, RNA structure, splicing and catalytic RNAs, protein synthesis, and chromatin.

#### 31200. Molecular Biology I

Nucleic acid structure and DNA topology; methodology; nucleic-acid protein interactions; mechanisms and regulation of transcription in eubacteria, and of replication in eubacteria and eukaryotes; mechanisms of genome and plasmid segregation in eubacteria.

#### 31300. Molecular Biology II

Eukaryotic Gene Expression. Transcriptional and Posttranscriptional Regulation. Analysis of regulatory pathways and mechanisms involved in the control of eukaryotic gene activity.

#### 31400. Genetic Analysis of Model Organisms

Fundamental principles of genetics discussed in the context of current approaches to mapping and functional characterization of genes. The relative strengths and weaknesses

of leading model organisms are emphasized via problem-solving and critical reading of original literature.

#### 31500. Genetic Mechanisms

Advanced coverage of genetic mechanisms involved in genome stability and rearrangement in lower and higher organisms. Topics include the genetics of mutagenesis, DNA repair, homologous and site specific recombination, transposition and chromosome segregation.

#### 31600. Cell Biology I

Eukaryotic protein traffic and related topics, including molecular motors and cytoskeletal dynamics, organelle architecture and biogenesis, protein translocation and sorting, compartmentalization in the secretory pathway, endocytosis and exocytosis, and mechanisms and regulation of membrane fusion.

#### 31700. Cell Biology II

This course covers the mechanisms with which cells execute fundamental behaviors. Topics include signal transduction, cell cycle progression, cell growth, cell death, cancer biology, cytoskeletal polymers and motors, cell motility, cytoskeletal diseases, and cell polarity. Each lecture will conclude with a dissection of primary literature with input from the students. Students will write and present two short research proposals, providing excellent preparation for preliminary exams. Cell Bio I 31600 is not a prerequisite.

## DEPARTMENT OF ECOLOGY AND EVOLUTION

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*Chair*

Joy Bergelson

*Professors*

Joy Bergelson  
 Jerry Coyne  
 Richard R Hudson  
 Martin Kreitman  
 Wen-Hsiung Li  
 Manyuan Long  
 Trevor D. Price  
 Molly Przeworski  
 John Reinitz  
 Kevin White  
 John Timothy Wootton  
 Chung-I Wu

*Associate Professors*

Gregory Dwyer  
 Stephen Pruett-Jones  
 Catherine Pfister

*Assistant Professors*

Stefano Allesina  
 Justin Borevitz  
 Ilya Ruvinsky

*Emeritus Faculty*

Stuart Altmann  
 Thomas Nagylaki  
 Manfred D.E. Rudder  
 Janice B. Spofford  
 Leigh Van Valen

*Research Associate*

Michael Z. Ludwig

The Department of Ecology and Evolution provides training for research and teaching in the ecology, evolution and behavior of whole organisms, at the levels of the organism, the population, and the ecosystem. The research interests of our faculty include molecular evolution, population genetics, quantitative genetics, animal behavior, plant and animal ecology, evolutionary theory, systematics, paleontology, and related subjects. Individual levels of study range from molecules to communities. A common theme is the conduct of studies in a rigorous ecological and conceptual context, and the faculty share an interest in the architecture of populations, species and communities.

The department stresses scientific breadth and the interrelations between various specialized fields. Students are encouraged to approach basic biological problems with

the most appropriate techniques: biophysical, biochemical, mathematical, physiological, or organismal. Departmental laboratories are equipped for a wide variety of contemporary research methods. Courses in other departments may be taken for credit in ecology and evolution for example, in the Departments of Organismal Biology and Anatomy, Biochemistry and Molecular Biology, Molecular Genetics and Cell Biology, Statistics, Geophysical Sciences, Anthropology, and Chemistry. Many students in the Department of Ecology and Evolution participate in interdepartmental programs in genetics, cell biology, developmental biology, population biology, theoretical biology, and evolutionary biology, and in these programs dissertation research may be co-sponsored by faculty from different departments. Collaboration is also maintained with the Field Museum and the Shedd Aquarium for students interested in research in systematics, taxonomy, and evolutionary biology, and with the Brookfield Zoo for basic research in conservation and behavior involving zoo animals. Possibilities also exist for field studies in Central America, Africa, and other regions of the earth.

**PROGRAM OF STUDY**

Most students in the Department of Ecology and Evolution complete their Ph.D. program in about five years, though students entering with master's degrees may finish in slightly less time. A student advisory committee advises all incoming and second year students on academic and research concerns. The first and second years consist largely of course work and individual reading courses, aiming toward successful completion of an oral general knowledge examination by the spring quarter of the first year, supervised by the student advisory committee. The student and faculty advisor in consultation with the Department chair, then choose a five member faculty doctoral committee, scheduling a defense of the dissertation research proposal by the end of the second year of study. Work in subsequent years shifts to dissertation centered research and, finally, preparation and defense of the Ph.D. dissertation. All students are required to register to be a supervised teaching assistant in two approved courses during their tenure in the doctoral program. While there is no master's program in the department, students may elect to receive the S.M. degree upon successful completion of their dissertation proposal defense.

**ENTRANCE REQUIREMENTS**

Entering students are expected to have received a broad undergraduate training in biology, and a good background in related quantitative subjects, such as chemistry, statistics and calculus. Students who are admitted without having fully satisfied these requirements will be required to remedy their deficiencies by taking appropriate courses during their first two years in the graduate program.

## GENERAL KNOWLEDGE EXAMINATION

Each first year student will be expected to pass an oral general knowledge examination during the first year of study, generally no later than the 10th week of the spring quarter. This examination session shall be attended by all three members of an examination committee appointed by the student advisory committee. The goal of the examination will be to assess each student's general knowledge of key concepts, processes and issues in ecology and evolutionary biology, as covered in the courses recommended to the student by the student advisory committee during the student's first year in the program.

## DISSERTATION PROPOSAL DEFENSE

This examination consists of the submission of a written Ph.D. research proposal and an oral presentation of the proposal in a public or closed/private seminar format, followed by a closed discussion and examination on the proposal presentation with the faculty committee chosen by the student and the chair of the department. Students are expected to schedule the dissertation proposal defense before the end of their second year.

## DOCTOR OF PHILOSOPHY

Upon successful completion of the dissertation proposal defense and admission into candidacy for the Ph.D., students work closely with the faculty advisor and dissertation committee on the dissertation project. During the period of two to three years in which students do primary original research, they also participate in seminars, discussion groups, and professional meetings and conferences, leading to the completion of the written Ph.D. dissertation. The Ph.D. in Ecology and Evolution is awarded based upon (1) submission of a written dissertation based on original research, which must be approved by the faculty adviser and dissertation committee; (2) presentation of a public seminar based on the dissertation research; (3) following the public seminar, successful performance during an oral examination by the dissertation committee and other relevant faculty; and, (4) acceptance of the approved written dissertation by the University Office of Academic Publications in compliance with that office's regulations.

## APPLICATION

We strongly advise students considering application to the department to begin preparation of their application early in the autumn quarter, so that all materials will arrive by the December 1 deadline. The department requires GRE General Test scores from all applicants, and strongly recommends submission of GRE subject test scores in biology. Foreign applicants whose first language is not English also must submit TOEFL test scores with their application materials.

Further information also may be obtained from the department's home page at <http://pondside.uchicago.edu/ecol-evol/>

## Courses

30600. Molecular Evolutionary Genetics (=EVOL 30600)

Advanced topics in evolutionary genetics and molecular evolution. The main goal is to survey the frontiers and to develop research projects of the future.

30800. Current Topics in Evolutionary Genomics (=EVOL 30800)

This course will cover statistical methods for analyzing genomic sequence data, comparative genomics, evolution of gene families, and evolution of genome structure and organization.

31200. Data Analysis in Ecology and Evolution (=EVOL 31200)

Covers the design and analysis of experiments, focusing on tests used commonly in evolutionary biology. Both parametric and nonparametric tests will be considered.

31300. Ecological Applications to Conservation Biology (=BIOS 23351, EVOL 31300)

Emphasizes quantitative methods and their use for applied problems in ecology, such as the design of nature reserves, the risk of extinction and the impact of harvesting. Course material will be drawn from the primary literature and the course will involve lectures, computer modeling exercises, and discussion groups.

31400. Geographical Variation (=EVOL 31400)

Theoretical and empirical aspects of geographical variation in population genetics. Theoretical topics will include protected polymorphism and clines maintained by migration and selection; random genetic drift in a cline; and spatial patterns under migration, mutation, and random genetic drift. Estimation from molecular gene frequency data of parameters that describe population structure and the relative contribution of random genetic drift and natural selection will be covered.

31500. Ecological Genetics (=EVOL 31500)

A graduate class in ecological genetics (evolution of phenotype, without considering molecular approaches). This will be a weekly 2-hour seminar, emphasizing quantitative genetic approaches. Basic theory will cover such topics as heritability and breeding value, genetic correlations, Price's theorem and sexual selection. Seminars will include discussions of current topics from the literature. T. Price.

31600. Smallpox, Mumps, and Beyond: vaccination Strategies in an Age of Emerging Infectious Diseases.

The looming threats of bioterrorism and emerging diseases arouse the specters of wide-spread death and suffering. Meanwhile, mistrust of science is leading many parents to

withhold vaccines from their children, leading in turn to rising levels of childhood diseases. Addressing these risks requires innovative vaccination strategies. An important tool for evaluating vaccination strategies comes from mathematical models of epidemics. But how can a health-care professional understand the uses of models without a Ph.D. in math? In this course, we will learn how to evaluate models of vaccination strategies, from the perspectives of officials charged with constructing public-health policy. Students will not need any more math than the vague memory that they might once have known what a derivative is. G. Dwyer.

#### 32500. Evolutionary Aspects of Gene Regulation

Using primary research literature, this course will examine recent advances in understanding of evolution of gene regulation. Among others it will cover the following topics: patterns and forces of evolutionary change in regulatory DNA and transcription factors, genetic changes that are responsible for phenotypic evolution, and discovery and evolutionary implications of gene control by microRNAs. I. Ruvinsky.

#### 32900. Plant Development and Molecular Genetics (=BIOS 23299, MGCB 36100, DVBI 36100)

Growth, differentiation and development in plants at the organismal, cellular, and molecular level. The regulatory function of environmental factors, hormones and phytochrome on gene expression and the possible evolutionary relationships will be studied. The molecular genetic advances in Arabidopsis and maize are a central feature of the course.

#### 33500. Experimental Evolutionary Ecology (=EVOL 33500)

Students and instructors will propose simple research questions on any question of ecological or evolutionary interest. In addition to conducting a set number of class chosen experiments, the bulk of the class work will consist of statistically analyzing and interpreting the results. It is expected that the projects have the potential to produce publishable results.

#### 34600. Current Issues in Evolution (=EVOL 34600)

A seminar on unresolved problems in the evolutionary half of biology.

#### 34700. Evolution of Development (=EVOL 34700)

A seminar on developmental aspects of evolution and evolutionary aspects of development.

#### 35000. Evolutionary Ecology (=EVOL 35000)

An evolutionary approach to the study of ecological interactions. Topics include plant animal interactions, life history evolution, host parasite and host mutualist interactions, competition, and predation. Appropriate for graduate students who have had little background in ecology.

#### 35200. Paleobiology of Mammals (=EVOL 35200)

Detailed treatment of mammalian evolution, including all recognized families, and its various evolutionary implications.

#### 35600, Principles of Population Genetics I, II (=EVOL 35600)

Lectures on the basic theoretical principles of population genetics and their application to the study of variation and evolution in natural populations. Topics include selection, mutation, random genetic drift, quantitative genetics, molecular evolution and variation, the evolution of selfish genetic systems, and human evolution. Knowledge of elementary genetics and calculus is assumed. Prerequisite: consent of instructor. Two Quarter course.

#### 35700. Principles of Population Genetics II (=ECEV 35700)

Continuation of EVOL 35600.

#### 35800. Classics of Evolutionary Genetics (=EVOL 35800)

Major classic papers in evolutionary genetics that had great impact on the development of the field are reviewed.

#### 35900. Evolution at the Genomic Level (=EVOL 35900)

We focus on the newly proposed and solved problems related to evolution of genomes. Instructors will give a series of lectures, dealing with basic concepts and techniques used in the research of topics. Students will present and evaluate literatures.

#### 36200. Current Topics in Evolutionary Biology (=EVOL 36200)

Critical analysis of recent literature on empirical research in evolutionary biology.. Prerequisite: some knowledge of population genetics, evolutionary biology or consent of instructor.

#### 36300. Speciation (=EVOL 36300)

A review of the literature on the origin of species beginning with Darwin and continuing through contemporary work. Both theoretical and empirical studies will be covered, with special emphasis on the genetics of speciation.

#### 37500. Sexual Selection (=EVOL 37500)

A discussion and critical analysis of sexual selection. The course will consist of lectures, reading and discussion.

#### 40100. Grants, Publications, and Professional Issues (=EVOL 40100)

Covers professional topics in evolutionary biology, such as strategies in grant and article writing, construction and submission of professional articles for journals in the field, career alternatives and strategies, ethical issues, etc.

#### 42500. Concepts in Ecology (=EVOL 42500)

Using a combination of lecture and student led discussion, this course will introduce students to the classical ecological literature as well as the latest work in each of several topics. The goal is to provide students with a solid framework upon which to build their own research programs.

42600. Community Ecology (=EVOL 42600)

Advanced topics in multi species systems, and an introduction to basic theoretical approaches.

42700. Topics in Aquatic Ecology (=EVOL 42700)

Theoretical and empirical topics especially relevant to the ecology of aquatic systems will be presented. Emphasis will be placed on features of aquatic systems that pose theoretical and empirical challenges such as the prevalence of complex life histories, the potential for long distance dispersal, and the diverse controls of trophic structure.

42800. Population Ecology (=EVOL 42800)

A lecture course on the empirical and theoretical approaches to the study of natural populations, including field methodologies and quantitative approaches. Includes computer assignments.

42900. Theoretical Ecology (=EVOL 42900)

An introduction to mathematical modeling in ecology. The course will begin with linear growth and Lotka Volterra models, and proceed to partial differential equations. The course's perspective will emphasize numerical computations and fitting models to data.

44001. Molecular Evolution I: Fundamentals and Principles (=EVOL 44001, BIOS 23258)

Prerequisite is two quarters of Biology and Calculus or consent of instructor. The comparative analysis of DNA sequence variation has become an important tool in molecular biology, genetics, and evolutionary biology. This course covers major theories that form the foundation for understanding evolutionary forces that govern molecular variation, divergence and genome organization. Particular attention is given to selectively neutral models of variation and evolution, and to alternative models of natural selection. The course provides practical information on accessing genome databases, searching for homologous sequences, aligning DNA and protein sequences, calculating sequence divergence, producing sequence phylogenies, and estimating evolutionary parameters.

44002. Molecular Evolution II: Genes and Genomes (=BIOS 23259, ECEV 44002)

Prerequisite is BIOS 23258 or consent of instructor. In Molecular Evolution II, the knowledge and well established evolutionary analyses of genes and genomes are taught. The related areas, such as origination and evolution of new genes, exon-intron structure, sex-related genes, sex-determination genetic systems, transposable elements, gene regulation systems, and duplication of genes and genomes, and evolution of genome sizes are covered in the teaching. These topics are discussed under the processes driven by various evolutionary forces and genetic mechanisms. The analysis of these problems is conducted with the genomic context. Lectures, discussions, and experiments are combined.

44100. Molecular Methods in Ecology and Evolution (=EVOL 44100)

A laboratory course intended as an intense introduction to molecular methods applicable to research in organismal biology. The topics covered by the course will change from year to year.

45300. Models of Animal Behavior (=EVOL 45300)

Introduction to mathematical models of naturalistic behavior. Lectures, discussions and individual projects.

## COMMITTEE ON EVOLUTIONARY BIOLOGY

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*Chair*

Michael Coates

*Faculty*

Kenneth Angielczyk, Field Museum  
 John Bates, Field Museum  
 Joy Bergelson, Ecology and Evolution  
 Rüdiger Bieler, Field Museum  
 Justin Borevitz, Ecology and Evolution  
 C. Kevin Boyce, Geophysical Sciences  
 Michael Coates, Organismal Biology and Anatomy  
 Jerry Coyne, Ecology and Evolution  
 Greg Dwyer, Ecology and Evolution  
 Martin Feder, Organismal Biology and Anatomy  
 Michael J. Foote, Geophysical Sciences  
 Lance Grande, Field Museum  
 Shannon Hackett, Field Museum  
 Lawrence Heaney, Field Museum  
 Andrew Hipp, Morton Arboretum/Herbarium  
 Robert Ho, Organismal Biology and Anatomy  
 Richard R. Hudson, Ecology and Evolution  
 David Jablonski, Geophysical Sciences  
 Susan M. Kidwell, Geophysical Sciences  
 Michael LaBarbera, Organismal Biology and Anatomy  
 Robert Lacy, Brookfield Zoo  
 Bruce Lahn, Human Genetics  
 Wen Hsiung Li, Ecology and Evolution  
 Scott Lidgard, Field Museum  
 Manyuan Long, Ecology and Evolution  
 Elizabeth Lonsdorf, Lincoln Park Zoo  
 Christopher Lowe, Organismal Biology and Anatomy  
 Thorston Lumbsch, Field Museum  
 Dario Maestriperi, Comparative Human Development  
 Peter Makovicky, Field Museum  
 Robert D. Martin, Field Museum  
 Jill Mateo, Comparative Human Development  
 Martha McClintock, Comparative Human Development  
 R. Michael Miller, Argonne National Laboratory  
 Gregory M. Mueller, Chicago Botanic Garden  
 Salikoko Mufwene, Linguistics  
 Bruce Patterson, Field Museum  
 Catherine Pfister, Ecology and Evolution  
 Trevor Price, Ecology and Evolution  
 Victoria Prince, Organismal Biology and Anatomy  
 Jonathan Pritchard, Human Genetics  
 Stephen Pruett-Jones, Ecology and Evolution  
 Richard Ree, Field Museum  
 Olivier Rieppel, Field Museum  
 Callum Ross, Organismal Biology and Anatomy  
 Ilya Ruvinsky, Ecology and Evolution

Urs Schmidt-Ott, Organismal Biology and Anatomy  
 Paul Sereno, Organismal Biology and Anatomy  
 Neil Shubin, Organismal Biology and Anatomy  
 Petra Sierwald, Field Museum  
 Wm. Leo Smith, Field Museum  
 Douglas Stotz, Field Museum  
 Russell Tuttle, Anthropology  
 Janet Voight, Field Museum  
 Jason Watters, Brookfield Zoo  
 Mark Webster, Geophysical Sciences  
 Mark Westneat, Field Museum  
 Naja Wielebnowski, Brookfield Zoo  
 John Timothy Wootton, Ecology and Evolution  
 Chung I Wu, Ecology and Evolution

*Emeritus Faculty:*

Stuart Altmann, Ecology and Evolution  
 John Bolt, Field Museum  
 James Hopson, Organismal Biology and Anatomy  
 R. Eric Lombard, Organismal Biology and Anatomy  
 Thomas Nagylaki, Ecology and Evolution  
 Janice B. Spofford, Ecology and Evolution  
 William Turnbull, Field Museum  
 Leigh Van Valen, Ecology and Evolution  
 Harold Voris, Field Museum  
 William Wimsatt, Philosophy

The Committee on Evolutionary Biology provides students with the opportunity for interdisciplinary study of all aspects of evolutionary biology. The committee consists of faculty members with primary appointments in departments in all four graduate divisions within the University and of associated faculty from institutions in the Chicago area, such as Argonne National Laboratory, the Brookfield Zoo, Lincoln Park Zoo, Chicago Botanic Garden, Morton Arboretum, and the Field Museum. The diversity of research interests represented by the collective expertise of the committee faculty contributes to its strong national and international reputation as a graduate training program.

Students in the committee have ready access to facilities at the associated institutions, including the more than 2,000 animals representing over 400 species at Brookfield Zoo, more than 17 million specimens in the Field Museum collections in botany, zoology, and paleontology, and libraries at the Field Museum and Brookfield Zoo. Various facilities for the study of molecular evolution and phylogenetic analysis are available to committee students, as are several student computer centers, an on campus greenhouse, and digital equipment for off site research.

In the Chicago area, committee students have access to the rich resources available at the Chicago Botanic Garden, the Shedd Aquarium, the Morton Arboretum, and the many parks and lands managed by the local county forest preserve and park districts.

The University of Chicago is a member of the Organization of Tropical Studies. Doctoral students in the committee have taken courses in tropical ecology and conducted research in Costa Rica through this affiliation. Recent evolutionary biology students have also conducted domestic research at a variety of field sites, including the Southwest Research Station of the American Museum of Natural History, Kellogg Biological Station, Friday Harbor Marine Laboratory, Rocky Mountain Biological Station, and the Indiana Dunes National Park. International research is conducted on every continent.

### PROGRAM OF STUDY

Most students in the Committee on Evolutionary Biology complete their Ph.D. program in about five years, though students entering with masters degrees may finish in slightly less time.

The first and second years consist largely of course work and individual reading and research courses, aiming toward successful completion of the preliminary examination and defense of a dissertation research proposal by the end of the second year of study.

*First year.* Entering students are expected to have received a broad undergraduate training in biology and a good background in related quantitative subjects, such as chemistry, statistics and calculus. Students who are admitted with gaps in these areas may be required to remedy their deficiencies by taking appropriate courses during their first two years in the graduate program. The committee maintains a student advisory committee, which meets three times a year with each of the first and second year students to advise them on courses available, arbitrate on which courses meet the committee's course distribution requirements, and otherwise help students keep on track towards Ph.D. candidacy.

*Second year.* Second year students continue to meet with the student advisory committee until they pass their preliminary examination/dissertation proposal hearing. The first part of the second year may be taken up mostly with course work, supplemented more heavily by reading and research courses.

*Reading and research requirements.* Committee on Evolutionary Biology courses have been divided into six broad areas. Students must take a course in five of the six areas to be recommended for PhD Candidacy. The primary aim is that the student acquires considerable breadth in evolutionary biology; this breadth and the interdisciplinary research it permits should be the distinguishing feature of students working in the committee. In the first two year of study students generally enroll in three courses per quarter. This can be a combination of lecture, seminar, and reading formats.

*Division of the Biological Sciences teaching assistant requirement program.* During their tenure in the doctoral program,

students are required to register for two evaluated teaching assistants in two approved courses.

*Preliminary examination/dissertation proposal hearing.* The student must make an oral defense of his or her dissertation proposal, followed by an oral examination by a faculty committee on general issues in evolutionary biology. Students are expected to pass the preliminary examination by the spring quarter of their second year in the committee.

Prior to the preliminary examination, all students admitted to the Committee on Evolutionary Biology shall select an advisor, who will normally become the chair of the student's preliminary examination committee. The committee for the preliminary examination will be formed by the student and her/his advisor, subject to approval by the CEB Chair, when the student notifies the CEB chair in writing of her/his plans to take the examination.

*Ph.D. dissertation.* Upon successful completion of the preliminary examination and admission into candidacy for the Ph.D., students work on their dissertation projects in close consultation with the faculty advisor and dissertation committee. During a period of two to three years the student does primary original research, participates in seminars, discussion groups, and professional meetings and conferences, and completes the written Ph.D. dissertation.

The Ph.D. in evolutionary biology is awarded based upon the candidate's having (1) submitted a written dissertation reporting results of the student's original research in a form suitable for publication, which must be approved by the faculty advisor and dissertation committee; and, (2) successfully completed a final oral examination covering the student's field of specialization, and (3) final approved of the dissertation by the CEB Chair.

### ADMISSION

The committee trains doctoral students for research and teaching, and other careers in evolutionary biology. The S.M. degree may be awarded in special cases, usually associated with graduate students in the Committee on the Conceptual and Historical Studies of Science. Although graduate studies in evolutionary biology can be carried out in several different departments at the University, students whose research and career interests are interdisciplinary generally apply to the Committee on Evolutionary Biology for admission.

We strongly advise students considering application to the committee to begin preparation of their application early in the autumn quarter, so that all materials will arrive by the December 1<sup>st</sup> deadline. The committee requires GRE General Test scores from all applicants, and recommends submission of GRE subject test scores in biology. Foreign applicants whose first language is not English also must submit TOEFL test scores with their application materials.

Further information also may be obtained from the department's home at <http://evbio.uchicago.edu>, or by sending an email to [darwin@uchicago.edu](mailto:darwin@uchicago.edu).

### *Courses*

#### *Required Courses*

38800. Introduction to Research in Evolutionary Biology  
Staff

This course meets once a week for a lecture by a curator at the Field Museum. A different curator lectures each week, presenting results of her/his current research on a range of topics in evolutionary biology, including phylogenetic systematics, molecular biology, paleontology, development, conservation biology and biodiversity, population biology, or biomechanics. Lectures are often followed by a tour of one of the world's major natural history collections of living or fossil birds, mammals, plants, insects, fishes, invertebrates, or amphibians and reptiles.

40100. Grants, Publications and Professional Issues  
Bergelson, Ho

Covers professional topics in evolutionary biology, such as strategies in grant and article writing, construction and submission of professional articles for journals in the field, career alternatives and strategies, ethical issues, etc. Topics are decided on by enrolled students and faculty leading the seminar.

#### *Advanced Courses*

30200. Chordate Evolutionary Biology. (=BIOS 20260)  
Coates, Shubin

Chordate biology emphasizes the diversity and evolution of modern vertebrate life, drawing on a range of sources (from comparative anatomy and embryology to paleontology, biomechanics, and developmental genetics). Much of the work is lab-based, with ample opportunity to gain firsthand experience of the repeated themes of vertebrate body plans, as well as some of the extraordinary specializations manifest in living forms. The instructors, who are both actively engaged in vertebrate-centered research, take this course beyond the boundaries of standard textbook content.

30300 Key Issues in Early Vertebrate Evolution. (=ORGB 31300)  
Coates

The course addresses questions about the origin of vertebrates, the interrelationships of major gnathostome clades, and the fish tetrapod transition. Undergraduate level chordate biology required; familiarity with methods in systematic biology advantageous.

30400, 30500. Vertebrate Paleontology (=ORGB 31400, 31500)  
Coates, Shubin, Sereno

Systematics, morphology ecology, and evolution of fossil vertebrates. Open to undergraduates.

30600. Molecular Evolutionary Genetics (=ECEV 30600)  
Wu

This course deals with advanced topics in evolutionary genetics and molecular evolution. The main goal is to survey the frontiers and to develop research projects of the future.

30800. Current Topics in Evolutionary Genomics (=ECEV 30800)

Borevitz, Li

This course will cover current topics in evolutionary genomics including comparative genomics, evolution of duplicate genes, evolution of genome structure and organization, evolution of protein interaction network, and evolution of gene expression. It will also review methods for data analyses. Some background in molecular evolution is required.

31100. Mammal Evolution  
Staff

An introduction to the major features of mammalian evolution. The course will survey major groups of mammals, including both living and fossil taxa. We will focus on phylogeny, morphology, biogeography, and patterns of diversification and extinction, using illustrations from Field Museum's world class collections of fossil and living mammals. Transportation to and from the museum will be arranged as needed.

31200. Data Analysis in Ecology and Evolution (=ECEV 31200)

Bergelson, Price

This course covers the design and analysis of experiments, focusing on tests used commonly in evolutionary biology. Both parametric and nonparametric tests will be considered.

31300. Ecological Applications to Conservation Biology (=ECEV 31300, BIOS 23351)

Larsen, Pfister

We focus on the contribution of ecological theory to the understanding of current issues in conservation biology. The course emphasizes quantitative methods and their use for applied problems in ecology, such as the design of nature reserves, the risk of extinction and the impact of harvesting, the dynamics of species invasions, and the role of species interactions. Course material is drawn mostly from the current primary literature. Two Saturday field trips and computer modeling labs are in addition to scheduled class time

31500. Ecological Genetics (=ECEV 31500.)

Price

A graduate class in ecological genetics (evolution of phenotype, without considering molecular approaches). This will be a weekly 2-hour seminar, emphasizing quan-

titative genetic approaches. Basic theory will covers such topics as heritability and breeding value, genetic correlations, Price's theorem and sexual selection. Seminars will include discussions of current topics from the literature.

31501. The Influence of History on Ecological Communities (=ECEV 31501)

Price

Why are some ecological communities much more species rich than others? We will examine historical and regional factors (age and area) using the primary research literature. Topics covered will include: the relationship between regional and local diversity; the use of phylogenies to reconstruct history of areas; speciation and extinction rates and dispersal; and the importance of different timescales.

31600. Bone (=ORGB 31600)

Ross

This course will explore the diversity and evolution of vertebrate mineralized connective tissues in order to investigate developmental mechanisms, adult structure, in vivo function, and structure-function relationships. Mineralized connective tissues perform vital physiological and biomechanical functions in vertebrates that are reflected in their structural properties. Understanding these function-structure relationships is a fundamental goal of much of vertebrate skeletal biomechanics. The relationships between structure and function in vertebrate bone also underlie hypotheses about physiology and behavior of fossil vertebrates, which in turn inform models of the evolution of physiological and biomechanical systems.

31700. Macroevolution (=GEOS 31700)

Jablonski

Patterns and processes of evolution above the species level, in both recent and fossil organisms. A survey of the current literature, along with case studies. Prereq: consent of the instructor.

31800. Taphonomy (=GEOS 31800)

Kidwell

Research oriented lecture and seminar course on processes and patterns of fossilization, including rates and controls of soft tissue decomposition, hydraulic behavior of skeletal hard parts, differential preservation of biominerals, and live/dead interactions with consequences for paleontological and evolutionary analysis. Post mortem phenomena will be examined at the level of individual organisms and species, multispecies assemblages, stratigraphic sequences, and larger geologic scales. Prereq: GEOS 22300; ECEV 32300.

31900. Topics in Paleobiology (=GEOS 31900)

Boyce, Foote, Jablonski, Kidwell, LaBarbera, Webster

Investigations in a seminar format of paleobiological and sedimentological topics of current interest to students and faculty. Previous subjects have included marine paleo-

ecology, Precambrian paleobiology and evolution of early terrestrial ecosystems. Prereq: consent of staff.

32000. Developmental Biopsychology (=CHDV 42201)

McClintock

An introduction to the biological and physiological analysis of behavior. Principles of neural and endocrine integration. A lecture course taught with a developmental emphasis, drawing from both the experimental and clinical literature.

32100. Diversity and Evolution of Arthropods. (=BIOS 23402)

Sierwald

This course will focus on arthropod evolution, with an emphasis on insects and spiders. Lectures will focus on facets of arthropod evolution, including theories of arthropod origins, the evolution of flight, and the evolution of metamorphosis. Laboratories will focus on comparative examination of diverse arthropod groups, and students will be expected to achieve a general understanding of major arthropod groups.

32300. Principles of Paleontology (=BIOS 23255, GEOS 22300)

Foote

The focus of the course is on the nature of the fossil record, the information it provides on patterns and processes of evolution through geologic time, and how it can be used to solve geological and biological problems. Lectures cover the principles of paleontology (e.g. fossilization, classification, morphological analysis and interpretation, biostratigraphy, paleoecology, and macroevolution); labs are systematic, introducing major groups of fossil invertebrates.

32400. Invertebrate Paleobiology and Evolution (= BIOS 23261, GEOS 26300)

Webster

This course provides a detailed overview of the morphology, paleobiology, evolutionary history, and practical uses of the invertebrate and microfossil groups commonly found in the fossil record. Emphasis is placed on understanding key anatomical and ecological innovations within each group (and interactions among groups) responsible for producing the observed changes in diversity, dominance, and ecological community structure through evolutionary time. Labs supplement lecture material with specimen based and practical application sections. Field trips offer experience in the collection of specimens and raw paleontological data. Several Hot Topics lectures introduce important, exciting, and often controversial aspects of current paleontological research linked to particular invertebrate groups: topics covered include the link between morphology and genetics, microevolution, functional morphology, and the inference of past climates using fossils. PQ: Geosci 13100, 13200, (or equivalents for Biosci students).

32500. Evolutionary History of Terrestrial Ecosystems (=GEOS 32500)

C. Boyce, P. Makovicky

Seminar course covering the evolution of terrestrial ecosystems from their Paleozoic assembly through to the modern world. The fossil history of plant, vertebrate, invertebrate, and fungal lineages will be covered, as will the diversification of their ecological interactions. The influence of extinction events and important extrinsic factors, such as geography, climate, and atmospheric composition, will also be considered. The class will meet once a week. Grades will be based upon student presentations and a final paper. (Autumn)

32600. Evolutionary Aspects of Gene Regulation (=ECEV 32500, DVBI 32500, GENE 32500)

Ruvinsky

Using primary research literature, this course will examine recent advances in understanding of evolution of gene regulation. Among others it will cover the following topics: patterns and forces of evolutionary change in regulatory DNA and transcription factors, genetic changes that are responsible for phenotypic evolution, and discovery and evolutionary implications of gene control by microRNAs.

32700. Philosophical Problems in the Biological Sciences (CHSS 37600, HIPS 22700, PHIL 32700)

Wimsatt

Main topic: reductionism and mechanism. We will begin by readings by philosophers on reduction. The classical model will be criticized and new models, based upon the practices of mechanistic explanation, will be offered. Related topics: complexity and organization, levels of organization, aggregativity and emergence, reductionistic model building heuristics, and model building in evolutionary biology will be covered. Following this, we will undertake an extended survey of the history of genetics, utilizing primary and secondary sources, and focusing on the period from 1868 through 1926, with selective discussion of the modern period. This discussion will illustrate the claims made in the first part of the course, and will in addition illustrate the superiority of mechanistic or realist approaches over operationalist or instrumentalist ones, the character of scientific change and reductive explanation, will focus on the productive use of models, especially false ones, as means to arrive at better theories. (Offered in even numbered years).

33001. Paleobiological Modeling and Analysis-1 (=GEOS 33001)

Foote

This course is an introduction to mathematical modeling as applied to problems in paleobiology and evolutionary biology. Topics include: basic probability theory; general approaches to modeling; model comparison using likelihood and other criteria; forward modeling of branching

processes; sampling models; and inverse methods. A series of programming exercises and a term project are required. Programming in R or C is recommended, but any language may be used. Prerequisites: Mathematics through first-year calculus; basic computer programming skills (or willingness to learn); elementary statistics helpful. EVOL 33001 and EVOL 33002 can be taken in either order.

33002. Paleobiological Modeling and Analysis-2 (=GEOS 33002)

Foote

This course is an introduction to multivariate analysis, with emphasis on morphological data and problems in paleontology and evolutionary biology. Topics include: types of data and scales of measurement; data transformations; bivariate analysis; measurement of similarity and difference; clustering; ordination; singular value decomposition; principal component analysis, factor analysis, principal coordinates, correspondence analysis, and other eigenvector methods; and path analysis. Each student will bring a multivariate dataset (not necessarily original) to the course and will write a series of short papers based on analysis of these data. Code written in the R programming language will be supplied for most analyses. Prerequisites: Mathematics at secondary school level; basic computer programming skills (or willingness to learn); calculus, linear algebra, and elementary statistics also helpful, although essential points will be reviewed. EVOL 33001 and EVOL 33002 can be taken in either order.

33100. Field Course in Stratigraphy (=GEOS 24000)

Staff

This is a one month excursion to the northwestern United States and/or eastern Canada to examine the tectonic and stratigraphic evolution of the margin of North America from the Cambrian period to the present. The purpose of the course is to acquaint students with sedimentary and volcanic rocks deposited in a variety of environments and to examine the tectonic and stratigraphic evolution of this complicated region. The trip takes place in late August or early September with field vehicles and camping equipment provided. Prereq: GEOS 13100 13200 or equivalent.

33600. Vertebrate Development. (=DVBI 35600, ORGB 33600)

Prince, Millen, Ho

This advanced level course combines lectures, student presentations, and discussion sessions. It covers major topics on the developmental biology of embryos (e.g. formation of the germ line, gastrulation, segmentation, nervous system development, limb patterning, organogenesis). We make extensive use of the primary literature and emphasize experimental approaches (e.g. classical embryology, genetics, molecular genetics).

33700. Geometric Morphometrics (=GEOS 36000).

Webster

This graduate-level course serves as an introduction to the field of morphometrics (the analysis of organismal shape). Quantitative exploratory and confirmatory techniques involving both traditional (length-based) and geometric (landmark-based) summaries of organismal shape are introduced in a series of lectures and practical exercises. Emphasis is placed on the application of morphometric methods to issues such as (but not restricted to) quantification of intraspecific variability, interspecific differences, disparity, ontogenetic growth patterns (allometry), and phylogenetic changes in morphology. Relevant statistical and algebraic operations are explained assuming no prior background. Students are required to bring personal laptop computers, and are expected to acquire and analyze their own data sets during the course.

34100. Introduction to Invertebrate Biology (=BIOS 22244)  
LaBarbera

This is a survey of the diversity, structure, and evolution of the invertebrate phyla, with emphasis on the major living and fossil invertebrate groups. Structure-function relationships and the influence of body plans on the evolutionary history of the invertebrate phyla are stressed. PQ: Completion of the general education requirement in the biological sciences or consent of instructor.

34200. Biological Fluid Mechanics (=ORGB 34200, BIOS 22242)

LaBarbera

Properties of biological materials, mechanical analysis of morphology, and principles of design optimization, with appropriate examples from zoology, botany and paleontology. Lectures concentrate on solid mechanics in odd-number years. Prereq: undergraduate chemistry and physics, consent of instructor. Next offered in Winter, 2011.

34300. Biomechanics of Organisms (=GEOS 34200, ORGB 34200, BIOS 22243)

LaBarbera

This course examines how organisms cope with their physical environment. It covers the properties of biological materials (bone, cartilage, tendon, shell, wood, cuticle, etc.), mechanical analysis of morphology, and principles of design optimization. Emphasis is placed on support systems of organisms. Mechanical properties of biomaterials are analyzed in relation to their underlying biochemical organization and biophysical properties. Students carry out self designed laboratory projects. There is a required laboratory.

34800. Kinship and Social Systems (=HUDV 34800)

Mateo

Graduate seminar. This course will use a biological approach to understanding how groups form and how cooperation and competition modulate group size and reproductive success. We will explore social systems from evolutionary

and ecological perspectives, focusing on how the biotic and social environments favor cooperation among kin as well as how these environmental features influence mating systems and inclusive fitness. While a strong background in evolutionary theory is not required, students should have basic understanding of biology. The essence of what I hope you will get from this course is a radically different way of thinking about why animals, including humans, behave as they do. In contrast to physiological, developmental, cognitive or other 'proximate' approaches to behavior, in this course an evolutionary or functional approach will be presented. The kinds of behavior we will focus on include aggression, cooperation, kin favoritism, mating systems, parental investment and sexual selection. We will examine these behaviors in numerous animal groups, including insects, fishes, birds, mammals, primates and humans, to mention only a few. Permission of instructor.

35000. Experimental Evolutionary Ecology (=ECEV 35000)  
Wootton

An evolutionary approach to the study of ecological interactions. Topics include plant animal interactions, life history evolution, host parasite and host mutualist interactions, competition, and predation. Appropriate for graduate students who have had little background in ecology.

35401. Reconstructing The Tree Of Life. (=BIOS 23404)

Moreau, Ree

This course is an introduction to the Tree of Life (phylogeny): its conceptual origins, methods for discovering its structure, and its importance in evolutionary biology and other area of science. Topics include historical context and concepts, source of data, methods of phylogenetic analysis, and the use of phylogenies to study the tempo and mode of lineage diversification, coevolution, biogeography, conservation, molecular biology, development epidemiology, etc. One Saturday field trip and computer labs required in addition to scheduled class time.

35501. Phylogenetics.

Smith

This course will explore the principles of molecular systematic biology and the use of contemporary phylogenetic methods to address diverse evolutionary questions. Topics include homology and the alignment of sequence data, genome evolution, computational complexity, tree-searching algorithms, optimality criteria, coalescent methods, tree support, and an introduction to comparative methods. This course will emphasize theoretical issues followed by empirical examples to examine these topics as well as feature hands-on instruction for relevant computer programs and resources.

35600. Principles Of Population Genetics I. (=ECEV 35600)

Hudson

Lectures on the basic theoretical principles of population genetics and their application to the study of variation and evolution in natural populations. Topics include selection,

mutation, random genetic drift, quantitative genetics, molecular evolution and variation, the evolution of selfish genetic systems, and human evolution. Knowledge of elementary genetics and calculus is assumed. Prerequisite: consent of instructor.

35700. Principles Of Population Genetics II. (=ECEV 35700)  
Hudson

Continuation of EVOL 35600.

35800. Classics of Evolutionary Genetics (=ECEV 35800)  
Long

Major classic papers in evolutionary genetics that had great impact on the development of the field are reviewed.

35900. Evolution at the Genomic Level (=ECEV 35900)  
Kreitman, Long

We focus on the newly proposed and solved problems related to evolution of genomes. Instructors will give a series of lectures, dealing with basic concepts and techniques used in the research of topics. Students will present and evaluate literatures.

36000. Ecological And Evolutionary Genomics. (=ECEV 36000)

Borevitz, Wu

This course will emphasize the vast potentials of the latest DNA sequencing technology in biology. Long standing biological questions that have become answerable will be the major focus. The course will cover topics in evolutionary genomics including genome structure and organization, interaction networks of transcription factors and miRNAs and others. A new subfield of ecological genomics will be explored, including QTL and association mapping, and population structure on the landscape. Some background in molecular evolution is required.

36200. Current Topics in Evolutionary Biology (=ECEV 36200)

Coyne

Critical analysis of recent literature on empirical research in evolutionary biology. Prerequisite: some knowledge of population genetics, evolutionary biology or consent of instructor.

36300. Speciation (=ECEV 36300)

Coyne

A review of the literature on the origin of species beginning with Darwin and continuing through contemporary work. Both theoretical and empirical studies will be covered, with special emphasis on the genetics of speciation. Prerequisite: coursework in genetics and evolution.

36800. Special Topics in Animal Conservation  
Lonsdorf

This course will focus on current advances in basic and applied conservation research in both in-situ and ex-situ populations. Each week, students will have a guest presen-

tation by conservation research staff and read and discuss accompanying relevant literature.

36900. Biopsychology of Sex Differences (=HUDV 30901 / PSYC 31600)

Mateo

This course will explore the biological basis of mammalian sex differences and reproductive behaviors. We will consider a variety of species, including humans. We will address the physiological, hormonal, ecological and social basis of sex differences. To get the most from this course, students should have some background in biology, preferably from taking an introductory course in biology or biological psychology.

37000. Topics in Systematics and Biogeography (=ORGB 37000)

Sereno

A graduate seminar which includes short lectures, one page summaries of readings, and class discussion. Topics include critical examination of current methods in systematics and historical biogeography, their limits, and applications to biological problems. The course assumes familiarity with the principles of systematics and historical biogeography and requires extensive readings from the current literature. Offered in even numbered years.

37100. Biopsychology of Attachment (=HUDV 34900)

Maestriperieri

This course explores parent child attachment from a bio social perspective. It consists of two parts: Part I will focus on mother infant attachment and include discussion of such topics as neuroendocrinology of maternal behavior in animals and humans and mother infant bonding in primates and humans. Part II will focus on infant mother attachment in humans and include discussion of such topics as Bowlby's formulation of attachment theory, individual differences in attachment and the Strange Situation Test, internal working models attachment, cross cultural studies of attachment, attachment and adult romantic relationships, and attachment and psychopathology.

37300. Primate Behavior and Ecology (=BIOS 23248, CHDV 21800, CHDV 34300)

Maestriperieri

This course explores the behavior and ecology of nonhuman primates. Specific topics include methods for the study of primate behavior, history of primate behavior research, socioecology, foraging, predation, affiliation, aggression, mating, parenting, development, communication, cognition, and evolution of human behavior. This course will involve visits to the Brookfield Zoo with observations of primate behavior.

37400. Evolutionary Social Psychology (CHDV 37800)

Maestriperieri

This course explores human social behavior from the perspective of a controversial new discipline: evolutionary

psychology. In this course we will read and discuss articles in which evolutionary theory has been applied to different aspects of human behavior and social life such as: developmental sex differences, cooperation and altruism, competition and aggression, physical attractiveness and mating strategies, incest avoidance and marriage, sexual coercion, parenting, parenting and child abuse, language and cognition, and psychological and personality disorders.

37500. Sexual Selection (=ECEV 37500)

Pruett Jones

A discussion and critical analysis of sexual selection. This course will consist of lectures, reading and discussion. Prerequisite: Common Core Biology, BIOS 248, or consent of instructor. (Odd numbered years.)

37600, 37700, 37800 Graduate Workshop in Animal Behavior (CHDV 37500)

This graduate workshop involves weekly research seminars in animal behavior given by faculty members, post docs, and advanced graduate students from this and other institutions. The seminars are followed by discussion in which students have the opportunity to interact with the speaker, ask questions about the presentation, and share information about their own work. The purpose of this workshop is to expose graduate students to current comparative research in behavioral biology and meet some of the leading scientists in this field. Students must register for this course in the autumn quarter and will receive credit in the spring, at the end of the 3 quarter sequence.

