

The University of Chicago

The Committee on Neurobiology

Graduate Student Handbook

2015-16

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Organization of the University of Chicago

The University of Chicago is a private university that is organized into four graduate divisions, four collegiate divisions and 7 professional schools, one of which is the Pritzker School of Medicine. The four graduate divisions are the Humanities Division, the Social Sciences Division, the Physical Sciences Division and the Biological Sciences Division. They are responsible for graduate education. Undergraduate education occurs within the College of the University of Chicago, which includes the Humanities Collegiate Division, the Social Sciences Collegiate Division, the Physical Sciences Collegiate Division and the Biological Science Collegiate Division.

The President of the University of Chicago is Robert Zimmer, who was formerly a professor in the mathematics department. The Provost of the University of Chicago is Eric D. Isaacs, who is a professor in the Department of Physics. The organization of the University is unusual in that the medical school is not physically separate from the rest of the university and one individual, Dean of the Biological Sciences Division and the Pritzker School of Medicine is responsible for both graduate and medical education. This current dean is Dr. Kenneth Polonsky.

The Division of Biological Science

The Division of Biological Sciences offers 19 Ph.D. degrees, each of which is administered by a graduate program. Some degrees are offered by basic science departments and some are offered by committees. Departments are academic units that hire faculty and have laboratory space. Each faculty at the University has a primary appointment in a department. Some, but not all, departments have graduate programs. In particular, the Department of Neurobiology does not have graduate programs. Committees are interdepartmental units that include faculty from several different departments. They offer training in areas of biology that involve several different sub-disciplines. The Committee on Evolutionary Biology, for example, brings together faculty from Anthropology, Ecology and Evolution, Geophysical Sciences, Organismal Biology and Anatomy, as well as several other departments in the University and the Field Museum of Natural History.

The Office of Graduate and Postdoctoral Affairs (OGPA) is located in BSLC 104. OGPA is led by the Associate Dean for Graduate Studies, Vicky Prince, and includes an executive administrator, Diane Hall, in addition to several administrators who coordinate divisional graduate programming, admissions, graduate financial matters such as training grants, and the postdoctoral fellows in BSD. Melissa Lindberg organizes the divisional Teaching Assistant (TA) requirements, the divisional ethics course and graduation. Sarah Reynolds is responsible for division-wide admission process and registrar-related forms.

Since the Biological Sciences Division has a large number of graduate programs, the majority have been grouped together into units called Clusters that bring together related programs. Each Cluster has an administrator who handles student matters for the cluster. Some of the Clusters have a core curriculum that is required for students in all of the programs in the cluster, and many Clusters sponsor events such as retreats.

Office of Graduate and Postdoctoral Affairs People:

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The Neuroscience Cluster

The Neuroscience Cluster includes the three graduate programs at the University of Chicago that are related to neuroscience and behavior. Two of the programs are committees and one is a track within a department. The two committees are the Committee on Neurobiology (CON, chaired by Ruth Anne Eatock), the Committee on Computational Neuroscience (CSN, chaired by David Freedman). The Integrative Neuroscience Program (INP, chaired by Leslie Kay) is a track within the Department of Psychology. Thus, students in Neurobiology and Computational Neuroscience receive degrees from the Committee on Neurobiology or from the Committee on Computational Neuroscience, respectively; students in Integrative Neuroscience receive a degree from the Department of Psychology. The Cluster sponsors a three-quarter core sequence of courses and an annual retreat, and holds annual talks by more advanced students in the three programs.

One advantage of the Cluster is that it allows students to choose a training option that best suits their interests and backgrounds. Individual faculty can belong to one, two or three of the programs. Thus, a student can work with a specific faculty member and have several degree options. Generally speaking, Neurobiology is a good choice for students with a broad interest in Neurobiology, while Computational Neuroscience is a good choice for student with a more specific interest in quantitative modeling. Integrative Neuroscience is a good choice for students with a strong interest in behavior. Numerous faculty members have students from more than one program in their lab at a given time.