38100. Evolution of the Hominoidea (=ANTH 38100)

Tuttle

A detailed consideration of the fossil record and phylogeny of the Hominoidea and collateral taxa of the Hominoidea based on studies of classic monographs, casts, and comparative primate osteology. (2 Crs.)

38200. Comparative Primate Morphology (=ANTH 38200)

Tuttle

Functional morphology of locomotor, alimentary, reproductive, and Springecial sensory systems in primates. Dissections will be performed on monkeys and apes. Prereq: consent of instructor. (2 Crs.)

38400. History and Theory of Human Evolution (=ANTH 38400)

Tuttle

A proseminar based on the classic theoretic writings, autobiographies, and biographies of C. Darwin, T.H. Huxley, A. Keith, H.F. Osborn, F.W. Jones, W.K. Gregory, D.J. Morton, R. Broom, D. Black, R. Dart, F. Weidenreich, J.T. Robinson, L. Leakey, W.E. LeGros Clark, A.H. Schultz, W.L. Straus, E.A. Hooton, S.L. Washburn, C.S. Coon, T. Dobzhansky, G. Simpson, and S.J. Gould.

38600. Apes and Human Evolution (=ANTH 38600)

Tuttle

A critical examination of the ways in which data on the behavior, morphology and genetics of apes have been used to elucidate human evolution, with particular emphasis on bipedalism, hunting, meat eating, tool behavior, food sharing, cognitive ability, language, self awareness, and sociability. Visits to local zoos, films, and demonstrations with casts of fossils and skeletons required.

38700. Primate Evolution. (=BIOS 23241)

Martin

A combined lecture and seminar course covering the comparative morphological and molecular evidence for evolution across the entire order Primates, including both basic data and theoretical issues.

40000. Evolutionary Conservation Biology

Staff

Graduate proseminar examining critical questions and issues in evolutionary conservation biology, from paleobiology of extinction and survivals to contemporary issues of hotspots, population genetics and ecology, behavioral ecology of free and managed populations, and molecular evolution and systematic biology.

40900. Behavioral Ecology.(=HUDV 40900).

Mateo

Graduate Seminar. We will meet once per week to discuss current topics in behavioral ecology, as selected by participating students.

41500. Topics in Stratigraphy and Biosedimentology (=GEOS 31500)

Kidwell

Exploration of current topics in a seminar format, with readings drawn from source literature. Topics will be selected from the rapidly evolving fields of synthetic stratigraphy, basin analysis and animal sediment relations in their broadest sense. Emphasis will reflect the interests of the participants; past topics include paleobathymetry, geologic time scales, biostratigraphy, sequence stratigraphy, sea level models, and geology of continental margins. Prereq: GEOS 22200 and 22300 or equivalent.

42200. Seminar: Research in Behavioral Endocrinology (=HUDV 42200)

McClintock

For students actively involved in research in behavioral endocrinology. Emphasis is on the current literature and on the analysis and the presentation of data. Prereq: Consent of instructor, active research in the area.

42500. Concepts in Ecology (=ECEV 42500)

Bergelson, Pfister, Wootton

Using a combination of lecture and student led discussion, this course will introduce students to the classical ecological literature as well as the latest work in each of several topics. The goal is to provide students with a solid framework upon which to build their own research program.

## 42600. Community Ecology (=ECEV 42600)

Wootton

Lectures cover advanced topics in multi species systems, and include an introduction to basic theoretical approaches.

## 42700. Topics in Aquatic Ecology (=ECEV 42700)

Pfister

Theoretical and empirical topics especially relevant to the ecology of aquatic systems will be presented. Emphasis will be placed on features of aquatic systems that pose theoretical and empirical challenges such as the prevalence of complex life histories, the potential for long distance dispersal, and the diverse controls of trophic structure.

## 42800. Population Ecology (=ECEV 42800)

Pfister

A lecture course on the empirical and theoretical approaches to the study of natural populations, including field methodologies and quantitative approaches. Includes computer assignments.

## 42900. Theoretical Ecology (=ECEV 42900)

Dwyer

An introduction to mathematical modeling in ecology. The course will begin with linear growth and Lotka Volterra models, and proceed to partial differential equations. The course's perspective will emphasize numerical computations and fitting models to data.

## 43000. Ecological Genetics of Plant/Animal Interactions (=ECEV 43000)

Bergelson, Dwyer

This seminar covers empirical and theoretical issues in the study of coevolutionary interactions.

## 44001. Molecular Evolution I: Fundamentals And Principles. (=BIOS 23258, ECEV 44001)

Kreitman

PQ: two quarters of Biology and Calculus or consent of Instructor. The comparative analysis of DNA sequence variation has become an important tool in molecular biology, genetics, and evolutionary biology. This course covers major theories that form the foundation for understanding evolutionary forces that govern molecular variation, divergence and genome organization. Particular attention is given to selectively neutral models of variation and evolution, and to alternative models of natural selection. The course provides practical information on accessing genome databases, searching for homologous sequences, aligning DNA and protein sequences, calculating sequence divergence, producing sequence phylogenies, and estimating evolutionary parameters.

## 44002. Molecular Evolution II: Genes And Genomes. (=BIOS 23259, ECEV 44002)

Long

PQ: BIOS 23258 or consent of Instructor. In Molecular Evolution II, the knowledge and well established evo-

lutionary analyses of genes and genomes are taught. The related areas, such as origination and evolution of new genes, exon-intron structure, sex-related genes, sex-determination genetic systems, transposable elements, gene regulation systems, and duplication of genes and genomes and evolution of genome sizes, are covered in the teaching. These topics are discussed under the processes driven by various evolutionary forces and genetic mechanisms. The analysis of these problems is conducted with the genomic context. Lectures, discussions, and experiments are combined.

## 44100. Molecular Methods in Ecology and Evolution (=ECEV 44100)

Bergelson, Kreitman

This is a laboratory course intended as an intense introduction to molecular methods applicable to research in organismal biology. The topics covered by the course will change from year to year. Students will learn techniques for manipulating DNA, for identifying single base substitutions and tandem repeat length variation, and for carrying out large scale mapping experiments of a quantitative trait. Class enrollment will be limited to approximately 6-8 students.

## 44800. Evolutionary Biomechanics Of Vertebrate Feeding Systems (=ORGB 44800)

Ross

This proseminar examines the evolutionary and functional principles underlying the diversity of vertebrate musculoskeletal systems as revealed by research on vertebrate feeding systems. Mechanical, neuromechanical, modeling and experimental approaches to the biomechanics of vertebrate feeding systems are examined. Weekly labs cover practical skills surrounding collection and analysis of in vivo data. Students are required to participate in class discussions and prepare a written and oral proposal of a research project on a vertebrate feeding system. It is expected that the students will then perform that research in the Summer Quarter. \*Required background:\* Vertebrate diversity and phylogenetic relationships; algebra, some linear algebra and calculus helpful. C. Ross

## 45300. Models of Animal Behavior (=ECEV 45300)

Pruett Jones

Introduction to mathematical models of naturalistic behavior. Lectures, discussions and individual projects. (even numbered years.)

## 45500. Biogeography (=ENST 25500, BIOS 23406)

Heaney, Patterson

This course examines factors governing the distribution and abundance of animals and plants. Topics include patterns and processes in historical biogeography, island biogeography, geographical ecology, areography, and conservation biology (the design and effectiveness of nature reserves).

## 45600. Paleobiogeography. (=ORGB 35600)

Serenio

This course concerns the development of historical biogeography as a discipline and the advent of more recent quantitative methods. Areas of special interest include the quality of fossil and geologic records, the definition of areas, the relationship of speciation and phylogeny to biogeography, and methods that search for congruence. The course is aimed at defining hypotheses open to test by empirical data or simulation.

46100. Chemical Information in the Sedimentary & Fossil Records (=GEOS XXXXX)

Boyce

48100. Advanced Problems in Paleoanthropology (=ANTH 48100)

Tuttle

Tutorial museum, laboratory and field studies on the hominoid fossil record and contextual information relevant to its interpretation.

48500. Advanced Problems in Primate Locomotion and Comparative Morphology (=ANTH 48500)

Tuttle

Seminar and/or laboratory study of the morphological and behavioral adaptations of selected primates and their implications for primate phylogeny.

49400. Approaches To Teaching In The Biological Sciences  
Staff

This course will introduce different teaching philosophies and methods that address how to be an effective teacher in the biological sciences. Specifically, the course will address what skills and knowledge undergraduates need to acquire and which assignments best teach these skills. Students will prepare course syllabi, discuss different approaches to teaching, and draft a philosophy of teaching statement. The overall goal for the course is that the students think critically about the art of teaching and formulate their own thoughts on the matter to better prepare them for their own careers in teaching.

49500. Teaching in Evolutionary Biology

Staff

Under the supervision of University faculty, graduate students in the Evolutionary Biology may serve as teaching assistants for courses in the College and relevant Graduate Divisions. Students will be evaluated and mentored throughout the quarter by their faculty supervisor, and at the end of the quarter by enrolled students. Prerequisite: successful fulfillment of the BSD teaching requirement and consent of instructor. Students must choose the instructor name from the faculty listing in the Time Schedules and register using that instructor's assigned section number.

49600. Graduate Readings in Evolutionary Biology at the Field Museum

Staff

Directed individual reading courses supervised by CEB faculty members who are curators at the Field Museum. Prereq: consent of instructor. Students must choose the instructor name from the faculty listing in the Time Schedules and register using that instructor's assigned section number.

49700. Graduate Readings in Evolutionary Biology  
Staff

Directed individual reading courses in evolutionary biology supervised by CEB faculty members. Prerequisite: consent of instructor. Students must choose the instructor name from the faculty listing in the Time Schedules and register using that instructor's assigned section number.

49800. Graduate Research Off Campus

Staff

Advanced research under the direction of the faculty of the Committee on Evolutionary Biology, undertaken away from the University of Chicago campus, approved by the Chair and the student's advisory committee. PQ: Consent of Instructor. Students must choose the instructor name from the faculty listing in the Time Schedules and register using that instructor's assigned section number.

49900. Graduate Research On Campus

Staff

Advanced research under the direction of the faculty of the Committee on Evolutionary Biology. While any approved research problem may be pursued under this course number, special attention is called to the following research fields available in the Committee: population ecology and genetics, entomology, applied ecology, plant biology, systematics of fossil invertebrates, molluscs, problems in the systematics of arthropods, herpetology, mammalogy, ornithology, and ichthyology, theoretical biology, animal behavior, paleoecology, molecular evolution, functional morphology, evolution of development, community ecology and evolution, evolutionary paleobiology and macroevolution, and physiological ecology. PQ: Consent of Instructor. Students must choose the instructor name from the faculty listing in the Time Schedules and register using that instructor's assigned section number.

## COMMITTEE ON GENETICS, GENOMICS & SYSTEMS BIOLOGY

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### *Chair*

Richard R. Hudson, Ecology & Evolution

### *Professors*

Graeme Bell, Biochemistry & Molecular Biology  
Joy Bergelson, Ecology & Evolution  
Douglas K. Bishop, Radiation & Cellular Oncology  
Nancy Jean Cox, Human Genetics  
Jerry Coyne, Ecology & Evolution  
Anna Di Rienzo, Human Genetics  
William B. Dobyns, Human Genetics  
M. Eileen Dolan, Medicine  
Martin Feder, Organismal Biology & Anatomy  
Richard Fehon, Molecular Genetics & Cell Biology  
Edwin L. Ferguson, Molecular Genetics & Cell Biology  
T. Conrad Gilliam, Human Genetics  
Benjamin Glick, Molecular Genetics & Cell Biology  
Jean Greenberg, Molecular Genetics & Cell Biology  
Robert Haselkorn, Molecular Genetics & Cell Biology  
Robert Ho, Organismal Biology & Anatomy  
Richard R. Hudson, Ecology & Evolution  
Martin Kreitman, Ecology & Evolution  
Bruce T. Lahn, Human Genetics  
Michelle M. LeBeau, Medicine  
Wen Hsiung Li, Ecology & Evolution  
Manyuan Long, Ecology & Evolution  
Rima McLeod, Ophthalmology & Visual Science  
Elizabeth M. McNally, Medicine  
Mary Sara McPeck, Statistics  
Thomas Nagylaki, Ecology & Evolution  
Carole Ober, Human Genetics  
Olufunmilayo Olopade, Medicine  
Brian J. Popko, Neurology  
Trevor Price, Ecology & Evolution  
Victoria Prince, Organismal Biology & Anatomy  
Jonathan Pritchard, Human Genetics  
Molly Przeworski, Human Genetics  
Bernard Roizman, Molecular Genetics & Cell Biology  
Marsha Rosner, Ben May Department for Cancer Research  
Lucia Rothman-Denes, Molecular Genetics & Cell Biology  
Janet D. Rowley, Medicine  
Andrey Rzhetsky, Medicine  
Angelo Scanu, Medicine  
James A. Shapiro, Biochemistry & Molecular Biology  
Harinder Singh, Molecular Genetics & Cell Biology  
Ursula B. Storb, Molecular Genetics & Cell Biology  
Leigh Van Valen, Ecology & Evolution  
Kevin White, Human Genetics  
Chung-I Wu, Ecology & Evolution

### *Associate Professors*

Malcolm J. Casadaban, Molecular Genetics & Cell Biology  
Wei Du, Ben May Department for Cancer Research  
Nathan Ellis, Medicine  
Michael Glotzer, Molecular Genetics & Cell Biology  
Tong-Chuan He, Surgery  
Akira Imamoto, Ben May Department for Cancer Research  
Stephen J. Kron, Molecular Genetics & Cell Biology  
Gayle K. Lamppa, Molecular Genetics & Cell Biology  
Yves Lussier, Medicine  
Jocelyn Malamy, Molecular Genetics & Cell Biology  
Laurens J. Mets, Molecular Genetics & Cell Biology  
Kathleen J. Millen, Human Genetics  
Ilaria Rebay, Ben May Department for Cancer Research  
Carrie Rinker-Schaeffer, Surgery  
Urs Schmidt-Ott, Organismal Biology & Anatomy  
Aaron Turkewitz, Molecular Genetics & Cell Biology

### *Assistant Professors*

David Biron, Department of Physics  
Justin Borevitz, Ecology & Evolution  
Yoav Gilad, Human Genetics  
Mohan Gupta, Molecular Genetics & Cell Biology  
Sally Horne-Badovinac, Molecular Genetics & Cell Biology  
Richard Jones, Ben May Department for Cancer Research  
David Kovar, Molecular Genetics & Cell Biology  
Jess Leber, Department of Microbiology  
Chun-Yu Liu, Department of Psychiatry  
Andy Minn, Radiation & Cellular Oncology  
Ivan Moskowitz, Department of Pediatrics  
Piers Nash, Ben May Department for Cancer Research  
Marcelo Nobrega, Human Genetics  
Abraham Palmer, Human Genetics  
Ilya Ruvinsky, Ecology & Evolution  
Jonathan P. Staley, Molecular Genetics & Cell Biology

### *Emeritus Faculty*

Rochelle Easton Esposito, Molecular Genetics & Cell Biology  
Wolfgang Epstein, Molecular Genetics & Cell Biology  
Anthony Mahowald, Molecular Genetics & Cell Biology  
Mary Mahowald, Obstetrics & Gynecology  
Alvin Markovitz, Biochemistry & Molecular Biology  
Samuel Refetoff, Medicine  
Janice B. Spofford, Ecology & Evolution  
Bernard Strauss, Molecular Genetics & Cell Biology

The Committee on Genetics, Genomics & Systems Biology (GGSB) is an interdisciplinary degree-granting program that brings together biologists from over a dozen academic departments. The program is aimed at training Ph.D. scholars for careers as independent scientists in basic and applied biomedical research and education. The Graduate Program in Genetics, Genomics, & Systems Biology offers a program of basic study leading to Doctor of Philosophy in Genetics. The Ph.D. training program combines a foundation

in modern genetic analysis with training in current methods for formulating and addressing biological questions in the context of complex systems. Such systems are studied in physiological, developmental and evolutionary contexts. The presence of both basic and clinical sciences in the Division of Biological Sciences enhances the Committee's broad based interdisciplinary approach to teaching and research. The Committee provides an exciting environment in which to pursue rigorous, high quality training with flexibility in designing programs to meet individual needs. The focus of GGSB is to train students to utilize sophisticated genetic analysis, genomics, modeling and systems level analysis of regulations networks in their own research program. Opportunities are available to study diverse areas of biology and genetics, including bioinformatics, developmental processes, gene structure and regulation, genetic recombination and mutation, chromosome mechanics, evolution, human disease, immunology, and other areas of modern genetics. Students receive broad training in these sub-disciplines, while specializing in one of them for their research career. The Committee's goal is to provide an intellectually stimulating, collegial and supportive environment for students to progress smoothly from research training to research independence.

Each student is expected to take five core courses in major areas of genetics, including Genetic Analysis of Model Organisms, Genetics Mechanisms, Genomics & Systems Biology, and Molecular Biology I OR Fundamentals of Molecular Biology. In addition, a fifth requirement is chosen from the following courses: Fundamentals of Molecular Evolution, Principles of Population Genetics, Human Variation and Disease or Evolutionary Genomics. The remaining four courses are chosen as elective courses from a host of courses offered in the Biological Sciences Division, The Department of Statistics and The Department of Computer Science. All elective courses are to be approved by an academic advisor. The curriculum and research training are designed to take full advantage of the strength of genetics, genomics & systems biology research at the University. The program sponsors a regular colloquium, an annual symposium on a chosen topic, a biweekly journal club, and a biweekly genetics of model organisms club. During the spring and summer of the first year laboratory rotations occur. At the beginning of the second year, students take an oral preliminary examination based on three written questions which are provided to the students two weeks prior to the exam. At the end of the second year, a written research proposal is submitted and defended at the qualifying examination. This is the final requirement for formal admission to candidacy for the Ph.D. degree.

## APPLICATION

For information about applying to our graduate program, please visit our website at <http://molbio.uchicago.edu>.

## Courses

Below are a list of both required courses (as mentioned above), and courses offered in the Committee on Genetics. For an updated version of course offerings, please visit our website at <http://cg.bsd.uchicago.edu>

MGCB 31400 Genetics Analysis of Model Organisms. Fundamental principles of genetics discussed in the context of current approaches to mapping and functional characterization of genes. The relative strengths and weaknesses of leading model organisms are emphasized via problem-solving and critical reading of original literature.

MGCB 31500 Genetic Mechanisms. Advanced coverage of mechanisms involved in promoting genome stability and genome evolution. A variety of experimental systems are explored from bacteriophage to humans. Topics include the genetics of mutagenesis, DNA repair, homologous and site specific recombination, transposition and chromosome segregation. Winter.

HGEN 47300 Genomics and Systems Biology. Genomics is a new field that addresses biological questions by combining large scale collection of biological data with rigorous mathematical and statistic design and analysis. This lecture course will explore the technologies that enable high-throughput collection of genomic-scale data, including sequencing, genotyping, gene expression profiling, and assays of copy number variation, protein expression and protein-protein interaction. In addition, the course will cover study design and statistic analysis of large data sets, as well as how data from different sources can be used to understand regulatory networks, i.e., systems. Statistical tools that will be introduced include linear models, likelihood-based inference, supervised and unsupervised learning techniques, methods for assessing quality of data, hidden Markov models, and controlling for false discovery rates in large data sets. Readings will be drawn from the primary literature. Evaluation will be based primarily on problem sets.

MGCB 31000 Fundamentals in Molecular Biology. The course covers nucleic acid structure and DNA topology, recombinant DNA technology, DNA replication, DNA damage, mutagenesis and repair, Transposons and site-specific recombination, prokaryotic and eukaryotic transcription and its regulation, RNA structure, splicing and catalytic RNAs, protein synthesis, and chromatin.

MGCB 31200 Molecular Biology I. Nucleic acid structure and DNA topology; methodology; nucleic-acid protein interactions; mechanisms and regulation of transcription in eubacteria, and replication in eubacteria and eukaryotes; mechanisms of genome and plasmid segregation in eubacteria.

GENE 31900. Allstars.

Lectures on current research by departmental faculty and other invited speakers. A required course for all first-year graduate students in GENE.

GENE 40200. Non-Thesis Research.

Laboratory rotations and all research prior to passing the Qualifying Examination.

BSDG 55000. Scientific Ethics Seminar.

Required for all First year BSD graduate students.

ECEV 44000. Fundamentals of Molecular Evolution.

Covers major theories that form the foundation for understanding evolutionary forces governing molecular variation and divergence and genome organization. It explores the evolutionary assembly of genes, the origin of novel gene function, the population genetics of repetitive DNA variation, and the evolution of multi gene families.

ECEV 44000 Fundamentals of Molecular Evolution.

Covers major theories that form the foundation for understanding evolutionary forces governing molecular variation and divergence and genome organization. It explores the evolutionary assembly of genes, the origin of novel gene function, the population genetics of repetitive DNA variation, and the evolution of multi-gene families.

ECEV 35600 Principles of Population Genetics I.

Examines the basic theoretical principles of population genetics, and their application to the study of variation and evolution in natural populations. Topics include selection, mutation, random genetic drift, quantitative genetics, molecular evolution and variation, the evolution of selfish genetic systems, and human evolution. *Winter.*

HGEN 46900 Human Variation and Disease.

This course focuses on principles of population and evolutionary genetics and complex trait mapping as they apply to humans. It will include the discussion of genetic variation and disease mapping data.

ECEV 35901: Evolutionary Genomics.

This course is a summary and analysis for the investigation of genomic evolution, a rapidly growing area in molecular evolution as a consequence of genomic studies in recent years. We will lecture basic tools and conceptual progresses in the field, including molecular clock, codon usages, new gene evolution and evolution related to sex reproduction and behavior genetics. We will discuss all major issues in the area, adaptive evolution of genomes, gene orders, codon evolution, intron evolutions, gene transfer, transposable elements, and Structure and variation in prokaryotic genomes. One debate will be organized, where students will have opportunity to practice how to express their ideas articulately.

## DEPARTMENT OF HEALTH STUDIES

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### *Chair*

Ronald A. Thisted

### *Professors*

Habib Ahsan

Benjamin B. Lahey

Willard G. Manning, Jr.

Ronald A. Thisted

### *Associate Professors*

Kathleen A. Cagney

Brian Chiu

James J. Dignam

Vanja M. Dukic

Diane S. Lauderdale

Paul Rathouz

### *Assistant Professors*

R. Tamara Konetzka

Lianne Kurina

### *Emeritus Faculty*

John Christian Bailar

The Department of Health Studies was approved by the University in 1993 and began operations in November of 1995. The mission of the department is to increase and communicate knowledge to enhance health, reduce illness, and improve outcomes of health care. Department members conduct research in biostatistics, epidemiology, and health services. These projects include interdisciplinary investigations such as medical outcomes studies, development and implementation of guidelines, analysis of clinical decision making, investigation of patient provider relationships, and development of health system models that effectively and efficiently address the health needs of a population.

### PROGRAM OF STUDY

Currently, the Department of Health Studies offers a graduate program, the Master of Science in Health Studies for Clinical Professionals, and a Ph.D. program. Current information on graduate programs is available from the department's website at <http://health.bsd.uchicago.edu/>.

### THE DEGREE OF DOCTOR OF PHILOSOPHY

The Department of Health Studies at the University of Chicago offers a program of study leading to the Ph.D. with emphasis in biostatistics, epidemiology or health services research. This program will prepare individuals for research careers in population-based research in human health and biomedical science. The program is organized around a common quantitative core curriculum designed to prepare

students methodologically for more in-depth study in their chosen field and for dissertation research. Beyond the core curriculum, each student will choose a major disciplinary area of concentration, take a sequence of advanced courses in that area, and prepare a dissertation of independent, original, and rigorous research. Opportunities for such concentrated study will be available in the three broad areas of biostatistics, epidemiology and health services research, areas of expertise represented by Department faculty.

In addition to the concentration, each student will choose a minor program of study in another area either represented by Department faculty or offered elsewhere in the Biological Sciences Division or on campus. Tailored to each individual student, the minor will vary in its degree of specificity from student to student. It may be in one of the board areas represented by the Department, or in a more specialized area. Examples of specialized minors include psychiatric or cancer epidemiology, health economics, economics of aging, clinical trials design, cancer biology, genetic or molecular epidemiology, bioinformatics, or medical decision theory.

*Program requirements.* Students should expect to complete the program in 5 years by fulfilling the following requirements:

- (i) Complete 18 graduate level courses, including
  - (a) a *core curriculum* of up to seven courses needed to prepare for the qualifying examination; and
  - (b) a *major concentration program* approved by the faculty consisting of at least 7 additional courses in a disciplinary domain (such as biostatistics); and
  - (c) a *minor program* approved by the faculty consisting of at least 3 additional courses in a second disciplinary area.
- (ii) Successfully complete a course in scientific integrity and the ethical conduct of research, usually in the first year of study (divisional ethics requirement);
- (iii) Pass a multi-part *qualifying examination* demonstrating mastery of the core curriculum and of foundational knowledge in the chosen area of concentration;
- (iv) Teach two quarters for credit in pre-approved teaching assistant positions in the biological sciences (divisional teaching requirement);
- (v) Establish a doctoral dissertation committee, present proposed dissertation research to members of that committee and other interested faculty, and obtain written approval from the committee on the proposed dissertation research;
- (vi) Prepare and defend a doctoral dissertation of independent, original, and rigorous research in the chosen area of concentration; and
- (vii) Participate in the departmental seminar, in weekly faculty/student workshops, and in research workshops that overlap with the chosen area of concentration.

*Required courses.* HSTD 32400 (Applied Regression Analysis), HSTD 32700 (Biostatistical Methods), HSTD 30900 (Principles of Epidemiology), HSTD 31001 (Epidemiologic Methods), HSTD 35100 (Health Services Research Methods), HSTD 38000 (Health Status Assessment).

#### APPLICATION FOR ADMISSION

Applications should be received by December 1st for entrance into the program in the fall quarter and should consist of a BSD application (including three letters of recommendation), sealed official transcript(s), GRE scores, TOEFL scores (if applicable), CV/detailed relevant work history, and a research statement indicating area of major concentration.

Interested students should visit the department website at <http://health.bsd.uchicago.edu>.

#### MASTER OF SCIENCE IN HEALTH STUDIES FOR CLINICAL PROFESSIONALS

The Master of Science Program for Clinical Professionals is a course of study in the theory, methods, and concepts of biostatistics, epidemiology, and health services research needed to design and carry out clinical and epidemiologic research programs. It is designed for the professional enhancement of physicians and other clinical professionals. The program can be completed in one year of full time study, or it can be undertaken in conjunction with a clinical fellowship or training program, in which case the course work may be distributed over two or three years. Students in the program acquire skills with basic statistical methods, followed by additional training in the fundamental theory and methods of epidemiology, biostatistics, and health services research. Through choice from a broad range of elective courses, students can specialize in one of the three disciplinary areas.

*Entrance requirements.* Applicants should either have a doctoral level clinical degree (such as M.D., D.O., or nursing Ph.D.) from an accredited institution, or must have completed pre clinical training at an accredited medical school. In the latter case, the candidate must provide a plan for completion of both the M.D. and S.M. degrees, and a letter of support from the candidate's medical school.

*Program requirements.* A candidate in this program for the degree of Master of Science in Health Studies must satisfy the divisional requirements for the degree, complete the required courses and elective courses (nine courses in total), and complete a master's paper.

*Required courses.* HSTD 32100 (Introduction to Biostatistics) [Stat 22000 or equivalent can be substituted for this course], HSTD 32400 (Applied Regression Analysis), HSTD 30700 Clinical Epidemiology or HSTD 30900 (Principles of Epidemiology), HSTD 31001 (Epidemiologic Methods), HSTD 35100 (Introduction to Health Services Research), and at least one of the following courses: HSTD 32600 (Categorical Data Analysis), HSTD 32700 (Biostatistical

Methods), HSTD 33300 (Longitudinal Data Analysis) or HSTD 33100 (Introduction to Survival Analysis).

#### APPLICATION FOR ADMISSION

Applications for admission should be completed by December 1st for entry into the program in summer quarter the same year.

If the degree program will be pursued while the candidate will be participating in a clinical training program, a letter of support from the training program director is required. Candidates must also submit a statement describing how the proposed course of study will enhance their professional objectives. In addition, candidates must provide sealed official transcripts from all post secondary institutions, MCAT or GRE scores, and a completed Biological Sciences Division application.

Interested students should visit the department website at <http://health.bsd.uchicago.edu>.

**Courses** (Electives may not be offered every year.)

#### *Epidemiology*

HSTD 30500 - Issue's in Women's Health (BIOS 29317, GNDR 30500)

HSTD 30700 - Clinical Epidemiology

HSTD 30900 - Principles of Epidemiology (BIOS 29318, ENST 27400, STAT 35000, PPHA 36400)

HSTD 31001 - Epidemiologic Methods (STAT 35700)

HSTD 31400 - Social Epidemiology

HSTD 31510 - Critical Readings in Epidemiology

HSTD 31601 - Epidemiology of Childhood Diseases

HSTD 31800 - Epidemiology of Mental Health

HSTD 31820 - Behavior Genetics

HSTD 31830 - Introduction to Genetic Epidemiology

HSTD 40500 - Advanced Epidemiologic Methods

#### *Biostatistics*

*HSTD 32100 - Introduction to Biostatistics*

HSTD 32400 - Applied Regression Analysis (STAT 22400)

HSTD 32600 - Analysis of Categorical Data (STAT 22600)

HSTD 32700 - Biostatistical Methods (STAT 22700)

HSTD 32800 - Modern Data Analysis in Biostatistics

HSTD 32901 - Introduction to Clinical Trials (STAT 35201)

HSTD 33000 - Topics in Bayesian Statistics (STAT 31600)

HSTD 33100 - Applied Survival Analysis (STAT 35600)

HSTD 33300 - Applied Longitudinal Data Analysis (STAT 36900)

HSTD 43000 - Bayesian Methods and Computation (STAT 32300)

HSTD 43001 - Advanced Bayesian Methods and Computation (STAT 32301)

HSTD 43501 - Theory and Methods for Multivariate & Longitudinal Data

#### *Health Services Research/Outcomes*

HSTD 35100 - Introduction to Health Services Research (SSAD 46300)

HSTD 35200 - Demography of Aging and the Life Course (SSAD 49200, PPHA 36500, SOCI 30310, HUDV 35202)

HSTD 35301 - Aging and Health Policy (PPHA 42401, SSAD 49022)

HSTD 37100 - Cost Effectiveness Analysis (PPHA 38200)

HSTD 37900 - Health Outcomes and Quality of Medical Care (PPHA 37900, SSAD 49300)

HSTD 38000 - Health Status Assessment: Measurement and Inference (PPHA 38000)

#### Reading & Research Courses

HSTD 39000 - M.S. Readings in Health Studies

HSTD 39100 - M.S. Research in Health Studies

HSTD 49000 - Ph.D. Readings in Health Studies

HSTD 49100 - Ph.D. Research in Health Studies

## DEPARTMENT OF HUMAN GENETICS

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### *Chair*

Conrad Gilliam

### *Professors*

Habibul Ahsan, Health Studies

Graeme Bell, Biochemistry and Molecular Biology

Nancy Jean Cox, Medicine

William B. Dobyns

T. Conrad Gilliam

Richard Hudson, Ecology and Evolution

Bruce T. Lahn

Michelle M. Le Beau, Medicine

Mary Sara McPeck, Statistics

Carole Ober

Jonathan Pritchard

Janet D. Rowley, Medicine

Andrey Rzhetsky, Medicine

Matthew Stephens

Olufunmilayo Olopade, Medicine

Kevin White

### *Associate Professors*

Mark Abney

Soma Das

Anna Di Rienzo

Rick Kittles, Medicine

Elizabeth M. McNally, Medicine

Dan Nicolae

Marion Verp, Obstetrics and Gynecology

### *Assistant Professors*

Yoav Gilad

Kathleen J. Millen

Marcelo A. Nobrega

Molly Przeworski

Abraham Palmer

Darrel J. Waggoner

The Department of Human Genetics offers training in a number of fields of human genetics such as human disease, classical genetics, complex trait genetics population/evolutionary genetics, cytogenetics, chromosomal biology, neurogenetics, pharmacogenetics and developmental human genetics. This coursework is intended for graduate students who plan to pursue research careers and teaching in the emerging areas of modern biology, and is intended for medical students, advanced undergraduate and graduate students in other departments. The Ph.D. program places great emphasis on sound preparation in human genetics, cell biology, and molecular biology.

## THE DEGREE OF DOCTOR OF PHILOSOPHY

A Ph.D. candidate must fulfill certain formal coursework requirements, pass one preliminary and one qualifying examination, and present a satisfactory dissertation describing the results of original research.

The department expects a knowledge of and proficiency in human genetics. This requirement will normally be met by fulfilling the formal coursework described here, but degree programs are flexible. Courses taken at other institutions, in other departments, or as part of the Medical School curriculum may substitute for HG courses with approval of the Curriculum Committee. To fulfill the requirements for a Ph.D. nine graded courses are required. In the Department of Human Genetics, a student must take the following three required courses: Genetic Analysis (MGCB 31400), Human Genetics I (HGEN 47000) and Human Variation and Disease (HGEN 46900), and one of the following courses: Introductory Statistical Genetics (HGEN 47100), Genetic Mechanisms (MGCB 31500), Vertebrate Developmental Genetics (DVBI 35600), Molecular Biology II (MGCB 31300), or Population Genetics I (ECEV 35600). The remaining 4 courses are electives chosen from a host of courses in the Biological Sciences Division and Statistics Department. All courses are to be approved by an assigned academic advisor. These courses and many more are designed to develop greater proficiency in your particular sub discipline.

A student is also required to do two laboratory rotations before selecting an advisor and laboratory in which to pursue a Ph.D. dissertation. These rotations will be graded and together will be equivalent to one elective. All students are required to serve as teaching assistants for two quarters.

During the second year, students select a thesis advisor and begin laboratory research. To complete the Ph.D. degree, they must prepare, under the general direction of an appointed doctoral committee, a dissertation based upon their original research. A public seminar describing the results of the dissertation research must be presented and the dissertation must be successfully defended before the doctoral committee.

### APPLICATION

For information about applying to our graduate program, please visit our website at <http://molbio.uchicago.edu>.

### *Courses*

Below are a list of both required courses (as mentioned above), and courses offered in the Department of Human Genetics. For an updated version of course offerings, please visit our website at <http://genes.uchicago.edu/>

MGCB 31400. Genetic Analysis

Coverage of the fundamental tools of genetics analysis as used to study biological phenomena. Topics include genetic

exchange in prokaryotes and eukaryotes, analysis of gene function, and epigenetics.

#### HGEN 47000. Human Genetics I

This course covers classical and modern approaches to studying cytogenetic, Mendelian, and complex human diseases. Topics include chromosome biology, human gene discovery for single gene and complex diseases, non Mendelian inheritance, mouse models of human disease, cancer genetics, and human population genetics. The format includes lectures and student presentations.

#### HGEN 46900. Human Variation and Disease

This course focuses on principles of population and evolutionary genetics and complex trait mapping as they apply to humans. It will include the discussion of genetic variation and disease mapping data.

#### HGEN 47100. Introductory Statistical Genetics

This course focuses on genetic models for complex human disorders and quantitative traits. Topics covered also include linkage and linkage disequilibrium mapping genetic models for complex traits, and the explicit and implicit assumptions of such models.

#### MGCB 31500. Genetic Mechanisms

Advanced coverage of genetic mechanisms involved in genome stability and rearrangement in lower and higher organisms. Topics include the genetics of mutagenesis, DNA repair, homologous and site specific recombination, transposition and chromosome segregation.

#### DVBI 35600. Vertebrate Development

This advanced level course combines lectures, student presentations, and discussion sessions. It covers major topics on the developmental biology of embryos (e.g. formation of the germ line, gastrulation, segmentation, nervous system development, limb patterning, organogenesis). We make extensive use of the primary literature and emphasize experimental approaches (e.g. classical embryology, genetics, molecular genetics).

#### MGCB 31300. Molecular Biology II

Topics include genome organization and rearrangements, changes in chromatin structure during gene activation, tissue and developmental specific transcription regulators, oncogenes, post transcriptional regulation and specialized system of gene expression.

#### ECEV 35600. Population Genetics I

Examines the basic theoretical principles of population genetics, and their application to the study of variation and evolution in natural populations. Topics include selection, mutation, random genetic drift, quantitative genetics, molecular evolution and variation, the evolution of selfish genetic systems, and human evolution.

## COMMITTEE ON IMMUNOLOGY

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#### *Interim Chair*

Alexander Chervonsky, Pathology

#### *Professors*

Albert Bendelac, Pathology

Anita Chong, Surgery

Marcus Clark, Medicine

Yang Xin Fu, Pathology

Vinay Kumar, Pathology

James Madara, Pathology

Rima McLeod, Surgery

Marcus Peter, Ben May Department for Cancer Research

Anthony Reder, Neurology

Raymond Roos, Neurology

Hans Schreiber, Pathology

Ursula B. Storb, Molecular Genetics and Cell Biology

Koen van Besien, Medicine

Martin Weigert, Pathology

#### *Associate Professors*

Maria Luisa Alegre, Medicine

Aaron Dinner, Chemistry

Thomas Gajewski, Pathology & Medicine

Tatyana Golovkina, Microbiology

Bana Jabri, Pathology

Barbara Kee, Medicine

Kay Macleod, Ben May Department for Cancer Research

Avertano Noronha, Neurology

Anne I. Sperling, Medicine

#### *Assistant Professors*

Erin Adams, Biochemistry and Molecular Biology

David Boone, Medicine

Fotini Gounari, Medicine

Jose Guevara, Surgery

Haochu Huang, Medicine

Glenn Randall, Microbiology

Rebecca Shilling, Medicine

Dorothy Sipkins

Patrick Wilson, Medicine

Jian Zhang, Medicine

The Committee on Immunology offers a graduate program of study leading to the Doctor of Philosophy degree in Immunology. The committee is dedicated to the open exchange of ideas among scholars of all fields, a commitment enhanced by an organizational structure that completely integrates the basic biological sciences with the clinical sciences. This multidisciplinary and integrated approach corresponds well with the reality of the new biology, where molecular and structural techniques are applied widely and with great success to clinical problems.

The Committee on Immunology is a member of the Biomedical Sciences Cluster, which also includes graduate programs from the Committee on Cancer Biology, Committee on Microbiology, the Committee on Molecular Metabolism and Nutrition, and the Department of Pathology's Molecular Pathogenesis and Molecular Medicine Graduate Program. The five academic units share several common courses, a seminar series and additional common events for students and faculty within the cluster. The goal of the cluster system is to encourage interdisciplinary interactions among both trainees and faculty, and to allow students flexibility in designing their particular course of study.

In addition to formal course work, the Committee on Immunology sponsors a weekly seminar series, an annual retreat where students and faculty present their research, and several focused group meetings.

### ADMISSION

Students interested in obtaining the Ph.D. in Immunology should apply directly to the Committee on Immunology by December 1st of each year and indicate Immunology as their field of specialization.

#### THE DEGREE OF DOCTOR OF PHILOSOPHY

Ph.D. requirements include: (1) completion of 9 course credits consisting of basic science, immunology and elective courses; (2) a preliminary exam in the form of an oral defense; (3) a dissertation based on original research; and (4) a final thesis examination.

#### Courses

IMMU 30800. Readings in Immunobiology  
Chervonsky and Staff

Readings from the current literature in immunobiology, with discussion.

IMMU 30266. Molecular Immunology (= BIOS 25266)  
Adams

This course is available every year and is also considered a basic biochemistry course. Molecular Immunology examines the structural principles of immune recognition by antigen receptors of the innate and adaptive immune systems, the discrimination between self and non-self and the molecular fundamentals of cell stimulation and signaling. Primary literature is integrated with lectures on commonly used biochemical, structural and immunological techniques.

IMMU 31200. Host Pathogen Interactions (= MICR 31200)  
Chervonsky

This course will explore the basic principles of host defense against pathogens, including evolutionary aspects of innate and adaptive immune responses, while also studying specific examples of viral and bacterial interactions with their hosts. The reviews of relevant immunological mecha-

nisms necessary for appreciation of host/pathogen interactions will be incorporated in the studies of specific cases.

IMMU 31500. Advanced Immunology 1  
Bendelac

This course explores the basic principles of the Immune System, including tolerance, the development and differentiation of lymphocyte subsets, the regulation of the class of immune responses, memory, cell homing and migration, cell to cell interactions, antigen presentation and recognition.

IMMU 32000. Advanced Immunology 2  
Kee

This class will explore the molecular and biochemical mechanisms by which lymphocytes develop and are activated in response to antigens. This will include the signal transduction pathways and transcriptional networks involved in these processes, as well as the molecular mechanisms underlying the generation of receptor diversity.

IMMU 35500. Selected Topics in Immunology  
Staff

An advanced literature analysis/discussion course involving a particular topic in Immunology which varies from year to year. Emphasis is placed on development of critical thought in evaluation of the scientific literature.

IMMU 40100. Research in Immunology  
Chervonsky and Staff

IMMU 40200. Experimental Immunology  
Wilson, Gounari, Huang

Centers around the Immunology Seminar Series and Journal Club and has two purposes. First: to provide background knowledge for the seminar given each week by an outside speaker or a member of the committee. Second: to allow the students an opportunity to develop skills in analyzing the literature in immunology.

## THE INTERDISCIPLINARY SCIENTIST TRAINING PROGRAM

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The Interdisciplinary Scientist Training Program (ISTP) is a doctoral-degree granting program within the Division of Biological Sciences at the University of Chicago. It awards a Ph.D. degree in Biology. The core mission of the Program is to train graduate students in interdisciplinary approaches and foster novel, multi-faceted analyses of biological systems and processes.

Central to the Program is the recruitment of unusual students with an aptitude and demonstrable interest in interdisciplinary biological science. Coursework is flexible and individually tailored depending on the student's background and interests. Students are strongly encouraged to pursue research projects that involve interdisciplinary collaborations between two or more members of the training faculty. A subset of ISTP students are part of a strategic training partnership between Chicago and the Howard Hughes Medical Institute's (HHMI) Janelia Farm Research Campus.

In addition to the BSD application requirements, students must submit a brief description of a proposed Ph.D. research project, designed to span the research interests of two or more participating faculty trainers. We expect that students who are selected for interviews for the ISTP program will be, highly committed, well-prepared and ready to pursue challenging research projects. During the interview process, candidates will be provided with extensive opportunities to discuss their proposed research with their potential advisors and will present their proposals orally to a committee. Selection into the program will be based on academic credentials, letters of recommendation, preparation and motivation for interdisciplinary training and quality of research ideas.

Incoming students are advised by the Program Director in consultation with a relevant member of the Steering Committee or Program faculty to select courses and formulate individual programs of study. This Steering Committee or Program faculty member provides oversight and guidance for the trainee in their first year. New trainees are introduced to the ISTP in an annual orientation session. Members of the Steering Committee and current ISTP trainees also participate in the orientation session.

All students are strongly encouraged to pursue research projects that involve interdisciplinary collaborations between two or more members of the training faculty. Students choose two faculty mentors as advisors from among the Program training faculty. Once the advisors are chosen, a thesis committee is constituted which is typically comprised of four members of the faculty. The chairperson of this committee is a faculty member other than the thesis mentors. The thesis committee is responsible for evaluating

the thesis research proposal and its defense as well as monitoring the student's progress on a yearly basis. ISTP trainees participate in an annual symposium—the venue for the symposium involves both the UC and JFRC campuses. Both participating students and faculty present research talks.

Further information about the program is available from:

Diane J. Hall Administrative Director of the Interdisciplinary Scientist Training Program, [d-hall@uchicago.edu](mailto:d-hall@uchicago.edu)

Daniel Margoliash, Ph.D., Director of the Interdisciplinary Scientist Training Program, [dan@bigbird.uchicago.edu](mailto:dan@bigbird.uchicago.edu)

## COMMITTEE ON MEDICAL PHYSICS

---

### Chair

Maryellen L. Giger  
Associate Chair  
Charles A. Pelizzari

### Professors

Kunio Doi, Radiology  
Jia-Hong Gao, Radiology  
Maryellen L. Giger, Radiology  
David J. Grdina, Radiation and Cellular Oncology  
Howard J. Halpern, Radiation and Cellular Oncology  
Gregory S. Karczmar, Radiology  
Charles E. Metz, Radiology  
Xiaochuan Pan, Radiology

### Associate Professors

Samuel G. Armato, Radiology  
Chin-Tu Chen, Radiology  
Yulei Jiang, Radiology  
Robert M. Nishikawa, Radiology  
Bill O' Brien-Penney, Radiology  
Charles A. Pelizzari, Radiation and Cellular Oncology

### Assistant Professors

Hania A. Al-Hallaq, Radiation and Cellular Oncology  
Bulent Aydogan, Radiation and Cellular Oncology  
Chien-Min Kao, Radiology  
Patrick La Rivière, Radiology  
Chester S. Reft, Radiation and Cellular Oncology  
Brian B. Roman, Radiology  
Kenji Suzuki, Radiology  
Kamil M. Yenice, Radiation and Cellular Oncology

### Instructors

Rodney D. Wiersma, Radiation and Cellular Oncology  
Naim Ozturk, Radiation and Cellular Oncology  
Emeritus Professor  
David N. Levin, Radiology

The Medical Physics program at the University of Chicago is recognized internationally for its research excellence and is housed within the Committee on Medical Physics. Many of the investigators are leaders in their respective specialties. Also, because the departments are located in the Medical Center of the University, there is strong interaction between the clinical and research staff. Faculty with primary interest in diagnostic imaging hold appointments in the Department of Radiology, whereas faculty with primary interest in the physics of radiation therapy hold appointments in the Department of Radiation and Cellular Oncology. The Committee on Medical Physics offers programs leading to

S.M. and Ph.D. degrees in medical physics. Although most students are admitted directly for study toward the Ph.D. degree, the S.M. degree may occasionally be awarded as a terminal degree and in some cases as a transitional degree en route to the Ph.D. Two years of residency are required for the S.M. degree, during which students may elect specialized training directed toward either research or clinical support applications of physics in radiology or radiation oncology. Normally four or five years of residency are required for the Ph.D. degree.

Medical Physics researchers at the University have available to them many state of the art machines:

- 1.5T MR scanners
- 3T MR scanner
- 1.5 T and 3.0 T scanners
- 9.4 T MRI/MRS system
- Electron paramagnetic resonance imaging spectrometers
- 16-, 32-, and 64 slice helical CT scanners
- Advanced 256- slice helical cone-beam scanner
- Advanced 256-slice dual-energy helical cone-beam scanner
- Dual energy chest radiography system
- Full field digital mammography systems
- PET/CT scanner
- 30% Sensitivity Dual Head Small-Animal PET Scanner
- Computer controlled dual energy linear accelerators with multileaf collimators, dynamic treatment capability and solid state megavoltage imagers and kilovoltage 2D and cone beam imaging capabilities
- Computer controlled high dose rate remote after loading brachytherapy system
- Virtual reality display system
- Computed radiography systems
- High quality laser digitizers and printers
- Multi-detector SPECT systems
- Cardiac first pass gamma camera
- Single detector gamma camera
- Real time quantitative PCR machine
- Zeiss Surgical Microscope
- Harvard small animal ventilator
- Micro-interventricular pressure and volume catheters
- MRI compatible fiber optic pressure transducer
- Physiological data acquisition and analysis system
- Class II Cell Culture hood
- Zeissfluorescence microscope with associated CCD camera and image acquisition and analysis computer system
- Microplate reader
- Sorvall RC-6 High speed ultracentrifuge
- Bio-rad gel documentation and analysis workstation
- Epson 10000XL flat bed color scanner to scan radiographic or radiochromic film
- Harshaw automated thermoluminescent reader

Philips 250 kVp orthovoltage machine  
 Diagnostic and mammography x-ray systems  
 Dual-head SPECT systems  
 Triple-head SPECT scanner  
 Xenogen IVIS 200 for bioluminescence and fluorescence  
 animal  
 imaging  
 VisEn FMT for fluorescence molecular tomography in  
 animal  
 imaging  
 Olympus OV-100 for fluorescence animal imaging  
 GMI/GE Triumph Flex miceoPET/SPECT/CT Pre-  
 Clinical Imaging  
 System  
 Vevo 770 ultrasound imaging system for animal  
 imaging  
 Super-Resolution Single-Photon Emission Microscope  
 (SPEM)  
 High-resolution digital x-ray imaging system  
 Computer-aided detection system for mammography  
 High-resolution display monitors and workstations  
 General use and specialized image processing and  
 display computers linked via a high speed network.  
 Inquiries concerning the graduate program should  
 be addressed to Maryellen L. Giger, Ph.D., Chair of the  
 Committee on Medical Physics, Director of the Graduate  
 Programs in Medical Physics, Department of Radiology,  
 MC 2026, 5841 South Maryland Avenue, Chicago, IL 60637,  
 or e mail: m-giger@uchicago.edu.

### *Courses*

MPHY 34200. Practicum in the Physics of Medical Imaging  
 I

Jiang and staff

This laboratory course is designed to enhance students  
 understanding of the theories presented in the course  
 Physics of Medical Imaging I and to acquaint students with  
 the operation of a diagnostic radiology clinic. Students are  
 expected to gain practical experience in the clinical use  
 of diagnostic x-ray generators, screen film combinations,  
 digital acquisition systems and their image processing  
 techniques, and in research on magnetic resonance imaging  
 (MRI) and computer aided diagnosis (CAD).

MPHY 34300. Practicum in the Physics of Medical Imaging  
 II

O'Brien Penney, Pan, Pelizzari

This laboratory course is designed to familiarize the medical  
 physics student with certain equipment and procedures in  
 diagnostic radiology, with emphasis on nuclear medicine,  
 ultrasonic and x-ray (helical) computed tomographic  
 imaging. A special project will be part of the course require-  
 ments: computed tomographic imaging.

MPHY 34400. Practicum in the Physics of Radiation  
 Therapy

Reft and staff

This course combines lectures and intensive hands on  
 experiments. It includes an introduction to thermolumines-  
 cent, film and ionization chamber dosimetry, Monte Carlo  
 radiation transport simulation and intensity modulated  
 radiotherapy. Training in data acquisition, error analysis,  
 experimental techniques and the safe handling of sealed  
 radioactive sources will be included. Prereq: MPHY 35100  
 or consent of instructor.

MPHY 34900. Mathematics for Medical Physics

Giger, Metz, Pan

This is a required course in the Graduate Programs in Medical  
 Physics. This first quarter course surveys the mathematics  
 necessary for the understanding of physical phenomena  
 and applications in medical imaging and medical physics,  
 which will be presented later to the students in their  
 graduate coursework. The course covers linear algebra,  
 Fourier analysis and transfer function analysis, Radon  
 transforms, probability theory and stochastic processes,  
 estimation theory, ROC analysis, and signal detection  
 theory. Although each student is assumed to have been  
 acquainted previously with at least some of these topics, no  
 specific mathematical background beyond that of a strong  
 undergraduate physics major is prerequisite.

MPHY 35000. Interactions of Ionizing Radiation with  
 Matter

Armato, Al-Hallaq

Interaction of electromagnetic and particulate radiation with  
 matter. Special emphasis on energy absorption, detection,  
 control, and production, and on their relation to medical  
 applications. Prereq: Physics, 22700, 23700 or equivalent.

MPHY 35100. Physics of Radiation Therapy

Yenice and Staff

This course covers aspects of radiation physics necessary  
 for understanding modern radiation therapy. Rigorous theo-  
 retical foundations of physical dose calculation for mega-  
 voltage energy photons and electrons, biological predictions  
 of therapy outcomes, and brachytherapy are presented.  
 Methods of modeling and implementing radiation therapy  
 treatment planning, evaluation, and delivery are described.  
 Emphasis is placed on current developments in the field  
 including intensity modulated radiation therapy. The  
 course is intended to provide comprehensive knowledge  
 of radiation therapy physics enabling the student to grasp  
 current research in the field. Prereq: MPHY 35000 or consent  
 of instructor.

MPHY 35400. Health Physics

Aydogan and Staff

The problems of the protection of active workers and the  
 general public from unnecessary and excessive exposure to  
 penetrating radiation. Prereq: MPHY 35000, 35100.

## MPHY 35600. Anatomical Structure of the Body

Giger and Holmes

Gross anatomy of the human body with correlation to medical images. In addition, radiographic, tomographic, radioisotope, ultrasound, and magnetic resonance images are used to present normal and pathological states of the anatomy. Designed to educate graduate and medical students with primary backgrounds in physics and engineering.

## MPHY35800. Biomedical Applications of Magnetic Resonance

Karczmar and Staff

Introduction to the physics of magnetic resonance, magnetic resonance methodology, and the applications of these methods to a variety of biomedical problems, including determination of protein structure by MR, metabolic imaging, anatomic imaging, solid state imaging, electron spin resonance, measurement of blood flow and perfusion, and effects of contrast agents. Prereq: MPHY 38700 or consent of instructor.

## MPHY 35900. Cancer and Radiation Biology

Grdina and Staff

This course provides students with an overview of the biology of cancer and of the current methods used to diagnose and treat the disease. Lectures from faculty throughout the Biological Sciences Division include presentations on cancer incidence and mortality, cancer prevention, a molecular biology perspective, the role of genetic markers, the imaging of pathology, methods of treatment (radiation, chemotherapy) and prognosis, and the role of medical ethics and patient care. The course is primarily for medical physics students.

## MPHY 38600. Physics of Medical Imaging I

Nishikawa and Staff

This is an introductory course to the basic elements of x-ray imaging and magnetic resonance imaging and spectroscopy. Topics covered on x-ray imaging include x-ray production, image formation, analog and digital detectors, physical measures of image quality, fluoroscopy, and computer aided diagnosis. Topics covered on magnetic resonance imaging include nuclear magnetic resonance, relaxation times, pulse sequences and spectroscopy.

## MPHY 38700. Physics of Medical Imaging II

Kao and Staff

The course covers the fundamentals of nuclear medicine, ultrasonic, and x-ray computed tomographic imaging. Topics include: physics, mathematics, and statistics of image formation in SPECT, PET, conventional ultrasound, ultrasonic diffraction tomography, conventional and helical computed tomography. Functional imaging and compartmental analysis are also covered.

## MPHY 39100. Physics of Mammography

Nishikawa and Staff

This is an advanced course designed to give students an in depth understanding of the application of basic medical physics concepts and principles to the problem of breast cancer detection using mammography. While focusing on mammography, students will examine how image quality is affected by x-ray ray generation and the acquisition and display of the image. Topics covered will include radiographic properties of breast tissue; image quality requirements for breast imaging; relationship between x-ray equipment and image quality; dosimetry; risk/benefit analysis as applied to screening; digital mammography (hardware, image processing, and computer aided diagnosis). This course will be offered as a reading course with a weekly discussion on the assigned reading material.

## MPHY 39300. Clinical Physics in Positron Emission Tomography (PET)

O'Brien-Penney and Staff

This course is designed to provide in depth experience in the clinical physics of PET. It focuses on PET technology and PET applications. Students learn PET instrumentation and procedures for operation and calibration of PET systems, computer and networking facilities, quality assurance programs, major PET protocols, and data and image analysis methods.

## MPHY 39500. Clinical SPECT

O'Brien-Penney and Staff

This course provides students with experience with the use of single photon emission computed tomography (SPECT) in the clinical setting. The protocols used for all SPECT exams will be reviewed. Trade-offs between different modes of data acquisition and processing will be presented. Quality control procedures and interpreting their results will be reviewed. Procedures needed to obtain quantitative SPECT results will be presented. Cardiac gated SPECT will be explained, as well as the special displays (e.g., polar displays) used in cardiac SPECT interpretation. The use of attenuation correction will be presented.

## MPHY 39600. Image Processing and Computer Vision

Armato, Suzuki

This course introduces the students to the fundamental concepts and technologies widely used for processing and understanding digital images. The course will consist of a series of lectures and several laboratories to provide hands-on experience in various image processing techniques.

## MPHY 40100. Special Reading on Image-Guided Radiation Therapy

Pelizzari and Staff

This course students will read and discuss recent papers concerning developments in the rapidly expanding field of image guidance as applied to radiation therapy. Phases of image guidance including prospective image-based treatment planning, image-based patient setup, image-

based adaptation of therapy delivery to account for patient set-up and motion uncertainties, real-time intratreatment imaging and post-treatment follow-up.

MPHY 41700. Research in Medical Physics  
Giger and Staff

Possible research topics can include diagnostic imaging to radiation therapy treatment methods, as well as cross-disciplinary projects. Prereq: Consent of instructor.

MPHY 42000 Research in the Physics of Nuclear Medicine  
Chen, Pan, Kao, La Riviere

Possible research topics include the development of methods to improve diagnostic accuracy; development of SPECT and PET; development of image reconstruction techniques; analysis and evaluation of imaging system components; and joint physical/clinical studies of new techniques in nuclear medicine. Prereq: Consent of instructor.

MPHY 42100. Research in the Physics of Diagnostic Radiology  
Giger and Staff

Possible research topics include the development of methods to improve diagnostic accuracy and/or to reduce patient radiation exposure; development of computerized methods for the interpretation of image data; analysis and evaluation of imaging system components; and joint physical/clinical studies of new techniques in diagnostic radiology. Prereq: Consent of instructor.

MPHY 42400. Research in Image-Guided Radiation Therapy  
Pelizzari and Staff

Possible research topics include fundamental aspects of image guidance in radiation therapy planning and delivery, use of respiratory correlated CT and dynamic patient modeling for treatment planning. Prereq: Consent of instructor.

## COMMITTEE ON MICROBIOLOGY

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### *Chair*

Olaf Schneewind

### *Professors*

Joy Bergelson, Ecology & Evolution

Robert Daum, Pediatrics

Robert Haselkorn, Molecular Genetics & Cell Biology

Bernard Roizman, Microbiology

Raymond Roos, Neurology

Lucia Rothman Denes, Molecular Genetics & Cell Biology

Olaf Schneewind, Microbiology

### *Associate Professors*

Kenneth Alexander, Pediatrics

Malcolm Casadaban, Molecular Genetics & Cell Biology

Tatyana Golovkina, Microbiology

Jean Greenberg, Molecular Genetics & Cell Biology

Dominique Missiakas, Microbiology

Tao Pan, Biochemistry & Molecular Biology

Wei Jen Tang, Ben May Department for Cancer Research

### *Assistant Professors*

Juliane Bubeck Wardenburg, Pediatrics and Microbiology

David Boone, Medicine

Sean Crosson, Biochemistry and Molecular Biology

Jess Leber, Microbiology

Juan Martinez, Microbiology

James Mastrianni, Neurology

Glenn Randall, Microbiology

The primary purpose of the Committee on Microbiology is to produce research scientists and teachers in microbiology by offering formal instructions; by fostering informal dissemination of information among the faculty, fellows and students engaged in research in microbiology; and by administering a program of study leading to the degree of Doctor of Philosophy. Through its faculty, activities and educational program, the Committee on Microbiology integrates studies in various clinical and non clinical departments of the Division of the Biological Sciences.

The Committee on Microbiology maintains maximum flexibility in its program to cater to students developing interests. Students with backgrounds in any appropriate field (physics, chemistry, biology, biochemistry, and medicine) may commence work in microbiology upon entering the graduate program of the Division of the Biological Sciences. The committee offers a program of study leading to a Ph.D.

The Committee on Microbiology sponsors a seminar series, which brings to campus prominent microbiologists from all over the world to discuss their research and meet with Microbiology faculty and students. Another regular activity sponsored by the Committee is the Microbiology Data Club.

Data Club meetings feature a current graduate student, postdoctoral fellow or other training fellow in Microbiology presenting his/her research data. Microbiology Data Club meetings are open to the University community, offering an informal forum for the discussion of microbiology within the Chicago scientific community.

The Committee on Microbiology is a member of the Biomedical Sciences Cluster, which also houses graduate programs of the Committee on Cancer Biology, the Committee on Immunology, the Committee on Molecular Metabolism and Nutrition, and the Department of Pathology's Molecular Pathogenesis and Molecular Medicine Graduate Program. The five academic units share a joint admissions committee, several courses, a seminar series and other events for students and faculty within the cluster. The goal of the cluster system is to encourage interdisciplinary interactions among both trainees and faculty, and to allow students flexibility in designing their particular course of study.

The Ph.D. degree is administered by the Committee on Microbiology and is recommended when the student has fulfilled the requirements stipulated in his individual program; has met the divisional requirements for the degree; and, in the opinion of the committee, has attained competence in research in his field of specialization.

### *Courses*

#### *PROGRAMMATIC CORE*

MICR 30600. Fundamentals of Bacterial Physiology (=BIOS 25206)

Missiakas.

This course introduces bacterial diversity, physiology, ultrastructure, envelope assembly metabolism, and genetics. In the discussion section, students review recent original experimental work in the field of bacterial physiology.

MICR 31200. Host Pathogen Interactions (=IMMU 31200)

Chervonsky.

This course will explore the basic principles of host defense against pathogens and pathogens' strategies to overcome host immune mechanisms. The course will address evolutionary aspects of innate and adaptive immune responses, while also studying specific examples of viral and bacterial interactions with their hosts. The reviews of relevant immunological mechanisms necessary for appreciation of host/pathogen interactions will be incorporated in the studies of specific cases.

MICR 31600. Molecular Basis of Bacterial Diseases (=BIOS 25216)

Martinez.

This lecture/discussion course involves a comprehensive analysis of bacterial pathogens, the diseases that they cause, and the molecular mechanisms involved during pathogen-

esis. Students discuss recent original experimental work in the field of bacterial pathogenesis.

MICR 33000. Molecular Genetic Analysis of Bacteriophage. Casadaban.

Examines a series of bacteriophage that have been instrumental in our understanding of genetics and molecular biology, with an emphasis on their properties and the methods for which they are used in current and potential biological studies and in biotechnology.

MICR 34000. Bacterial Pathogenesis.

Schneewind.

Molecular basis of bacterial pathogenesis of human, animal and plant bacteria, their infection strategies and molecular mechanisms of causing disease.

MICR 34200. Microbial Genomes.

Shapiro.

Examines the information available from complete bacterial genome sequences. It addresses the usefulness of sequence databases and bioinformatics for answering questions of functional and comparative genomics. The genome sequences serve as the basis for addressing topics in microbiology (e.g. metabolic diversity, intercellular communication, cellular differentiation, pathogenicity, vaccine development, and bacterial evolution).

MICR 34600. Introduction to Virology.

Roizman, Pilipenko.

This course describes the viruses that infect animal and human cells, their structure and assembly pathways.

MICR 35900. Medical Microbiology

Schneewind.

Lecture and laboratory course on microbial pathogens that produce common and uncommon infectious diseases. The proper use of the laboratory to assist in diagnosing bacterial, fungal, and viral infections is emphasized.

MICR 39000. Introduction to Experimental Microbiology.

Schneewind.

This seminar series with nine presentations by faculty invited from outside institutions during the autumn and Winter Quarters. A required reading discussion session accompanies the seminar series.

MICR 40000. Microbiology Data Club.

Schneewind

All graduate students, postdoctoral fellows and honors undergraduate students of the Committee on Microbiology present their research in a central forum, once each year. This course provides a forum to ensure continued progress of graduate students in their thesis projects, interaction between Committee on Microbiology scientists and development of novel ideas and avenues of research.

MICR 47000. Thesis Research: Microbiology

Schneewind and Staff

Thesis research in microbiology.

MICR 47100. Non-Thesis Research: Microbiology  
Schneewind and Staff

This course comprises a 10 week research lab rotation for first year microbiology students. At least two rotations are required before a thesis lab can be chosen.

### GENERAL BASIC SCIENCE CORE

All students in the Committee on Microbiology are required to take the following two Basic Science Core courses as part of their Microbiology Core Sequence: Cell Biology I and Molecular Biology I (noted below with an \*). Two additional courses are to be taken as electives.

#### *Biochemistry*

BCMB 30400 Proteins 1: Protein Fundamentals.

Koide, Keenan

The course covers the physico-chemical phenomena that define protein structure and function. Topics include: 1) the interactions/forces that define polypeptide conformation; 2) the principles of protein folding, structure and design; and 3) the concepts of molecular motion, molecular recognition, and enzyme catalysis. Prereq: BCMB 30100, which may be taken concurrently, or equivalent.

BCMB 32300 Protein Molecular Structure and Function.

Perozo, Roux

This course will be an in depth assessment of the structure and function of biological membranes. In addition to lectures, directed discussions of papers from the literature will be used. The main topics of the courses are: (1) Energetic and thermodynamic principles associated with membrane formation, stability and solute transport (2) membrane protein structure, (3) lipid-protein interactions, (4) bioenergetics and transmembrane transport mechanisms, and (5) specific examples of membrane protein systems and their function (channels, transporters, pumps, receptors). Emphasis will be placed on biophysical approaches in these areas. The primary literature will be the main source of reading.

#### *Cell Biology*

MGCB 31600\* Cell Biology I.

Turkewitz, Glick

Lecture/discussion course on fundamentals of protein synthesis and translocation, protein and membrane sorting and transport, organelle biogenesis, and the cytoskeleton.

MGCB 31700 Cell Biology 2.

Glotzer, Kovar

This course will cover cell cycle progression, cell growth, cell death, cytoskeletal polymers and motors, cell motility, and cell polarity.

#### *Genetics*

GENE 31400 General Principles of Genetic Analysis.

Bishop

Coverage of the fundamental tools of genetic analysis as used to study biological phenomena. Topics include genetic exchanges in prokaryotes, eukaryotes, and their viruses and plasmids; principles of transformation; analysis of gene function.

GENE 31500 Genetic Mechanisms.

Bishop

Advanced coverage of genetic mechanisms involved in genome stability and rearrangement. Topics include genetics of transposons, site specific recombination, gene conversion, reciprocal crossing over, and plasmid and chromosome segregation.

#### *Molecular Biology*

MGCB 31000 Fundamentals in Molecular Biology.

Storb, Staley

The course covers nucleic acid structure and DNA topology, recombinant DNA technology DNA replication, DNA damage, mutagenesis and repair, transposons and site specific recombination. Prokaryotic and eukaryotic transcription and its regulation, RNA structure, splicing and catalytic RNAs, protein synthesis, and chromatin.

MGCB 31200 Molecular Biology 1.

Rothman-Denes

Nucleic acid structure and DNA topology; methodology; nucleic-acid protein interactions; mechanisms and regulation of transcription in eubacteria, and of replication in eubacteria and eukaryotes; mechanisms of genome and plasmid segregation in eubacteria.

MGCB 31300 Molecular Biology 2.

Singh, Staley

The content of this course will cover the mechanisms and regulation of eukaryotic gene expression at the transcriptional and post-transcriptional levels. Our goal is to explore with you research frontiers and evolving methodologies. Rather than focusing on the elemental aspects of a topic, the lectures and discussions will focus on the most significant recent developments, their implications and future directions.

## PROGRAM IN CELL AND MOLECULAR BIOLOGY

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### *Chair*

Jon Staley

### *Faculty accepting students into their lab*

#### *Professors*

Douglas K. Bishop, Radiation & Cellular Oncology  
 Edwin L. Ferguson  
 Richard Fehon  
 Benjamin Glick  
 Stephen J. Kron  
 Bernard Roizman, Microbiology  
 Lucia Rothman-Denes  
 Ursula B. Storb

#### *Associate Professors*

Michael Glotzer  
 Jean Greenberg  
 Gayle K. Lamppa  
 Jocelyn Malamy  
 Ilaria Rebay, Ben May Institute for Cancer Research  
 Jonathan P. Staley  
 Aaron Turkewitz

#### *Assistant Professors*

Sally-Horne Badovinac  
 Mohan Gupta  
 David Kovar  
 Ed Munro

### *Faculty not accepting students into their lab*

#### *Professors*

Robert Haselkorn  
 Robert Josephs  
 Terence E. Martin  
 Daphne Preuss  
 Janet D. Rowley, Medicine  
 Harinder Singh

#### *Associate Professors*

Malcolm J. Casadaban  
 Laurens J. Mets

#### *Emeritus Faculty*

Kwen Sheng Chiang  
 Wolfgang Epstein  
 Rochelle Easton Esposito  
 Anthony Mahowald  
 Theodore L. Steck, Biochemistry & Molecular Biology  
 Bernard S. Strauss  
 Edwin W. Taylor

The graduate program in Cell and Molecular Biology offers training in the fields of cell biology, molecular biology, and molecular genetics for (1) graduate students who plan to pursue research careers and teaching in the emerging areas of modern biology, (2) medical students, and (3) undergraduate students. Programs for the Ph.D. degree place great emphasis on sound preparation in cell biology, molecular biology, and genetics. For properly qualified advanced students, the department offers opportunities for research in cell biology, molecular biology, genetics, developmental biology, microbiology, plant molecular biology, and virology. Of special interest is the design of interdisciplinary programs that emphasize the frontiers of biology.

### THE DEGREE OF DOCTOR OF PHILOSOPHY

The graduate program in Cell and Molecular Biology offers a program of study leading to the Doctor of Philosophy in Molecular Genetics and Cell Biology. A Ph.D. candidate must fulfill certain formal coursework requirements, pass one preliminary and one qualifying examination, and present a satisfactory dissertation describing the results of original research.

The program expects knowledge of and proficiency in cell biology, molecular biology, and genetics. This requirement will normally be met by fulfilling the formal coursework described here, but detailed degree programs are flexible. Courses taken at other institutions, in other departments, or as part of the Medical School curriculum may substitute for CMB courses with approval of the curriculum committee. To fulfill the requirements for a Ph.D., nine graded courses are required. In the program in Cell and Molecular Biology, a student must take one course in each of three areas during the first year: (1) cell biology, (2) molecular biology, and (3) genetics. In addition to these core courses, a second course in one of these areas is required to develop greater proficiency in a subdiscipline. The total of four required courses can be selected from those marked with an asterisk (\*) in the list of courses. Four additional graded electives must be taken, one of which may be a reading course. They can be selected according to the student's interests and the availability of courses.

A student is also required to do two laboratory rotations before selecting an advisor and laboratory to pursue a Ph.D. dissertation. These rotations will be graded and together will be equivalent to one elective. All students are required to serve as teaching assistants for two quarters.

During the second year, students select a thesis advisor and begin laboratory research. To complete the Ph.D. degree, they must prepare, under the general direction of an appointed doctoral committee, a dissertation based upon their original research. A public seminar describing the results of the dissertation research must be presented

and the dissertation must be successfully defended before the doctoral committee.

#### ADMISSIONS

For information about applying to our graduate program, please visit our website at <http://molbio.uchicago.edu>.

#### Courses

##### 31000. Fundamentals in Molecular Biology

The course covers nucleic acid structure and DNA topology, recombinant DNA technology, DNA replication, DNA damage, mutagenesis and repair, Transposons and site specific recombination, prokaryotic and eukaryotic transcription and its regulation, RNA structure, splicing and catalytic RNAs, protein synthesis, and chromatin.

##### 31200. Molecular Biology I\*

Nucleic acid structure and DNA topology; methodology; nucleic-acid protein interactions; mechanisms and regulation of transcription in eubacteria, and of replication in eubacteria and eukaryotes; mechanisms of genome and plasmid segregation in eubacteria.

##### 31300. Molecular Biology II\*

Eukaryotic Gene Expression. Transcription and Posttranscriptional Regulation. Analysis of regulatory pathways and mechanisms involved in the control of eukaryotic gene activity.

##### 31400. Genetic Analysis of Model Organisms\*

Fundamental principles of genetics discussed in the context of current approaches to mapping and functional characterization of genes. The relative strengths and weaknesses of leading model organisms are emphasized via problem-solving and critical reading of original literature.

##### 31500. Genetic Mechanisms\*

Advanced coverage of genetic mechanisms involved in genome stability and rearrangement in lower and higher organisms. Topics include the genetics of mutagenesis, DNA repair, homologous and site specific recombination, transposition and chromosome segregation.

##### 31600. Cell Biology I\*

Eukaryotic protein traffic and related topics, including molecular motors and cytoskeletal dynamics, organelle architecture and biogenesis, protein translocation and sorting, compartmentalization in the secretory pathway, endocytosis and exocytosis, and mechanisms and regulation of membrane fusion.

##### 31700. Cell Biology II\*

This course covers the mechanisms with which cells execute fundamental behaviors. Topics include signal transduction, cell cycle progression, cell growth, cell death, cancer biology, cytoskeletal polymers and motors, cell motility, cytoskeletal diseases, and cell polarity. Each lecture will conclude with a dissection of primary literature with input from the students. Students will write and present two short

research proposals, providing excellent preparation for preliminary exams. Cell Bio I 31600 is not a prerequisite.

##### 31900. Introduction to Research

Lectures on current research by departmental faculty and other invited speakers. A required course for all first year graduate students.

##### 34400. Principles and Practices of Electron Microscopy

This course deals with the principles involved in obtaining electron micrographs of biological specimens. Preparation techniques and analytical procedures will be offered at an individualized level.

##### 35400. Advanced Developmental Biology

This course provides an overview of the fundamental questions of developmental biology, with particular emphasis on the experimental approaches used in the field. Topics covered will include primary body axis formation, the role of local signaling interactions in regulating cell fate, the cellular basis of morphogenesis, and stem cells.

##### 35500. Developmental Genetics of Non vertebrate Model Systems

This course explores the use of genetics in three different model systems, *C. elegans*, *Drosophila melanogaster* and *Arabidopsis thaliana*, to elucidate developmental mechanisms. The class will focus on a series of interrelated topics: for each topic, introductory material presented by the lecturer will be followed by student led discussions of individual papers. Not offered in 2009-10.

##### 35600. Vertebrate Developmental Genetics

This advanced level course combines lectures and student presentations. It covers major topics in the developmental biology of vertebrate embryos (e.g., formation of the germ line, gastrulation, segmentation, nervous system development, limb patterning, organogenesis). The course makes extensive use of the current primary literature and emphasizes experimental approaches including embryology, genetics, and molecular genetics. Not offered in 2009-10.

##### 35800. Developmental Neurobiology

Topics include neural induction, early patterning of the central nervous system, axon guidance and neuronal migration, the development of brain activity, and the mechanisms of plasticity that fine tune brain function. Approaches will range from molecular to cellular to systems neurobiology. Focus will be on the vertebrate CNS but attention will be given to important lessons from invertebrate systems.

## COMMITTEE ON MOLECULAR METABOLISM AND NUTRITION

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### *Chair*

Christopher Rhodes, Medicine

### *Professors*

John Alverdy, Surgery

George Bakris, Medicine

Graeme Bell, Medicine

Deborah Burnet, Medicine

Eugene Chang, Medicine

Anita Chong, Surgery

Anna DiRienzo, Human Genetics

David Ehrmann, Medicine

Murray Favus, Medicine

Godfrey Getz, Pathology

J. Michael Millis, Transplant Surgery

Deborah Nelson, Neurobiology, Pharmacology and Physiology

Louis Philipson, Medicine

Victoria Prince, Organismal Biology and Anatomy

Robert Rosenfield, Pediatrics

F. Gary Toback, Medicine

Eve Van Cauter, Medicine

Roy Weiss, Medicine

### *Associate Professors*

Marisa Alegre, Medicine

Marc Bissonnette, Medicine

Matthew Brady, Medicine

Suzanne Conzen, Medicine

Diane Deplewski, Pediatrics

Yan Chun Li, Medicine

Rebecca Lipton, Medicine

Kay Macleod, Ben May Department for Cancer Research

Mindy Schwartz, Medicine

Carol Semrad, Medicine

Xiaoxi Zhuang, Department of Neurobiology

### *Assistant Professor*

David Boone, Medicine

Ron Cohen, Medicine

Michael Grassi, Surgery

Manami Hara, Medicine

Helen Kim, Obstetrics & Gynecology and Pediatrics

Plamen Penev, Medicine

Vivek Prachand, Surgery

Brian Roman, Radiology

Daniel Spergel, Medicine

Xiao Jian Sun, Medicine

Barton Wicksteed, Medicine Instructor

Esra Tasali, Medicine

Research Associate (Professor)

Catherine Reardon Alulis, Pathology Research Associate (Assistant Professor)

Mark Musch, Medicine

The Committee on Molecular Metabolism and Nutrition is a dynamic and interactive research unit of the University of Chicago offering interdisciplinary doctoral training in the molecular basis of biological processes as they relate to nutrition and human disease. The graduate program in Molecular Metabolism and Nutrition offers a program of study leading to the Doctor of Philosophy in Molecular Metabolism and Nutrition. Faculty expertise includes the areas of insulin secretion, diabetes genetics, nutritional regulation of epithelial cell biology, intestinal absorption, adaptation, and malabsorption, water/nutrient/electrolyte transport, nutraceuticals, atherogenesis, abnormalities in lipid and lipoprotein metabolism, vitamin D research, insulin metabolic signaling, transcription factors and adipogenesis, impact of nutrition on reproductive biology, glucocorticoid action and sleep research. A mixture of nationally recognized senior faculty and dynamic junior faculty provide a stimulating and supportive environment designed to guide graduate students through course work and research training. Major resources include transgenic mouse facilities, flow cytometry, microscope imaging suites, microarray and gene chip facilities, computational labs and facilities for human research. The Committee works closely with the government sponsored Diabetes Research and Training Center, Digestive Disease Research Core Center, Training Program in Digestive Diseases and Nutrition, and the Clinical Research Center to offer a broad array of choices for research topics.

The Committee on Molecular Metabolism and Nutrition is a member of the Biomedical Sciences Cluster, which also includes graduate programs from the Committee on Cancer Biology, the Committee on Immunology, the Committee on Microbiology and the Department of Pathology's Molecular Pathogenesis and Molecular Medicine Graduate Program. The five academic units share several common courses, a seminar series, and additional common events for students and faculty within the cluster. The goal of the cluster system is to encourage interdisciplinary interactions among both trainees and faculty, and to allow students flexibility in designing their particular course of study.

### ADMISSION

Students interested in obtaining the Ph.D. in Molecular Metabolism and Nutrition should apply directly to the Committee on Molecular Metabolism and Nutrition by December 1st of each year and indicate Molecular Metabolism and Nutrition as their field of specialization.

## THE DEGREE OF DOCTOR OF PHILOSOPHY

Ph.D. requirements include: (1) completion of 9.5 course credits consisting of basic science, metabolism and elective courses; (2) a preliminary exam in the form of a mock NIH-style grant proposal; (3) a dissertation based on original research; and (4) a final thesis examination.

### *Courses*

MOMN 30100. Directed Independent Research  
Rhodes and Staff

This course comprises a 10 week research lab rotation for first year Nutrition students. At least 2 rotations are required before a thesis lab can be chosen.

MOMN 30200. Nutrition in Medicine (=MEDC 30200)  
Schwartz

This is a clinically oriented course designed to emphasize the basics. The topics include: macro and micronutrients, prenatal nutrition, nutrition in childhood, nutritional assessment and nutrition in critical illness, obesity and nutrition and coronary artery disease.

MOMN 30901. Molecular Basis of Metabolic Disease  
(=MPMM 30901, MOLM 30901)  
Wicksteed

A reading course with in depth study of metabolic pathways. Particular emphasis is placed on learning to read primary literature, give oral presentations of papers and writing of research proposals.

MOMN 30910. Grant Writing  
Brady

The grant writing course will give students extensive exposure to the grant writing and review process. Several speakers will lecture on the various funding agencies, types of grants, and general approaches to grant writing. Students will also participate in mock grant review panel type discussions, and be expected to complete an R01 grant application by the end of the quarter, which will fulfill the mock grant proposal requirement for the CMMN students.

MOMN 30920. Advanced Biotechniques  
Sun

The Biotechniques course will focus on familiarizing students with cutting edge experimental techniques used in biomedical research. The course will comprise a combination of lectures, reading and discussion of primary literature and exposure to several core facilities located on campus. Topics to be covered include generation of transgenic animals, biosensors and cell imaging, genomic microarrays, proteonomics, protein overexpression, knockdown and detection.

MOMN 35000. Molecular Nutrition 1  
Brady and Staff

Comprehensive review of nutritional physiology and requirements including metabolism of vitamins, minerals, protein, and energy.

MOMN 36600. Molecular Nutrition 2  
Brady, Reardon and Staff

Consideration will be given to those selected topics in nutrition in which modern molecular and cell biology have provided new explanatory power.

MOMN 37900. Metabolism Research (=MEDC 37900)  
Favus and Staff

This class is designed for Pritzker School of Medicine students. Advanced reading in an area of metabolism research with a faculty mentor. Prereq: consent of instructor.

MOMN 39900. Readings in Metabolism  
Rhodes and Staff

Advanced reading in an area of metabolism research with a faculty mentor. Prereq: Consent of instructor.

MOMN 40100. Research in Molecular Metabolism and Nutrition  
Rhodes and Staff

Independent thesis research.

MOMN 40200. Topics in Nutrition  
Hara

This course is conducted as a seminar series. Students will broaden their exposure to nutrition related research through bi-weekly faculty and student presentations of research data and primary literature. Attendance is mandatory for first and second year students.

## COMMITTEE ON NEUROBIOLOGY

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### *Chair*

Christian Hansel

### *Professor*

Francisco Bezanilla, Biochemistry and Molecular Biology

Harriet de Wit, Psychiatry

Glyn Dawson, Pediatrics

Aaron P. Fox, Neurobiology, Pharmacology and Physiology

Elliot S. Gershon, Psychiatry

Jay M. Goldberg, Neurobiology, Pharmacology and Physiology

Steve Goldstein, Pediatrics

Christopher Gomez, Neurology

William Green, Neurobiology

Elizabeth Grove, Neurobiology

Dorothy Hanck, Medicine

Christian Hansel, Neurobiology

Un Jung Kang, Neurology

Richard P Kraig, Neurology

Bruce T. Lahn, Human Genetics

Anning Lin, Ben May Department of Cancer Research

Daniel Margoliash, Organismal Biology and Anatomy

Peggy Mason, Neurobiology

Martha McClintock, Psychology

Deborah Nelson, Neurobiology, Pharmacology and Physiology

Eduardo Perozo, Pediatrics

Brian Popko, Neurology

Nanduri Prabhakar, Medicine

Raymond P. Roos, Neurology

Marsha Rosner, Ben May Department of Cancer Research

Eric A. Schwartz, Neurobiology, Pharmacology and Physiology

S. Murray Sherman, Neurobiology

Sangram Sisodia, Neurobiology

Steven L. Small, Neurology

Sara Szuchet, Neurology

Wei-Jen Tang, Ben May Department of Cancer Research

V. Leo Towle, Neurology

Ming Xu, Anesthesia and Critical Care

### *Associate Professor*

James Brorson, Neurology

Melina Hale, Organismal Biology and Anatomy

Nicholas Hatsopoulos, Organismal Biology and Anatomy

Leslie Kay, Psychology

Andrea King, Psychiatry

Philip E. Lloyd, Neurobiology, Pharmacology and Physiology

Jeremy Marks, Pediatrics

Kathleen J. Millen, Human Genetics

Dario Maestriperi, Psychology

James A. Mastrianni, Neurology

Daniel McGehee, Anesthesia and Critical Care

Victoria Prince, Organismal Biology and Anatomy

Clifton Ragsdale, Neurobiology

Anthony T. Reder, Neurology

Steven Roth, Anesthesia and Critical Care

Kamal Sharma, Neurobiology

Betty Soliven, Neurology

Gopal Thinakaran, Neurobiology

Paul Vezina, Psychiatry

Xiaoxi Zhuang, Neurobiology

### *Assistant Professor*

David Biron, Physics

Stephanie Dulawa, Psychiatry

David Freedman, Neurobiology

Christopher J. Lowe, Organismal Biology and Anatomy

Jason MacLean, Neurobiology

Abraham Palmer, Human Genetics

Brian Prendergast, Psychology

Daniel Spergel, Medicine

### *Emeritus Faculty*

Robert L. Perlman, Pediatrics

Philip S. Ulinski, Organismal Biology and Anatomy

The Committee on Neurobiology is an interdepartmental committee designed to provide training and instruction for students interested in the biology of the nervous system, and to encourage communication and the exchange of ideas between faculty members and students interested in neurobiology. Recent technical and conceptual developments in neuroscience have produced remarkable growth in this field. The committee reflects this growth in its structure, having members from different departments whose research interests include a broad spectrum of approaches from the biochemical and molecular to the behavioral and comparative. The committee aims to provide broad training in technical and theoretical aspects of the neurosciences.

## THE DEGREE OF DOCTOR OF PHILOSOPHY

Students initially are admitted to the Division of the Biological Sciences and must meet divisional requirements. The progress of each student will be supervised during the first one or two years by the chair of the Committee on Neurobiology until the student chooses a thesis advisor. Upon choosing a thesis advisor, an advisory committee chaired by a faculty member who is not the student's thesis advisor is formed. The advisory committee consists of at least four faculty members with a majority being members of the Committee on Neurobiology. As a student's focus

changes, the composition of the advisory committee may be modified.

Each student is required to take at least nine basic science courses. Usually these courses will be taken during the first year and part of the second year. Required courses include a series of courses on cellular, developmental, molecular and systems neurobiology and a course in cell biology. Elective courses focus on topics such as neuropharmacology, systems neurophysiology, development, physiology of ion channels and statistics.

During the first year, in addition to taking courses, students rotate through different laboratories. There is not a required minimum of rotations but students usually rotate through two to four laboratories and pick a research lab by the end of their first year. Toward the end of the second year, students write a preliminary examination consisting of a critical essay, which is followed by an oral defense. The topic of this exam does not overlap with the expected topic of thesis research. During the third or fourth year, the student writes a thesis proposal and defends this before the advisory committee. For the purposes of the divisional requirements, this is the examination testing the candidate's qualifications for candidacy.

The original observations included in the final Ph.D. dissertation should be judged suitable for publication. The final oral examination for the Ph.D. degree consists of a public seminar and a private defense conducted by the advisory committee and by other such members of the University faculties as may be deemed suitable.

### *Courses*

Courses that are currently established as part of the committee curriculum are listed below.

#### 31600. Models of Systems Neuroscience Ragsdale, Mason

This lab centered course teaches students the fundamental principles of mammalian neuroanatomy. Students learn the major structures and the basic circuitry of the CNS and PNS. Somatic, visual, auditory, vestibular and olfactory sensory systems are presented in particular depth. A highlight of this course is that students become practiced at recognizing the nuclear organization and cellular architecture of many regions of the neuroaxis in rodent, cat and primate brain. The connections between neural structures and basic neural circuitry are discussed. In the second half of the course, each functional system, including somatosensory, visual, auditory, vestibular, and motor systems is presented in more depth.

#### 31800. Cellular Neurobiology (=CPNS 30000) Lloyd

Concerned with the structure and function of the nervous system at the cellular level. The cellular and subcellular components of neurons and their basic membrane and electrophysiological properties will be described. Cellular and

molecular aspects of interactions between neurons will be studied. Leads to functional analyses of the mechanisms involved in the generation and modulation of behavior in selected model systems.

#### 31900. Molecular Mechanisms of Cell Signaling (=CPHY 31900)

Tang

Cells in the body communicate with each other by a variety of extracellular signals (e.g., hormones, neurotransmitters). Processes such as vision and olfaction, as well as diseases such as cancer, all involve aspects of such signaling processes. The subject matter of this course considers molecular mechanism of the wide variety of intracellular mechanisms that, when activated, change cell behavior. Both general and specific aspects of intracellular signaling are covered in the course, with an emphasis on the structural basis of cell signaling. Offered alternate years.

#### 32100. Cell and Molecular Biology of the Neuron Thinakaran

This course will explore core concepts in cell and molecular biology in considerable depth using examples from neurobiology. A wide range of topics will be covered including: from gene to proteins, regulation of gene expression, mammalian cell architecture, neuronal compartmentalization, membrane trafficking, neuronal dysfunction, and genetic models.

#### 32200. Molecular Neurobiology Green, Popko and Thinakaran

Current research in the molecular biology of the nervous system, i.e., the structure and function of macromolecules that control, propagate, and elicit neural signaling. Topics covered include (1) structural elements of neurons and glia; (2) structure and function of the synapse; (3) aspects of the molecular basis of neural signaling; and (4) gene expression in neural systems. Lectures draw on current journal literature to present a state of the art background of the topic, the current questions being explored, as well as problems and aspects.

#### 32400. Synaptic Physiology Daniel McGehee, Aaron Fox

This course will examine the fundamental aspects of interneuronal communication. Students will learn the physiology of the synapse beginning with the molecular mechanics of neurotransmitter release followed by post-synaptic receptor structure and function. Various forms of synaptic plasticity will be discussed in relation to their relevance to animal behavior.

#### 32500. Developmental neurobiology and brain plasticity. Grove

Topics include neural induction, early patterning of the central nervous system, axon guidance and neuronal migration, the development of brain activity, and the mechanisms of plasticity that fine tune brain function. Approaches

will range from molecular to cellular to systems neurobiology. Focus will be on the vertebrate CNS but attention will be given to important lessons from invertebrate systems.

#### 32800. Neuropsychopharmacology II

Vezina

Effects of drugs on behavior; emphasis on the functional contribution of brain neurotransmitter systems.

#### 33800. Animal models of neuropsychiatric disorders.

Dulawa

Topics include the development, validation, and use of animal models of neuropsychiatric disorders. A wide range of animal models will be covered including behavioral, pharmacological, and genetic models, with an emphasis on mouse models. The disorders covered will range from those with unknown etiology to those with known single-gene causes. Disorders covered will include mood disorders, aggression, obsessive-compulsive disorder, autism, and Huntington's disease.

#### 39900. Readings in Neurobiology

Staff

Reading courses on various topics in neurobiology.

#### 40100. Research in Neurobiology

Staff

Research credit (varied units) for research undertaken by graduate students under the guidance of a faculty member of the Committee on Neurobiology.

#### *Other Courses of Interest*

#### CPNS 33000. Computational Neuroscience I: Single Neuron Computation

Ulinski

This course briefly reviews the historical development of computational neuroscience and discusses the functional properties of individual neurons. The electrotonic structure of neurons, functional properties of synapses, and voltage gated ion channels are discussed.