A second advantage of the Cluster is that regardless of his or her interests, each student will be exposed to students and faculty working in all of the major areas of neuroscience.

The cluster has an Administrative Director (cluster administrator) whose office is in room J233 of the Surgery and Brain Research Institute (SBRI, 5812 S. Ellis Avenue). The administrative director is responsible for the committee operating budget, recruiting graduate students, handling any paperwork related to graduate degrees, and organizing Cluster events such as the annual retreat.

Sharon Montgomery is the secretary for the Committee, and is also located in SBRI J233. She is responsible for scheduling speakers for seminars and other matters directly related to the Committee on Neurobiology or Computational Neuroscience.

Neuroscience Cluster contacts

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Chair of the Committee on Neurobiology

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Leslie Kay

Chair of the Integrative Neuroscience Program

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Sharon Montgomery

Cluster Secretary

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The Committee on Neurobiology

The Committee on Neurobiology offers a program leading to the Ph.D. degree, within the Biological Sciences Division. In this document the general requirements for progress to the Ph.D. degree are outlined, but students take a variety of paths towards their thesis. Students must keep in touch with members of their advisory committee throughout their time in the graduate program.

Students are admitted to the program by an admissions committee representative of the disciplines covered within the Committee on Neurobiology. Admission is based upon scholastic record and research experience. Application to the Committee on Neurobiology is usually made at the time of application to the Division.

Faculty

Current CON faculty members of the committee are listed on the BSD Graduate website,

<http://graduateannouncements.uchicago.edu/graduate/committeoneurobiology/>

You can find out more about them on the general neuroscience website, <http://neuroscience.uchicago.edu/faculty/>. You may do rotations and thesis research with any of the active CON faculty who have a position available. You may also arrange a lab rotation with a University of Chicago faculty member who is not a member of the Committee.

Student Progress

First Year

Students usually take all or most of the required courses (listed below) in this year. Students are expected to be associated with laboratories at all times. For each laboratory rotation, you in concert with your temporary PI will need to fill out a laboratory agreement form, which specifies you are to be graded on your laboratory performance and whether or not the rotation is in consideration for thesis research.

Second Year

Students choose a laboratory in which to pursue their thesis research by the beginning of their second year, often earlier, after the second rotation is completed. Once this decision is made, the student assembles a Faculty Advisory Committee (FAC) or thesis committee. The FAC consists of at least four faculty, at least three of whom are in the Committee on Neurobiology. It includes the faculty member in whose laboratory the student is pursuing thesis research and a procedural chair. The procedural chair, who must be in the Committee on Neurobiology, runs FAC meetings and communicates the outcome of the meetings to the student and the Committee on Neurobiology through a confirmation e-mail. The procedural chair is selected by the thesis committee members. At the first meeting, the FAC approves the student's course work (the procedural chair may contact the program advisor for a copy of said student's transcript) and then meets at least every 6 months for the remainder of the time the student is in the program.

Coursework

All students must successfully complete the four core courses, two laboratory rotations and the ethics course listed below. In addition students must take three (3) elective courses so that including lab rotations, he or she has completes 9 units of study. In terms of elective courses, courses in any division at the University of Chicago may be selected – provided students are able to articulate how it aids their research. One of the elective courses needs to be a course related to quantitative analysis or computational neuroscience (CPNS).

Core Courses

<i>Name</i>	<i>Number</i>	<i>Offered</i>
Cellular Neurobiology	NURB 31800	Autumn Quarter
Systems Neuroscience	NURB 31600	Autumn Quarter
Behavioral Neuroscience	NURB 30107	Winter Quarter
Cellular and molecular biology of the neuron	NURB 32100	Winter Quarter
Scientific Integrity and Ethical Conduct	BSDG55000	Spring Quarter
Non-Thesis Research (2)	BSDG 40100	All Quarters