#### CPNS 33100. Computational Neuroscience II: Vision

Ulinski and Staff

This course considers computational approaches to vision. It discusses the basic anatomy and physiology of the retina and central visual pathways, and then examines computational approaches to vision based on linear and non linear systems theory, and algorithms derived from computer vision.

#### NEUR 33400. Genetics in Neuropharmacology

Zhuang

This course focuses on diverse genetic approaches in pharmacology research. Topics are organized by genetic approaches including knockout, transgenic, knock in, tissue specific knockout, inducible strategies, forward genetics, pharmacogenomics and gene therapy. The selection of papers aims to cover different neurotransmitter systems and signaling pathways.

## DEPARTMENT OF ORGANISMAL BIOLOGY AND ANATOMY

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#### *Chair*

Robert K. Ho

#### *Professors*

Michael I. Coates

Martin Feder

Edwin L. Ferguson, Molecular Genetics & Cell Biology

Elizabeth Grove, Neurobiology

Robert K. Ho

Michael LaBarbera

Raphael Lee, Surgery

Daniel Margoliash

Victoria E. Prince

Paul Sereno

Neil H. Shubin

#### *Associate Professors*

Melina E. Hale

Nicholas G. Hatsopoulos

Clifton Ragsdale, Neurobiology

Callum Ross

Urs C. Schmidt Ott

#### *Assistant Professors*

Sliman Bensmaia

Christopher Lowe

Ilya Ruvinsky, Ecology and Evolution

#### *Lecturers*

Mark Westneat

#### *Emeritus Faculty*

James A. Hopson

Luis M.H. Larramendi

R. Eric Lombard

Lorna P. Straus

Philip S. Ulinski

The Department of Organismal Biology and Anatomy (OBA) has a long history of training students in integrative organismal biology. During the 1970's, the focus of the (then) Department of Anatomy shifted from the classic purview of Anatomy departments in the middle of the 20<sup>th</sup> century — histology, neurobiology, and cell biology — to more comparative and functionally oriented topics and an explicit focus on vertebrate evolutionary biology and functional morphology. The neurobiology section of the department expanded first into explicitly comparative areas and later into neuroethology. Over the next twenty years the department evolved into its present configuration with research and teaching foci which include biomechanics/functional morphology, organismal neurobiology,

evolutionary developmental biology, and vertebrate evolutionary biology, all unified by a shared reference point in the biological hierarchy — the organism — an entity we see as the natural reference for all of the biological sciences since it is the natural unit of selection. We see the intellectual areas presently housed in OBA as inextricably and naturally connected. To understand the organismal level in biology requires an understanding of both how organisms have been shaped over evolutionary time scales and how they are generated on developmental time scales, the various interacting tissue and organ systems that generate organismal functions, and the mutual feedback among these functional, evolutionary, and developmental processes. The high degree of connectivity among our core disciplines is exemplified by the integrative nature of student dissertation projects in OBA and by the high level of interaction and collaboration among our faculty; both faculty and graduate student research in OBA frequently span several of these areas. In recent years there has been a resurgence of interest in and appreciation for organismal-level biology on the national level, putting molecular, genetic, and computational tools and information to use to understand broader systems-level questions. OBA has been actively positioning itself as a leader in research and graduate training in this endeavor.

Research and training in the Department focus on the integration of five overlapping areas:

*Biomechanics* is concerned with the application of concepts and methods from engineering and physics to biology. It involves analyses of the mechanical forces involved in animal behaviors such as feeding and locomotion and in fluid flow in blood vessels and in other organ systems.

*Developmental biology* is concerned with the processes underlying the development of organisms. Work on developmental biology in the department places particular emphasis on the interface between development and evolution.

*Neuroethology* is concerned with the evolution of the nervous system and with the neuronal mechanisms underlying natural behaviors.

*Paleobiology* is concerned with the interrelationships between organisms and with their evolutionary histories.

*Physiology* is concerned with the mechanisms of organismal function. Work in the department on physiological problems focuses on the evolution of physiological systems and on the relationship of the organism to its environment.

Training in the department places an emphasis on familiarity with a broad range of ideas and skills in organismal biology. Although students can conduct research in any of the areas represented in the department, they are encouraged to develop research programs that capitalize on the talents of two or more faculty members with different perspectives. The department also encourages students to interact with other units on campus (such as the

Department of Ecology and Evolution and the Committees on Developmental Biology, Evolutionary Biology, Genetics, and Neurobiology) as well as the Field Museum of Natural History, the Brookfield and Lincoln Park Zoos and the Shedd Aquarium. Students earning doctorates through the department will be qualified, following suitable postdoctoral training, for research and teaching careers in biology departments, anatomy departments and museums.

## DEGREES

### MASTER OF SCIENCE

Students are not admitted to the department for the sole purpose of obtaining a Master of Science degree, but this degree is awarded to students from other academic units who require a Master of Science degree as one requirement for the doctorate.

### DOCTOR OF PHILOSOPHY

The requirements for the Doctor of Philosophy are as follows:

1. Course requirements are individualized and are defined for students early in their stay in the department, based on the students background and interests. Students must fulfill the divisional requirement of serving as a teaching assistant in two courses.
2. The preliminary examination, consisting of a written segment which covers a range of topics in organismal biology, as well as both the oral and written presentation of a directed research project or dissertation research proposal.
3. The completion of a research project and the presentation of a dissertation satisfactory to the department faculty.
4. The passing of a final oral examination.

## ADMISSION

We strongly advise students considering application to the department to begin preparation of their application early in the autumn quarter, so that all materials will arrive by the December 1, deadline. The department requires GRE General Test scores from all applicants, and strongly recommends submission of GRE subject test scores in biology. Foreign applicants whose first language is not English also must submit TOEFL test scores with their application materials. Further information also may be obtained from the department's home page on the World Wide Web, at <http://pondside.uchicago.edu/darwin>, or by sending an email to Darwin@uchicago.edu.

### Courses

Didactic and seminar courses are offered in each of the departmental research foci. The specific courses presented vary from year to year. A list of current courses can be

obtained by contacting the Administrative Director of Graduate Programs. Students are encouraged to take courses related to their interests in other academic units on campus.

#### 30001 The Human Body

Ross, Staff

The Human Body course is the first component of the Scientific Foundations of Medicine curriculum in Year 1. The Human Body course will provide you with a foundation in the structural organization of the body. You will learn gross anatomy of the back, thorax, abdomen, pelvis, head and neck, and upper and lower limbs through large and small group teaching sessions, as well as cadaver dissection. Correlations with Radiology and Surgery are an integral part of the course and provide real world clinical context for the anatomic material.

#### 30260 Chordate Evolutionary Biology (=EVOL 30200, BIOS 20260)

Coates, Staff

This course addresses early vertebrate diversity and evolution, use of fossils and systematic approaches in developmental evolutionary biology.

#### 31300 Key Issues In Early Vertebrate Evolution (=EVOL 30300)

Coates

The course addresses questions about the origin of vertebrates, the interrelationships of major gnathostome clades, and the fish tetrapod transition. Undergraduate level chordate biology required; familiarity with methods in systematic biology advantageous.

#### 31400, 31500 Vertebrate Paleobiology (=EVOL 30400, 30500)

Coates, Sereno, Shubin

Systematics, morphology, ecology, and evolution of fossil vertebrates. Open to undergraduates.

#### 31600 Bone (=EVOL 31600)

Ross

This course will explore the diversity and evolution of vertebrate mineralized connective tissues in order to investigate developmental mechanisms, adult structure, in vivo function, and structure-function relationships. Mineralized connective tissues perform vital physiological and biomechanical functions in vertebrates that are reflected in their structural properties. Understanding these function-structure relationships is a fundamental goal of much of vertebrate skeletal biomechanics. The relationships between structure and function in vertebrate bone also underlie hypotheses about physiology and behavior of fossil vertebrates, which in turn inform models of the evolution of physiological and biomechanical systems.

#### 32200 Scientific Illustration

Abraczinskas

#### 32500 Vertebrate Neural Systems

Ragsdale

This lab centered course teaches students the fundamental principles of mammalian neuroanatomy. Students learn the major structures and the basic circuitry of the CNS and PNS. somatic, visual, auditory, vestibular and olfactory sensory systems are presented in particular depth. A highlight of this course is that students become practiced at recognizing the nuclear organization and cellular architecture of many regions of brain in rodents, cats and primates.

#### 33400 Advanced Dissection

Staff

Laboratory work on special topics in gross anatomy. Prereq: OBA 30100, 30200, or equivalent and consent of instructor.

#### 33600 Vertebrate Development (=DVBI 35600, EVOL 33600)

Prince, Millen, Ho

This advanced level course combines lectures, student presentations, and discussion sessions. It covers major topics on the developmental biology of embryos (e.g. formation of the germ line, gastrulation, segmentation, nervous system development, limb patterning, organogenesis). We make extensive use of the primary literature and emphasize experimental approaches (e.g. classical embryology, genetics, molecular genetics).

#### 33700 Developmental Genetics & Evolution (=EVOL 33700, BIOS 20256)

Schmidt-Ott

This course addresses the Development of the body axis in *Drosophila* and other model and non-model flies. Use of developmental genetics and early patterns of gene expression to understand the evolution of morphological diversity.

#### 34200 Biological Fluid Mechanics (=BIOS 22242, EVOL 34200)

LaBarbera

This course introduces fluid mechanics and the interactions between biology and the physics of fluid flow (both air and water). Topics range from the fluid mechanics of blood flow to the physics (and biology) of flight in birds and insects.

#### 34300 Biomechanics Of Organisms (=BIOS 22243, EVOL 34300)

LaBarbera

This course examines how organisms cope with their physical environment. It covers the properties of biological materials (bone, cartilage, tendon, shell, wood, cuticle, etc.), mechanical analysis of morphology, and principles of design optimization. Emphasis is placed on support systems of organisms. Mechanical properties of biomaterials are analyzed in relation to their underlying biochemical organization and biophysical properties. Students carry out self designed laboratory projects. There is a required laboratory.

34500 Computational Neuroscience I: Neurons (=BIOS 24221)

Ulinski, Staff

This course briefly reviews the historical development of computational neuroscience and discusses the functional properties of individual neurons. The electrotonic structure of neurons, functional properties of synapses, and voltage gated ion channels are discussed. PQ: Prior course in cellular neurobiology or consent of instructor required. Prior or concurrent registration in Math 200.

34600 Computational Neuroscience II: Vision (=BIOS 24222)

Ulinski, Staff

This course considers computational approaches to vision. It discusses the basic anatomy and physiology of the retina and central visual pathways and then examines computational approaches to vision based on linear and non linear systems theory, information theory and algorithms derived from computer vision. PQ: BIOS 24222 and a prior course in systems neurobiology, or consent of instructor, required. Prior or concurrent registration in MATH 20100 recommended.

34700 Computational Neuroscience III: Language (=BIOS 24223, PSYC 34400)

T. Regier, Staff

This course discusses computational approaches to human language. It examines the learning, production, and comprehension of language, through neural network modeling of human linguistic behavior, and through brain imaging. PQ: Consent of instructor.

35600 Paleobiogeography (=EVOL 45600)

Sereno

This course concerns the development of historical biogeography as a discipline and the advent of more recent quantitative methods. Areas of special interest include the quality of fossil and geologic records, the definition of areas, the relationship of speciation and phylogeny to biogeography, and methods that search for congruence. The course is aimed at defining hypotheses open to test by empirical data or simulation.

37000 Topics in Systematics and Biogeography (=EVOL 47000)

Sereno

A graduate seminar which includes short lectures, one page summaries of readings, and class discussion. Topics include critical examination of current methods in systematics and historical biogeography, their limits, and applications to biological problems. The course assumes familiarity with the principles of systematics and historical biogeography and requires extensive readings from the current literature.

40000 Introduction to Integrative Organismal Biology

Staff

This course meets once per week. The focus of these sessions is less on transfer of information than on faculty and students getting to know one another. It also provides first year students with an early opportunity to think about possible lab rotations, introduces students to resources available in the department, and exposes the students to the range of faculty expertise for later research advice.

40001 Topics in Integrative Organismal Biology

Staff

The goal of the course is to take a topic in organismal biology and approach it from a variety of perspectives, highlighting how integration of approaches can provide new research opportunities and insights

## DEPARTMENT OF PATHOLOGY

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### *Chair*

Vinay Kumar, Pathology

### *Professors*

Albert Bendelac, Pathology

Richard DeMay, Pathology

Yang Xin Fu, Pathology

Godfrey Getz, Pathology

John Hart, Pathology

Aliya Husain, Pathology

Thomas N. Krausz, Pathology

Vinay Kumar, Pathology

Stephen Meredith, Pathology

Jonathon Miller, Pathology

Anthony G. Montag, Pathology and Surgery

José Quintans, Pathology and The College

Hans Schreiber, Pathology

Lucia Schuger, Pathology

Jerome Taxy, Pathology

Jerrold Turner, Pathology

James Vardiman, Pathology

Martin Weigert, Pathology

Robert Wollmann, Pathology and Neurology

K-T Jerry Yeo, Pathology

### *Associate Professors*

John Anastasi, Pathology

Beverly Baron, Pathology

Alexander Chervonsky, Pathology

Thomas F. Gajewski, Pathology and Medicine

Barbara Kee, Pathology

Mark Lingen, Pathology

Susana Marino, Pathology

Shane Meehan, Pathology

Ting-Wa Wong, Pathology

### *Assistant Professors*

Tatjana Antic, Pathology

Anthony Chang, Pathology

Karen M. Frank, Pathology

Katja Gwin, Pathology

Loren Joseph, Pathology

Ivan Moskowitz, Pathology

Jeffrey Mueller, Pathology

Peter Pytel, Pathology

Husain Sattar, Pathology

Peter Savage, Pathology

H. Rosie Xing, Pathology

### *Emeritus Faculty*

Cyril Abrahams, Pathology

Frank W. Fitch, Pathology

Seymour Glagov, Pathology

Martin Goss, Pathology

Zdenek Hruban, Pathology

Josephine Morello, Pathology

Hyman Rochman, Pathology

Donald A. Rowley, Pathology

Benjamin H. Spargo, Pathology

Francis H. Straus II, Pathology

### *Instructors*

Nikolina Babic, Pathology

Sandeep Gurbuxani, Pathology

Elie Richa, Pathology

### *Clinical Associates*

Jerome Dickstein, Pathology

Ward Reeves, Pathology

Elizabeth Sengupta, Pathology

The Department of Pathology previously joined with the Committee on Molecular Medicine to offer a joint program, Molecular Pathogenesis and Molecular Medicine. The Graduate Program in Molecular Pathogenesis and Molecular Medicine offers a program of study leading to the Doctor of Philosophy degree in Pathology. Fields of particular emphasis include immunobiology, vascular biology, and atherosclerosis, neurodegenerative disease, gastrointestinal epithelial biology, molecular oncology, and respiratory biology.

Instruction includes courses in biochemistry, defense reactions, cellular and molecular pathology, cell, molecular and genetic biology, cancer biology and immunology that are generally completed within the first two years of study. Each student must select a faculty sponsor who is willing to supervise his or her thesis research. Such faculty members are generally in the Department of Pathology but may be chosen from other departments in the Division of the Biological Sciences if the research program is considered suitable by the departmental graduate student advisory committee.

The Department of Pathology's graduate program is integrated within the Biomedical Sciences Cluster, which also includes graduate programs from the Committee on Cancer Biology, the Committee on Immunology, the Committee on Microbiology, and the Committee on Molecular Metabolism and Nutrition. The five academic units share several common courses and additional common events for students and faculty within the cluster. The goal of the cluster system is to encourage interdisciplinary interactions among both trainees and faculty, and to allow students flexibility in designing their particular course of study.

## ADMISSION

Students interested in obtaining the Ph.D. in Pathology should apply directly to the Molecular Pathogenesis and Molecular Medicine program by December 1st of each year and indicate Molecular Pathogenesis and Molecular Medicine as their field of specialization.

## THE DEGREE OF DOCTOR OF PHILOSOPHY

Ph.D. requirements include: (1) completion of 9.5 course credits consisting of basic science, pathology and elective courses; (2) a preliminary exam in the form of a mock NIH-style grant proposal; (3) a dissertation based on original research; and (4) a final thesis examination.

### *Courses*

MPMM 30010. Immunopathology (=Biosci 25258, IMMU 30010)

Jabri

This course is aimed at revisiting key immunological concepts in the context of diseases. Emphasis is placed on understanding the immunological basis of disease and the propositions of experimental approaches to test immunopathological models.

MPMM 30600. Signal Transduction and Disease  
Dulin

Topics include receptor ligands, membrane receptor tyrosine kinases and phosphatases, G proteins, proto oncogenes, signaling pathways, cytoplasmic protein kinases and phosphatases, transcription factors, receptor nucleus signaling, development and cancer, genetic dissection of signaling pathways, cell growth and cell proliferation, interplay of cell cycle regulators, cell cycle progression and apoptosis, and sensing of hypoxia and mechanical stimuli. The role of signaling in disease is a theme throughout the course.

MPMM 30800. Molecular Defense Mechanisms  
Boone and Staff

This course describes the basic mechanisms involved in defense against and pathogenesis of human diseases. Topics to be covered include inflammation, coagulation, complement, wound repair, cytokines, hypersensitivity, infection, autoimmunity and AIDS. Emphasis is on mechanisms at the molecular level with an introductory lecture and following with discussions of recent journal articles.

MPMM 30900. Molecular Mechanisms in Cancer Biology (=CABI 30900)

Macleod

An introduction to the molecular and cell physiological abnormalities of cancer cells. Topics include the normal roles of proto oncogenes and tumor suppressor genes and their dysfunction in cancer, mechanisms of oncogene activation, mechanisms of invasion and metastasis, and modalities of cancer therapy.

MPMM 30901. Molecular Basis of Metabolic Disease (=MOLM 30901, MOMN 30901)

Wicksteed

A reading course with in depth study of insulin secretion and action. Particular emphasis is placed on learning to read primary literature, give oral presentations of papers and writing of research proposals.

MPMM 31201. Modern System Pathology  
Moskowitz

This course provides in depth study of the disease processes that affect three major organ systems each year. In a 3 year cycle. Organ system groupings include: Cardiovascular/Respiratory/Gastrointestinal; Obesity/Reproduction/Endocrinology; and Kidneys/Neural Degeneration/Liver.

MPMM 32000. Molecular Biology of Disease  
Meredith

This course reviews a broad range of biochemical imbalances that contribute to disease, from hyperhomocysteinemia to nitricoxide dysregulation to prion accretion.

MPMM 33000. Extracellular Matrices  
Collier

Advanced topics dealing with the biology and chemistry of the extracellular matrix, cell-matrix interactions, and current methodologies for engineering these interfaces.

MPMM 36600. Molecular Nutrition 2 (=MOMN 36600)  
Brady, Reardon

Consideration is given to those selected topics in nutrition in which modern molecular and cell biology provide a greater understanding of the regulation of these metabolic pathways. Prereq: Biochemistry.

MPMM 39000. Major Human Diseases  
Getz, Meredith

The objective of this course is to familiarize the student with the molecular pathogenesis of 5 major human diseases that span a wide spectrum of disease classes. Diseases addressed are: coronary artery disease and congestive heart failure; asthma; breast cancer; rheumatoid arthritis; and toxoplasmosis.

MPMM 40100. Research in Pathology  
Meredith

Thesis research.

MPMM 40200. Readings in Pathology: Selected readings in Pathology

Meredith and Staff

Consent of instructor.

MPMM 57500. Cell Growth, Injury Repair & Death (=MOLM 57500, ORGB 57500)

Lee, Hamann

This course reviews the various modes of cell injury that can occur, the basic molecular healing responses and pathways of metabolic survival or death. This course may be of interest to those interested in wound healing, biological

stress responses, molecular chaperones, radiobiology, biomechanics, biomedical engineering as well as trauma and critical care medicine.

### *Medical School Courses*

PATH 30100. Cellular Pathology and Immunology  
Meredith and Staff

A survey of basic mechanisms underlying cellular pathology, including the following topics: inflammation and wound healing; the immune response and immunopathology (immunodeficiency, hypersensitivity and autoimmunity); neoplasia and carcinogenesis; and atherosclerosis and other vascular diseases.

PATH 30210. Clinical Pathophysiology and Therapeutics I (CPP&T)

Husain, Stern and Murray

This course provides a transition between the basic medical sciences and the clinical practice of medicine by demonstrating how the clinical manifestations of specific diseases correlate with current knowledge of the underlying structural (anatomical, histological, ultrastructural) and functional (pathophysiological) abnormalities. Applied therapeutics, previously a separate course, has been incorporated since 2004 into CPP with the intent of providing integrated learning of related topics. It is not the aim of this course to provide comprehensive coverage of the diseases which afflict each organ system, but to select within each system those diseases which are common, as well as those, though infrequent, which best illustrate the scientific basis of our current concepts of the nature of disease.

PATH 30220. Clinical Pathophysiology and Therapeutics II (CPP+T)

Husain, Stern and Murray

This is a continuation of Path 30210. Prereq: Path 30210.

### *Electives*

PATH 30400. The Post Mortem Examination

Husain

Course to consist of learning experiences in autopsy pathology. The students will attend the weekly gross autopsy conference, follow an autopsy through to completion, and attend teaching seminars in forensic pathology and in problem based learning in autopsy pathology.

PATH 35600. Current Projects in Surgical Pathology

Husain and Staff

Working on a project or projects with a surgical pathology faculty member(s) and sitting in on conferences and sign out as wished for by student.

PATH 35700. Rotation in Surgical Pathology

Husain and Staff.

Working up surgical pathology specimens, sitting in on sign out, under direction of pathology resident and attending many surgical pathology and specialty confer-

ences and helping to teach gross surgical pathology to Jr. SWG. Clerks. Prereq: Med Bio (Path 30100) & Med Bio (Path 30200) & Consent of Instructor / Visiting Students (from USMLE Accredited Medical Schools Only)

PATH 35800. Advanced Gynecological Pathology  
Montag.

A tutorial course on Pathology of female reproductive tract with emphasis on neoplastic and preneoplastic conditions. Appropriate for students with an interest in Ob/Gyn or Pathology. Prereq: Med Bio Sequence / Juniors & Seniors Only

PATH 37800. Tutorials in Neuropathology.

Wollman

This course is intended for those who are interested in careers in neurology, neurosurgery, or neuropathology. The entire spectrum of disease affecting CNS, PNS skeletal muscle is covered in a daily seminar format lasting 8-10 weeks. Students are assigned slides from cases for group review on a daily basis. Includes attendance at weekly autopsy brain cutting session. Prereq: Med Bio (Path 30200) or equivalent from other medical school.

### *Experimental and Comparative Pathology*

PATH 36200. Individual Tutorial Projects in Experimental and Comparative Pathology

Kumar

PATH 39000. Teaching of Pathology

Husain & Meredith

Teaching Assistant for Department of Pathology Med Bio Sequence 30100, 30220 Prereq: Med Bio Sequence / Senior Only / Consent of Instructor.

PATH 46000. Path Experience: Off campus

Kumar and Staff

Seniors who have satisfactorily completed the first 3 years of medical studies. Applications must be approved in advance by the dean of students and department.

## CLINICAL DEPARTMENTS IN THE BIOLOGICAL SCIENCES

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Faculty in the Division of the Biological Sciences participate in undergraduate and graduate medical education through the Pritzker School of Medicine, and maintain a vital clinical enterprise through the University of Chicago Medical Center. Twelve clinical departments offer a wide variety of educational and research opportunities to students and treatment options to patients. In addition, one of these departments, described in the section on the Basic Biological Sciences, offers graduate programs leading to the PhD degree: Radiology (Medical Physics). Brief descriptions of each of the clinical departments appear below. Additional details about our clinical departments can be found by visiting the Biological Sciences Division and Pritzker School of Medicine websites: <http://www.bsd.uchicago.edu> and <http://pritzker.uchicago.edu>

**Department Of Anesthesia and Critical Care**  
The Department of Anesthesia and Critical Care offers clinical training and educational and research opportunities for qualified students at all levels. While one mission of the department is to provide high quality clinical anesthesia (including pain therapy, intensive care, and perioperative management), the Department of Anesthesia and Critical Care also maintains active research programs in neurobiology, echocardiography, patient safety, psychomotor pharmacology, clinical pharmacology (including herbal medications in conjunction with the TANG Center), and outcomes research. Educational opportunities for students occur at the undergraduate level, in graduate courses that are led by our faculty, during the course of the medical school curriculum, and at the post graduate level. We also provide pre doctoral and post doctoral positions in our laboratories and provide post residency clinical training in critical care, pain management, cardiothoracic anesthesia and pediatric anesthesia. Individuals seeking opportunities for research or study within the department are invited to call the Chairman of the Department of Anesthesia and Critical Care, Pritzker School of Medicine, 5841 South Maryland Avenue, MC 4028, Chicago, IL 60637, telephone: (773) 702-2545.

### DEPARTMENT OF FAMILY MEDICINE

The Department of Family Medicine was established by Bernard Ewigman, MD MSPH, who was recruited as the Founding Chairman in 2002. Since that time, the Department has grown to include many clinical practices, over 70 faculty members, medical student education, a residency program, fellowship programs, and a practice based research network. The Department is based primarily at the University of Chicago, the NorthShore University Health System and in the communities served

both on the south and north sides of the Chicagoland area. The Department is unique in its focus on community based practice, education in community based settings, and research and scholarship relevant to improving primary care in both urban and suburban practice and the health of the communities we serve.

### DEPARTMENT OF MEDICINE

The Department of Medicine is staffed with over 200 full time members. The department's 14 subspecialty sections cover every field of internal medicine. These sections include cardiology, dermatology, endocrinology, emergency medicine, gastroenterology, geriatrics, general internal medicine, genetic medicine, hospital medicine, nephrology, infectious disease, hematology/ oncology, pulmonary/critical care medicine and rheumatology. Besides providing a full range of outpatient care and consultative services, these sections conduct basic, translational and clinical, research. The faculty not only is involved in extensive clinical teaching but also provides ample opportunities, facilities and support for clinical and research training.

Although the ultimate research effort of the Department is directed toward the study of disease, strict adherence to this principle imposes limits that are too narrow, since advancements in other branches of science promote health sciences as well. Students are encouraged to participate in clinical and laboratory research always taking place.

For further information, please contact: Executive Administrator, Department of Medicine, Pritzker School of Medicine, 5841 South Maryland Avenue; Chicago, IL 60637, (773) 702-9670.

### DEPARTMENT OF NEUROLOGY

The Department of Neurology offers clinical training and research opportunities in the study of the nervous system and in neurological disorders. The department has a number of educational programs directed towards medical students, graduate students, residents and post residency fellows. These programs offer instruction in basic and translational research and in clinical neurology as well as the subspecialties of neurology that include pediatric neurology, neuroimmunology, neurovirology, clinical neurophysiology and sleep disorders, stroke, movement disorders and cognitive disorders. The department does not admit students or offer a degree program. Nevertheless, opportunities are available for students who have been admitted to a Ph.D. program to pursue research under the direction of the several of the department's faculty who direct laboratory research programs in basic neuroscience and/or neurological disease research. Post doctoral and post residency positions are also available. Candidates for graduate and post graduate study are invited to visit the faculty and explore opportunities for research. Please contact the department at (773) 702-6390.

## DEPARTMENT OF OBSTETRICS AND GYNECOLOGY

The Department of Obstetrics and Gynecology is located in the Chicago Lying-in Hospital in Hyde Park, which is an integral part of the University of Chicago Medical Center complex. The department is dedicated to the health care of women and has an outpatient clinic adjacent to the hospital. The faculty care for women with high risk pregnancies, gynecologic malignancies, those requiring complex gynecologic and pelvic reconstructive surgery as well as minimal invasive surgery, reproductive health and complex contraception, and problems of reproductive endocrinology & infertility, including assisted reproductive technologies.

The educational activities of the department are multifaceted and include medical students, residents and fellows under the supervision of the faculty. We have recently established an affiliation with an excellent community-based academic institution in Evanston, NorthShore University Health System. This led to a major expansion of our clinical and research activities which are carried out within the department at both sites and encompass basic translational laboratory investigation, clinical trials and population-based epidemiology. We encourage students, interns, and residents to participate in these scientific endeavors and a large number pursue careers in academic medicine.

Our Departmental activities take place in the outpatient setting, the labor and delivery suite, the operating rooms, the inpatient wards, and in our laboratories. Research opportunities are available in all the subspecialty areas as well as genetics. Subspecialty fellowships are also available in Family Planning, Maternal -Fetal Medicine and Urogynecology and Pelvic Reconstructive Surgery. For more information, please call (773) 702-6726.

## DEPARTMENT OF PATHOLOGY

Please see the listing under Basic Biological Sciences.

## DEPARTMENT OF PEDIATRICS

The Department of Pediatrics offers instruction and research in normal and abnormal growth and development of infants and children and in the prevention, diagnosis and treatment of illness in children. All educational activities are integrated with research and scholarly endeavors to advance knowledge in the field of child healthcare. The Department of Pediatrics has clinical and research facilities at the University of Chicago Children's Hospital; at La Rabida Children's Hospital and Research Center (children's chronic diseases); at the University of Chicago Friend Family Health Center at 55th and Cottage Grove Avenue; and at ambulatory clinical facilities at pediatric offices located in the southern suburbs and northwest Indiana.

Comprising over 100 faculty and research associates, the department conducts extensive research programs in a wide range of disciplines related to child health, growth, development and public policy. Research is conducted

at all of the sites mentioned above. Postdoctoral fellows, both M.D.s and Ph.D.s, as well as undergraduate medical students conduct research and receive research education guided by departmental faculty.

Candidates for graduate and post graduate study are invited to visit with the various faculty to explore a wide range of opportunities. Contact the office of the department chair at the University of Chicago Children's Hospital, University of Chicago, 5841 South Maryland Avenue, Chicago, IL 60637, or call (773) 702-6205.

## DEPARTMENT OF PSYCHIATRY AND BEHAVIORAL NEUROSCIENCE

Full time faculty in the Department of Psychiatry and Behavioral Neuroscience teach and deliver inpatient, outpatient, and consultation services in mood disorders, anxiety disorders, personality disorders, eating disorders, addictive disorders, electroconvulsive therapy, and schizophrenia. Primary and affiliated teaching and clinical institutions besides the University of Chicago Medical Center include Mercy Hospital, Evanston Hospital, and the Chicago Lakeshore Hospital. Assessments include psychiatric diagnostic evaluation, psychological testing, neuropsychological testing, and other structured evaluations. Interventions may include a broad range of individual, family, and group therapies, including cognitive behavioral, psychodynamic, and psychopharmacologic treatments. Specialties in the Child and Adolescent Section include attention deficit hyperactivity disorder, disruptive behavior disorders, developmental disorders, and behavioral and learning difficulties. Major research efforts across the Department are in molecular pharmacology, behavioral psychopharmacology, behavioral and molecular genetics, affective neuroscience and neuroimaging, and psychopharmacology.

The department does not offer any degrees, but elective opportunities are available for degree candidates from other programs. Major educational opportunities for medical students, graduate students, interns, residents, fellows, other physicians and clinical psychologists are linked to through <http://psychiatry.bsd.uchicago.edu>.

For more information, please contact the Psychiatry Office of Education at (773) 702-0529 or the Chair of Psychiatry at (773) 834-4083, further contact information available at <http://psychiatry.bsd.uchicago.edu>.

## DEPARTMENT OF RADIATION AND CELLULAR ONCOLOGY

The Department of Radiation and Cellular Oncology currently provides clinical radiation oncology services at two major practice locations: the University of Chicago's Center for Advanced Medicine (DCAM) and the Outpatient Care Center (OCC) at the University of Illinois at Chicago. Approximately 1900 patients per year are treated at these facilities. The department facilities include six linear accelerators, and three simulators. Computing facilities include

VAX workstations for clinical use, and Sun, IBM, Silicon Graphics, DEC workstations for research use.

The department stresses both a basic science approach to radiation oncology and state of the art investigation of molecular aspects of cancer through joint research programs with faculty members in the Division of the Biological Sciences.

The Department of Radiation and Cellular Oncology, in conjunction with the Department of Radiology, offers programs leading to the S.M. and Ph.D. degrees to medical physics. For more information, refer to the Committee in Medical Physics listing.

### DEPARTMENT OF RADIOLOGY

Please see the Graduate Program in Medical Physics listing under Basic Biological Sciences.

### DEPARTMENT OF SURGERY

The Department of Surgery has a very active research program spanning the basic, translational, and clinical sciences. While traditionally surgery has focused on the excision of diseased tissues and repair of injury, it is now equally concerned with specific interventions that facilitate tissue regeneration, supplement the body through the transplantation of organs and the implantation of synthetic materials and tissues developed *in vitro*, and target particular diseased cells or modulate the behavior of normal cells.

Research in the Department of Surgery is organized into several focus areas including transplantation immunology and inflammation, carcinogenesis and metastasis, tissue regeneration and engineering, epithelial pathobiology, and cardiothoracic and vascular research. Each of these areas encompasses multiple clinical specialties within the Department. The Department also leads the University of Chicago-Argonne Bioengineering Institute for Advanced Surgery and Endoscopy (BIASE), a collaborative effort with scientists at Argonne National Laboratory to develop novel therapeutic approaches and medically relevant instruments.

Faculty members of the Department of Surgery are members of a variety of graduate programs in the Biological Sciences Division, and are also extensively involved in the Medical Scientist Training Program (M.D.-Ph.D). Graduate and medical students interesting in participating in research within the Department should contact individual investigators or:

Karl S. Matlin, Ph.D.  
Vice-Chairman of Research  
Department of Surgery  
University of Chicago  
5841 S. Maryland Avenue, MC5032, Room J557 SBRI  
Chicago, Illinois 60637-1470  
773-834-2242  
kmatlin@surgery.bsd.uchicago.edu

## THE PRITZKER SCHOOL OF MEDICINE

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**Mission:** At the University of Chicago, in an atmosphere of interdisciplinary scholarship and discovery, the Pritzker School of Medicine is dedicated to inspiring diverse students of exceptional promise to become leaders and innovators in science and medicine for the betterment of humanity.

### OVERVIEW:

The University of Chicago matriculated its first class of medical students in 1927 and today is a national leader in training physicians and physician-scientists. In recognition of the generous support extended to the medical school from the Pritzker family of Chicago, the medical school was renamed the Pritzker School of Medicine in 1968. The great traditions which underlie the school's history include the presence of a full-time teaching faculty devoted to working with students, a strong emphasis on research and discovery, and a commitment to translating the most recent advances in biomedical science to the bedside.

The Pritzker School of Medicine is unique among medical schools in that it is a part of the academic Division of the Biological Sciences. This situation offers medical students a wide array of opportunities for interdisciplinary research, learning and collaboration between the basic and clinical sciences. Surveys conducted by the Association of American Medical Colleges over the last several years consistently show the University of Chicago among the top schools in the nation as a producer of faculty members at academic medical centers.

In 2009, the Pritzker School of Medicine began rolling out a reorganized curriculum, known as the Pritzker Initiative. The new curriculum emphasizes active learning, integration among the clinical and basic sciences, and scholarship and discovery. The Pritzker curriculum begins with the introduction to the Human Body, which runs from early August through October and includes lectures from nearly 30 University of Chicago faculty members. Beginning in late September, first years students are introduced to the Scientific Foundation of Medicine series. This series spans the first two years of study guiding students through such themes as Response to Injury, Neurobiology, and Clinical Pathophysiology and Therapeutics. Students also begin seeing patients during their first quarter as part of the longitudinal Physician-Patient-Society-Systems (P2S2) course. This course includes modules on Health Care Disparities and the Social Context of Medicine. Students have access to a state-of-the-art clinical performance center which uses standardized patients and videotaped performance to educate students in taking a history, performing a physical examination, and clinical decision making. By the time students enter their clerkship rotations during the end of

their second year of studies they are considered part of the health care team. During their clinical years, students participate in eight clinical clerkships, a subinternship and a series of elective experiences at the nationally ranked University of Chicago Medical Center and NorthShore University HealthSystem.

Building on Pritzker's legacy of producing research scholars, the revamped curriculum also includes a Scholarship and Discovery thread which requires the completion of a mentored scholarly project. Students have the option to engage in scholarship in medical education, quality improvement, community health, and global health. During the pre-clinical years, students acquire core skills in research methodology and biostatistics and return to their designated scholarly area during their fourth year. The Pritzker School of Medicine's curriculum culminates with the Transitions to Internship Capstone course which provides graduating fourth year students with the practical skills they need to transition seamlessly into graduate medical education.

#### THE UNIVERSITY OF CHICAGO MEDICAL CENTER

The University of Chicago Medical Center serves as the teaching hospital for the Pritzker School of Medicine. Routinely rated as one of the best hospitals in the United States by U.S. News & World Report, the medical center is a leader in research and treatment of disorders such as cancer, gastrointestinal disease, diabetes, lung disease, heart disease, neurological disorders, musculoskeletal disorders and others. The center contains over one hundred specialty clinics and provides medical care to more than 300,000 patients a year.

The Medical Center consists of more than 3.5 million gross square feet in more than 25 buildings devoted to research, teaching and patient care. In 2009, the ten-story Knapp Center for Biomedical Discovery added another 330,000 square feet of research space. In 2013, the planned New Hospital Pavilion, designed by renowned architect Rafael Viñoly, will add another 1.2 million square feet of clinical space. The Medical Center currently has over 700 attending (or principal) physicians, as well as more than 600 residents and fellows (physicians working in advanced specialty training in medical science, leading to specialty board certification). Faculty members associated with the Medical Center rank fifth nationally in National Institutes of Health (NIH) research funding per investigator and in National Academy of Science membership per 100 faculty. The medical center is the major provider of health care for the immediate neighborhood and has engaged in a long-term effort to construct a more rational collaborative system of doctors' offices, clinics, community hospitals and academic centers to provide care for the 1.1 million people who live on the South Side of Chicago. Community-based training opportunities include relationships with

nearby physicians and hospitals, and an academic affiliation with the NorthShore University Health System, which includes three suburban hospitals. At the tertiary care level, the medical center draws referrals from the entire region, including northern Indiana. Patients with particularly complex or obscure medical problems often travel long distances to the University of Chicago Medical Center for treatment. The center includes a National Cancer Institute Comprehensive Cancer Research Center; a Howard Hughes Medical Institute; a National Diabetes Research and Training Center; a National Clinical Nutrition Research Unit; the Special Center for Research in Arteriosclerosis; the MacLean Center for Clinical Medical Ethics; the Joseph P. Kennedy, Jr. Mental Retardation Research Center; the Center for Health and the Social Sciences and the Clinical Pharmacology Center. It is also the site of two additional national clinical research units and has widely recognized research programs on digestive diseases, anti-cancer medications, cell biology of cardiac and skeletal muscle, transplantation biology, lipoprotein-cell surface interactions, nuclear medicine and imaging, and receptors and response proteins in reproductive tissue. It has regional burn and perinatal units and an emergency care center augmented by a specially equipped and staffed medical helicopter.

Requests for an application and other inquiries should be addressed to the Admissions Department, The University of Chicago Pritzker School of Medicine, 924 E. 57<sup>th</sup> Street, BSLC 104, Chicago, IL 60637. Email: pritzkeradmissions@bsd.uchicago.edu

#### NORTHSHORE UNIVERSITY HEALTH SYSTEM

Headquartered in Evanston, Ill., NorthShore University HealthSystem (NorthShore) is a comprehensive, fully integrated, healthcare delivery system that serves the greater North Shore and northern Illinois communities. The system includes four Hospitals – Evanston Hospital, Glenbrook Hospital, Highland Park Hospital and Skokie Hospital. In addition, the health system has more than 2,400 affiliated physicians, including a 600-physician, multispecialty physician group practice with over 70 office locations - NorthShore University HealthSystem Medical Group. Further, NorthShore is committed to excellence in its academic mission and supports teaching and research as the principal teaching affiliate for the University of Chicago Pritzker School of Medicine.

The NorthShore University HealthSystem Research Institute focuses on clinical and translational research, including leadership in outcomes research and clinical trials.

The HealthSystem has significant capabilities in a wide spectrum of clinical programs, including neurosciences, cancer, heart, orthopaedics, high-risk maternity and pediatrics. NorthShore is a national leader in the implementation

of innovative technologies, including electronic medical records, (EMR). In 2003, the HealthSystem was among the first in the country to successfully launch a system wide EMR with demonstrable benefits in quality, safety and service to patients. NorthShore has been recognized by multiple national organizations for this notable achievement.

### COMBINED MD/PHD PROGRAMS IN THE DIVISION OF THE BIOLOGICAL SCIENCES AND PRITZKER SCHOOL OF MEDICINE

The University of Chicago's Pritzker School of Medicine has an exceptionally rich tradition of interdisciplinary scholarship. Each year, typically 15 to 20 percent of the graduating medical school class also graduates with a PhD. In the spirit of this tradition, The Pritzker School of Medicine offers a wide selection of joint degree programs for individuals interested in the critical interface of medicine, biological sciences, and society.

Students interested in combining clinical and biomedical research can combine their MD training with education toward a PhD in one of the degree granting units (see section on Basic Sciences) within the Biological Sciences Division. The Pritzker School of Medicine is also home to several highly competitive and award winning NIH funded MD/PhD training programs including the Medical Scientist Training Program (MSTP) and the Growth and Development Training Program (GDTP). Students interested in pursuing a PhD degree in the Humanities or Social Sciences can do so as part of a unique MD-PhD program in Medicine, Social Sciences and Humanities (MESH). This program includes the NIH funded MD-PhD program in Medicine, the Social Sciences and Aging. Students may also graduate with additional master degrees in business, law or policy.

### MEDICAL SCIENTIST TRAINING PROGRAM

The University of Chicago Medical Scientist Training Program is a challenging interdisciplinary training program in biomedical sciences which leads to an MD from the Pritzker School of Medicine and to a PhD in the newly-created Interdisciplinary Scientist Training Program (ISTP). Our trainees graduate prepared to assume successful leadership roles in the evolving world of 21st century academic biomedicine. Being one of the earliest programs to obtain federal funding in 1967, the MSTP at the University of Chicago is currently one of the longest running in the country.

The MD is awarded through the Pritzker School of Medicine, one of the top 15 graduate schools in the nation. With the introduction of the Pritzker Initiative in Autumn 2009, students will be educated in smaller classes with more individual attention from faculty, with an emphasis on active learning and scholarship, will be integrated among

disciplines when possible, and in an atmosphere that highlights the relationship between basic and clinical sciences.

For their graduate work, trainees will be part of the ISTP, the degree-granting arm of the MSTP. This program is a novel, adaptable mechanism for students to obtain highly-integrated, interdisciplinary training. Trainees will be part of a flexible PhD program that offers superb educational opportunities and rigorous training in the highly integrated environment of Chicago Biomedicine at The University of Chicago. The ISTP also provides a programmatic identity that fosters a seamless progression of our students through the medical and graduate phases of their training.

The program is designed for students who seek broad careers in biomedical related research and a desire to apply both clinical and research expertise to solve the most pressing problems in medical science. Typically students begin their full-time PhD research after completion of their second year of medical studies and return to medical school after they have successfully defended their PhD thesis. On average, MSTP trainees complete both degrees in 8 years.

### GROWTH AND DEVELOPMENT TRAINING PROGRAM

The Growth and Development Training Program (GDTP) is a unique opportunity available to University of Chicago medical students who decide to pursue an advanced PhD degree after they have started medical school. The program began over 40 years ago and in 2003 received the first NICHD Mentor Award for Excellence in Research Training.

Entry into the program is available for students who have completed two years (occasionally one year) of medical studies. Students wishing to be considered for the program generally acquire relevant laboratory experience, fulfill at least some graduate courses requirements and seek out a research sponsor and graduate degree unit during their first two years of medical studies, in anticipation of their application to the program.

The program is unique in that it offers medical students the opportunity to pursue a Ph.D. degree after they have started medical school. This represents a major opportunity for students at the Pritzker School of Medicine, who frequently become so enthusiastic about research during their first or second year of medical school that they decide to take a leave from medical studies to pursue a Ph.D. degree. A wide variety of Ph.D. degree granting units is available to trainees, most often in the Biological Sciences Division.

Students interested in the program may submit formal applications in the winter quarter of their first or second year of medical studies. When all necessary supporting material, including transcripts and letters of recommendation, is received, the students undergo two formal interviews. Decisions are announced in the spring, with appointment to the grant in July. Demonstrated interest and commitment to basic research, as evidenced by prior experience

and accomplishment, as well as strong academic record, are major criteria for selection.

Trainees in the program receive a maximum of five years of support which generally includes three years of support during the Ph.D. phase and the remainder of the M.D. training (the two clinical years). Financial aid covers full tuition, fees and a stipend supplemented to national competitive levels to support living expenses.

For further information about this program, please visit: <http://pritzker.bsd.uchicago.edu/jointdegrees/gdtp>

### MD-PHD PROGRAM IN MEDICINE, SOCIAL SCIENCES AND HUMANITIES (MESH)

The program is based on the premise that physicians should acquire special competence in another area of scholarship in order to address the overlapping social, economic, scientific, ethical, legal and humanistic problems which medicine as an enterprise, and as a profession, faces today.

Doctoral studies may be pursued in any of the departments within the social sciences (including Anthropology, Economics, History, Philosophy, Political Science, Psychology or Sociology) or humanities, in the Committee on Social Thought or the Conceptual and Historical Studies of Science Division, or the schools of divinity or public policy. Research may also be conducted through the Center for Health and the Social Sciences, the Morris Fishbein Center for the Study of the History and Science of Medicine, or the MacLean Center for Clinical Medical Ethics. Following completion of their doctoral studies, students in the program are expected to return to medical school to resume work toward the M.D. degree.

For further information about this program, please visit: <http://pritzker.bsd.uchicago.edu/jointdegrees/mesh/>

## THE DIVISION OF THE PHYSICAL SCIENCES

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*Dean*

Robert Fefferman

*Associate Dean*

Michael J. Foote

*Dean of Students*

Richard Hefley

The Division of the Physical Sciences includes the Departments of Astronomy & Astrophysics, Chemistry, Computer Science, Geophysical Sciences, Mathematics, Physics, and Statistics. It also includes the Enrico Fermi Institute, the James Franck Institute, and the (interdivisional) Institute for Biophysical Dynamics. Graduate degrees are awarded only by the departments and the Biophysical Sciences program, but students in physical sciences programs often conduct their research under the auspices of the research institutes.

Undergraduate programs in the physical sciences are administered by the College. Detailed descriptions of programs leading to the bachelor's degree may be found in the College's annual publication, Courses and Programs of Study.

### ADMISSION TO GRADUATE PROGRAMS IN THE DIVISION

Applicants for admission to graduate studies in a particular branch of the Physical Sciences should refer to individual department entries for specific admissions requirements.

An applicant who has received a bachelor's degree or the master's degree from an accredited college or university may be admitted on the basis of his or her previous academic record.

An applicant who has completed at least two years of college work with superior standing in the basic courses of a special field and an adequate record of general studies but who does not have a four year bachelor's degree may be admitted to the division to study toward a higher degree. However, failure to qualify for a higher degree leaves the student with no degree. Admission on this basis is recommended only for those with high aptitude for their major field and with not more than two deficiencies in general education covering the areas of English, modern foreign languages, humanities, social science, and biological science.

A person may be admitted as a graduate student at large or as a returning scholar for the purpose of studying a definite subject or subjects for which he or she has an

adequate background. Admission is considered upon the basis of an abbreviated application, such credentials as may be appropriate, and a clearly defined statement of objectives. Application is made to the Graham School of General Studies, Judd Hall, 5835 Kimbark Avenue, Chicago, IL 60637 (see page xx).

### FINANCIAL AID

Most graduate students at the doctoral level in the Division of the Physical Sciences receive some form of financial support. Almost all advanced students engaged in thesis research have research assistantships and receive stipends from the research sponsor's contract or grant. A merit tuition scholarship normally accompanies such assistantships. Since teaching experience is a requirement for the Ph.D. degree in all departments, many students, usually in their first and second years of graduate study, serve as teaching assistants in undergraduate courses offered by their departments. Other forms of support include fellowships provided by the National Science Foundation, the U.S. Department of Education, and various private foundations. The University provides a limited number of special scholarships and fellowships for outstanding students from its own student aid funds and from privately endowed funds.

### DEGREES

Normally students admitted to a degree program are expected to be in continuous, full time residence until the degree has been conferred.

Since individual departmental degree requirements may change, students should always contact their department for current degree requirements and regulations.

#### MASTER OF SCIENCE

Each department offers a Master of Science program; however, most students enter graduate study with the objective of obtaining a Ph.D. degree.

There are, however, several special masters programs in the division for students who want to specialize in specific areas in the physical sciences without getting a Ph.D. The Department of Mathematics offers a program, Master of Science in Financial Math, which focuses on mathematics in finance (see page xx). The Department of Computer Science offers a professional master's program to students who seek employment in the computer industry (see page xx). The interdisciplinary master's program in the Physical Sciences is aimed at students who wish to broaden or deepen their knowledge of a specific area in the physical sciences (see page xx). Finally, the Division, together with the Harris School, offers a Masters degree in Environmental Science and Policy (see page xx).

Master of Science students are required to register full time in the division for a minimum of three quarters, during which time they must satisfactorily complete a minimum of nine individual courses.

### DOCTOR OF PHILOSOPHY

The degree of Doctor of Philosophy is conferred in recognition of high accomplishment and ability in the candidate's chosen field. It is understood that the completion of a specified number of courses and a given period of residence do not ensure the granting of this degree. The requirements for the degree of Doctor of Philosophy are as follows:

1. Completion of the University's residence requirements.
2. Admission to candidacy for the degree. Admission to advanced work in the division does not necessarily imply admission to candidacy for a degree, which is contingent upon the recommendation of the department in which the student is working. At the appropriate time departments will submit to the dean of students in the division, on behalf of each student, an application requesting approval of admission to candidacy. Approval of the application certifies that (1) the candidate has begun investigation for a dissertation; (2) the candidate's department recommends admission to candidacy (following satisfactory completion of individual examination requirements); and (3) the candidate has satisfied any foreign language requirement of his or her department.
3. The passing of final examination(s) in accordance with one of the following plans: (1) a basic examination in the major fields of interest in the department or departments of specialization and a final oral examination in the field covered by the dissertation, or (2) in the absence of a preliminary or basic examination, passing comprehensive examinations covering major fields of interest in the department of specialization, including the field of the dissertation.
4. Acceptance by the department and the Dissertation Office of a dissertation submitted for the degree.

## DIVISIONAL MASTER'S PROGRAM IN THE PHYSICAL SCIENCES

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### *Director*

Jonathan L. Rosner

The Division of the Physical Sciences offers a one year program leading to the degree of Master of Science in Physical Sciences. The program is interdisciplinary in character with a focus on general education. It will be of interest to those who wish to broaden or deepen their knowledge in areas of physical science but do not seek a Ph.D., and also to those who are undecided about seeking a Ph.D. degree or what area of research specialization to choose. In addition, it should be of interest to students who plan to obtain a Ph.D., but wish to strengthen their background in their chosen area of specialization before starting a Ph.D. program.

Students in the program are required to complete nine courses and a master's research project. The courses are chosen from among the courses being offered in the division, and at least four of these courses must be graduate courses in a single department or associated with a specified interdepartmental track (such as environmental science, biochemistry/physics, computational methods in physical science, and optics/imaging). In order to accommodate students who are seeking to broaden their knowledge of physical science, a student may be allowed to take as many as three advanced undergraduate courses in fields outside of his or her undergraduate major. In all cases, the director and the student's advisor must approve the chosen curriculum.

A typical masters project would consist of performing or assisting with a laboratory research experiment (for experimentalists) or performing some numerical simulation experiments (for theorists). The project normally is chosen in the winter quarter and carried out during the spring quarter. A masters paper summarizing the results of the project is required.

### ADMISSION

A student seeking admission to the program normally must have a bachelor's degree in a traditional discipline of the physical sciences. GRE scores for the general test (verbal, quantitative, and analytical) must be submitted, and it is strongly recommended that the GRE subject score in an area of physical science also be submitted. TOEFL scores are required for applicants from foreign (non English speaking) countries. The application deadline is February 1 for admission for the following autumn, although later applications will be considered on a space available basis.

Interested persons should contact the Office of the Dean of Students in the Division of the Physical Sciences, Room 116, Jones Laboratory, 5747 South Ellis Avenue, Chicago, IL 60637, telephone: (773) 702-8789, e mail: rhesley@uchicago.edu.

## DEPARTMENT OF ASTRONOMY AND ASTROPHYSICS

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### *Chair*

Edward "Rocky" Kolb

### *Professors*

John Carlstrom

Kyle Cudworth

Joshua A. Frieman

Doyal A. Harper, Jr.

Stephen Kent

Edward Kibblewhite

Alexei Khokhlov

Edward W. Kolb

Arieh Königl

Richard G. Kron

Donald Q. Lamb, Jr.

Stephan Meyer

Angela Olinto

Patrick E. Palmer

Robert Rosner

Simon P. Swordy, Physics

James W. Truran, Jr.

Michael Turner

Donald G. York

### *Associate Professors*

Fausto Cattaneo

Scott Dodelson

Nickolay Y. Gnedin

Wayne Hu

Andrey Kravtsov

### *Assistant Professors*

Hsiao-Wen Chen

Michael Gladders

Clement Pryke

### *Emeritus Faculty*

James W. Cronin

Roger Hildebrand

Richard H. Miller

Takeshi Oka, Chemistry

Eugene Parker

Noel M. Swerdlow

Peter O. Vandervoort

The Department of Astronomy & Astrophysics awards the Ph.D. degree, and carries on programs of research and graduate instruction on the quadrangles of the University; at Adler Planetarium, Chicago; at Apache Point Observatory, Sunspot, New Mexico; and at the Yerkes Observatory, Williams Bay, Wisconsin.

## ADMISSION

Students seeking admission to the department for graduate study should have the training in physics and mathematics that is represented by the conventional bachelor's degree. Candidates for admission should request an admissions packet from the director of admissions. Applicants must submit recent scores on the Graduate Record Examination Aptitude and Advanced Physics tests.

## PROGRAM OF STUDY

The program leading to the Ph.D. degree in Astronomy & Astrophysics has four parts: a program of eighteen required and elective courses, a research project, the candidacy examination, and research leading to a dissertation. The program and the requirements for graduate degrees are summarized below. A more detailed description of the program and the degree requirements can be obtained from the Director of Admissions, 5640 South Ellis Avenue, Chicago, IL 60637. This additional information is also available on line at <http://astro.uchicago.edu/academics/prospective.html>. Students may apply online at <https://grad-application.uchicago.edu/intro/ast/intro1.cfm>, or request application forms at <http://astro.uchicago.edu/academics/request.html>.

During the first academic year, students normally take the course sequence Astronomy 30100-30700; and either Physics 33000 (Mathematical Methods of Physics) and Physics 32200 (Advanced Electrodynamics and Optics); or Physics 34100 and 34200 (Quantum Mechanics); or Chemistry 36100 and 36200 (Quantum Mechanics). These basic courses provide the foundation for subsequent study. Students with unusually strong preparation may be excused from one or more of these courses. During the summer quarter following the first academic year students undertake a research project. This project may be carried out on the University campus, in one of the laboratories or observatories of the University, at a national laboratory or national observatory, or in another suitable research facility. Students enroll in Astronomy 30700 during spring quarter of their first year as they prepare for this project, and in Astronomy 30900 in fall quarter of their second year to present a seminar reporting on the project.

At the beginning of the second academic year, students take the Ph.D. candidacy examination. After passing the examination, they begin research leading to the doctoral dissertation under the direction of a faculty member. During the second and subsequent years of graduate study, students take Astronomy 30900, and at least seven elective courses. Four of the electives must normally be chosen from among a list that includes the upper 3x level courses in Astronomy as well as several appropriate Physics courses. The remaining electives typically are 3x level or 4x level courses in Astronomy & Astrophysics. With the approval of the dissertation committee, other graduate level lecture

courses in the Division of the Physical Sciences may be substituted for some of the elective courses described above. The selection of topics in the advanced 4x level courses and the times at which they are offered are governed by the interests of the faculty and students. Participation in research is an important part of the graduate program. In a 3x level research course, (Astronomy 37100) students work closely with members of the faculty on problems of current research. The research courses at the 4x level involve independent research, including research leading to the doctoral dissertation.

During the academic year, the department offers a weekly colloquium series dealing with current research in astronomy, astrophysics, and related fields. These colloquia are given by visiting scientists as well as members of the faculty. A number of other seminars on specialized topics in astrophysics are held each week throughout the year, including a weekly series of lectures by the faculty on their research programs.

#### THE DEGREE OF DOCTOR OF PHILOSOPHY

Students who enter the department intending to proceed toward the degree of Doctor of Philosophy are normally required to complete the 3x level program of lecture courses described above. With the approval of the student's dissertation committee, modifications of this requirement may be made. Students are expected to maintain a grade point average of at least 3.0 in their course work.

At the end of the first year, after completing the basic 3x level program, students who wish to begin research for the degree of Doctor of Philosophy must pass both the written and oral portions of the candidacy examination, which includes the subject matter of the basic 3x level astronomy courses and the required physics courses. The candidacy examination is offered at the beginning of the autumn quarter. A student whose performance on this examination does not merit continuation in the program may retake the examination once. Ordinarily, students who do not proceed toward the Ph.D. are given the opportunity to complete the master's degree. Graduate students who are permitted to proceed toward the degree of Doctor of Philosophy may elect to receive an incidental Master of Science degree after having passed the candidacy exam.

The requirements for the degree of Doctor of Philosophy include the divisional requirements. In particular, a student who is permitted to begin research for the dissertation based on a satisfactory performance on the candidacy examination must still formally establish candidacy for the degree according to divisional requirements. A degree candidate must fulfill a two quarter teaching requirement, which is explained in detail in the departmental graduate program document. A candidate for the degree must submit a dissertation acceptable to the department and pass a final oral examination on the dissertation. The Ph.D. degree is awarded only after the dissertation or a paper based on the

dissertation is submitted for publication in a recognized scientific journal. Demonstration of proficiency in a foreign language is not required.

#### FACILITIES FOR RESEARCH

A student may perform the research for the doctoral dissertation on the quadrangles of the University or at the Yerkes Observatory. A student working at either location has access to the complete facilities of the department.

Moreover, there exist in the other departments and in the institutes of the Division of the Physical Sciences a variety of research programs which bear on modern astrophysics. Contact with persons working in these programs is possible and is encouraged. In fact, students research programs may be carried out under the direction of faculty members in these departments and institutes.

Computing resources for the department include a multiprocessor SUN SPARC server, networked printers, and a multitude of workstations and PCs, with Ethernet and LocalTalk (AppleTalk) connections in every room. This equipment is linked via ethernet with the computation facilities of the Division of the Physical Sciences, which include SUN and SGI servers, and a high speed line links them to the super computer facilities of the National Center for Supercomputer Applications at the University of Illinois at Urbana and of the Argonne National Laboratory (operated by the University of Chicago). These resources form a powerful facility for computational astrophysics.

The principal instruments at the Yerkes Observatory are the 40 inch refracting telescope and the 41 inch and 24 inch reflecting telescopes, all of which are used for both instrument testing and research. The department's adaptive optics group has actively used the 41 inch reflector, and the astrometric program uses the refractor extensively. The Yerkes Observatory also houses an excellent library as well as engineering facilities and shops that are heavily used in developing instrumentation for the department's wide ranging activities.

The University of Chicago is a member of the Astrophysical Research Consortium, a consortium of several universities that has built and operates a 3.5 meter new technology telescope on Sacramento Peak in Sunspot, New Mexico. This remotely operated facility was designed to permit rapid changes in instrumentation and in observing mode.

The University is also a key partner in the Sloan Digital Sky Survey (SDSS). The SDSS is a project for which a 2.5 meter new technology telescope is mapping the Northern Galactic sky cap with five band photometry and obtaining redshifts of approximately one million galaxies and one hundred thousand QSOs.

By arrangement, facilities of the Argonne National Laboratory may be used by students in the department. These include unique facilities for experimental nuclear

astrophysics, and a computation center equipped with vector and parallel processing computers.

Students also may take advantage of the resources of the Fermi National Accelerator Laboratory (Fermilab) in Batavia, Illinois, including the computational facilities, through its Institute for Cosmology and Particle Physics, funded by the National Aeronautics and Space Administration, or through the program in Experimental Astrophysics.

In recent years, some students have also used national facilities such as the National Radio Astronomy Observatory, the National Optical Astronomy Observatories, and the NASA Ames Research Center.

### *Courses*

#### 30100. Astrophysics I

Introduction to stars (physical and observational), hydrodynamics of self gravitating fluids, statistical mechanics and equations of state, energy transport, astrophysical nuclear reactions, stellar models, advanced topics.

#### 30200. Astrophysics II

Star formation, main sequence evolution, post main sequence evolution, degenerate stars, and supernovae.

#### 30300. Astrophysics III

Interstellar medium, collisionless systems, distribution of stars in the solar neighborhood, stellar kinematics/dynamics, observations of galactic large scale structure, theory of galactic structure and evolution.

#### 30400. Astrophysics IV

The observed universe, the universe at high redshift, early universe microwave background radiation, relativistic homogeneous isotropic cosmologies, evolution of structure in the universe, primordial nucleosynthesis.

#### 30500. Radiative Processes in Astrophysics

Fundamentals of radiative transfer, theory of stellar atmospheres, basic theory of radiation fields, continuum emission processes, atomic and molecular emission, plasma effects.

#### 30600. Radiation Measurements in Astrophysics

Radiation as a random process, optical coherence, and signal analysis in spatial and temporal domains, along with the detection and measurement of radiation with astronomical instruments.

#### 30700. Preparation for Summer Research Project

Students work with faculty members to select their research project topic and study the published literature related to it.

#### 30800. Summer Research Project

Research project pursued during the summer between a student's first and second years of graduate school.

#### 30900. Research Project Seminar

Students present a seminar series based on their summer research projects.

#### 31300. Extragalactic Studies

Interpretation of observations of galaxies, quasars, and intergalactic material. The structure of selected individual objects is discussed as well as the contents of the universe as a whole. (Offered biannually.)

#### 31500. Dynamics I (Fluids)

Principles of hydrodynamics and hydromagnetics. Equilibrium and stability of fluid systems in astrophysics. Waves. Shocks. Turbulence. (Offered biannually.)

#### 31600. Dynamics II (Particle Systems)

Dynamics of collisionless plasmas and stellar systems. Stochastic processes and kinetic equations. Dynamics of galaxies and star clusters. Astrophysical plasmas. (Offered biannually.)

#### 32000. Relativistic Astrophysics

Special and General relativity and the experimental tests, with applications to astrophysical problems such as super massive stars, black holes, relativistic star clusters, and gravitational radiation. (Offered biannually.)

#### 32100. Cosmology

Study of physical cosmology with emphasis on the standard big bang model and its observational and experimental tests. (Offered biannually.)

#### 33000. Computational Astrophysics

Basic computational methods useful for astrophysics, supplemented by specific examples drawn primarily from astrophysics. Starting with basics (e.g., precision, errors and error analysis) and basic computational methods (differentiation, integration/quadrature, Monte Carlo, numerical linear algebra), and then discussing solution of problems posed in terms of ordinary and partial differential equations.

#### 34000. Statistical Methods in Astrophysics

An exploration of the variety of statistical methods used in modern astrophysics. (Offered biannually.)

#### 36100. Interstellar Matter

Physics of the Interstellar Gas. Emission nebulae. H I regions. Interstellar grains and molecules. Cosmic rays and the inter stellar magnetic field. (Offered biannually.)

#### 37100. Pre Candidacy Research

#### 37200. Readings in Astronomy and Astrophysics

#### 38100. General History of Astrophysics

38x00. Topics in History of Astronomy (numbers vary within the 38000 series)

#### 38800. Galileo's Astronomy and Conflicts with the Church

#### 39900. Reading/Research in Astronomy

Courses numbered 40000 to 48000 are lecture or seminar courses taught from time to time in specialized or advanced topics in fields in which members of the department are working. Admission to any of these is by permission of the instructor. Typical courses include:

41300. Topics in Stellar Astronomy  
 41400. Advanced Stellar Dynamics  
 41500. Astrophysical Jets  
 42200. Early Universe Cosmology  
 42700. Atomic Structure and Spectra  
 43000. Plasma Astrophysics  
 43300. Accretion Disks  
 44200. Topics in Astrophysical Fluid Dynamics  
 45100. High Resolution Imaging  
 45200. Primer on the SDSS  
 47100. Evolution of Galaxies  
 47200. Star Clusters  
 47300. Distant Galaxies  
 49400. Postcandidacy Research in Astrophysics

## GRADUATE PROGRAM IN BIOPHYSICAL SCIENCES

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### *Chair*

Tobin R. Sosnick

### *Web Site*

<http://biophysics.uchicago.edu>

The Graduate Program in Biophysical Sciences is designed to transcend traditional departmental boundaries for the purpose of training scientists who will excel at addressing biological problems using quantitative and physical approaches. The program, which grants a Ph.D. degree from both the Biological and Physical Science Divisions, serves the needs of students who have strong backgrounds in the physical sciences and are intrigued by the interface of the physical, biological and computational sciences. Dual mentorship is a fundamental component of the program. Each student chooses a pair of dissertation advisors from across our diverse faculty and fully participates in both of these research groups.

The participating faculty in the program are drawn from The Physical and The Biological Sciences Divisions, and Argonne National Laboratory and hold appointments in:

### DEPARTMENTS & COMMITTEES

Ben May Dept. for Cancer Research  
 Biochemistry & Molecular Biology  
 Cancer Biology  
 Cell & Molecular Biology  
 Cell Physiology  
 Chemistry  
 Computational Neuroscience  
 Computer Sciences  
 Developmental Biology  
 Genetics, Genomics & Systems Biology  
 Immunology  
 Mathematics  
 Microbiology  
 Neurobiology  
 Pathology  
 Pediatrics  
 Physics

### INSTITUTES & CENTERS

Inst. for Biophysical Dynamics  
 Computation Institute  
 Inst. for Genomics & Systems Biology  
 James Franck Institute  
 Center for Adv. Radiation Sources  
 Materials Research Science & Engineering Center  
 Office of Shared Research Facilities

## CURRICULUM

The curriculum assumes that entering students are well-grounded in the physical sciences. During the first year, students are expected to take one class per quarter from both the Biological Sciences Division and the Physical Sciences Division (6 courses total). The Biological Organization Series consists of courses chosen to rapidly teach the fundamental biology necessary to enter a laboratory and begin serious interdisciplinary research. To build upon students' strengths in the physical sciences, the first year includes three courses chosen from a list of graduate courses offered in Chemistry or Physics. The curriculum can be modified to fit the strengths and weaknesses in a student's background.

Students undertake a series of laboratory rotations as part of the process of identifying a dissertation topic. These rotations are usually performed during the Summer Quarter after the first academic year.

## INTERDISCIPLINARY PRACTICAL TRAINING

One of the unique advantages of the program is the 3 quarter laboratory course: From Production to Measurement and Analysis. In this intense, 16 hour a week course students deeply explore a series of important current instruments and techniques while carrying out the systematic characterization of several genes and their expressed proteins. The genes are chosen from the long list of 'unknown ORFs - Open reading frames that have been predicted by genome sequencing projects, but have never been examined further.

The laboratory course is managed by a full-time course director who works closely with the students to provide experimental and intellectual continuity. The laboratory course covers (1) sample preparation and high throughput selection methods (e.g. engineering, expression, synthesis, and labeling of proteins and nucleic acids) and high throughput selection methods (phage display, in vitro selection); (2) measurement (spectroscopy and imaging including single molecule methods, NMR, x-ray diffraction, and mass spectrometry, etc.); and (3) computational approaches (extracting information from large data sets, bioinformatics, simulation and modeling). Although it is impossible to cover all biophysical methods, the process of mastering a subset of the important techniques gives students the confidence and foundation to build in any direction.

The first section of this course is the four-week Biological Research Immersion, which starts in late August and ends before the start of Fall Quarter. The course continues through the Autumn and Winter Quarters.

The program in Biophysical Sciences is an inherently collaborative training program, and the foundation of collaboration is the ability to coherently express complex ideas.

As part of the laboratory course, students are expected to give frequent presentations, both oral and written: Analysis of recent papers, background preparation before research seminars, overviews of upcoming experimental techniques, experimental proposals, and presentations of results. As a group, students also participate in two large projects during the year - building an advanced optical instrument from basic components, and writing a software package to simulate a biological process.

## DUAL MENTORSHIP

In order to truly bridge the expertise and approach of two scientific fields it is necessary to fully participate in both. The research program each professor maintains is a vibrant and dedicated research group whose members share in the daily successes and frustrations of their related questions. It is this shared intellectual exertion that moves a subject forward, and it is this environment that most efficiently teaches the deepest understanding. In our experience, this dual mentorship creates an unparalleled learning structure and will lead to the development of unimagined science.

For a list of trainers and their affiliations, details about admissions, and current information about this new and innovative program, see <http://biophysics.uchicago.edu>

## DEPARTMENT OF CHEMISTRY

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### *Chair*

Richard F. Jordan

### *Professors*

Laurie Jeanne Butler

Karl F. Freed

Philippe M. Guyot Sionnest

Robert Haselkorn,

Molecular Genetics & Cell Biology

Gregory Hillhouse

Michael D. Hopkins

Rustem F. Ismagilov

Richard F. Jordan

Stephen Kent, Biochemistry & Molecular Biology

Ka Yee Christina Lee

Donald H. Levy

Milan Mrksich

Viresh Rawal

Norbert F. Scherer

Steven J. Sibener

Hisashi Yamamoto

Luping Yu

### *Associate Professors*

Aaron Dinner

Chuan He

Sergey A. Kozmin

David Mazziotti

Joseph A. Piccirilli, Biochemistry & Molecular Biology

### *Assistant Professors*

Gregory Engel

Dmitri Talapin

Jun Yin

### *Emeritus Faculty*

R. Stephen Berry

Brice Bosnich

Robert N. Clayton,

Geophysical Sciences

Philip E. Eaton

Robert Gomer

Jack Halpern

John C. Light

James R. Norris, Jr.

Takeshi Oka

Stuart A. Rice

The Ph.D. program in the Department of Chemistry offers wide opportunity and unusual flexibility for advanced study and research, and is designed to encourage individuality, independence, and excellence in students. Most students select their research advisor by winter quarter of

their first year and are engaged in research by the spring quarter. The department has neither a system of cumulative examinations nor a written major examination. There are relatively few course requirements and great flexibility as to which courses may be taken.

In the Division of the Physical Sciences barriers between departments are low. Students in the Department of Chemistry often take courses in other departments and can even earn the degree in chemistry for research that has been done under the supervision of a member of another department. Students are encouraged to fashion special programs of study under the guidance of the faculty.

### APPLICATION

A completed application will include undergraduate transcripts, three letters of recommendation, and the results of the GRE examination (to include the advanced test in chemistry). Foreign applicants must also submit the results of the TOEFL or IELTS.

Students are normally admitted beginning with the autumn quarter of each year. The sequential nature of some of our courses makes this the best time to begin graduate studies. Although applications may be considered at any time at the discretion of the admissions committee, students are strongly encouraged to complete their applications by December 31st. The department has no admissions quota and in recent years the entering class has numbered between 20 and 38.

A well defined Master of Science program of appropriate rigor is maintained, but the Department of Chemistry does not offer financial support to students whose degree goal is the master's degree. This degree is neither a prerequisite for, nor a forerunner of, the Ph.D. degree, although it may be acquired along the way if a student so desires.

The Department of Chemistry participates actively in the Medical Scientist Training Program (MSTP) administered by the Pritzker School of Medicine at the University of Chicago. MSTP is a structured six year program leading to both the M.D. degree and the Ph.D. in chemistry. Full tuition and a stipend are awarded for the six year period. MSTP is funded by the National Institute of General Medical Sciences and is open only to U.S. citizens.

### FINANCIAL SUPPORT

All students admitted to the Ph.D. program are offered financial support. Generally this takes the form of a first year teaching assistantship which provides a complete merit tuition scholarship and pays a competitive monthly stipend. Teaching assistants are usually assigned to one of the undergraduate laboratory courses. Duties involve supervising one class section (13-18 students) for one afternoon per week, holding a discussion session and office hours, and assisting with grading. The total time required is about fifteen hours per week.

By the end of the third quarter students have usually selected their research supervisor. An appointment as a research assistant (stipend plus tuition) normally continues throughout the period of research.

There are several special supplemental fellowships and scholarships offered by the department and the University. All students seeking admission are automatically considered in the competition for these awards. No separate application is required. Students are urged to compete for the many national and other external fellowships available.

### ADVANCED DEGREES

The department administers basic examinations in the fields of inorganic, organic, and physical chemistry in the autumn, winter, and spring quarters. Graduate students are expected to take these examinations upon entering the department. Deficiencies evidenced by these examinations must be remedied and the examinations passed prior to the end of the third quarter of residence (not counting summer quarter).

In the first year, students must satisfactorily complete nine courses. At least six of these must be 30000 level courses from the offerings of the Department of Chemistry or of related departments in the Divisions of the Physical and the Biological Sciences, and of these six courses, at least two shall be in different areas of chemistry, e.g., inorganic, organic, or physical chemistry. For this purpose, inorganic chemistry courses are defined as Chemistry 30100- 31100, organic chemistry courses as Chemistry 32100- 33400, and physical chemistry courses as Chemistry 36100-38700. Grades of C or better are expected. The remaining three courses may include Chemistry 35000 and/or 40000 level chemistry research courses; however, one may not register for these courses during the autumn quarter. An advisor assists students in formulating programs of study that will best satisfy personal needs and departmental requirements. Courses taken outside the department to satisfy the first year requirements must be approved by the advisor.

Students who have completed all courses with grades of C or better (P in research courses) may be recommended for the S.M. degree; these students may, at the discretion of a faculty member, be required to submit a paper on their work in Chemistry 35000 or a 40000 level research course.

At the end of the spring quarter in the first year, the faculty review the student's overall record. Course performance is a major part of this review; a B average or better in all 30000 level courses (excluding Chemistry 35000) is expected. At this time the department will advise students whether they are qualified to continue studies and to prepare for the Ph.D. candidacy examination described below. A student seeking admission to Ph.D. candidacy must take the candidacy examination before the end of his or her fifth quarter in residence (normally October for this purpose summer quarter is counted as a quarter

in residence). This examination is based on the student's written research prospectus and on the discussion of scientific papers selected by the examining committee. The student presents the research prospectus to the committee, and must be prepared to discuss the relevant chemical literature, progress to date, plans for future work, and the relationship of the research to other chemical problems. The student is expected to conduct a critical analysis of the scientific papers selected by the committee.

The faculty review the recommendations of the candidacy examining committee and, after consideration of the student's academic record, vote on whether or not to recommend that the student be admitted to candidacy. All candidates for the Ph.D. degree are required to participate in some form of teaching. Normally this involves serving as a teaching assistant for three quarters.

The Ph.D. degree is granted upon satisfactory completion of scholarly research work, presented in a written thesis, discussed in a public seminar, and defended orally before a faculty committee.

Students should especially note the following:

1. It is the responsibility of the individual research sponsor to monitor the progress of a student's research. Unsatisfactory progress may result in termination of financial support and/or dismissal from the Ph.D. program.
2. The department will recommend formal admission to candidacy as soon as the student has (1) satisfied the basic examination requirement, (2) satisfied the course requirements, (3) passed the candidacy examination, and (4) demonstrated satisfactory progress in research and teaching.
3. Students should consider satisfying any or all course requirements by taking proficiency examinations. Application to take a proficiency examination should be made directly to the person who will be teaching the particular course. The examinations will be administered during the first week of the quarter in which the course is offered. No stigma is attached to failing a proficiency examination.

### *Courses*

#### 30100. Advanced Inorganic Chemistry

Group Theory and its applications in inorganic chemistry are developed. These concepts are used in surveying the chemistry of inorganic compounds from the standpoint of quantum chemistry, chemical bonding principles, and the relationship between structure and reactivity.

#### 30200. Synthesis and Physical Methods in Inorganic Chemistry

This course covers theoretical and practical aspects of important physical methods for the characterization of inorganic molecules. Topics may include NMR, IR, RAMAN,

EPR, and electronic and photoelectron spectroscopy; electrochemical methods; and single crystal X ray diffraction.

#### 30400. Organometallic Chemistry

The preparation and properties of organometallic compounds, notably those of the transition elements, their reactions, and the concepts of homogeneous catalysis are discussed.

#### 30500. Nanoscale Materials

This course will provide an overview of nanoscale phenomena in metals, semiconductors and magnetic materials. It will cover the fundamental aspects of quantum confinement in semiconductors and metals, superparamagnetism in nanoscale magnets, electronic properties of nanowires and carbon nanotubes, surface plasmon resonances in nanomaterials, photonic crystals, etc. Special attention will be paid to preparative aspects of nanomaterials, colloidal and gas-phase syntheses of nanoparticles, nanowires and nanotubes. Engineered nanomaterials and their assemblies are considered promising candidates for a variety of applications, from solar cells, electronic circuits, light-emitting devices and data storage to catalysts, biological tags, cancer treatments and drug delivery. The course will cover state of the art in these and other areas. Finally, the course will provide an overview of the experimental techniques used for structural characterization of inorganic nanomaterials: electron microscopy, X-ray diffractometry, small-angle X-ray scattering, STM, AFM, Raman spectroscopy, etc.

#### 30600. Chemistry of the Elements

The descriptive chemistries of the main group elements and the transition metals are surveyed from a synthetic perspective, and reaction chemistry of inorganic molecules is systematically developed.

#### 30900. Bioinorganic Chemistry

This course focuses on the various roles of metals in biology. Topics include coordination chemistry of bioinorganic units, substrate binding and activation, electron transfer proteins, atom and group transfer chemistry, metal homeostasis, ion channels, metals in medicine, and model systems.

#### 31100. Supramolecular Chemistry

This course develops the concepts of supramolecular chemistry (both organic and metal based systems) and its applications. Coordination chemistry is introduced as a background to metal based supramolecular systems. The chemistry and physical properties of transition metal complexes are presented, including crystal field theory, molecular orbital theory, magnetism, and electronic spectra. The mechanisms by which molecular motors operate are presented and reference is made to synthetic systems that attempt to emulate biological molecular motors.

#### 32100. Physical Organic Chemistry I

Focuses on the quantitative aspects of structure and reactivity: molecular orbital theory and the insight it provides into structures and properties of molecules, stereochemistry, thermo chemistry, kinetics, substituent and isotope effects, and pericyclic reactions.

#### 32200. Organic Synthesis and Structure

Close consideration of the mechanism, applicability and limitations of the major reactions in organic synthesis, and of stereochemical control in synthesis.

#### 32300. Tactics of Organic Synthesis

Dissection of the most important syntheses of complex natural and unnatural products. Synthesis planning and methodology. The logic of synthesis.

#### 32400. Physical Organic Chemistry II

Topics include the mechanisms and fundamental theories of free radicals and related free radical reactions, biradical and carbene chemistry, and pericyclic and photochemical reactions.

#### 32500. Bioorganic Chemistry

Relates chemical phenomena with biological activities. Covers two main areas: (1) chemical modifications of biological macromolecules and their potential effects, and (2) the application of spectroscopic methods to elucidate the structure and dynamics of biologically relevant molecules.

#### 32900. Polymer Chemistry

This course introduces a broad range of polymerization reactions and discusses their mechanism and kinetics. New concepts of polymerization and new materials of current interest are introduced and discussed. We also discuss the physical properties of polymers, ranging from thermal properties to electrical and optical properties in both a solution state and a solid state. Our emphasis is on structure/property relationship.

#### 33000. Complex Chemical Systems

This course describes chemical systems in which nonlinear kinetics lead to unexpected (emergent) behavior of the system. Autocatalytic and spatiotemporal pattern forming systems are covered, and their importance in the development and function of living systems are discussed.

#### 33100. New Synthetic Reactions and Catalysts

This course presents recent highlights of new synthetic reactions and catalysts for efficient organic synthesis. Mechanistic details as well as future possibilities will be discussed.

#### 33200. Chemical Biology I

This course emphasizes the concepts of physical organic chemistry (e.g., mechanism, molecular orbital theory, thermodynamics, kinetics) in a survey of modern research topics in chemical biology. Topics, which are taken from recent literature, include the roles of proteins in signal transduction pathways, the biosynthesis of natural products, strate-

gies to engineer cells with novel functions, the role of spatial and temporal inhomogeneities in cell function, and organic synthesis and protein engineering for the development of molecular tools to characterize cellular activities.

#### 33300. Chemistry Biology II

This course emphasizes the concepts of physical organic chemistry (e.g., mechanism, molecular orbital theory, thermodynamics, kinetics) in a survey of modern research topics in chemical biology. Topics, which are taken from recent literature, include the roles of proteins in signal transduction pathways, the biosynthesis of natural products, strategies to engineer cells with novel functions, the role of spatial and temporal inhomogeneities in cell function, and organic synthesis and protein engineering for the development of molecular tools to characterize cellular activities.

#### 33400. High-Throughput Synthesis and Screening

The course focuses on discovery of reactions, bioactive compounds, and materials by construction of chemical libraries and screening them for desired properties.

#### 35000. Introduction to Research

Individual laboratory or theoretical work under the supervision of a staff member. The student must make arrangements with a staff member, who will assign and supervise the work.

#### 36100. Wave Mechanics and Spectroscopy

The introductory concepts, general principles, and applications of wave mechanics to spectroscopy are presented. The course includes introductory quantum mechanics at the graduate level.

#### 36200. Quantum Mechanics

A formal development of quantum mechanics, including operators, matrix mechanics, and perturbation methods. The theory is applied to the description of the electronic structure of atoms and molecules.

#### 36300. Statistical Thermodynamics.

This course covers the thermodynamics and introductory statistical mechanics of systems at equilibrium.

#### 36400. Advanced Statistical Mechanics

Topics may include statistics of quantum mechanical systems, weakly and strongly interacting classical systems, phase-transitions and critical phenomena, systems out of equilibrium, and polymers.

#### 36500. Chemical Dynamics

Develops a molecular level description of chemical kinetics, reaction dynamics, and energy transfer in both gases and liquids. Topics include potential energy surfaces, collision dynamics and scattering theory, reaction rate theory, collisional and radiationless energy transfer, molecule surface interactions, Brownian motion, time correlation functions, and computer simulations.

#### 36800. Advanced Computational Chemistry

The theme for this course is the identification of scientific goals that computation can assist in achieving. The course is organized around the examination of exemplary problems, such as understanding the electronic structure and bonding in molecules and interpreting the structure and thermodynamic properties of liquids. The lectures deal with aspects of numerical analysis and with the theoretical background relevant to calculations of geometric and electronic structure of molecules, molecular mechanics, molecular dynamics, and Monte Carlo simulations. The lab consists of computational problems drawn from a broad range of chemical and biological interests.

#### 36900. Materials Chemistry

This course covers structural aspects of colloidal systems, surfactants, polymers, diblock copolymers, and self assembled monolayers. We also cover the electronic properties associated with organic conducting polymers, organic light emitting devices, and transistors. More novel topics of molecular electronics, nanotubes, quantum dots, and magnetic systems are also covered. The aim of the course is to provide a broad perspective of the various contributions of chemistry to the development of functional materials.

#### 37100. Advanced Spectroscopies

This linear and nonlinear spectroscopy course includes notions on matter-radiation interaction, absorption, scattering, and oscillator strength. They are applied mostly with the optical range, but we briefly touch upon microwave (NMR, ESR) and X-rays at the extreme. We cover nonlinear optical processes such as coherent Raman, harmonic, and sum-frequency; induced transparency; slow light; and X-ray generation. We also cover coherent and incoherent dynamical probes, such as pump-probe, echos, and two-dimensional spectroscopy.

#### 37200. Statistical Mechanics of Polymers/Glasses

The course material is designed to describe the basic statistical mechanics of polymers in dilute and semi-dilute solutions, including the use of path integrals and renormalization group methods. Lattice models are used to describe polymer melts and blends, focusing on miscibility and the descent into glass formation.

#### 38700. Biophysical Chemistry

This course develops a physicochemical description of biological systems. Topics include macromolecules, fluid phase lipid bilayer structures in aqueous solution, biomembrane mechanics, control of biomolecular assembly, and computer simulations of biomolecular systems.

#### 40000. Research in Related Departments and Institutes

Programs must be approved in advance by both the chair of the Department of Chemistry and the chief executive officer of the department or institute in which the research is to be done.

**4xx00. Research**

A specific 40000 number is assigned to each member of the faculty. Students doing research with a specific faculty member will normally register for the specific assigned course number.

## DEPARTMENT OF COMPUTER SCIENCE

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*Chair**Professors*

Yali Amit, Statistics  
 Laszlo Babai  
 Todd Dupont  
 Ian Foster  
 John Goldsmith, Linguistics  
 Stuart A. Kurtz  
 David B. MacQueen  
 Ketan Mulmuley  
 Partha Niyogi  
 Michael J. O'Donnell  
 John Reppy  
 L. Ridgway Scott  
 Janos Simon  
 Robert I. Soare  
 Rick L. Stevens

*Associate Professors*

Pedro Felzenszwalb  
 Anne Rogers

*Assistant Professors*

Nina Hinrichs  
 Gordon Kindlmann

*Adjunct faculty*

Mark Shacklette (adjunct professor)  
 Andrew R Siegel (adjunct professor)  
 Geraldine Brady (adjunct assistant professor)

The Department of Computer Science is dedicated to advancing and improving the knowledge, understanding, and practice of computer science through basic research and education.

### RESEARCH

We construe the field of computer science broadly, to include the complementary concepts of computation, information, and communication. We employ modes of inquiry and creation from pure mathematics to experiment and observation to design and engineering. We investigate computation, information, and communication as inherently interesting phenomena; we also investigate the many ways in which computational concepts engage other topics: artificial computational tools for science and scholarship, computational infrastructure for society.

Our current research may be classified into artificial intelligence, computational mathematics, programming

systems, networks and distributed systems, scientific computing, and theoretical computer science.

*Artificial intelligence.* We use language, vision, and learning as the organizing themes driving work in artificial intelligence.

*Computational mathematics, scientific computing;* mathematical, algorithmic, language and systems aspects of numerical computing; parallel and high performance computing.

*Programming systems.* Our faculty emphasizes the formal definition, design, and implementation of programming languages, formal methods for software design, concurrency, and applications of scripting languages in scientific computing.

*Networks and distributed systems.* Our faculty advance the principles, practice, and applications of large scale distributed and collaborative systems, particularly through leadership roles in the global computing grid and the study of peer to peer networks. Research areas include the design, implementation, and evaluation of systems, protocols, and applications.

*Theoretical computer science.* We investigate the fundamental descriptive and algorithmic concepts underlying the computational process and the intrinsic limitations to efficient computation. Our faculty specialize in complexity theory, computational geometry, algorithms, discrete random processes, distributed computing, combinatorics, computability theory, and programming language semantics.

In addition to these more traditional areas, we have a growing commitment to research in applied computing. Examples include: developing mathematical and computational methods to measure and graphically depict structure in three-dimensional imaging modalities (like MRI and CT) and combining molecular dynamics simulations with chemical experimental data to gain an understanding of the motions and kinetics of biological molecules.

These efforts are enhanced by strong connections to the Computation Institute, which develops computational tools and techniques for a broad range of disciplines, including biological and physical sciences, medicine, law, the arts, and humanities; the James Franck Institute, which focuses on condensed matter physics; and the Institute for Biophysical Dynamics, which provides a forum for studying questions that arise at the boundary between the biological and physical sciences. In addition, we have collaborations with faculty in academic departments, including geophysics, linguistics, mathematics, physics, psychology, and statistics, as well as with the Division of Mathematics and Computer Science at Argonne National Laboratory (ANL). ANL is operated by the University of Chicago for the US Department of Energy.

## GRADUATE PROGRAMS

We offer two graduate curricula in computer science.

\*A graduate professional curriculum leading to the Master of Science (S.M.) degree, for students who wish to enter or advance themselves in computer science practice.

\*A graduate research curriculum leading to the Ph.D. degree that prepares students to perform advanced basic research in computer science either in industry or academia. Teaching experience is available for students preparing for academic careers.

Acquire further information about our Professional Programs or through our website <http://masters.cs.uchicago.edu/> by writing to our CSPP Admissions, Department of Computer Science, University of Chicago, 1100 East 58th Street, Chicago, IL 60637, by telephoning 773 834 3388. You may email any questions to our [questions@cs.uchicago.edu](mailto:questions@cs.uchicago.edu) email address.

Acquire further information about our educational programs by writing to Admissions, Department of Computer Science, University of Chicago, 1100 East 58th Street, Chicago, IL 60637, by telephoning (773) 702-6011, or through the Web at <http://www.cs.uchicago.edu/>.

### THE PH.D. PROGRAM

The department offers two Ph.D. tracks: a standard track and a computational mathematics track.

The detailed requirements for the Ph.D. degree and for the S.M. degree within the Ph.D. program can be found by visiting the Department's web page at <http://www.cs.uchicago.edu/>. Here is a brief summary:

Our research curriculum does not offer an S.M. program; students admitted to the Ph.D. program receive their S.M. degrees along the way toward their Ph.D.

To obtain an S.M. degree, students in the Ph.D. program must fulfill the following requirements:

(a) Course requirements. Complete CMSC 31100 Big Ideas in Computer Science, plus a sequence of five core courses and four electives. The core courses include two in Theory, two in Systems, and one in Artificial Intelligence. Please refer to the web page for details regarding the core courses.

A modified set of core courses applies to the computational mathematics track (see the web site). The list of electives is frequently updated; we refer to the web page.

Students must complete the course requirements by the end of their second year of study. Students must receive a grade of at least B in all the nine courses and have a GPA of at least 3.00 in the five core courses.

(b) Write a Master's paper and pass a Master's examination.

To obtain a Ph.D. degree, students must meet enhanced S.M. requirements, including at least B on each of the nine courses and a GPA of at least 3.25 on the five core courses; plus the following:

- (c) Pass the Candidacy exam;
- (d) Write and defend a Doctoral Thesis which contains significant original research in computer science.

### FINANCIAL AID FOR STUDENTS IN THE PH.D. PROGRAM

We expect to support all students who make satisfactory progress toward a doctorate. This support includes full tuition and a monthly stipend during the academic year that is competitive with offers made by other top ranked schools. To earn their stipends, students will have to perform part time work for the department as teaching assistants, research assistants, members of the technical staff, etc. The department also encourages prospective students to apply for all externally funded grants and fellowships for which they qualify.

### ADMISSION TO THE PH.D. PROGRAM

While most of our graduate students have majored in mathematics or computer science as undergraduates, applicants with other backgrounds have also been successful in our department. Students will succeed in the program if they are motivated to do research and have a strong general intellectual preparation to study in a particular field of computer science.

Students also need a reasonable foundation in mathematics, including calculus and linear algebra.

The required background for students depends on their intended areas of specialization. Applicants who expect to specialize in computational mathematics or theoretical computer science will need a more substantial mathematics background that includes advanced proof-based courses such as analysis, abstract algebra, probability and measure theory, logic, topology.

Applicants who expect to work in artificial intelligence (AI) will also want to have had some background in cognition, such as linguistics, cognitive psychology, or AI.

For specializing in programming languages and systems, the necessary background is much of a typical undergraduate computer science curriculum: programming languages, data structures, operating systems and algorithms.

Applicants interested in more application-oriented areas such as computational biology and visualization should have a more diverse background, including familiarity with topics like signal processing, applied mathematics, computer graphics, or statistics.

The department encourages all potential students to take an advanced test of the Graduate Record Examination (GRE). That advanced test does not need to be in computer science or mathematics, although these are generally the most helpful. In certain areas, such as Theory or AI, a mathematics GRE tends to be more helpful than a computer science GRE.

### TEACHING OPPORTUNITIES FOR STUDENTS IN THE PH.D. PROGRAM

The department takes its undergraduate teaching responsibilities very seriously, and offers supervised teaching opportunities, including lecturing, acting as teaching assistants, and working as lab assistants to its best graduate students. The program allows students to develop their teaching abilities and gain significant classroom experience.

### COMPUTING FACILITIES

In addition to general University computing facilities and our Undergraduate Computing Laboratory (which contains about four dozen Macintosh computers and two dozen Linux workstations with extensive peripherals and software), the Ryerson Research Computing Service provides the faculty, students, and postdoctoral associates in computer science with state of the art computing resources. We have the flexibility to adapt quickly to new research needs.

The resources include: 24 hour 7 day interactive computing services on a number of shared Unix/Linux computing servers and workstations interconnected by high speed ethernet; a workstation on each desktop (a total of more than 200 workstations); wireless connections; substantial amounts of personal file storage, backed up nightly for reliability and accessible transparently from all departmental computers; printer service; web servers and access to the Internet; Linux clusters for research in parallel computing and High Performance Computing. The department also has access to highly parallel machines at ANL.

### Courses

For the list of courses offered and the course descriptions, please consult the departmental web page at <http://www.cs.uchicago.edu/courses>.

## DEPARTMENT OF THE GEOPHYSICAL SCIENCES

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*Chair*

Michael J. Foote

*Professors*

David Archer

Andrew M. Davis

Michael J. Foote

John E. Frederick

Lawrence Grossman

David Jablonski

Susan M. Kidwell

Michael C. LaBarbera, Organismal Biology &amp; Anatomy

Douglas R. MacAyeal

Michael J. Pellin

Raymond T. Pierrehumbert

Frank M. Richter

David B. Rowley

*Associate Professors*

Nicolas Dauphas

Dion L. Heinz

Noboru Nakamura

*Assistant Professors*

C. Kevin Boyce

Fred Ciesla

Albert S. Colman

Pamela Martin

Elisabeth J. Moyer

Mark Webster

*Research Associate (Prof.)*

Bruce A. Buffett

*Visiting Professor*

Ho Kwang Mao

*Emeritus Faculty*

Alfred T. Anderson, Jr.

Victor Barcilon

Roscoe R. Braham, Jr.

Robert N. Clayton

Paul B. Moore

Robert C. Newton

David Raup

William H. Reid

Ramesh C. Srivastava

Alfred M. Ziegler

## PROGRAM OF GRADUATE STUDY

*OVERVIEW AND PHILOSOPHY.*

The department serves graduate students who seek the Ph.D. in earth, planetary, geological and environmental sciences and the paleontological and paleobiological disciplines of biological and historical sciences broadly conceived.

The Ph.D. signifies the graduate's mastery of the problems, techniques and knowledge covering the full spectrum of intellectual pursuit in the many disciplines listed above. The degree additionally acknowledges the candidate's contribution to specialized knowledge through original research conducted in experimental, observational and theoretical venues. The M.S. is also awarded to graduate students in the program, and is given in recognition of post-undergraduate scholarship. Students considering the program of graduate study should realize, however, that it is conceived primarily for study and research leading to the Ph.D.

The Department of Geophysical Sciences was created in 1961 when the departments of geology and meteorology of the university were united to better embrace the multi-disciplinary nature of research and scholarship applied to earth, its place in the cosmos and its environmental and biological history. The precursor Department of Geology was founded in the 1890's and reflected the University of Chicago's distinctively modern philosophy toward education and research. What is today lauded as new, namely the approach to physical, chemical, biological and natural science of earth that values connections and multi-disciplinary ways of thinking, was the original organizing principle of the university's activities in earth science at the time the university was first created. Faithful to its original conception, the department is exemplified today by the diverse, yet interactive, composition of the faculty, students and research activities.

Our program distinguishes itself from those at other institutions through our rigorous adherence to a principle that the path to knowledge in earth sciences is best traveled when disciplinary ways of thinking are applied interactively. To follow this path, our students and faculty engage each other in a constant exchange of ideas that spans a variety of specialized interests and disciplines. Indeed, the range of specialized interests and disciplines encompassed by our single intimate community is, at typical universities elsewhere, housed in separate departments. The exchange of ideas our community offers is both literal (as when research techniques from one discipline are applied in another) and figurative (as when students of diverse background and interests attend a common seminar), and is marshaled through our philosophical view that intellectual power is drawn from many sources. The tension created by bringing together disparate disciplines with differing traditions leads to constructive discourse in our community.

## AREAS OF STUDY.

Research, classroom teaching and seminar activity in the program reflect the long tradition of esteem directed toward multidisciplinary knowledge. Graduate study and research today thus ranges from geochemical approaches to nucleosynthesis and planet forming cosmochemistry to geomorphology, from evolutionary paleobiology to multi cellular automata, and from oceanic conveyor-belt circulation systems and biogeochemical cycles to subduction zone petrology. Graduate students are exposed to the breadth of intellectual activity in the physical and natural science of the earth through courses they take during their first two years of study and through weekly attendance of seminars where both faculty and visiting scientists present research lectures. Graduate students are expected to develop two skills. First is the ability to conduct scientific discourse across the full range of disciplines. Second is the ability to conduct original research leading to unique contributions in an area of specialization.

Research and teaching within the program is further amplified by associations with other groups within the university. The most notable programs allied with ours are: the committee on evolutionary biology (CEB, research on the evolution of life), the chemistry department (research on atmospheric and environmental chemistry), the materials research lab (research on planetary and interplanetary materials at high pressure and temperature), the Argonne National Lab (environmental chemistry, advanced computing, the advanced photon source, CARS), the environmental science program (teaching and public policy debate) and the environmental statistics program (analysis of environmental trends).

## STUDENT ADVISING.

A distinctive element in the everyday life of the department is the mentoring relationship the faculty of the department provide for students of the program. In our program, students are regarded as colleagues, not subordinates. Students participate in an apprenticeship which is designed to teach through active learning both the tangible and intangible professional skills needed of a scientist. Students are guided in their learning and research activities by mentorship engaging both the program faculty and fellow students. This mentorship oversees both the course work activity and the student's research, and is conceived as a means of establishing the student as a full partner in research and scholarship. Formal mentoring activities involve regular academic advisory committee meetings that include a combination of faculty covering the student's field of specialty and faculty covering allied fields where cross disciplinary exchange of ideas or techniques may prove helpful to the student's progress. In addition to formal activities, mentoring also proceeds along informal avenues: the department faculty prides itself in maintaining an open door atmosphere,

where students seeking help or advice can readily find it down the hall.

## RESEARCH.

Dissertation research can address any aspect of physical, chemical, biological and natural sciences of the earth, its life and environment, and the solar system environment from which the planets were formed. Typically, dissertation research begins in the second year of the student's residence after courses taken in preparation for the preliminary examination have been completed and an oral research prospectus has been defended.

## TEACHING, OUTREACH AND PROFESSIONAL SKILLS DEVELOPMENT.

Young scientists are faced with an ever increasing demand for breadth in the scope of their professional skills: from teaching to proposal writing, and from website design to mountaineering. To help prepare our students for the varied challenges they will encounter in their post graduate career, we involve them to the maximum extent possible in teaching, research planning, public outreach and field activity. While there are no strict requirements for teaching activities, the majority of our students participate in at least some teaching as laboratory assistants for the large, undergraduate-level classes taught by our faculty. Typical demands on a graduate student's time might involve four to eight hours a week of student contact time, and four to six hours a week of preparation and grading. To emphasize the value the university places on graduate student participation in undergraduate teaching, a slightly larger stipend is provided to teaching assistants over research assistants. In addition to teaching, our graduate students typically become involved in the scientific funding process through exposure to the efforts undertaken by faculty in the securing of research funds through the writing of proposals. Public outreach is also an important element of professional skills, and is emphasized through scientific web site development (required by funding agencies for grants funded in support of scientific research) and other activities (e.g., local science fairs and lectures at surrounding schools) which emphasize contact with the general public. Many of our graduate students engage in deep-field activity in various parts of the world. Field activities in the recent past have included dive trips to Central America for taphonomic research, fossil collecting expeditions to the St. Elias Mountains, and glaciological survey work on the Ross Ice Shelf and its icebergs.

## CURRICULUM.

The diversity of intellectual pursuit encompassed by the program places students and faculty into a challenging position when confronted with the need to design a curriculum capable of preparing students of the program to become Ph.D. scientists. Our approach to this challenge is to focus on thinking tools that prepare students for

research. Thinking tools embody knowledge of methodologies, awareness of fundamental scientific problems, understanding of current research areas and creative thought when encountering difficult questions. These tools are taught, in part, by a curriculum of courses that delve deeply into various subsets of knowledge covered by the department's scholarly interests. While a student may enter the program with the ultimate goal of writing a dissertation in one area of specialization, courses taken in closely allied areas of specialization are often, by virtue of practicality, all that our curriculum offers. While this may seem detrimental to progress toward specialized research, in practice, the specific subject material used to build the student's base of knowledge and rigorous understanding of thought and methodologies is not strongly correlated with the student's subsequent success. Our curriculum of courses thus focuses on teaching notions of understanding and methodologies that are universal in their application to a wide range of specialized phenomena.

#### REQUIRED COURSE ACTIVITIES.

This time period is divided into two parts, the pre-candidacy phase where the student focuses on course work and general scholarship, and the candidacy phase where the student focuses on specialized research directed to the completion of the dissertation. While flexibility is a distinct advantage of the department's small, intimate setting of graduate study compared to other, larger programs, graduate students are normally expected to progress through their study as follows. Classes are taken through the first two years of residence at the university, and a preliminary examination is taken normally in the spring of the second year. Classes are selected from the department's graduate courses, appropriate upper-level undergraduate courses and courses offered elsewhere in the university. Selection of courses is made through consultation with a faculty advisory committee, which meets regularly through the first two years of the student's residence.

The preliminary examination taken at the end of the second year of residence serves to promote students to candidacy for the Ph.D. The purpose of the examination is to ensure the student's progress in the two goals of graduate study: breadth of fundamental knowledge, and depth of knowledge in a particular area of specialization (chosen normally to be consistent with the student's anticipated dissertation topic).

The preliminary examination has two parts. The written part (taken either in one single sitting or as a series of written tests taken in conjunction with final exams of courses, depending on the particular situation) covers the aspects of knowledge addressed in courses and in the weekly seminars which students are expected to attend. The oral part requires the student to present a research prospectus to a committee of faculty advisors. The topic of this pro-

spectus is normally expected to be the student's planned research activity directed toward the dissertation.

#### THE DISSERTATION.

The Ph.D. degree is awarded to the candidate who has completed a written dissertation, defended it orally to a body of scientists which includes members of the department's faculty (who have the responsibility to vote in favor or against acceptance of the dissertation), and who have submitted the dissertation to the university dissertation office in proper form.

#### *Courses.*

Courses listed below are modified from year to year. Students are expected to consult course schedules published by the University for information regarding courses offered on an infrequent basis. A student's course load is expected to be two to four classes per quarter during the first five quarters (not including Summer Quarter) of residence. Over this period, the student will take a mixture of high level (designated by numbers greater than 30000) and medium level (designated by numbers in the 20000s) classes listed under the department's offerings, and appropriate courses offered by other departments of the university.

#### 30200. Introduction to Research in the Geophysical Sciences

##### Staff

This course is mandatory for all incoming graduate students in the department. Its purpose is to introduce the faculty's current research themes/areas and to familiarize incoming graduate students with research areas they might contemplate for further specialization. Lectures are presented by individual faculty on either 1) a general survey of a research area, or 2) a specialized topic of interest. Student activity varies from year to year and is based on a combination of oral and written presentations.

#### 30500. Topics in Geophysical Sciences

##### Staff

This course is offered from time-to-time as a means of covering topics that are generally not covered by regularly offered courses in the curriculum. Students should consult with appropriate faculty regarding opportunities to take this course when the situation arises.

#### 31200. Physics of the Earth

##### Richter

We consider geophysical evidence bearing on the internal makeup and dynamical behavior of the Earth, including seismology (i.e., properties of elastic waves and their interpretation, and internal structure of the Earth); mechanics of rock deformation (i.e., elastic properties, creep and flow of rocks, faulting, earthquakes); gravity (i.e., geoid, isostasy); geomagnetism (i.e., magnetic properties of rocks and history, origin of the magnetic field); heat flow (i.e., temperature within the Earth, sources of heat, thermal history of

the Earth); and plate tectonics and the maintenance of plate motions. Prereq: Prior calculus and college-level physics courses, or consent of instructor.

### 31205. Introduction to Seismology, Earthquakes, and Near-Surface Earth Seismicity

MacAyeal

This course introduces the mechanics and phenomenology of elastic waves in the Earth and in the fluids near the Earth's surface (e.g., S and P waves in the solid earth, acoustic waves in the ocean and atmosphere). Topics include stress and strain, constitutive equations, elasticity, seismic waves, acoustic waves, theory of refraction/reflection, surface waves, dispersion, and normal modes of the Earth. Phenomenology addressed in the context of the course includes exploration geophysics (refraction/reflection seismology), earthquakes and earthquake source characterization, seismograms as signals, seismometers and seismological networks, and digital seismogram analysis. A demanding laboratory component is part of this course, and focuses on use of computational methods to analyze seismic data and to simulate seismic processes.

### 31300. Earth's Mantle: Structure, Composition and Dynamics

Heinz

Seminar course to discuss classic and current papers on the Structure, Composition and Dynamics of the Earth's mantle. Topics will include boundary layers, heat transfer, geotherms, compositional constraints, phase changes, high pressure phases, melting and melt production, and melt migration.

### 31400. Thermodynamics and Phase Change

Heinz

Develops basic concepts of homogeneous and heterogeneous phase equilibrium. Emphasis is on evaluation of thermodynamic data, reactions among thermodynamic quantities, and calculation of simple equilibria. Prereq: Undergraduate physical chemistry or consent of instructor.

### 31500. Mineral Physics

Heinz

The application of physics at the microscopic level to geologic and geophysical problems. Topics: vibrational, electric and transport properties of minerals. Prereq: 2 yrs. math beyond calculus; 1 year physical chemistry or 1 year of both physics and chemistry; general geology, general geophysics and mineralogy, petrology or equivalent; or consent of instructor.

### 32040. Formation of Planetary Systems in our Galaxy: From Dust to Planetesimals

Ciesla

This course examines the physical and chemical processes that operate during the earliest stages of planet formation when dust in a protoplanetary disk aggregates into bodies 1-10 km in size. Topics that will be covered include

the physical and chemical evolution of protoplanetary disks, radial transport of dust particles, transient heating events, and the formation of planetesimals. We will discuss the evidence of these processes found in meteorites and observed in disks around young stars. Chemical and physical models of dust evolution will be introduced, including an overview of basic numerical modeling techniques. Prereq: One year of college level calculus and physics or chemistry, or consent of instructor.

### 32050. Formation of Planetary Systems in our Galaxy: From Planetesimals to Planets

Ciesla

We will explore the stage of planet formation during which 1-10 km planetesimals accrete to form planets. Specific topics include heating of planetesimals, models of giant planet formation, the delivery of water to terrestrial planets, and the impact that stellar mass and external environment have on planet formation. We will also discuss what processes determine the properties (mass, composition, and orbital parameters) of a planet and its potential for habitability. Basic modeling techniques will be discussed. Students will be expected to actively discuss current research papers in peer-reviewed journals. Prereq: GEOS 32040 or consent of instructor.

### 32100. Cosmochronology

Dauphas

This course covers cosmology and the age of the universe (Big-Bang theory is treated in a Newtonian perspective, and some of the methods used for constraining cosmological parameters are presented); the age of the Milky Way (main sequence lifetimes in globular clusters and U/Th ages of old stars); the duration of nucleosynthesis (galactic chemical evolution and its application to cosmochronology); the age of the solar system (condensation of refractory inclusions and definition of time zero). Prereq: Background in college-level geology, physics, and mathematics.

### 32200. Geochronology

Dauphas

This course covers the duration of planetary differentiation and the age of the Earth (i.e., extinct and extant chronometers); timescales for building a habitable planet (i.e., the late heavy bombardment, the origin of the atmosphere, the emergence of life, and continent extraction); dating mountains (i.e., absolute ages, exposure ages, and thermochronology); the climate record (i.e., dating layers in sediments and ice cores); and dating recent artifacts (e.g., the Shroud of Turin). Prereq: Background in college-level geology, physics, and mathematics.

### 32300. Cosmochemistry

Grossman

Chemical, mineralogical, and petrographic classifications of meteorites. Topics include: abundances of the elements, origin of the elements and stellar evolution, the interstellar

medium and formation of the solar nebula, condensation of the solar system, chemical fractionations in meteorites and planets, age of the solar system, extinct radionuclides in meteorites, isotope anomalies. Prereq: Consent of instructor.

32700. Analytical Techniques in Geochemistry  
Davis

Measurement of the isotopic and chemical compositions of solar system materials involves a wide variety of analytical techniques. In this course, we will review the major types of instrumentation used in modern laboratories. The goal is not to produce experts in the operation of each instrument, but rather that everyone gain an appreciation for how instruments work and what the capabilities and limitations are for each kind of instrument.

32705. Analytical Techniques  
Steele

Theory and practice of analytical techniques. Prereq: Consent of instructor.

33200. Climate Dynamics of the Earth and Other Planets.  
Moyer, Pierrehumbert

This course introduces the basic physics governing the climate of planets, the Earth in particular but with some consideration of other planets. Topics include atmospheric thermodynamics of wet and dry atmospheres, the hydrological cycle, blackbody radiation, molecular absorption in the atmosphere, the basic principles of radiation balance, and diurnal and seasonal cycles. Students solve problems of increasing complexity, moving from pencil-and-paper problems to programming exercises, to determine surface and atmospheric temperatures and how they evolve. An introduction to scientific programming is provided, but the fluid dynamics of planetary flows is not covered. Prereq: Prior physics course (preferably PHYS 13300 and 14300) and knowledge of calculus required; prior geophysical sciences course not required. Prior programming experience helpful but not required.

33300. Advanced Topics in Climate Dynamics  
Pierrehumbert

Topics will vary yearly, and will be drawn from the following, among others: real gas infrared radiative transfer; the surface energy balance of planets; radiative-convective models; data analysis of Earth and planetary climate data; 1D energy balance models; models of long term geochemical and physical evolution of atmospheres. Prereq: GEOS 23200 or equivalent or consent of the instructor.

33500. Physical Oceanography  
MacAyeal, Martin

This course provides a conceptual understanding of the dynamics of ocean circulation and a background in physical oceanography for students interested in further study of climate dynamics, chemical oceanography, marine biology, and paleontology. Topics include geometry of map projec-

tions, hypsometry of ocean basins and the geoid, temperature and salinity structure, watermasses, geostrophy and geostrophic adjustment, Ekman layers, coastal upwelling, Sverdrup balance, vorticity balance and western intensification, and waves and tides. A series of computational laboratory exercises in data analysis and modeling is a strong and time-consuming part of this course. Prereq: GEOS 33200 or consent of instructor.

33600. Chemical Oceanography  
Martin

This course introduces the geochemistry of the oceans with an emphasis on topics relevant to global change, past and future. The role of the ocean in the global carbon cycle is discussed, along with the interplay between ocean circulation, biology, and physical chemistry and its impact on the distributions of nutrients, carbon, and oxygen in the ocean. Also covered are sediment geochemistry and what sediments can tell us about oceans and climates of the past. Prereq: Consent of instructor.

33605. Advanced Topics in Chemical Oceanography  
Archer, Martin

This course builds on topics covered in Chemical Oceanography. The course continues the emphasis on understanding the role of the ocean in the global carbon cycle and the modification of chemical signals by ocean circulation, biology, and physical chemistry. We will read classic papers as well as recently published advances, contrasting the generalizations and simplifications often used in simple calculations with the more complex reality exposed by regional studies. We will construct simple box models and compare these results to output from more complex general circulation models. Prereq: chemical oceanography and consent of instructor.

33700. Proxies and Reconstructions in Paleooceanography  
Martin

This course covers the tools used to reconstruct the environmental history of the oceans, as well as some of the actual reconstructions. Our focus is on tools used for and reconstructions during the Cenozoic. Prereq: Third-year standing or higher. Knowledge of physical or chemical oceanography and/or interest in research in paleoceanography or paleoclimate.

33800. Global Biogeochemical Cycles  
Archer

This survey course covers the geochemistry of the surface of the Earth, with emphasis on biological and geological processes, their assembly into self-regulating systems, and their potential sensitivity to anthropogenic or other perturbations. Budgets and cycles of carbon, nitrogen, oxygen, phosphorous, sulfur, and silicon are discussed, as well as fundamentals of the processes of weathering, sediment diagenesis, and isotopic fractionation. What is known about the biogeochemistry of the Earth through geologic time is

also presented. Prereq: CHEM 11100-11200 or consent of instructor.

### 33805. Stable Isotope Biogeochemistry Colman

Stable isotopes of H, C, O, N, and S are valuable tools for understanding the biological and geochemical processes that have shaped the composition of Earth's atmosphere and oceans throughout our planet's history. This course examines basic thermodynamic and kinetic theory to describe the behavior of isotopes in chemical and biological systems. We then examine the stable isotope systematics of localized environmental processes, and see how local processes contribute to global isotopic signals that are preserved in ice, sediment, rock, and fossils. Special emphasis is placed on the global carbon cycle, the history of atmospheric oxygen levels, and paleoclimate. Prereq: CHEM 11100-11200-11300 or equivalent; 13100-13200-13300 or consent of instructor.

### 33900. Environmental Chemistry. (=ENST 23900) Colman

The focus of this course is the fundamental science underlying issues of local and regional scale pollution. In particular, the lifetimes of important pollutants in the air, water, and soils are examined by considering the roles played by photochemistry, surface chemistry, biological processes, and dispersal into the surrounding environment. Specific topics include urban air quality, water quality, long-lived organic toxins, heavy metals, and indoor air pollution. Control measures are also considered. Prereq: CHEM 11101-11201 or equivalent, and prior calculus course.

### 34100. Fundamentals of Fluid Mechanics Nakamura

This course provides an introduction to concepts and phenomenology of fluid mechanics of newtonian fluids. Classroom demonstrations are coupled with analytical treatment of equations of motion and their approximations. Topics include (1) pressure and stress, (2) Bernoulli's theorem, (3) vorticity and turbulence, (4) surface and internal waves, (5) effects of rotation and gravity on stability, (6) spin up. The lectures are supplemented by problem sets. Commands of vector calculus are highly desirable. Prereq: Classical mechanics and vector calculus.

### 34105. Dynamics of Viscous Fluids MacAyeal

This course is offered on an occasional basis (last offered in 2005), and deals with the thermomechanical properties and behavior of ideal viscous fluids, with applications in special areas of geophysical fluid dynamics, particularly glaciology and mantle isostasy. Topics to be covered include: constitutive descriptions of ideal and non ideal fluids, compressible and incompressible fluids, coulomb failure laws, plastic approximations, kinematics of flow fields, strain and strain rate tensors, equations governing

the balance of momentum and energy, stress tensor, Navier Stokes equations, Stokesian flows, non Newtonian constitutive laws and laminar/turbulent transitions. Special cases of fluid flow will be examined, including irrotational and incompressible flow, Bernoulli's theorem for inviscid fluids, jets, wakes and flow past rigid boundaries. Special boundary conditions will be examined, including both dynamic and kinematic. Geophysical applications in 2005 ranged across the basics of glaciological flow systems, including classical Nye/Vialov icesheet flow, ice shelf flow and basal sliding. Readings will include chapters from G.K. Batchelor's *An Introduction to Fluid Dynamics* and occasional classical journal articles in glaciology. Prereq: consent of instructor.

### 34200. Geophysical Fluid Dynamics Nakamura

Theoretical foundation for understanding the large scale flow patterns in the Earth's atmosphere and ocean. Topics include: The governing equations for fluids on a rotating sphere under gravity; basic conservation properties; linear wave dynamics and geostrophic adjustment; quasigeostrophic dynamics with Ekman friction; effects of isolated mountains on the general circulation of the atmosphere; two layer model of baroclinic instability and implications to storm organization; wind driven ocean circulation. Prereq: One quarter of fluid mechanics in any discipline, or consent of instructor.

### 34400. Topics in Geophysical Fluid Dynamics Nakamura

This course teaches science and art of numerical modeling at an elementary level. Classroom discussions on mathematical principles will be supplemented by a series of actual coding assignments. (Command of a programming language is assumed this is not a course on programming.) It is our goal that at the end of the course each student will have coded a working copy of shallow water model on a rotating sphere (and do science with it). Prereq: Calculus, working knowledge of Fourier Transform and of a programming language (C, Fortran, IDL, etc.), access to a computer with a compiler and runtime environment. No previous experience in fluid dynamics is necessary, although this course alone does not fully prepare one to become a fluid dynamicist.

### 34500. The Atmosphere and Ocean in Motion Nakamura

The motion of the atmosphere and ocean not only affects daily weather conditions but is also critical in maintaining the habitable climate of our planet. This course teaches: (1) observed patterns of large-scale circulation of the atmosphere and ocean; (2) physical principles that drive the observed circulation; (3) transport of heat, angular momentum, and other quantities; and (4) climate variability and predictability. The lectures are supplemented

by problem sets and a computer lab project. Prereq: GEOS 13300 or equivalent, and calculus.

34505. Dynamics of the Stratosphere

Nakamura

Focus on the vertical structure of the Earth's atmosphere due to compressibility and radiative heating, and its consequences on the dynamics, particularly of the stratosphere. Emphasis is placed more on the underlying physics than on the mere phenomenology of the stratosphere. Prereq: GeoSci 35200 or equivalent, or consent of instructor.

34510. Topics in Atmospheric Science

Pierrehumbert

Topics of current interest in atmospheric science, with a particular emphasis on issues arising in recent publications. Topics covered have included: tropical circulations, cloud climate feedbacks, and dynamics of the stratosphere. Prereq: Permission of the instructor.

34600. Laboratory Course on Weather and Climate

Nakamura

Working in groups, students gain hands-on experience in designing, implementing, and analyzing experiments concerning the principles of rotating fluids that underlie weather and climate.

34800. Radiation Transfer Theory

Frederick

Develops the theory of radiation emission, absorption, and scattering by planetary atmospheres. Emphasis on the derivation and solution of the radiative transfer equation for plane parallel, horizontally homogeneous atmospheres. Prereq: Advanced undergraduate level knowledge of electromagnetic theory, atomic structure, and differential equations.

35300. Inverse Methods in the Geophysical Sciences

Staff

This course is offered from time to time, and last offered in 2005. Inverse theory is a set of mathematical techniques used to obtain inferences about the Earth from physical measurements. The focus of this class is on formulating and solving inverse problems and understanding the non-uniqueness and resolution associated with inversions. We cover solutions of linear and nonlinear inverse problems in geophysics by optimization techniques such as norm minimization and linear programming. Both theory and applications are covered. Prereq: Consent of instructor.

36000. Geometric Morphometrics

Webster

This graduate-level course serves as an introduction to the field of morphometrics (the analysis of organismal shape). Quantitative exploratory and confirmatory techniques involving both traditional (length-based) and geometric (landmark-based) summaries of organismal shape are introduced in a series of lectures and practical exercises.

Emphasis is placed on the application of morphometric methods to issues such as (but not restricted to) quantification of intraspecific variability, interspecific differences, disparity, ontogenetic growth patterns (allometry), and phylogenetic changes in morphology. Relevant statistical and algebraic operations are explained assuming no prior background. Students are required to bring personal laptop computers, and are expected to acquire and analyze their own data sets during the course.

36100. Chemical Information in the Sedimentary and Fossil Records (=EVOL 46100)

Boyce, Martin

Explores the range of biological and environmental information that can be preserved in the chemical composition of fossils and sedimentary rocks, including topics such as elemental proxies for environmental conditions, metabolic and climate controlled isotopic fractionations, and the preservation of organic chemistry and biomarkers. The range of analytical approaches available and the different types of paleobiological and climatological questions that can be addressed are reviewed with the goal of encouraging geochemical awareness and applications in student research. Previous course themes have included biomineralization and the geochemistry of important events in earth history.

36200. Species and the Fossil Record

Webster

This course serves as an introduction to the practical and theoretical issues involved in obtaining primary systematic data from the fossil record, and demonstrates the criticality of such data to the rigorous documentation and interpretation of evolutionary patterns. Precise topics of the seminar discussions will vary from year to year depending on relevance to student research projects and interest, but are likely to focus on issues such as (but not restricted to) practical techniques in specimen-based paleontology (including fossil preparation and photography), species delimitation (including species concepts, variability, and ecophenotypy), stratigraphic/geographic range determination (including biostratigraphic correlation), phylogeny reconstruction (including the relevance of stratigraphic data), and the importance of these topics to broader macroevolutionary issues such as diversity/disparity dynamics and the determination of evolutionary trends, rates and processes.

36300. Invertebrate Paleobiology and Evolution. (=GEOS 26300, EVOL 23400, BIOS 23261)

Webster

This course provides a detailed overview of the morphology, paleobiology, evolutionary history, and practical uses of the invertebrate and microfossil groups commonly found in the fossil record. Emphasis is placed on understanding key anatomical and ecological innovations within each group (and interactions among groups) responsible for producing

the observed changes in diversity, dominance, and ecological community structure through evolutionary time. Labs supplement lecture material with specimen based and practical application sections. Field trips offer experience in the collection of specimens and raw paleontological data. Several Hot Topics lectures introduce important, exciting, and often controversial aspects of current paleontological research linked to particular invertebrate groups: topics covered include the link between morphology and genetics, microevolution, functional morphology, and the inference of past climates using fossils. Prereq: GEOS 13100, 13200, or completion of Biological Sciences general education requirements.

36400. Principles of Paleontology. (=BIOS 23255, EVOL 32300)

Footnote

Our focus is on the nature of the fossil record, the information it provides on patterns and processes of evolution through geologic time, and how it can be used to solve geological and biological problems. Lectures cover the principles of paleontology (e.g., fossilization, classification, morphologic analysis and interpretation, biostratigraphy, paleoecology, macroevolution); labs are systematic, introducing major groups of fossil invertebrates. Prereq: GEOS 13100-13200, or completion of the general education requirement in the biological sciences, or consent of instructor.

36501. Paleobiological Modeling and Analysis-1 (=EVOL 33001)

Footnote

This course is an introduction to mathematical modeling as applied to problems in paleobiology and evolutionary biology. Topics include: basic probability theory; general approaches to modeling; model comparison using likelihood and other criteria; forward modeling of branching processes; sampling models; and inverse methods. A series of programming exercises and a term project are required. Programming in R or C is recommended, but any language may be used. Prereq: Mathematics through first-year calculus; basic computer programming skills (or willingness to learn); elementary statistics helpful. Winter quarter, generally in even numbered years. GEOS 36501 and GEOS 36502 can be taken in either order.

36502. Paleobiological Modeling and Analysis-2 (=EVOL 33002)

Footnote

This course is an introduction to multivariate analysis, with emphasis on morphological data and problems in paleontology and evolutionary biology. Topics include: types of data and scales of measurement; data transformations; bivariate analysis; measurement of similarity and difference; clustering; ordination; singular value decomposition; principal component analysis, factor analysis, principal coordinates, correspondence analysis, and other

eigenvector methods; and path analysis. Each student will bring a multivariate dataset (not necessarily original) to the course and will write a series of short papers based on analysis of these data. Code written in the R programming language will be supplied for most analyses. Prereq: Mathematics at secondary school level; basic computer programming skills (or willingness to learn); calculus, linear algebra, and elementary statistics also helpful, although essential points will be reviewed. Winter quarter, generally in odd numbered years. GEOS 36501 and GEOS 36502 can be taken in either order.

36700. Taphonomy (=EVOL 31800)

Kidwell

Lecture and research course on patterns and processes of fossilization, including rates and controls of soft tissue decomposition, post mortem behavior of skeletal hard parts, concentration and burial of remains, scales of time averaging, and the net spatial and compositional fidelity of (paleo)biologic information, including trends across environments and evolutionary time. Offered alternate years. Prereq: Consent of instructor.

36800. Macroevolution (=EVOL 31700)

Jablonski

Patterns and processes of evolution above the species level, in both recent and fossil organism. A survey of the current literature, along with case studies. Prereq: Consent of the instructor.

36900. Topics in Paleobiology (=EVOL 31900)

Jablonski, Kidwell, LaBarbera, Foote

In this seminar we investigate paleobiological or multidisciplinary topics of current interest to students and faculty. Previous subjects include the origin of phyla, historical and macro-ecology, the stratigraphic record and evolutionary patterns, and climate and evolution. Prereq: Consent of instructor.

37000. Evolutionary History of Terrestrial Ecosystems (=EVOL 32500)

Boyce, Makovicky

Seminar course covering the evolution of terrestrial ecosystems from their Paleozoic assembly through to the modern world. The fossil history of the plant, vertebrate, and fungal line ages will be covered, as will the diversification of their ecological interactions. The influence of extinction events and important extrinsic factors, such as geography, climate, and atmospheric composition, will also be considered. Grades will be based upon student presentations and a final paper. Prereq: GEOS 13200 or equivalent, or by permission of instructor.

37100. Plant Paleontology (=EvBio 33300)

Boyce

Introduction to all major groups of extant and fossil plants, ranging from green algae to angiosperms. Discussions of plant taphonomy, the use of fossil plants as indicators of

paleoclimate, the fossil spore/pollen record, evolutionary and paleoclimatic applications of palynological data, and the history of terrestrial ecosystems. Examination of living and fossil material at the Garfield Park Conservatory and the Field Museum. Prereq: Consent of instructor.

37200. Biomechanics (=EvBio 34300, ORGB 34300, BIOS 22243)

LaBarbera

Properties of biological materials, mechanical analysis of morphology, and principles of design optimization, with appropriate examples from zoology, botany and paleontology. Lectures concentrate on solid mechanics in odd numbered years. Prereq: undergraduate chemistry and physics, consent of instructor.

38000. Introduction to Structural Geology.

Rowley

This course explores the deformation of the Earth materials primarily as observed in the crust. We emphasize stress and strain and their relationship to incremental and finite deformation in crustal rocks, as well as techniques for inferring paleostress and strain in deformed crustal rocks. We also look at mesoscale to macroscale structures and basic techniques of field geology in deformed regions. PQ: GEOS 13100.

38100. Global Tectonics

Rowley

The spatial and temporal development of tectonic and plate tectonic activity of the globe will be reviewed. Prereq: Consent of instructor.

38300. Principles of Stratigraphy

Kidwell

This course introduces principles and methods of stratigraphy. Topics include facies analysis, physical and biostratigraphic correlation, development and calibration of the geologic time scale. We also discuss controversies concerning the completeness of the stratigraphic record; origin of sedimentary cycles; and interactions between global sea level, tectonics, and sediment supply. Prereq: GEOS 13100-13200 or equivalent required; GEOS 23500 and/or 28200 recommended.

38400. Topics in Stratigraphy and Biosedimentology (=EVOL 41500)

Kidwell

Seminar course using the primary literature and/or a field problem. Topic selected from the rapidly evolving fields of sequence stratigraphy, basin analysis, and animal sediment relationships. Prereq: GeoSci 22200 and 22300 or equivalent.

38500. Stratigraphic Analysis

Kidwell

Historical review of basic concepts and methods, leading to current frontiers and controversies in basin and global scale

analysis of the sedimentary rock record. Prereq: GeoSci 22200 or equivalent; consent of instructor.

39001. Field Course in Geology

Staff

We visit classic locations to examine a wide variety of geological environments and processes, including active tectonics, ancient and modern sedimentary environments, and geomorphology. For information on upcoming trips, consult the departmental counselor. Prereq: GEOS 13100-13200 and consent of instructor.

39002. Field Course in Modern and Ancient Environments

Kidwell

This course uses weekly seminars during the winter quarter to prepare for a ~one-week fieldtrip over spring break, where students acquire experience with sedimentary rocks and the modern processes responsible for them. The focus for Winter 2010 will be the geology and biology of tropical carbonate settings, including the formation of reefs, working out of the Gerace Research Station on San Salvador, Bahamas. First organizational meeting for the course will be in late Autumn 2009; contact instructor for details.

39003. Field Course in Oceanography

Archer

We spend roughly a week sailing a tall ship from the SEA education program, learning oceanographic sampling techniques and data interpretation as well as principles of navigation and seamanship. For information on upcoming trips, consult the departmental counselor. Prereq: Consent of instructor.

39005. Field Course in Environmental Science

Staff For information on upcoming trips, consult the departmental counselor. Prereq: Consent of instructor.

39700-39799. Reading and Research in the Geophysical Sciences

Staff

Topics available include, but are not limited to: Mineralogy, Petrology, Geophysics, High Pressure Geophysics, Geodynamics, Volcanology, Cosmochemistry, Geochemistry, Atmospheric Dynamics, Paleoclimatology, Physical Oceanography, Chemical Oceanography, Paleoceanography, Atmospheric Chemistry, Fluid Dynamics, Glaciology, Climatology, Radiative Transfer, Cloud Physics, Morphometrics, Phylogeny, Analytical Paleontology, Evolution, Taphonomy, Macroevolution, Paleobiology, Aktuopaleontology, Paleobotany, Biomechanics, Paleoecology, Tectonics, Stratigraphy. Prereq: Admission to graduate status.

39800. Reading and Research in the Geophysical Sciences for the Master's Degree

Staff

An essay or formal thesis will be required. Prereq: Admission to graduate status.

49700-49799. Advanced Reading and Research in the Geophysical Sciences

Staff

Topics available include, but are not limited to: Mineralogy, Petrology, Geophysics, High Pressure Geophysics, Geodynamics, Volcanology, Cosmochemistry, Geochemistry, Atmospheric Dynamics, Paleoclimatology, Physical Oceanography, Chemical Oceanography, Paleoceanography, Atmospheric Chemistry, Fluid Dynamics, Glaciology, Climatology, Radiative Transfer, Cloud Physics, Morphometrics, Phylogeny, Analytical Paleontology, Evolution, Taphonomy, Macroevolution, Paleobiology, Aktuopaleontology, Paleobotany, Biomechanics, Paleoecology, Tectonics, Stratigraphy. Prereq: Admission to Ph.D. candidacy.

49900. Post Ph.D. Research: GeoSci

Staff.

Prereq: Admission to Ph.D. candidacy

## DEPARTMENT OF MATHEMATICS

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### *Chair*

Peter S. Constantin

### *Professors*

Jonathan L. Alperin

Laszlo Babai, Computer Science

Alexander A. Beilinson

Peter S. Constantin

Kevin D. Corlette

Jack D. Cowan

Vladimir Drinfeld

Todd Dupont, Computer Science

Alex Eskin

Benson Farb

Robert A. Fefferman

Victor Ginzburg

George I. Glaubergerman

Denis Hirschfeldt

Kazuya Kato

Carlos E. Kenig

Robert Kottwitz

Gregory Lawler

J. Peter May

Madhav Vithal Nori

Niels O. Nygaard

Leonid Polterovich

Paul J. Sally

Wilhelm Schlag

L. Ridgway Scott, Computer Science

Robert I. Soare, Computer Science

Panagiotis Souganidis

Sidney Webster

Shmuel Weinberger

Robert Zimmer

### *Associate Professors*

### *Assistant Professors*

Miklos Abert

Ioan Bejenaru

Roger Lee

Antonio Montalban

Luis Silvestre

Andrej Zlatos

### *Instructors*

Vigleik Angeltveit

Rina Anno

David Constantine

Francisco Gancedo

Dubi Kelmer

Dano Kim  
 Caroline Klivans  
 William Lopes  
 Maryanthe Malliaris  
 David McReynolds  
 Amir Mohammadi  
 Artem Pulmetov  
 Pierre Py  
 Luca Scala  
 Benjamin Schmid  
 Sugwoo Shin  
 Michael Shulman  
 Eva Marie Strawbridge  
 Weiran Sun  
 Sandeep Varma  
 Liang Xiao  
 Nathalie Wahl

*Emeritus Faculty*

Walter L. Baily  
 Spencer Bloch  
 Leo P. Kadanoff, Physics  
 Norman Lebovitz  
 Matam P. Murthy  
 Raghavan Narasimhan  
 Melvin G. Rothenberg

The Department of Mathematics provides a comprehensive education in mathematics which takes place in a stimulating environment of intensive research activity. The graduate program includes both pure and applied areas of mathematics. Ten to fifteen graduate courses are offered every quarter. Several seminars take place every afternoon. There is an active visitors program with mathematicians from around the world coming for periods from a few days to a few months. There are four major lecture series each year: the Adrian Albert Lectures in Algebra, the Antoni Zygmund and Alberto Calderón Lectures in Analysis, the Unni Namboodiri Lectures in Topology, and the Charles Amick Lectures in Applied Mathematics. The activities of the department take place in Eckhart and Ryerson Halls. These contiguous buildings are shared with the Departments of Statistics and Computer Science. The Department of Mathematics and the Department of Computer Science have several joint appointments, and they coordinate their activities. The Department of Mathematics also has joint appointments and joint activity with the Department of Physics.

### GRADUATE DEGREES IN MATHEMATICS

The graduate program of the Department of Mathematics is oriented towards students who intend to earn a Ph.D. in mathematics on the basis of work done in either pure or applied mathematics. The department also offers the degree of Master of Science in mathematics, which is

acquired as the student proceeds on to the Ph.D. degree. Students are not admitted with the Master of Science degree as their final objective. In addition, the department offers a separate Master of Science in Financial Mathematics degree program which is taught in the evenings. See The Degree of Master of Science in Financial Mathematics below for more information.

The divisional requirements for these degrees can be found in the section on the Division of the Physical Sciences in these Announcements. The departmental requirements for students choosing the program in applied mathematics are described below under the heading, Graduate Degrees in Applied Mathematics. Otherwise, the requirements are as follows.

### THE DEGREE OF MASTER OF SCIENCE

The candidate must pass, to the instructor's satisfaction, the nine basic first year graduate courses in the areas of algebra (Mathematics 32500, 32600, 32700), analysis (Mathematics 31200, 31300, 31400), and topology (Mathematics 31700, 31800, 31900). With the approval of the department, the exceptionally well prepared student may place out of one or more of these courses, and substitute a more advanced course.

If any of these courses are not passed to the instructor's satisfaction, the student will be required to take an oral exam in those subject areas before receiving the Master of Science degree.

The student must also pass a reading exam (in a form approved by the department) in French, German or Russian.

### THE DEGREE OF DOCTOR OF PHILOSOPHY

For admission to candidacy for the Doctor of Philosophy, an applicant must demonstrate the ability to meet both the divisional requirements and the departmental requirements for admission.

The applicant must satisfy the above mentioned requirements for the degree of Master of Science in mathematics.

The applicant must satisfactorily complete an oral topic presentation. This presentation covers material that is chosen by the student in consultation with members of the department and is studied independently. The topic presentation is normally made by the end of the student's second year of graduate study.

The applicant must also successfully complete the department's program of preparatory training in the effective teaching of mathematics in the English language at a level commensurate with the level of instruction at the University of Chicago.

After successful completion of the topic presentations, the student is expected to begin research towards the dissertation under the guidance of a member of the department. The remaining requirements are to: (1) complete a dissertation containing original, substantial, and publishable math-

ematical results; (2) present the contents of the dissertation in an open lecture; and (3) pass an oral examination based both on the dissertation and the field of mathematics in which it lies.

## GRADUATE DEGREES IN APPLIED MATHEMATICS

The Department of Mathematics, through the Computational and Applied Mathematics Program (CAMP), offers interdisciplinary programs in applied mathematics leading to S.M. and Ph.D. degrees. These programs overlap with but are different from the program in pure mathematics and allow for variations depending on the direction of applications the student chooses. Students choosing the applied mathematics program will participate in courses and seminars not only with pure mathematics students, but also with students in the sciences who have chosen an applied mathematics emphasis in their own departments.

Expanded activity in applied mathematics is occurring within the Department of Mathematics and in the Division of the Physical Sciences. Moreover, the department recognizes that students enter applied mathematics from diverse backgrounds, and that some otherwise well qualified students may require more than one year to satisfy the requirements described below.

To obtain the degree of Master of Science in mathematics under the auspices of CAMP, the candidate must meet the departmental requirements stated above, with the modification that the nine graduate courses to be passed are not restricted to those listed above. These nine courses must, however, include the analysis sequence, Mathematics 31200, 31300, 31400. They must also include a second, approved three quarter sequence of mathematics courses. This will normally be a sequence of applied mathematics courses emphasizing differential equations, ordinary and partial, and their numerical treatment. They may, however, consist of the algebra or topology sequence.

A third approved sequence of courses may be chosen from the offerings of the Department of Mathematics or from those of another department. Possible choices of sequences outside the Department of Mathematics are Astronomy & Astrophysics 30100, 30200, 30300; Chemistry 36100, 36200, 36300; Economics 30500, 30600, 30700; Geophysical Sciences 35100, 35200, 35300; Physics 31500, 32300, 32400.

The requirements for the Ph.D. in applied mathematics are the same as the departmental requirements listed above.

## THE DEGREE OF MASTER OF SCIENCE IN FINANCIAL MATHEMATICS

The program on financial mathematics is designed to produce graduates with a good understanding of the theoretical background of pricing models for financial derivatives, but more importantly a real understanding of the

underlying assumptions and an ability to critically ascertain the applicability and limitations of the various models. A significant part of the program will be taught by professionals from the financial industry and will be devoted to examining how models behave in practice under a variety of market conditions, to examine how realistic the underlying assumptions are and to understand what happens when these assumption are violated. Students will learn to use the models to set up hedges and to evaluate the effectiveness of these hedges by simulating various market conditions.

The program consists of four components: Mathematics, Probability Theory, Economics, and Financial Applications and Simulations.

The Mathematics component runs over three quarters, Probability Theory over two quarters and Economics over one quarter. The Financial Applications and Simulations is a three quarter component. Courses in each component meet for three hours per week except for the courses in the Financial Applications component which will meet for four hours for a total of ten hours of instruction per week. The Mathematics and Probability Theory will be taught by faculty members from the Departments of Mathematics and Statistics, respectively. The Economics course will be taught by a faculty member from the Department of Economics. The Financial Applications courses will be taught by professionals from financial institutions and will also include a computer lab.

The contents and curriculum for the program has been worked out jointly by faculty members at the University and by practitioners in the field to insure the relevance of the material. The teaching of the program relies heavily on the use of computer simulations to illustrate the material. This both makes it possible to cover more material and teaches students to implement the theory at every stage.

Various software packages are licensed to the program and will be provided free of charge for the course work. Course material and assignments will be available and submitted on line.

The program has a nine quarter-course requirement for obtaining the Master of Science degree. The program is structured to allow part time enrollment to complete the program over two or three years. The courses will be taught evenings at the main campus of the University located in Hyde Park.

The requirements for acceptance to the program are a solid undergraduate background in mathematics, ideally a major in mathematics or science/engineering, with some background also in probability theory. Some experience in C/C++ programming will also be useful. Persons with practical experience in the financial industry but with less of a mathematical background will be considered but may be required to acquire additional skills in mathematics.

“The following are representative lists of courses in Financial Mathematics and in the Ph.D. Program. For up-to-date information please consult the web page of the Department at: <http://www.math.uchicago.edu>.”

#### *Courses in Financial Mathematics*

The Subject code for the following courses is FINM. They are listed in the Time Schedules under Financial Mathematics.

32000. Numerical Methods I  
Lee
32150. Trading Strategy Analysis  
Chriss, Frey
32200. Computing for Finance  
Nygaard
32300. Computing for Finance  
Nygaard
32400. Computing for Finance  
Nygaard
33000. Differential Equations  
Lee
33100. Financial Data Analysis  
Mykland
33300. Statistical Inference and Applications to Trading  
Zhang
34500. Stochastic Calculus I  
Mykland
34600. Stochastic Calculus II  
Mykland
35000. Topics in Economics  
Kimel (or other Economics)
36600. Fixed Income Derivatives I  
Balasanov, Doloc and Greco
36700. Portfolio Theory and Risk Management I  
Staneski and Zerolis
36800. Fixed Income Derivatives II  
Balasanov, Doloc and Greco
36900. Portfolio Theory and Risk Management II  
Frye and Zerolis
37300. Foreign Exchange  
Kanzler and Weithers
37400. Advanced Option Pricing  
Mosevich and Nelken
37550. Independent Study: Reading/Research  
Nygaard

#### *Courses in the Ph.D. Program in Math*

30000. Set Theory I  
Hirschfeldt

MATH 30000 is a course on axiomatic set theory. Topics include the axioms of Zermelo Frankel (ZF) set theory; ordinals and cardinals; infinitary combinatorics; Von Neumann rank and reflection principles; absoluteness; inner models; Goedel’s Constructible sets (L); and the consistency of the Axiom of Choice (AC) and the Generalized Continuum Hypothesis (GCH). Prereq: Consent of instructor.

#### 30100. Set Theory II

Hirschfeldt

MATH 30100 deals with models of set theory; Cohen’s method of forcing and the independence of AC and CH; Martin’s axiom and the unprovability of Souslin’s Hypothesis; Solovay’s model in which every set of reals is Lebesgue Measurable; larger cardinals (measurable cardinals, elementary embeddings, and compactness); the axiom of determinateness; and possibly some descriptive set theory. Prereq: Consent of instructor.

#### 30200. Computability Theory I (Ident to CMSC 38000)

Soare

Math 30200 begins with models for defining computable functions such as the recursive functions and those computable by a Turing machine. Topics include the Kleene normal form theorem for representing computable functions and computably enumerable (c.e) sets; the enumeration and s-m-n theorem, unsolvable problems, classification of c.e. sets, the Kleene arithmetic hierarchy, coding of information from one set to another, various degrees for measuring non-computability, many one, truth table, and Turing degree. The course also includes the Kleene recursion theorem and its applications, other fixed point theorems such as the Arslanov completeness criterion, elementary properties of Turing degrees, generic sets, and the construction of various non c.e. degrees by oracle Kleene Post constructions. Prereq: Math 25500 or consent of instructor.

#### 30300. Computability Theory II (Ident to CMSC 38100)

Soare

Math 30300 develops the deeper properties of computability and the classification of relative computability on sets and (Turing) degrees. It begins with the finite injury priority method of Friedberg and Muchnik, continues with the infinite injury priority method of Sacks, and minimal pair of computably enumerable (c.e) degrees method by Lachlan. It introduces the tree method of Lachlan for classifying more difficult priority constructions, and it works out many properties of the c.e. degrees and the algebraic structure of the c.e. sets. It presents results on the relationship between a c.e. set and the degree of information it encodes such as the high maximal set the theorem of Martin. Prereq: Math 30200.

#### 30400. Model Theory III

Hirschfeldt

This course will cover the basics of stability theory, at the level of Buechler’s Essential Stability Theory. Topics will include Morley rank, the Baldwin Lachlan Theorem, an

introduction to geometrical stability theory, and the fundamentals of the study of stable theories. Prereq: Math 31000.

### 30800. Intuitionistic Logic and Constructive Mathematics Hirschfeldt

An introduction to constructivism in mathematics, with particular emphasis on logical aspects. Topics include deduction systems for intuitionistic logic, Kripke semantics, relationships between classical and intuitionistic logic, intuitionistic arithmetic, principles employed in constructive mathematics, constructive real numbers, and constructive analysis. Prereq: Math 27700 or equivalent logic course.

### 30900. Model Theory I

Completeness and compactness; elimination of quantifiers; omission of types; elementary chains; homogeneous models; two cardinal theorems by Vaught, Chang, and Keisler; categories and functors; inverse systems of compact Hausdorff spaces; applications of model theory to algebra. Prereq: Math 25500 or Math 27900, or consent of instructor.

### 31000. Model Theory II

Saturated models; categoricity in power; Cantor Bendixson and Morley derivatives; Morley and Baldwin Lachlan theorems on categoricity; rank in model theory; uniqueness of prime models and existence of saturated models; indiscernibles; ultraproducts; differential fields of characteristic zero. Prereq: Math 30900.

### 31100. Model Theory III

Malliaris

### 31200. Analysis I Measure and Integration

Lawler

Measure theory, including Lebesgue and Hausdorff measures, integration, convergence theorems, the Radon Nikodym theorem, and differentiation theory. Normed linear spaces,  $L_p$  spaces, completeness, duality, and the Riesz representation theorem. Fourier series, the Poisson summation formula, and the boundedness of the Hilbert transform. Prereq: Math 26200, 27000, 27200, and 27400.

### 31300. Analysis II Functional Analysis

Souganidis

Fréchet spaces, spaces of smooth functions, weak topologies and weak convergence, distributions and Fourier analysis, including mollifiers, convolution, the Paley Wiener theorem, and local solvability of constant coefficient PDE. Sobolev spaces and the embedding theorems. Operator theory, including compact and bounded operators, integral operators, spectral theory and Fredholm operators. Applications to the representation theory of compact groups (the Peter Weyl theorem) and an introduction to the calculus of variations. Prereq: Math 31200.

### 31400. Analysis III Complex Variables

Constantin

A review of the basic theory of one complex variable: Cauchy's theorem, the Cauchy Riemann equations, power

series expansions, the maximum modulus principle, classification of singularities, and the residue theorem. Normal families, conformal mapping and the Riemann mapping theorem. Prescribing zeros and poles of meromorphic functions. Harmonic functions and the Dirichlet problem. Introduction to Riemann surfaces. Negative curvature and Picard's Big Theorem. According to the inclinations of the instructor, further topics may include: holomorphic functions of several variables (e.g. Artogs Theorem), a deeper study of Riemann surfaces, the uniformization theorem, the Dirichlet problem in higher dimensions, differential equations in a complex domain and the Riemann Hilbert problem, Hardy spaces. Prereq: Math 31300.

### 31700. Topology And Geometry I Smooth Manifolds Farb

Definition of manifolds, tangent and cotangent bundles, vector bundles. Inverse and implicit function theorems, transversality, Sard's theorem and the Whitney embedding theorem. Vector fields and flows, Frobenius theorem, differential forms and the associated formalism of pullback, wedge product, integration, etc. Cohomology via differential forms, and computational tools, e.g. the Poincaré lemma and the Mayer Vietoris sequence. The degree of a map between compact oriented manifolds. Lie groups and Lie algebras. Prereq: Math 26100, 26200, 26300.

### 31800. Topology And Geometry II Differential Geometry Weinberger

Riemannian metrics, connections and curvature on vector bundles, the Levi Civita connection, and the multiple interpretations of curvature. Geodesics and the associated variational formalism (formulas for the 1st and 2nd variation of length), the exponential map, completeness, and the influence of curvature on the structure of a manifold (positive versus negative curvature). The Gauss Bonnet theorem and possibly the Hodge Theorem. Prereq: Math 31700.

### 31900. Topology And Geometry III Basic Homology Schlag

The fundamental group, covering space theory and Van Kampen's theorem (with a discussion of free and amalgamated products of groups). CW complexes, higher homotopy groups, cellular and singular cohomology, the Eilenberg Steenrod axioms, computational tools including Mayer Vietoris, cup products, Poincaré duality, and the Lefschetz fixed point theorem. Homotopy exact sequence of a fibration and the Hurewicz isomorphism theorem. Remarks on characteristic classes. Prereq: Math 31800.

### 32000, 32100, 32200. Mathematical and Statistical Methods for the Neuro Sciences I, II, III Cowan

This three quarter sequence is for students interested in computational and theoretical neuroscience. It introduces various mathematical and statistical ideas and techniques

used in the analysis of brain mechanisms. The first quarter introduces mathematical ideas and techniques in a neuroscience context. Topics include some coverage of matrices and complex variables; eigenvalue problems, spectral methods, and Green's functions for differential equations; and some discussion of both deterministic and probabilistic modeling in the neurosciences. The second quarter treats statistical methods that are important in understanding nervous system function. It includes basic concepts of mathematical probability; and information theory, discrete Markov processes, and time series. The third quarter covers more advanced topics that include perturbation and bifurcation methods for the study of dynamical systems, symmetry, methods, and some group theory. A variety of applications to neuroscience are described. Prereq: Students must have completed the equivalent of one year of college calculus and a course in linear algebra such as MATH 25000 and preferably a course in differential equations such as MATH 27300, and at least one course in neurobiology such as BIOS 14106 or 24236, or NURB 31800.

32500. Algebra I Group Theory  
Ginzburg

Group theory. Linear groups, semisimple algebras and modules, and group representations. Prereq: Math 25400, 25500, 25600.

32600. Algebra II Commutative Rings and Homology  
Nori

Noetherian rings and modules, the Hilbert basis theorem. Integral extensions, the going up theorem. Localisation, exactness of localisation. Finitely generated algebras over a field, varieties, the Noether normalisation lemma, Hilbert's Nullstellensatz, dimension. Discussion of the dictionary between commutative algebra and algebraic geometry. Other possible topics include: Kähler differentials, smoothness, completions, power series rings, the p-adic numbers. Ext and Tor. Dedekind domains. The spectrum of a commutative ring and the sheaf associated to a module. Prereq: Math 32500.

32700. Algebra III Topics in Algebra  
May

According to the inclinations of the instructor, this course may cover: Galois theory, algebraic number theory, algebraic curves, multilinear algebra (tensor, symmetric and exterior algebras), Lie algebras, homological algebra and/or the cohomology of groups. Prereq: Math 32600.

34100, 34200, 34300. Geometric Literacy  
Farb and Weinberger

This ongoing course might be subtitled: what every good geometer should know. The topics will intersperse more elementary background with topics close to current research, and should be understandable to second year students. The individual modules (2.5 weeks each) might be logically interrelated, but we will try to maintain a modular

structure so that people who are willing to assume certain results as black boxes will be able to follow more advanced modules before formally learning all the prerequisites. This year's topics might include: basics of symplectic geometry, harmonic maps in geometry, pseudo-Anosov homeomorphisms and Thurston's compactification of Teichmüller space, algebraic geometry for non-algebraic geometries. Prereq: First year graduate sequence.

36000, 36100, 36200. Topology Proseminar  
May

As a regular feature of the graduate mathematics program, there are informal proseminars that are devoted primarily to topics in algebraic topology and, recently, category theory, but are often concerned with topics that are of interest to people in such neighboring fields as algebraic geometry, geometric topology, and group theory. The proseminar is run by Professor May and other faculty members, who often talk on requested topics. In 2004-05, the 1:30-2:50 Tuesday and Thursday time slots were devoted primarily to talks in algebraic topology given by graduate students. The 3:00-4:00 Tuesday time slot was primarily devoted to proseminar talks in which the speakers at the 4:30-5:30 topology seminar gave informal talks on relevant background material. The 3:00-4:00 Thursday time slot was devoted primarily to talks in category theory.

36909. Iwasawa Theory I  
Kato

37500. Algorithms In Finite Groups (Ident to: CMSC 36500)  
Babai

We shall consider the asymptotic complexity of some of the basic problems of computational group theory. The two classes of groups highlighted will be permutation groups and matrix groups. The course will demonstrate the relevance of a delightful mix of mathematical techniques, ranging from combinatorial ideas, the elements of probability theory, and elementary group theory, to the theories of rapidly mixing Markov chains, applications of simply stated consequences of the Classification of Finite Simple Groups (CFSG), and occasionally, detailed information about finite simple groups. We shall go in some depth into the theory of permutation groups, combining 19th century style combinatorial approaches with techniques relying on CFSG. Prereq: Linear algebra, finite fields, a first course in group theory (Jordan-Hölder and Sylow theorems), elements of probability theory (Chebyshev's inequality). All other requisite subjects will be reviewed in class before used. No prior knowledge of the theory of algorithms is required.

37609. Topics in PDE  
Schlag

38109. Geometry of Variational Problems  
Polterovich

The course goes along Arnold's "Mathematical Methods of Classical Mechanics": Euler-Lagrange equation, Hamiltonian mechanics, integrable systems.

38300. Numerical Solutions to PDEs (Ident to: CMSC 38300)

Dupont

This course covers the basic mathematical theory behind numerical solution of partial differential equations. The course will investigate the convergence properties of finite element, finite difference and other discretization methods for solving partial differential equations. A brief introduction to Sobolev spaces and polynomial approximation theory will be given. Special emphasis on error estimators, adaptivity and optimal order solvers for linear systems arising from PDEs. Special topics include (from time to time) PDEs of fluid mechanics, max norm error estimates, and Banach space operator interpolation techniques. Prereq: Consent of instructor.

38500. Applied Mathematics Literacy

Scott

This ongoing course, analogous to Geometric Literacy, might be subtitled: "some things every good applied mathematician should know. The topics will intersperse elementary background with topics in current research, and will be understandable by second year math grad students. The individual modules (hopefully 3 weeks long, but maybe 2-5 weeks each) will allow people to re-start if interest or focus diverges. Topics for fall 2003 will include: models for fluids from Newton to Rivlin and Eriksen (existence, uniqueness, computational algorithms); models for economic equilibrium based on Monge Ampere type equations Guest lectures by experts on particular subjects will be featured. Prereq: None, but Analysis I or equivalent would be useful.

38510. Applied Topology

Weinberger

This course will be a literature course, with the work being done by the students. (It might last more than a quarter.) We will discuss applications in several directions, of which the following are four: 1. Theoretical computer science: e.g. parallel computation a la Herlihy et al. complexity of solution to certain problems (e.g. the Blum-Cucker-Shub-Smale model and e.g. the fundamental theorem of algebra). 2. Data analysis of the style discussed in recent papers of Carlsson and Ghrist. 3. Economics, e.g. the existence of Nash equilibria in game theory, the existence of equilibrium prices for certain economies, and the topological social choice model. 4. Robotics and problems of sensing. Prereq: The first year courses in Algebraic and Differential topology, although in theory the undergraduate algebraic topology should suffice.

39000, 39100. Mathematical Neuroscience I, II

Cowan

The topics to be covered will range from the modeling of single neuron behavior, to the dynamics of large scale brain activity. Various applications of dynamical systems theory will be introduced, as well as a variety of mathematical methods for analyzing such systems. Winter Spring. Prereq: MATH 27000, 27300, and 27500 and one course in neurobiology or computational neuroscience.

39003. Partial Differential Equations

Souganidis

This is the first quarter of sequence in Partial Differential Equations. The class will cover some basic topics for linear and nonlinear pde of elliptic and hyperbolic-type like Laplace, heat and wave equations, viscosity solutions for Hamilton-Jacobi and fully nonlinear second-order equations and hyperbolic conservation laws. Prereq: Some basic knowledge of Analysis.

40009. Rational Billiards, Translation Surfaces, Dynamics

Masur

This course will be an introduction to some of the basic ideas in dynamics. I will use the examples of billiards in polygons, and flows on translation surfaces to motivate the discussion.

40300. Lie Algebras

Alperin

Classical groups and lie algebras, basic representation theory. Structure and classification of complex semisimple lie algebras. Prereq: Math 325

41109. Mathematical Topics in Ecology Modeling (Ident to EVOL 43201)

Berestycki

This course will explore several subjects of current interest in ecology:

Biological invasions in heterogeneous environments (persistence of species, speed of propagation)

Effects of long distance dispersal (colonization speeds, spatial genetic structures)

Effects of climate change on populations distributions

Biodiversity (competing species models)

Some of the modeling aspects will be explained. The selected topics involve new mathematical results in non linear partial differential equations, mostly of reaction-diffusion type which will be developed in the course. We will meet questions such as equations and systems of reaction-diffusion type, non homogeneous environments, non-local operators, generalized traveling fronts, principal eigenvalues of elliptic operators in unbounded domains, asymptotic speed of spreading, optimal shape and free boundary problems. I will discuss the insight gained from and consequences of the mathematical results. Properties of elliptic and parabolic equations are required but will be recalled.

47000, 47100, 47200. Geometric Langlands Seminar

Beilinson and Drinfeld

This seminar is devoted not only to the Geometric Langlands theory but also to related subjects (including topics in algebraic geometry, algebra and representation theory). We will try to learn some modern homological algebra (Kontsevich's A infinity categories) and some forgotten parts of D module theory (e.g. the microlocal approach).

*Graduate Courses in Reading and Research*

Faculty members in the Department of Mathematics will offer courses in reading and research on an individual basis, according to the research interests of the student.

## DEPARTMENT OF PHYSICS

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*Chair*

Robert M. Wald

*Professors*

Isaac D. Abella

Edward C. Blucher

Marcela Carena

John Eric Carlstrom, Astronomy & Astrophysics

Henry J. Frisch

Philippe M. Guyot Sionnest, Chemistry

Jeffrey A. Harvey

Eric Isaacs

Heinrich Martin Jaeger

Woowon Kang

Kwang Je Kim

Young Kee Kim

David Kutasov

Kathryn Levin

Zheng Tian Lu

Emil J. Martinec

Gene F. Mazenko

Frank S. Merritt

Stephan Meyer, Astronomy & Astrophysics

Sidney R. Nagel

Pier Oddone

Mark J. Oreglia

James E. Pilcher

Thomas F. Rosenbaum

Jonathan L. Rosner

Robert Rosner, Astronomy & Astrophysics

Guy Savard

Melvyn J. Shochet

Simon P. Swordy

Michael Turner, Astronomy & Astrophysics

Carlos E.M. Wagner

Yau Wai Wah

Robert M. Wald

Paul B. Wiegmann

Bruce Winstein

Thomas A. Witten

*Associate Professors*

Juan I. Collar

Ilya Gruzberg

Robin Santra

Savdeep Sethi

Wendy Zhang

*Assistant Professors*

David Biron

Florencia Canelli

Cheng Chin

Margaret Gardel  
Richard Hill  
Scott Wakely

*Emeritus Faculty*

Albert V. Crewe  
James W. Cronin  
Dean Eastman  
Peter G.O. Freund  
Robert P. Geroch  
Roger H. Hildebrand  
Leo P. Kadanoff  
Riccardo Levi Setti  
Dietrich Müller  
Yoichiro Nambu  
Reinhard Oehme  
Eugene Parker  
John P. Schiffer  
S. Courtney Wright

The Department of Physics offers advanced degree opportunities in many areas of experimental and theoretical physics, supervised by a distinguished group of research faculty. Applications are accepted from students of diverse backgrounds and institutions: graduates of research universities or four year colleges, from the U.S. and worldwide. Most applicants, but not all, have undergraduate degrees in physics; many have had significant research experience. Seeking to identify the most qualified students who show promise of excellence in research and teaching, the admissions process is highly selective and very competitive.

## DOCTOR OF PHILOSOPHY

During the first year of the doctoral program, a student takes introductory graduate physics courses and usually serves as a teaching assistant assigned to one of the introductory or intermediate undergraduate physics courses. Students are encouraged to explore research opportunities during their first year. Students are also encouraged to take the candidacy examination as soon as they feel that they are prepared for it. After passing the candidacy exam and identifying a research sponsor, the student begins dissertation research while completing course requirements. Within a year after research begins, a Ph.D. committee is formed with the sponsor as chairman. A student continues research, from time to time consulting with the members of the committee, until completion of the dissertation. The average length of time for completion of the Ph.D. program in physics is about five and a half years. In addition to fulfilling University and divisional requirements, a candidate for the degree of Doctor of Philosophy in physics must:

1. Pass the candidacy examination on basic physics covers fundamental material usually studied in upper division undergraduate courses (mechanics, electricity and magnetism, special rela-

tivity, statistical mechanics, and quantum mechanics) and requires some knowledge of particles and fields and of the structure of matter. The candidacy examination is given every September and March and must be passed by the autumn quarter of the student's third year after matriculation.

2. Fulfill the experimental physics requirement by completing Advanced Experimental Physics (Physics 33400) or Advanced Experimental Physics Project (Physics 33500).
3. Pass four post candidacy advanced graduate courses devoted to the broad physics research areas of (A) Condensed Matter Physics, (B) Particle Physics, (C) Large Scale Physics (i.e. Astrophysics and/or Cosmology related), and (D) Intermediate Electives. The four courses selected must include at least one from each of the categories (A), (B), and (C).
4. Pass two other advanced (40000 level) courses either in physics or in a field related to the student's Ph.D. research.
5. Within the first year after beginning research, convene a first meeting of the Ph.D. committee to review plans for the proposed thesis research and for fulfilling the remaining Ph.D. requirements.
6. One to two quarters prior to the defense of the dissertation, hold a pre-oral meeting at which the student and the Ph.D. committee discuss the research project.
7. Defend the dissertation before the Ph.D. committee.
8. Submit for publication to a refereed scientific journal the thesis which has been approved by the Ph.D. committee or a paper based on the thesis. A letter from the editor acknowledging receipt of the thesis must be provided to the department office.

Consult a department adviser for more details.

## MASTER OF SCIENCE

The graduate program of the Department of Physics is oriented toward students who intend to earn a Ph.D. degree in physics. Therefore, the department does not offer admission to students whose goal is the Master of Science degree. However, the department does offer a master's degree to students who are already in the physics Ph.D. program or other approved graduate programs in the University. Normally it takes one and a half years for a student to complete the master's program. A master's degree is not required for continued study toward the doctorate.

In addition to fulfilling University and Divisional requirements, a candidate for the degree of Master of Science in physics must:

1. Demonstrate a satisfactory level of understanding of the fundamental principles of physics by either (a) passing the Ph.D. candidacy examination at the

master's level or higher or (b) passing nine approved courses with a minimum grade point average of 2.5. Five of the nine courses must be Physics 31600, 33000, 34100, 34200, 32200, and 35200.

2. Complete the Experimental Physics requirement (Physics 33400 or 33500).

### TEACHING OPPORTUNITIES

Part of the training of graduate students is dedicated to obtaining experience and facility in teaching. Most first year students are supported by teaching assistantships, which provide the opportunity for them to engage in a variety of teaching related activities. These may include supervising undergraduate laboratory sections, conducting discussion and problem sessions, holding office hours, and grading written work for specific courses. Fellowship holders are invited to participate in these activities at reduced levels of commitment to gain experience in the teaching of physics. During the Autumn quarter first year graduate students attend the weekly workshop, Teaching and Learning of Physics, which is an important element in their training as teachers of physics.

### TEACHING FACILITIES

All formal class work takes place in the modern lecture halls and classrooms and instructional laboratories of the Kersten Physics Teaching Center. This building also houses special equipment and support facilities for student experimental projects, departmental administrative offices, and meeting rooms. The center is situated on the science quad-range near the John Crerar Science Library, which holds over 1,000,000 volumes and provides modern literature search and data retrieval systems.

### RESEARCH FACILITIES

Most of the experimental and theoretical research of Physics faculty and graduate students is carried out within the Enrico Fermi Institute, the James Franck Institute and the Institute for Biophysical Dynamics. These research institutes provide close interdisciplinary contact, crossing the traditional boundaries between departments. This broad scientific endeavor is reflected in students' activities and contributes to their outlook toward research.

In the Enrico Fermi Institute, members of the Department of Physics carry out theoretical research in particle theory, string theory, field theory, general relativity, and theoretical astrophysics and cosmology. There are active experimental groups in high energy physics, nuclear physics, astrophysics and space physics, infrared and optical astronomy, and microwave background observations. Some of this research is conducted at the Fermi National Accelerator Laboratory, at Argonne National Laboratory (both of these are near Chicago), and at the European Organization for Nuclear Research (CERN) in Geneva, Switzerland.

Physics faculty in the James Franck Institute study chemical, solid state, condensed matter, and statistical physics. Fields of interest include chaos, chemical kinetics, critical phenomena, high  $T_c$  superconductivity, nonlinear dynamics, low temperature, disordered and amorphous systems, the dynamics of glasses, fluid dynamics, surface and interface phenomena, nonlinear and nanoscale optics, unstable and metastable systems, laser cooling and trapping, atomic physics, and polymer physics. Much of the research utilizes specialized facilities operated by the institute, including a low temperature laboratory, a materials preparation laboratory, x-ray diffraction and analytical chemistry laboratories, laser equipment, a scanning tunneling microscope, and extensive shop facilities. Some members of the faculty are involved in research at Argonne National Laboratory.

The Institute for Biophysical Dynamics includes members of both the Physical Sciences and Biological Sciences Divisions, and focuses on the physical basis for molecular and cellular processes. This interface between the physical and biological sciences is an exciting area that is developing rapidly, with a bi-directional impact. Research topics include the creation of physical materials by biological self assembly, the molecular basis of macromolecular interactions and cellular signaling, the derivation of sequence structure function relationships by computational means, and structure function relationships in membranes.

In the areas of chemical and atomic physics, research toward the doctorate may be done in either the physics or the chemistry department. Facilities are available for research in crystal chemistry; molecular physics; molecular spectra from infrared to far ultraviolet, Bose Einstein condensation, and Raman spectra, both experimental and theoretical; surface physics; statistical mechanics; radio chemistry; and quantum electronics.

Interdisciplinary research leading to a Ph.D. degree in physics may be carried out under the guidance of faculty committees including members of other departments in the Division of the Physical Sciences, such as Astronomy & Astrophysics, Chemistry, Computer Science, Geophysical Sciences or Mathematics, or related departments in the Division of the Biological Sciences.

### ADMISSION AND STUDENT AID

Most students entering the graduate program of the Department of Physics of the University of Chicago hold a bachelor's or master's degree in physics from an accredited college or university.

December 28 is the deadline for applications for admission in the following autumn quarter. The Graduate Record Examination given by the Educational Testing Service is required of all applicants. Applicants should submit recent scores on the verbal, quantitative, and analytic writing tests and on the advanced subject test in physics. Arrangements

should be made to take the examination no later than early December in order that the results be available in time for the department's consideration. Applicants from non English speaking countries must provide the scores achieved on the TOEFL or the IELTS.

All full time physics graduate students in good standing receive financial aid. Most graduate students serve as teaching assistants in their first year.

For information regarding application for admission, e-mail [physics@uchicago.edu](mailto:physics@uchicago.edu) or write to: Graduate Affairs, Department of Physics, University of Chicago, 5720 South Ellis Avenue, Chicago, IL 60637-1434. A departmental counselor will be glad to answer questions. Use URL <http://physics.uchicago.edu> to access the department's World Wide Web home page for further information.

### Courses

The following nine introductory graduate courses are normally taken in the first year:

- 31600. Advanced Classical Mechanics
- 32200. 32300. Advanced Electrodynamics and Optics I, II
- 33000. Mathematical Methods of Physics I
- 34100. 34200. Quantum Mechanics I, II
- 35200. Statistical Mechanics
- 33400/33500. Advanced Experimental Physics (required for master's and Ph.D. degrees)

The following courses are among those normally taken in the second and third years:

#### Category A (Condensed Matter Physics).

- 36100. Introduction to Solid State Physics
- 36600. Advanced Solid State Physics
- 36700. Soft Condensed Matter

#### Category B (Particle Physics).

- 36300. Introduction to Particle Physics
- 44300 or 44400. Introduction to Quantum Field Theory

#### Category C (Large Scale Physics).

- 36400. General Relativity
- 37100. Introduction to Cosmology

#### Category D (Intermediate Directives)

- 31700. Symplectic Methods of Classical Dynamics
- 38500. Advanced Mathematical Methods of Physics
- 38600. Advanced Methods of Data Analysis
- 37200. Space Physics and Astrophysics

A total of four courses with at least one from each of the first three categories above is required for the Ph.D. Each year the department also offers six to eight advanced (40000 level) courses dealing with special topics relating to the research of individual faculty members.

## DEPARTMENT OF STATISTICS

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### Chair

Stephen M. Stigler

### Professors

Yali Amit  
 Mihai Anitescu, Argonne National Laboratory  
 Paul Fischer, Argonne National Laboratory  
 Lars Hansen, Economics  
 Steven P. Lalley  
 Gregory Lawler, Mathematics  
 Peter McCullagh  
 Mary Sara McPeck  
 Per Mykland  
 Partha Niyogi, Computer Science  
 Michael Leonard Stein  
 Matthew Stephens  
 Stephen M. Stigler  
 Ronald Thisted, Health Studies  
 Kirk Wolter

### Associate Professors

Dan Liviu Nicolae, Medicine  
 Michael J. Wichura  
 Mathias Drton  
 Wei Biao Wu

### Assistant Professors

Nina Hinrichs, Computer Science  
 Debashis Mondal

### Senior Lecturers

Mei Wang

The modern science of statistics involves the invention, study, and development of principles and methods for modeling uncertainty through mathematical probability, for designing experiments, surveys and observational programs, and for analyzing and interpreting empirical data. Problems arising throughout the sciences and in business and technology drive the development of statistical methods. The interplay between applied and theoretical problems is at the core of what the department and its degree programs are about. Faculty and graduate students are currently working on statistical and probabilistic problems in fields such as genetics, computer vision, speech recognition, finance, environmental science, clinical trials, and demography. Other faculty and students are working on abstract topics in mathematical statistics and probability theory. Mathematics plays a major role in all statistical activity, whether of an abstract nature or dealing with specific techniques for analyzing data.

The department offers programs leading to the degrees of Master of Science and Doctor of Philosophy. Instruction

in statistics is designed to accommodate both students specializing in statistics and also those studying statistics as a tool for use in their own specialties. The graduate program in statistics provides a broad based education in statistics, probability and their applications to the social, biological and physical sciences. The faculty have diverse research interests and a student able to take advantage of this intellectual breadth will be well suited to the program.

### PROGRAM OF STUDY

A student applying to the program should normally have taken advanced calculus, linear algebra, probability and a few courses in statistics. Additional courses in mathematics, especially a course in real analysis, will be helpful for Ph.D. students. Some familiarity with computers and programming is expected. Even so, students who have not taken courses in all of these areas should not be discouraged from applying, especially if they have a substantial background, through study or experience, in some area of science or other discipline involving quantitative reasoning and empirical investigation. Because statistics is an empirical and interdisciplinary field, a strong background in some area of potential application of statistics is a considerable asset. Indeed, a student's background in mathematics and in science or another quantitative discipline is more important than his or her background in statistics in determining the ability of the student to do statistical research.

The master's program offers this degree with an orientation toward survey methods, medical statistics and finance or toward other fields of specialization of the faculty. For a student with a solid background in mathematics and statistics, the program can be completed in one year. There is a course sequence: currently, five courses on applied and theoretical statistics plus four electives. A master's paper is required and is presented as a seminar.

Reflecting the diversity of the students, the Ph.D. program is flexible in terms of the timing and content of coursework and research. The following describes a typical path for a student with a solid background in mathematics and some familiarity with statistics. During the first year, the student takes courses in probability theory and stochastic processes, mathematical statistics and applied statistics. These three areas receive roughly equal emphasis and serve as the foundation for all later work. A substantial component of the applied courses is the use of advanced statistical programming languages, such as R, for data analysis. At the start of the second year, the student takes preliminary examinations covering all these areas. During the second year, students take more advanced and specialized courses, depending on their interests. The selection of courses offered varies from year to year, but there is always a variety of courses in probability and in theoretical and applied statistics sufficient to address quite diverse interests. In the third year, students normally begin to work

with a thesis advisor and initiate their doctoral research. One common way to get started in research is to take a reading course with a prospective advisor. After making substantial research progress, the student prepares a paper, typically early in the fourth year, that is distributed to the faculty and students and is discussed in an open departmental workshop. A completed dissertation is presented in a formal departmental seminar, and then a final oral examination completes the program for the Ph.D. In recent years, nearly all students have completed the Ph.D. within five years of entering the program. Students who have significant graduate training before entering the program can obtain their doctors degree in four years.

Some students must postpone taking one of the usual first-year courses in order to strengthen their background in that area first. This delay does not usually slow the student's progress through the remainder of the program.

Most students receiving a doctorate proceed to faculty appointments in research universities. A substantial number take positions in government or industry, in research groups and the National Institutes of Health, in communications and in commercial pharmaceutical research groups, and in finance. The department has an excellent track record in placing new Ph.D.s.

### PROGRAM IN BIOSTATISTICS

Doctoral students with an interest in applying statistical methods and doing research in biology and medicine can do so by tailoring their doctoral program to emphasize biostatistics. Courses are offered every year in areas such as biometry, survival analysis, medical imaging, and clinical trials. The Biostatistics Workshop, cosponsored with the Department of Health Studies, meets regularly in the Medical Center, and is a forum in which graduate students, physicians, and medical researchers meet to discuss all aspects of quantitative methods in medicine. Through the workshop, students in statistics have the opportunity to participate in current medical research. Consequently, in recent years students from the department have coauthors on scientific papers in areas such as genetics, anesthesiology, geriatrics, and emergency medicine.

### TEACHING

Part of every statistician's job is to evaluate the work of others and to communicate knowledge, experience, and insights. Every statistician is, to some extent, an educator, and the department provides graduate students with some training for this aspect of their professional lives. The department expects all doctoral students, regardless of their professional objectives and sources of financial support, to take part in a graduated program of participation in some or all phases of instruction, from grading, course assisting, and conducting discussion sections, to being a lecturer with responsibility for an entire course.

## CONSULTING

Students in the degree programs are encouraged to complement their training in statistics with experience and study in some field where statistics is important. Courses and study in empirical science and summer employment offer opportunities in this direction. The department operates a consultation program, under the guidance of the faculty, that serves mainly students and faculty throughout the University. All degree candidates in statistics must participate in these consulting activities, at a level appropriate to their training and prior experience, as an integral part of their degree program. An informal seminar meets regularly to provide a forum for presenting and discussing problems, solutions and topics in statistical consultation.

## APPLICATION

Students interested in learning more about the department's admission procedures and obtaining other information about the department and University may visit our web site at <http://www.stat.uchicago.edu>. The online application for admission can be accessed at <http://stat.uchicago.edu/admissions/> or by applying directly at <https://grad-application.uchicago.edu>.

## FACILITIES

The department is housed in several adjacent floors of Eckhart Hall. All students have office spaces in one of several student office suites. A small departmental library and conference room is a common meeting place for formal and informal gatherings of students and faculty. The mathematics and statistics branch of the University Library is located on the second floor of Eckhart Hall. The major computing facilities of the department are based on a network of Linux workstations for the faculty and students. These facilities are available around the clock.

## STATISTICS THROUGHOUT THE UNIVERSITY

In addition to the courses, seminars and programs in the Department of Statistics, courses and workshops of direct interest to statisticians are offered throughout the University, most notably in the programs in statistics, econometrics and finance in the Chicago Booth School of Business and in the research programs in economics, sociology, and education associated with NORC (National Opinion Research Center).

For courses in Statistics, see the Time Schedules at <http://timeschedules.uchicago.edu> or visit the department web site at <http://www.stat.uchicago.edu/>.

## THE ENRICO FERMI INSTITUTE

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### *Director*

Simon Swordy

### *Professors*

Edward Blucher, Physics  
 Marcela Carena, Physics  
 John Eric Carlstrom, Astronomy & Astrophysics  
 Andrew Davis, Geophysical Sciences  
 Henry J. Frisch, Physics  
 Lawrence Grossman, Geophysical Sciences  
 Jeffrey A. Harvey, Physics  
 Craig Hogan, Astronomy & Astrophysics  
 Wayne Hu, Astronomy & Astrophysics  
 Alexei Khokhlov, Astronomy & Astrophysics  
 Edward James Kibblewhite, Astronomy & Astrophysics  
 Kwang Je Kim, Physics  
 Young Kee Kim, Physics  
 Edward W. Kolb, Astronomy & Astrophysics  
 Arieh König, Astronomy & Astrophysics  
 David Kutasov, Physics  
 Donald Quincy Lamb, Jr., Astronomy & Astrophysics  
 Zheng-Tian Lu, Physics  
 Emil J. Martinec, Physics  
 Frank S. Merritt, Physics  
 Stephan Meyer, Astronomy & Astrophysics  
 Sidney Nagel, Physics  
 Angela V. Olinto, Astronomy & Astrophysics  
 Mark J. Oreglia, Physics  
 James E. Pilcher, Physics  
 Jonathan L. Rosner, Physics  
 Robert Rosner, Astronomy & Astrophysics  
 Guy Savard, Physics  
 Melvyn J. Shochet, Physics  
 Simon P. Swordy, Physics  
 James Wellington Truran, Jr., Astronomy & Astrophysics  
 Michael Turner, Astronomy & Astrophysics  
 Carlos E.M. Wagner, Physics  
 Yau Wai Wah, Physics  
 Robert M. Wald, Physics  
 Paul B. Wiegmann, Physics  
 Bruce Winstein, Physics  
 Donald G. York, Astronomy & Astrophysics

### *Associate Professors*

Juan Collar, Physics  
 Andrey Kravtsov, Astronomy & Astrophysics  
 Savdeep Sethi, Physics

### *Assistant Professors*

Florencia Canelli, Physics  
 Nicolas Dauphas, Geophysical Sciences  
 Richard Hill, Physics

*Emeritus Faculty*

Robert N. Clayton, Geophysical Sciences

Albert V. Crewe, Physics

James W. Cronin, Physics

Robert P. Geroch, Physics

Roger H. Hildebrand, Physics

Leo P. Kadanoff, Physics

Riccardo Levi Setti, Physics

Dietrich Müller, Physics

Yoichiro Nambu, Physics

Takeshi Oka, Chemistry

S. Courtenay Wright, Physics

Founded at the end of World War II with a faculty that included Nobel laureates Enrico Fermi and Harold Urey, the Enrico Fermi Institute has played a central role in the development of basic research in nuclear physics and nuclear chemistry, elementary particle physics, and astrophysics. Of the many Nobel laureates associated with the institute, James Cronin and Yoichiro Nambu are currently in residence as Professors Emeritus. Early research at the EFI examined the nature of nuclear structure and the origin of cosmic rays, and also established carbon 14 dating for research in geophysics and archeology. Today these interdisciplinary traditions continue among the areas most actively pursued at the Enrico Fermi Institute, including high-energy experimental physics, theoretical particle physics, quantum field theory, astronomy and high-energy astrophysics, cosmology, general relativity, solar and planetary research, nuclear cosmochemistry, electron and ion microscopy, and solar energy concentration.

All members of the EFI faculty hold one or more joint appointments in the Departments of Astronomy & Astrophysics, Chemistry, Geophysical Sciences, Mathematics, or Physics. The scientific staff of the EFI also includes a number of senior scientists, senior research associates, research scientists, and postdoctoral research associates. Every year, a few outstanding young scientists from an international group of applicants are appointed as Enrico Fermi Fellows or as Robert R. McCormick Fellows. Students, both graduates involved in thesis projects and undergraduates taking their first steps in research, also play an important role in the intellectual life of the EFI.

EFI faculty and scientific and technical staff occupy part of the University's Research Institutes Building, the High Energy Physics Building, the Laboratory for Astrophysics & Space Research, and the Astronomy & Astrophysics Center. Experimental research is conducted not only within these laboratories on campus but also at outside facilities such as the Argonne National Laboratory and the Fermi National Accelerator Laboratory, both about an hour's drive from campus, and the European Center for Nuclear Research (CERN) in Geneva, Switzerland, as well as Salt Lake City, Utah in collaboration with the University of Utah. Equipment designed and constructed at the EFI also

is used in experiments on mountain observatories, balloons, the space shuttle, and many spacecraft, including those on missions to the inner and outer planets and beyond the edge of the solar system.

## THE JAMES FRANCK INSTITUTE

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### *Director*

Heinrich M. Jaeger

### *Professors*

Laurie J. Butler, Chemistry

Todd Dupont, Computer Science

Karl F. Freed, Chemistry

Philippe M. Guyot Sionnest, Chemistry

Eric D. Isaacs, Physics

Heinrich M. Jaeger, Physics

Woowon Kang, Physics

Ka Yee Lee, Chemistry

Kathryn Levin, Physics

Donald H. Levy, Chemistry

Gene F. Mazenko, Physics

Sidney R. Nagel, Physics

Thomas F. Rosenbaum, Physics

Norbert F. Scherer, Chemistry

Steven J. Sibener, Chemistry

Paul Wiegmann, Physics

Thomas A. Witten, Physics

Luping Yu, Chemistry

### *Associate Professors*

Aaron Dinner, Chemistry

Ilya Gruzberg, Physics

Dion L. Heinz, Geophysical Sciences

David Mazziotti, Chemistry

Wendy Wei Zhang, Physics

### *Assistant Professors*

David Biron, Physics

Cheng Chin, Physics

Greg Engel, Chemistry

Margaret Gardel, Physics

### *Emeritus Faculty*

R. Stephen Berry, Chemistry

Dean Eastman, Physics

Robert Gomer, Chemistry

Leo P. Kadanoff, Physics

John C. Light, Chemistry

Stuart A. Rice, Chemistry

## ABOUT THE INSTITUTE

The James Franck Institute is the premier institute in the U.S. for interdisciplinary research at the intersection of physics, chemistry and materials science. The Institute is home to scientists from condensed matter physics, physical and materials chemistry, atomic, molecular and optical physics, and biophysics. Several of its thirty-three faculty members are affiliated as well with departments such as

computer science, geophysics, mathematics, and with other research institutes on campus or with nearby Argonne National Laboratory. Most of the faculty in the Institute are also associated with the Chicago Materials Research Center, one of the select Research Science and Engineering Centers (MRSECs) supported by the National Science Foundation.

The James Franck Institute was established after World War II as the Institute for the Study of Metals, with the present name being adopted in 1967 to reflect the emerging wider range of research activities covering the full spectrum of solids, liquids, and gases. Today, high-profile experimental and theoretical research in the Institute covers the areas of nanoscience, chemical kinetics and dynamics, phase transitions and far-from-equilibrium phenomena, dynamical systems, materials behavior under extreme deformations, low-temperature transport phenomena and superconductivity, ultracold atomic matter, molecular beams, laser spectroscopy, surface phenomena, polymer chemistry and physics, and biophysics. The Institute provides a nurturing environment for scientists of different disciplines to interact and aid each other's research, and it extends to pre- and postdoctoral researchers the opportunity to do research in a unique interdisciplinary setting. Housed in the new Gordon Center for Integrative Science building, the Institute provides state-of-the-art laboratory space and operates a number of specialized research facilities. These include a low-temperature (cryogenics) laboratory, materials preparation and spectroscopic facilities, scanning probe and electron microscopes, and extensive shop and computer facilities.

In an age where much cutting-edge research lies at the boundaries between traditional disciplines, the James Franck Institute fosters creative interdisciplinary work at the forefront of science.

## INSTITUTE FOR BIOPHYSICAL DYNAMICS

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*Director*

Tobin R. Sosnick

*Professors*

Francisco Bezanilla, Biochemistry and Molecular Biology

Benjamin Glick, Molecular Genetics and Cell Biology

Rustem Ismagilov, Chemistry

Stephen Kent, Biochemistry and Molecular Biology

Anthony A. Kossiakoff, Biochemistry and Molecular  
Biology

Ka Yee C. Lee, Chemistry

Keith Moffat, Biochemistry and Molecular Biology

Milan Mrksich, Chemistry

Eduardo Perozo, Biochemistry and Molecular Biology

Daphne Preuss, Molecular Genetics and Cell Biology

Benoit Roux, Biochemistry and Molecular Biology

Norbert Scherer, Chemistry

L. Ridgway Scott, Computer Science, Mathematics

Tobin R. Sosnick, Biochemistry and Molecular Biology

*Associate Professors*

Aaron Dinner, Chemistry

Chuan He, Chemistry

*Assistant Professors*

David Biron, Physics

Margaret Gardel, Physics

*Emeritus Faculty*

James R. Norris, Jr., Chemistry

Exciting frontiers in scientific research lie at the interface of the physical and biological sciences, outside the traditional boundaries of existing scientific disciplines. It is the purpose of the Institute for Biophysical Dynamics to create a stimulating environment to foster novel research at this important interface. Critical examination of a biological system as basic as a single cell raises questions so complex that they cannot even be stated in terms of a single discipline: the questions overflow the normal boundaries of biology and spill into the various branches of the physical sciences. Fortunately, converging trends in the biological and physical sciences permit the development of a detailed, molecular-level understanding of the structure, diversity and function of biological entities within the cell.

The University of Chicago established the Institute for Biophysical Dynamics to meet these challenges with a new approach to scientific research. The Institute brings together experimentalists, theoreticians, and computational scientists to forge a scientific culture of open exchange of

ideas and of collaboration across disciplines and among laboratories.

To provide educational training, the Institute has established programs to involve undergraduate, graduate and postdoctoral students in this new cross-disciplinary approach to science. This culture of interdisciplinary research will catalyze exchanges among researchers in industry, Argonne National Laboratory, and many diverse groups (e.g. ranging from neurobiology and cell biology to physics and computer science) at the University.

# THE PROFESSIONAL SCHOOLS

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## CHICAGO BOOTH

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Founded in 1898, the University of Chicago Booth School of Business is the second-oldest business school in the United States and one of the most distinguished. The school's programs consistently rank highly in surveys, and the school has a strong reputation for innovation in both research and teaching. For example, Chicago Booth faculty have made significant contributions in the areas of finance, the economics of regulation, and decision making. For more than a century, Chicago Booth has been known as an innovator in business education and a creator of ideas.

In autumn 2004 Chicago Booth opened its Hyde Park Center. Named the Charles M. Harper Center in 2007, this new facility brought together all of Chicago Booth's previously existing Hyde Park campus buildings into one 415,000-square-foot space. Located at 5807 South Woodlawn Avenue, Harper Center was designed around how teachers want to teach and how students want to learn. With the opening of Harper Center, Chicago Booth could lay claim to the best business school facilities in the world. Chicago Booth is the only business school with permanent campuses on three continents. Built in 1994, Gleacher Center, off Michigan Avenue in downtown Chicago, provides state-of-the-art executive education and conference facilities and is home to the school's part-time MBA programs. In London, Woolgate Exchange is the home of the school's Executive MBA Program Europe. In Singapore, the House of Tan Yeok Nee, a renovated historic building in the center of Singapore's business and government district, is the location for the Executive MBA Program Asia.

The University of Chicago Booth School of Business offers six programs of study leading to a degree: four leading to an MBA (the Full-Time MBA Program, the Evening MBA Program, the Weekend MBA Program, and the Executive MBA Program), one leading to an IMBA (the International MBA Program), and the PhD Program.

### THE MBA PROGRAM

The MBA curriculum is designed to prepare students for significant careers in management. It encompasses both the basic disciplines that underlie management and the operational areas specific to business. The courses are designed to provide understanding of the components of managerial decision making while furnishing perspective on the role of business as an economic, political, and social institution.

The MBA experience is not restricted to the classroom at Chicago Booth. Although Booth is not a case study institution, a substantial percentage of the total course work, depending on the student's choice of classes, will consist of various kinds of cases and applied analyses. Because of the school's location in one of the world's major commercial centers, students meet business, economic, labor, and political leaders at the numerous lecture and seminar series held on campus and through alumni and friends in Chicago's business community.

Freedom of choice is a way of life at Chicago Booth. Professors are free to use the teaching method they believe to be most effective; students are free to choose the courses and professors from whom they can best learn. In addition, students are encouraged to make use of the resources of the entire university and take advantage of the critical and intellectual diversity that thrives on the campus. The Chicago Booth MBA is characterized by a willingness to experiment, to judge people by their performances rather than their origins, to judge ideas by their consequences rather than their antecedents.

Chicago Booth's Leadership Effectiveness and Development Program (LEAD) was founded in 1989 as one of the first experiential leadership programs at a major business schools. Held during autumn quarter and lead by second-year student facilitators, the program provides a common educational experience within a curriculum that has always offered exceptional flexibility. This required, noncredit course for full-time program students is designed to enhance self-awareness and interpersonal effectiveness through a varied and highly interactive curriculum. Through these experiences, students will enhance their mastery of three of the most important aspects of leadership: building relationships, inspiring others, and influencing outcomes. Other class activities in autumn quarter revolve around the 10 student cohorts assigned during LEAD that help build a sense of community, instill the value of teamwork, and acquaint students with the school.

The school admits persons with a wide variety of backgrounds. The normal prerequisite is a four-year bachelor's degree, or equivalent, from an accredited institution. Students who do not have a bachelor's degree may apply to the school for special eligibility. Those interested in consideration for special eligibility must receive approval before an application is submitted and should, therefore, write to the director of admissions for further information.

Requests for an application and other inquiries should be addressed to the Office of Admissions and Financial Aid, The University of Chicago Booth School of Business, 5807 South Woodlawn Avenue, Chicago, Illinois 60637, phone: 773.702.7369, email: [admissions@ChicagoBooth.edu](mailto:admissions@ChicagoBooth.edu).

## THE INTERNATIONAL MBA PROGRAM

The University of Chicago Booth School of Business also offers an international MBA (IMBA) degree. This program provides students with in-depth training in business fundamentals as well as the skills and training required to be competitive at the global level.

The core of the IMBA program draws on the traditional strengths of the school's MBA program. Students enjoy flexibility in course selection, few absolute course requirements, and access to the best business faculty in the world. They grasp the fundamentals of business and develop the skills necessary to apply those fundamentals in real world situations.

In addition, IMBA students develop a broad set of intercultural skills necessary for successful careers in international business. They master a foreign language, spend at least one term of study abroad, participate in specialized multicultural programming, and potentially work on real company projects as part of specially tailored project courses while studying overseas. International education is delivered by Booth faculty, world-renowned scholars from other units of the university (such as East Asian Studies or International Relations), and by faculty from partner universities around the globe.

Though the IMBA contains additional requirements, the IMBA program is completed in the same time frame as the traditional MBA program. As a result, most students should expect to complete the program in the twenty-one months usually required for the MBA program. Since expertise in international business is implicit in the IMBA degree, recognition of an international business concentration would be redundant; therefore, no IMBA student may declare an international business concentration.

Acceptance into the IMBA program is based first on gaining admission to the Full-Time MBA Program. During the first quarter of enrollment students may declare their intention to follow the IMBA curriculum. To obtain an MBA application, contact the Office of Admissions and Financial Aid, The University of Chicago Booth School of Business, 5807 South Woodlawn Avenue, Chicago, Illinois 60637, or phone 773.702.7369.

### THE PART-TIME MBA PROGRAMS

#### *The Evening MBA Program*

The University of Chicago pioneered the concept of part-time MBA study for men and women employed in management and the professions. Even though the school's Evening MBA Program is more than fifty years old, it is still unique in the field of management education because it is identical in every important way to the full-time program. Entrance requirements and degree requirements are the

same for both programs, and courses are taught by the same faculty.

While the academic aspects of the full-time and part-time programs are the same, their logistics are quite different. Evening MBA classes meet on weeknights in the school's convenient downtown location at Gleacher Center, 450 North Cityfront Plaza Drive, along the north bank of the Chicago River between Michigan Avenue and Columbus Drive. Approximately 1,600 students from a diverse background of job functions and industries are currently engaged in part-time study in the program. Many of the students come from Chicago area banks and financial institutions; heavy industry, consulting, advertising, and the entrepreneurial and nonprofit sectors also are well represented. Job titles of current students range from new management trainees to senior executive officers.

Classes are available in all four academic quarters. Students completing two courses per quarter will fulfill the program requirements in two-and-one-half years, although the average graduation time is approximately three years. All MBA candidates are allowed a maximum of five years to complete the degree program.

#### *The Weekend MBA Program*

Many managers often find it convenient to take their classes on Saturdays due to travel schedules or the location of their offices far from Chicago. To meet the needs of individuals and their companies, Booth provides an additional avenue of continuing education in its Weekend MBA Program. Students take courses on Saturday mornings and Saturday afternoons at the convenient downtown Gleacher Center and thereby can complete the MBA program in as little as two-and-one-half years. Some students fly in from across the country and around the globe, with over 70 percent of weekend students living outside of Illinois. The Weekend MBA Program follows in the Chicago Booth tradition of offering all MBA candidates the same academic program, same faculty, and same degree as the full-time and evening MBA programs.

## THE PHD PROGRAM

The PhD Program is an integral part of Chicago Booth. The school began the first PhD program in business in the United States in 1920 and awarded its first PhD degree in 1922. Since then, more than five hundred degrees have been granted.

The program leading to the degree of doctor of philosophy is designed for students of outstanding ability who desire advanced studies in preparation for careers in university teaching and research. The number of students admitted to the program each year is small and, within the framework of the general requirements described below, programs of study are designed to fit individual interests. Students with a variety of backgrounds are admitted

to the program; undergraduates with strong academic backgrounds (e.g., economics, mathematics, psychology, sociology) and strong research interests are encouraged to apply. Students without strong academic backgrounds in their area of study may have to take prerequisite courses in economics, mathematics, or statistics.

Information about the program and application materials may be requested from the PhD Program Office, The University of Chicago Booth School of Business, 5807 South Woodlawn Avenue, Chicago, Illinois 60637, and are available online at [ChicagoBooth.edu/phd](http://ChicagoBooth.edu/phd).

### JOINT DEGREE PROGRAMS

Chicago Booth participates in joint degree programs with several other schools and divisions of the University: the Law School; School of Social Service Administration; Pritzker School of Medicine; Irving B. Harris Graduate School of Public Policy; East European/Russian, Middle Eastern, South Asian, and Latin American area study centers; and Committee on International Relations. These programs allow the student to pursue combined programs of study. For more information on the joint MBA/AM programs in international relations or Middle Eastern, East Asian, East European/Russian, Latin American, and South Asian studies, contact the Committee on Joint MBA/AM Programs, The University of Chicago Booth School of Business, 5807 South Woodlawn Avenue, Chicago, Illinois 60637. For all other joint programs, write to the director of admissions of Chicago Booth and the dean of students of the appropriate school.

### THE EXECUTIVE MBA PROGRAM

The Executive MBA Program is a part-time MBA program designed to prepare experienced executives to be more effective general managers.

Each year, approximately 90 students are admitted to each location of study in this intensive, twenty-month program. Students will participate primarily at one of our three international locations: downtown Chicago (Gleacher Center); London (Woolgate Exchange); or Singapore (The House of Tan Yeok Nee). The Executive MBA Program curriculum emphasizes the value of learning in groups and sharing experiences. International cohorts are composed of an equal mix of students from all three campuses and convene for week-long sessions in London and Singapore.

Although the format is different, the Executive MBA Program, like all of Chicago Booth's MBA programs, is based on the Chicago Approach to business education. This approach emphasizes developing an understanding of the fundamental forces in the economy, in organizations, and in individuals; using this understanding to analyze and produce creative, imaginative solutions to real world problems; and staffing courses with regular full-time

members of the faculty. Optional concentrations are optional and available in finance, marketing, and strategy for students interested in specializing or deepening their knowledge in areas of particular relevance to their careers.

For further information about the program, contact the director of the Executive MBA Program North America, The University of Chicago Booth School of Business, 450 North Cityfront Plaza Drive, Chicago, Illinois 60611, phone: 312.464.8750, email: [xp@ChicagoBooth.edu](mailto:xp@ChicagoBooth.edu); the director of the Executive MBA Program Europe, The University of Chicago Booth School of Business, Woolgate Exchange, 25 Basinghall Street, London EC2V 5HA United Kingdom, phone: 44.(0)20.7643.2210, email: [europe.inquiries@ChicagoBooth.edu](mailto:europe.inquiries@ChicagoBooth.edu); or the director of the Executive MBA Program Asia, The University of Chicago Booth School of Business, 101 Penang Road, Singapore 238466, phone: 011.65.6835.6482, email: [asia.inquiries@ChicagoBooth.edu](mailto:asia.inquiries@ChicagoBooth.edu).

## THE LAW SCHOOL

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The Law School offers a three-year program of professional instruction leading to the degree of Doctor of Law (J.D.). It is designed to prepare students for the practice of law in any American jurisdiction. A bachelor's degree from an approved college is usually a prerequisite to admission, although highly qualified students with only three years of undergraduate studies may be admitted. All applicants must take the Law School Admission Test. Each entering class is limited to approximately 195 students. A student in good standing at an approved American law school who has completed at least one year of law study or a graduate of an approved foreign law school whose studies have been primarily in the common law may apply for admission with advanced standing.

The school offers advanced studies leading to the degrees of Master of Laws (LL.M.), Doctor of Jurisprudence (J.S.D.), Master of Comparative Law (M.Comp.L.), and Doctor of Comparative Law (D.Comp.L.).

What sets Chicago apart from other law schools is its unabashed enthusiasm for the life of the mind and its conviction that ideas matter and are worth discussing. We value legal education and training, not only as preparation for legal careers, but for their own sakes as well. Legal study at Chicago is a passionate venture that begins in the classroom, where the faculty engage their students in a rigorous Socratic dialogue. Chicago's unique first year required course, *Elements of the Law*, introduces students to the law as an interdisciplinary field and gives them the tools to continue the interdisciplinary inquiry throughout their legal education.

Chicago remains committed to legal education as an education for generalists, although students with particular interests will find it possible to study topics in depth through advanced and more specialized courses.

Emphasizing the acquisition of broad and basic knowledge of law, an understanding of the functioning of the legal system, and the development of analytic abilities of the highest order, a Chicago legal education prepares students for any professional role they might choose: legal practice or legal education, entrepreneurial ventures, international private or public law practice, corporate practice, government service, alternative dispute resolution including arbitration and mediation, or work with nonprofit organizations. Graduates do many things in their careers, and they all take with them the analytic skills emphasized during their years at the Law School.

In addition to a wide array of courses and seminars, second and third year students may participate in a number of clinical programs, including the Irwin Askow Housing Initiative, the Criminal and Juvenile Justice Project, the Police Accountability Project, the Institute for Justice Clinic

on Entrepreneurship, the Exoneration project, and the Appellate Advocacy Clinic. In these programs, students engage in supervised practice, including the representation of clients in court.

A significant portion of the faculty specialize in disciplines other than law, such as economics, history, sociology, and political science. The curriculum devotes substantial attention to relevant aspects of economics, legal history, comparative law, psychiatry, statistics, and other social science methodology. In addition to the student edited *University of Chicago Law Review*, *Legal Forum*, and the *Chicago Journal of International Law*, the school has three scholarly journals the *Supreme Court Review*, the *Journal of Law and Economics*, and the *Journal of Legal Studies*. The Law School is also home to the Center for Comparative Constitutionalism, the John M. Olin Program in Law and Economics, the Center for Studies in Criminal Justice, and the Legal History Program.

Detailed information on admission, programs, faculty, and facilities is contained in the Announcements of the Law School, obtainable from the Admissions Office, Law School, The University of Chicago, 1111 East 60th Street, Chicago, IL 60637.

## IRVING B. HARRIS GRADUATE SCHOOL OF PUBLIC POLICY STUDIES

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### PROGRAM OF STUDY

One of six professional schools, the Harris School of Public Policy Studies is part of a world-class intellectual community and continues the University's tradition of scholarship intended to address real-world problems. Established in 1988, the Harris School emerged from the interdisciplinary Committee on Public Policy Studies. Influential founding supporters include educational sociologist James Coleman, urban sociologist William Julius Wilson, and the 2000 Nobel laureate economist James Heckman. From its inception, the Harris School has sought to enhance the University's role in shaping and understanding public life by conducting policy-relevant research and preparing talented individuals to become leaders and agents of social change.

The Harris School offers a Master of Public Policy degree; a one-year Master of Arts degree in public policy studies for students already possessing another professional degree; a Master of Science in Environmental Science and Policy; a combined degree program with the Committee on International Relations; cooperative programs with the University of Chile, Tel Aviv University, and Yonsei University Graduate School of International Studies; and joint degrees with the Divinity School, Graduate School of Business, Law School, and School of Social Service Administration. The Harris School also offers a Doctor of Philosophy for students seeking research-related careers in academia or elsewhere. In addition, the Harris School offers non-degree training opportunities for public policy professionals.

An exciting and challenging place to learn, the Harris School's model of public policy training reflects the University of Chicago's tradition of research and teaching—meticulous scholarship, open inquiry, and cross-disciplinary, critical thinking. Faculty come from diverse academic backgrounds and lend their individual expertise to a collaborative curriculum. Students come ready and willing to work and prepare for leadership in public policy. Alumni around the world apply their Harris School training to a multitude of public policy issues, making an impact in whatever arena they choose to work.

The rigorous curriculum stresses the development of analytical tools, which form the basis of the program's approach to understanding the nature of social problems and the impact of public policy. Harris School students become conscientious consumers of social science research and are able to evaluate information and make informed policy choices.

However, classroom training is only part of the equation. The Harris School provides opportunities for students to apply the critical skills that they learn in the classroom to real-world situations. Through a mentor program, internships, and practica, Harris School students are able to enrich their education, network with community leaders, and lend their growing public policy expertise to local, national, and international organizations. The School fosters a spirit of cooperation between students, public policy professionals, faculty, and others to address societal concerns and is constantly seeking new partnership opportunities.

### PROGRAM OVERVIEW

All students are required to fulfill core course requirements to acquire technical and analytical skills for their professional growth and distribution requirements to gain a broad background in policy analysis. However, the flexibility of the program allows students to tailor their course of study to fit their interests through:

- Concentration areas (optional), which expose students to the content and complexity of at least one policy domain
- Electives, which offer students an opportunity to acquire training both in the theoretical and applied analysis of public policy issues, and to develop the skills necessary for a professional position in policy analysis

The integration of research and practical training and a multi-disciplinary approach to problem solving underlie all aspects of the program.

### RESEARCH OPPORTUNITIES

Faculty and student research at the Harris School is guided not only by theoretical interests, but also by a strong commitment to solving enduring public policy problems.

Students are frequently involved in faculty research through research assistantships, coursework, independent studies, and research centers housed at the School and throughout campus. The Harris School is home to three research centers—the Center for Human Potential and Public Policy, the Cultural Policy Center, and the Program on Political Institutions—as well as the Pritzker Consortium on Early Childhood Development. The Center for Human Potential and Public Policy supports innovative social science research and encourages transdisciplinary research approaches on a broad range of issues, including health and well-being; science, technology, and inequality; and poverty and education. The Cultural Policy Center provides research and informs policy that affects the arts, humanities, and cultural heritage. It serves as an incubator for new ways of understanding what the arts and culture are, what they do, and how they can be affected by a range of policies in the public and private sectors. The Program on Political Institutions focuses on the domestic and international institutions that create and implement public policy.

Through the support of workshops, conferences, student training, and scholarship, it establishes an intellectual hub at the University for faculty and graduate students who are interested in the political economy of institutions. The Harris School is also home to Pritzker Consortium on Early Childhood Development, which brings together the world's leading experts to identify when and how child intervention programs can be most influential.

The interdisciplinary nature of the centers allows for broad participation by students and faculty. The School works closely with other research centers and programs throughout the University, including:

Alfred P. Sloan Center on Parents, Children, and Work  
 Center for Early Childhood Research  
 Center for Health Administration Studies  
 Center for Health and the Social Sciences  
 Center for Social Program Evaluation  
 Center for the Study of Race, Politics, and Culture  
 Center on Aging, Health and Society  
 Center on Demographics and Economics of Aging  
 Chapin Hall Center for Children  
 Economic Research Center  
 NORC (formerly the National Opinion Research Center)  
 Ogburn/Stouffer Center for the Study of Social

Organizations

Program on International Politics, Economics and Security (PIPES)

Program on International Security Policy (PISP)  
 Population Research Center

## STUDENT BODY

The Harris School is strongly committed to supporting a student body that includes diverse cultural and ethnic backgrounds, educational and work experiences, and professional training. The current student body is comprised of students who received undergraduate degrees in such fields as American studies, economics, education, engineering, English, environmental studies, international relations, philosophy, physics, political science, psychology, and sociology. The incoming class is 55 percent female and 22 percent international students, representing 20 countries. The age of current students ranges from 21 to 52 with approximately 250 master's students and 45 Ph.D. students enrolled.

Academic life is enriched by a variety of extracurricular activities and organizations. The Public Policy Student Association (PPSA), the Harris School student government, provides a voice for students and works with administrators at the Harris School on many issues and opportunities. Students may also participate in the *Chicago Policy Review*, the School's student-run academic journal; Chicago Environmental Policy Group (CEPA); the Minorities in Public Policy Studies (MIPPS); Community and Economic Development Organization (CEDO); Women in Public

Policy (WIPP); Out in Public Policy (OIPP); the Committee on International Affairs and Public Policy (CIAPP); Latin America(n) Matters (LAM); Education Interest Coalition (EPIC); IBH Consulting; and other groups organized by Harris School students. In addition, Harris School students are able to take part in many University-sponsored activities, including intramural sports, University Theater, *Chicago Maroon* (the student-run newspaper), Chicago Debate Society, Minority Graduate Student Association, and Student Government.

## APPLICATION AND ADMISSION

We seek candidates with the academic preparation, intellectual ability, experience, and motivation to undertake a rigorous program in public policy studies, and who have the potential for academic and professional success. While no specific background or major is required or recommended, students with a strong liberal arts background and sound quantitative and analytical skills will be best prepared for the program. The Committee on Admission and Aid evaluates all official transcripts of academic work, personal essays, letters of recommendation, extracurricular activities and community service, performance on standardized tests, and special factors brought to its attention. The Committee considers each application on the basis of all materials submitted and does not eliminate applications based solely on grade point averages or test scores.

To be considered for admission, applicants must submit the following materials:

- Application for admission
- Transcripts of all prior academic work at institutions of higher education
- Three letters of recommendation
- \$50 non-refundable application fee
- TOEFL scores (international applicants only use institution code 1849) or IETLS scores
- Official GRE or GMAT scores, or LSAT scores (if a joint M.P.P./J.D. applicant). If submitting GRE scores, use code 1849; if submitting GMAT scores, use code 1849.

The Committee on Admission and Aid will not review your application until all required materials are received. We highly recommend that you apply online and submit any supplement materials in one package to avoid delays in processing your application.

The Harris School currently accepts only electronic applications. Contact the Office of Admission at 773-702-8401 or [HarrisSchool@uchicago.edu](mailto:HarrisSchool@uchicago.edu) for more information.

## THE PRITZKER SCHOOL OF MEDICINE

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**Mission:** At the University of Chicago, in an atmosphere of interdisciplinary scholarship and discovery, the Pritzker School of Medicine is dedicated to inspiring diverse students of exceptional promise to become leaders and innovators in science and medicine for the betterment of humanity.

### OVERVIEW:

The University of Chicago matriculated its first class of medical students in 1927 and today is a national leader in training physicians and physician-scientists. In recognition of the generous support extended to the medical school from the Pritzker family of Chicago, the medical school was renamed the Pritzker School of Medicine in 1968. The great traditions which underlie the school's history include the presence of a full-time teaching faculty devoted to working with students, a strong emphasis on research and discovery, and a commitment to translating the most recent advances in biomedical science to the bedside.

The Pritzker School of Medicine is unique among medical schools in that it is a part of the academic Division of the Biological Sciences. This situation offers medical students a wide array of opportunities for interdisciplinary research, learning and collaboration between the basic and clinical sciences. Surveys conducted by the Association of American Medical Colleges over the last several years consistently show the University of Chicago among the top schools in the nation as a producer of faculty members at academic medical centers.

In 2009, the Pritzker School of Medicine began rolling out a reorganized curriculum, known as the Pritzker Initiative. The new curriculum emphasizes active learning, integration among the clinical and basic sciences, and scholarship and discovery. The Pritzker curriculum begins with the introduction to the Human Body, which runs from early August through October and includes lectures from nearly 30 University of Chicago faculty members. Beginning in late September, first years students are introduced to the Scientific Foundation of Medicine series. This series spans the first two years of study guiding students through such themes as Response to Injury, Neurobiology, and Clinical Pathophysiology and Therapeutics. Students also begin seeing patients during their first quarter as part of the longitudinal Physician-Patient-Society-Systems (P2S2) course. This course includes modules on Health Care Disparities and the Social Context of Medicine. Students have access to a state-of-the-art clinical performance center which uses standardized patients and videotaped performance to educate students in taking a history, performing a physical examination, and clinical decision making. By the time students enter their clerkship rotations during the end of

their second year of studies they are considered part of the health care team. During their clinical years, students participate in eight clinical clerkships, a subinternship and a series of elective experiences at the nationally ranked University of Chicago Medical Center and NorthShore University HealthSystem.

Building on Pritzker's legacy of producing research scholars, the revamped curriculum also includes a Scholarship and Discovery thread which requires the completion of a mentored scholarly project. Students have the option to engage in scholarship in medical education, quality improvement, community health, and global health. During the pre-clinical years, students acquire core skills in research methodology and biostatistics and return to their designated scholarly area during their fourth year. The Pritzker School of Medicine's curriculum culminates with the Transitions to Internship Capstone course which provides graduating fourth year students with the practical skills they need to transition seamlessly into graduate medical education.

More information about the Pritzker School of Medicine, including information about the medical center and joint degree programs can be found in the Division of Biological Sciences section of this publication and by visiting the Pritzker website at <http://pritzker.uchicago.edu>.

## THE SCHOOL OF SOCIAL SERVICE ADMINISTRATION

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### PROGRAMS OF STUDY

The School of Social Service Administration, chartered in 1908 as the Chicago School of Civics and Philanthropy, became a part of the University of Chicago in 1920. The School offers a graduate program leading to the A.M. in Social Work and a program of advanced study leading to the Ph.D.

The A.M. degree can be completed in two years of full time study. An Extended Evening Program is offered to permit full time workers the opportunity to complete degree requirements part time in the evenings during three years of continuous enrollment. A part time day program allows students to work toward a master's degree as a part time student taking day classes. The A.M. is a graduate social work degree accredited by the Council on Social Work Education. Joint degree programs leading to the A.M./M.B.A., A.M./M. Div., and A.M./M.P.P. degrees are also available. The A.M. program is organized into (a) a core curriculum focusing on the fundamentals of social welfare policy and practice, (b) an elective concentration in either clinical practice or social administration, and (c) field internships in government, schools, hospitals, and nonprofit social welfare organizations coordinated and integrated with course work during the two years of study.

The School provides students opportunities to prepare for a variety of professional roles. Students in the clinical concentration pursue careers in direct service to individuals, families, and groups. Such service includes helping individuals and families cope with social and psychological problems; organizing care for children whose families are unable to provide for them through foster care and adoption; working in communities and social institutions like schools, health care settings, and workplaces to promote positive social development; working in family support programs, antipoverty agencies, mental health programs, and settlement houses.

Social policy formulation, planning, community organization, and the management of social service organizations and systems is the focus of students in the social administration concentration. Graduates hold positions in agencies concerned with comprehensive health and mental health planning and policy development, race relations, planning for the aged, neighborhood organizations, community councils, and funding agencies. Others hold staff and administrative positions in federal, state, and local child welfare, mental health, or health care agencies, in international social welfare organizations, and in offices of members of Congress and public officials.

The Ph.D. degree provides advanced training for careers in research, teaching, and administration in the field of social welfare and the profession of social work. Requirements include course work in SSA and other University departments in methodological, theoretical and substantive areas, a qualifying exam, and a dissertation. The program is typically completed within three to five years for students entering with the A.M. degree.

### RESEARCH CENTERS

#### CHAPIN HALL CENTER FOR CHILDREN

The Chapin Hall Center for Children at the University of Chicago engages in policy research in child welfare and children's services. Its primary functions include collecting and reporting data on the condition of children, conducting research and demonstration projects in areas of special interest for children, families and communities, and providing information and stimulating discussion about children's issues. Chapin Hall also works directly with policy makers to understand and create policies to improve the well-being of children. A number of faculty members from the School of Social Service Administration are associates of the Center and direct research under its auspices. SSA doctoral and master's-level students form an integral part of many Chapin Hall research teams, and are active participants in seminars and discussions. Please see the Chapin Hall website for more information about the organization's research, publications, and conferences: [www.chapinhall.org](http://www.chapinhall.org).

#### CENTER FOR HEALTH ADMINISTRATION STUDIES

The Center for Health Administration Studies (CHAS) supports multidisciplinary research on health policy and politics through a seed-grant program. The initiative is available to University of Chicago faculty and health researchers, as well as those interested in pursuing a health-related project for the first time. The supported projects are oriented towards health care policy for poor and vulnerable populations including projects focused specifically on Medicaid policy, behavioral health service in community-based settings, and school-based health care research. The Center also supports the Michael M. Davis seminar series on "Health and Vulnerable Populations," drawing on speakers across a wide spectrum of health-related fields. The Davis Seminars are held weekly, during the Autumn and Spring academic quarters. Please see the CHAS website for details on these and other health-related events across the university: <http://www.chas.uchicago.edu/>.

## CENTER FOR FAMILY HEALTH

The Center for Family Health at the University of Chicago was established to provide an interdisciplinary center for research, advanced academic studies, clinical training, and social policy directed to the promotion of healthy family development, functioning, and adaptation to biologically-based and psychosocial life challenges. The Center, co-directed by Froma Walsh, Ph.D. and John Rolland, M.D., is based in the School of Social Service Administration and the Department of Psychiatry, with involvement of faculty and students in Medicine, Psychology, Human Development and other related disciplines.

## CENTER FOR SOCIAL WORK PRACTICE RESEARCH

The Center for Social Work Practice Research, directed by Elsie M. Pinkston, Ph.D., provides leadership in the development and evaluation of social work intervention. The Center's aims are fourfold; to develop effective social work practice research, to collaborate with community agencies on research about clinical practices, to provide clinical practice consultation services; and to foster graduate education in clinical practice and research methodology.

## INFORMATION AND APPLICATION

For further information and application materials, contact the Office of Admissions, The School of Social Service Administration, The University of Chicago, 969 East 60th Street, Chicago, IL 60637; telephone: (773) 702-1492 or by visiting the SSA website at <http://www.ssa.uchicago.edu>.

## THE DIVINITY SCHOOL

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### PROGRAMS OF STUDY

The Divinity School offers programs of study leading to the degrees of Master of Arts in Divinity (A.M.), Master of Arts in Religious Studies (A.M.R.S.), Doctor of Philosophy (Ph.D.), and Master of Divinity (M.Div.).

The A.M. in Divinity (A.M.) program is the foundational program for students without a graduate degree who wish to pursue the Ph.D. in the Divinity School.

The A.M. in Religious Studies (A.M.R.S.) program serves students who seek a general introduction to the contemporary study of religion. It does not lead to Ph.D. work at the Divinity School.

The Ph.D. program of study prepares students for scholarship, teaching, and research in the study of religion.

The M.Div. program of study is designed to prepare students for traditional, well defined ministerial professions as well as new and emerging forms of ministry.

Students in the A.M.R.S., A.M., and M.Div. programs are required to register for and to complete a certain number of courses in order to receive the degree. Students in the Ph.D. program are required to register according to a two stage residence structure. Ph.D. student are not required to register for a certain number of courses, although particular areas of study specify certain courses for their Ph.D. studies. Students should consult the area guidelines (available in the Dean of Students Office and online at <http://divinity.uchicago.edu>) for their respective areas of study concerning these matters. In addition to attending to any area requirements, students are also advised that normally they should maintain a substantial course load during their A.M. years and their first year of doctoral study in order both to develop their own scholarly capacities and to afford faculty members appropriate opportunities for the assessment of their work.

The Divinity School is organized into three committees of the faculty and ten areas of study that support the School's degree programs. The three committees, with their respective areas of studies, are Constructive Studies in Religion (Philosophy of Religion, Religious Ethics, Theology); Historical Studies in Religion (Biblical Studies, History of Christianity, History of Judaism); and Religion and the Human Sciences (Anthropology and Sociology of Religion, History of Religions, Religion and Literature). The tenth area of study is Islamic Studies. In addition to responsibility for the administration of the curriculum of these areas, the faculty annually offer a small number of courses designed to serve specific program requirements, e.g., the course Introduction to The Study of Religion for the A.M. program, the sequences Ministry and the Public Church and the Arts of Ministry for the M.Div. program, and

reading courses for Ph.D. exam preparation and dissertation research. According to personal interests and academic specializations, faculty members of the School may teach in one or more of these areas.

The academic year at Chicago is divided into four quarters of approximately three months each, but the Divinity School offers formal courses only in the autumn, winter, and spring quarters. Because the Divinity School is one of the academic units of the University of Chicago, its students have available to them, in addition to courses offered in the Divinity School, a wide range of courses in other divisions and schools that are related to their areas of study. The Divinity School encourages all students to make use of these offerings in view of their specific research interests.

## THE GRAHAM SCHOOL OF GENERAL STUDIES

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The Graham School of General Studies has a tradition of excellence in graduate education and outreach. It houses three master degree programs and two graduate level non degree educational opportunities.

### THE MASTER OF LIBERAL ARTS PROGRAM

The Master of Liberal Arts program offers an interdisciplinary course of study designed to teach students the principles, perspectives, and methodologies of the major academic disciplines, and to encourage students to assess these principles and approaches critically as they are applied to contemporary issues. The program achieves these objectives through a three tiered structure consisting of core courses in the humanities, social sciences, and natural sciences; five electives; independent research; and the completion of either a thesis paper or a special project. The program was created especially for adults who wish to broaden their personal and academic horizons through a structured program of part time evening or Saturday study leading to the Master of Liberal Arts degree.

### MASTER OF SCIENCE IN THREAT AND RESPONSE MANAGEMENT

The Master of Science in Threat and Response Management is an applied degree program that addresses issues of concern to public health practitioners and administrators, medical and nursing professionals, homeland security and emergency response personnel, and policy makers who are responsible for preserving and protecting the nation's health. All students take a public health core, including epidemiology, biostatistics, and environmental health. Then, students may choose from two curricular tracks, one examining the scientific aspects of public health preparedness, focusing on infectious disease and preventive health care, the other addressing issues of administration and leadership, concentrating on health planning, policy, and decision making. The program is connected to the Great Lakes Regional Center of Excellence for Biodefense and Emerging Infectious Diseases Research, which is housed at the University of Chicago's affiliate, Argonne National Laboratory, and is designed to help promote the lessons learned from this research project to practitioners and policy makers. Additional instruction is provided by professors of the Pritzker School of Medicine and the Irving Harris School of Public Policy Research. Students may elect to pursue a one year full time or two year part time degree program.

### MASTER OF ARTS IN TEACHING (MAT)

The University of Chicago's Urban Teacher Education program (UTEP) offers a Master of Arts in Teaching degree and an Illinois Teaching Certificate in grades K-9, with endorsements available in all middle school subjects, or an Illinois Teaching Certificate in grades 6-12 in Math or Biology. UTEP has many features that distinguish it from traditional teacher education programs. Its rigorous curriculum and in-depth clinical experiences not only equips students with the knowledge, skills and ability to teach, but also prepares them to become successful and reflective teachers who are attuned to the social, cultural and economic circumstances of their students. Over eight quarters, students receive instruction which includes exploring aspects of the teaching profession that contribute to social injustice. Through guided field visits to Chicago Public Schools, UTEP students learn how to observe students, collect data about schools, and reflect and document their experiences. Students continue to develop their teaching practice through one-on-one paid tutoring sessions at the University's charter schools. The clinical experience of the program affords students two 18-week classroom rotations where they are paired with experienced teachers to further develop a teaching practice. Alumni receive support with job placement, in-classroom coaching, planning and professional development for two years, free of charge.

### THE RETURNING SCHOLAR (RS) PROGRAM

The Returning Scholar program is designed for adults who would like to take courses at the University but prefer not to receive grades and credit. Students choose from the extensive list of graduate and undergraduate courses offered by the University's degree granting departments. A grade of R (registered audit) is entered on the student's record for each course completed. Courses cannot be used to complete degree requirements at the university, nor can they be used as transfer credit toward a degree at another institution.

### THE GRADUATE STUDENT AT LARGE (GSAL) PROGRAM

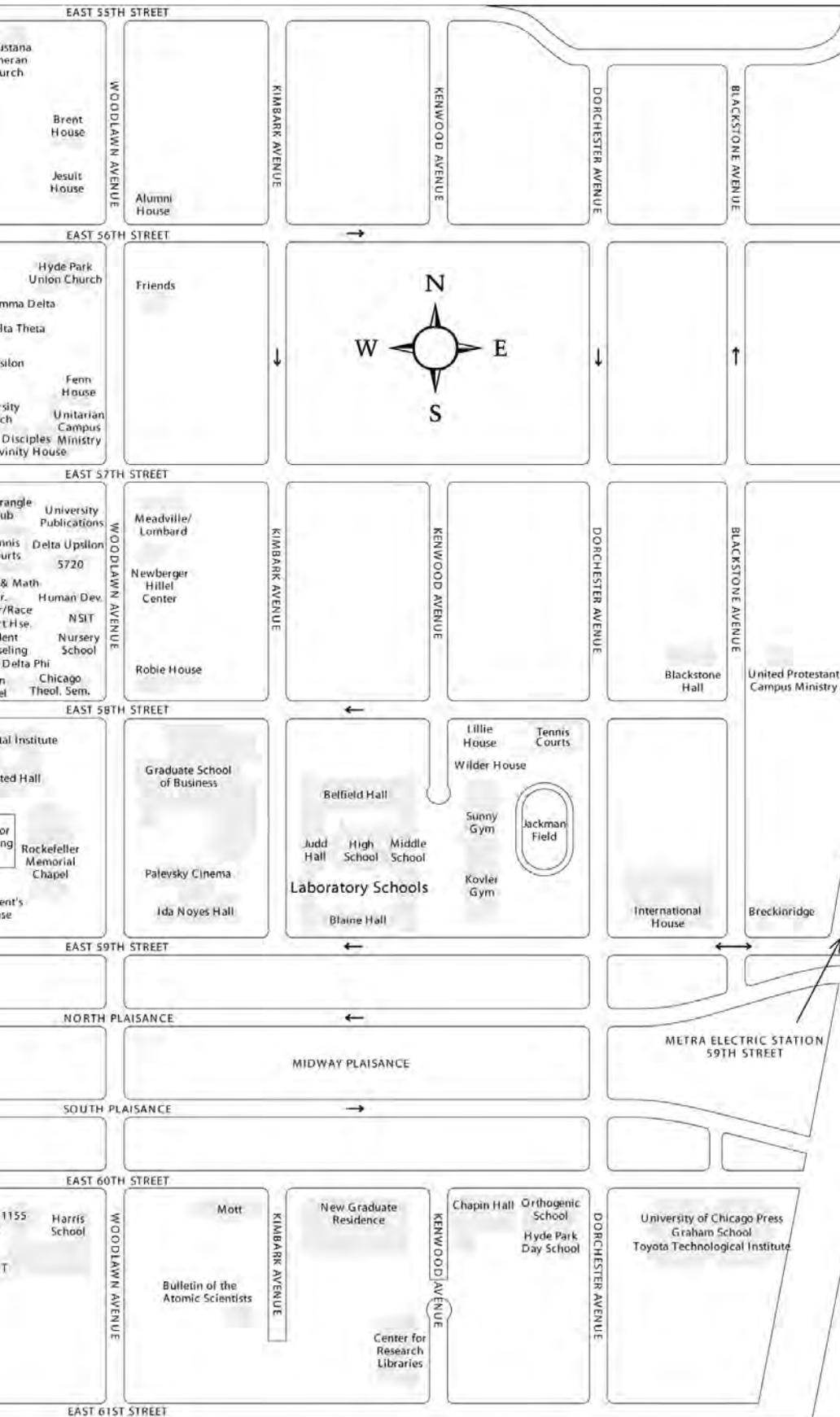
The Graduate Student at Large program enables adults who would like to return to school to work toward a master's or doctoral degree but who are uncertain of which field is best. The program also serves people who have no immediate degree plans but for whom a quality grade and credit study is appropriate. Academic credit is given and copies of transcripts may be requested. Courses offered are the same as those from which Returning Scholars select. Those who later apply and are accepted into a degree program at the University, or elsewhere, may be able to transfer up to three of the courses taken in the GSAL program towards their degree. Acceptance into the GSAL program does not guarantee subsequent admission to a degree program.

Students from institutions not having formal exchange or traveling scholar programs with the University should apply as a Graduate Student at Large if they wish to study at the University for a specific period of time and have the work transferred for credit to the home school.

For further information about these programs contact:

The University of Chicago  
Graham School of General Studies  
1427 E. 60th Street, Press Building, Suite 2  
Chicago, IL 60637  
773/702 1722





## ACADEMIC CALENDAR

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### 2009 SUMMER QUARTER

Quarter begins	Monday Jun 22
Independence Day	Friday Jul 03
Convocation	Friday Aug 28
Quarter Ends	Saturday Aug 29
Medicine Ends	Friday Sept 04

### 2009 AUTUMN QUARTER

College Orientation	Monday Sept 21
Registration	Wednesday Sep 23
Quarter Begins	Tuesday Sep 29
Thanksgiving	Thursday-Friday, Nov 26-27
Reading Period	Thursday-Friday, Dec 03-04
Convocation	Friday Dec 11
Quarter Ends	Saturday Dec 12

### 2010 WINTER QUARTER

Quarter Begins	Monday Jan 04
Martin Luther King, Jr. Day	Monday Jan 18
College Break	Friday Feb 12
Reading Period	Thursday-Friday, Mar 11-12
Convocation	Friday Mar 19
Quarter Ends	Saturday Mar 20

### 2010 SPRING QUARTER

Quarter Begins	Monday Mar 29
Memorial Day	Monday May 31
Reading Period	Thursday -Friday, Jun 03-04
Convocation	Friday-Sun, Jun 11-13
Quarter Ends	Saturday Jun 12

All dates are subject to change with no notice.

Up to date academic calendars can be found at <http://academic-calendar.uchicago.edu/>.