A selection of recommended elective courses

Psych 37300 + 37900	Experimental Design I and II
Statistics 20000	Elementary Statistics
Statistics 22000	Stat Method and Applications
CPNS 31000, 31100, 31200	Math Methods for Biological Sciences I,II and III
CPNS 34231	Methods in Computational Neuroscience
CPNS 35520	Theoretical Neuroscience: Network Dynamics and Computation
CPNS 35600	Theoretical Neuroscience: Statistic & Information Theory
CPNS 33200	Computational Approaches to Cognitive Neuroscience
CPNS 32111	Modeling and Signal Analysis for Neuroscientists
Anatomy 30000, 30200	Human morphology I and II
Biochemistry 30100/30200	Molecular basis of metabolic regulation I and II
Biochemistry 30400/30500	Structure and function of proteins I and II
Biochemistry 30600	Nucleic acid structure and function
Biochemistry 30700	RNA structure and function
Biochemistry 33500	Genetic analysis and genetic manipulation
Biopsych 31500	Brain asymmetry
Biopsych 38000	Sensation and perception
Genetics 35300	Developmental genetics of model systems
Neurobiology 33800	Animal models OF neuropsychiatric disorders
Neurobiology 30800	Spatio-temporal information in vision
Neurobiology 32700, 32800	Neuropharmacology I and II
MGCB 31600/31700	Cell biology I and II

T.A. Requirement

The Biological Sciences Division requires two quarters of teaching experience. These are normally done in the second or third year, after the student's own course work is completed. Students should identify courses they would like to T.A., and register for credit and submit a 'Green TA form' (available at the Neuroscience administrative offices).

OGPA maintains a website (<http://teachingopportunities.uchicago.edu/>) with a list teaching assistant opportunities that satisfy the divisional requirement. Additionally students may substitute one quarter of teaching experience for the 'How to TA' course offered through the BSD during autumn quarter. Please contact Melissa Lindberg (mlindber@bsd.uchicago.edu) in the division for information on this course.

T.A. for Pay. After completing two quarters of T.A.'ships, a student may serve as a teaching assistant for pay. He or she should seek permission from their P.I. to ensure it does not disrupt laboratory duties.

Graduate student presentations

Students who have completed the preliminary examination requirement (second year and beyond) will present their research progress in a public talk once per year, as scheduled by the Administrative Director.

Qualifying Exam

At the end of the second year, students must have successfully completed all course work prior to completing their Qualifying Exam. This exam should be written in consultation with the student's advisor, in the form of a Research Plan for a NIH grant proposal (F31). Upon completion the proposal should be forwarded to the FAC for review. Following the successful defense of this proposal and oral exam component, the procedural chair of the FAC will forward the recommendation that the student be admitted to candidacy to both the chair of the committee on neurobiology, and administrative director. Upon divisional approval, the OGPA forwards the paperwork to the Registrar's Office where this becomes part of the student's permanent transcript record. By Divisional requirements, the candidate must be in residence for at least eight months prior to submitting the Ph.D. thesis.

As part of their training, students are strongly encouraged to submit their thesis proposals to funding agencies, following a timeline advised by their faculty committee.

Third Year and Beyond

Finally, students will prepare a thesis. The thesis must include a background section placing the research in broad perspective, a description of the original research, and a discussion of the significance of this research. The description of the research may consist of published papers on which the student is a major author, as well as publishable material in manuscript form. The University Dissertation Office can provide guidelines for the format required. It is recommended that students meet with their thesis committee at least once every six months to ensure their research remains on track.

Thesis Defense

Prior to scheduling a thesis defense, a student will meet with the FAC for a pre-defense meeting. This meeting must be held sufficiently close to the proposed defense date (usually 6 weeks before) so that the thesis can be read as a rough draft not as a work in progress. The purpose of this meeting is to determine if the thesis is defensible.

A Final Examination Committee will be assembled after the thesis is reviewed in preliminary form. This committee includes the FAC but may also include additional members with special expertise in the area of research. In addition, the committee may include an examiner who is a scholar from outside the Committee on Neurobiology, recognized as an expert in the field of the thesis work.

The Final Examination Committee must be presented with copies of the thesis in finished form, including publication quality copies of all figures and supporting materials, a minimum of two weeks prior to the oral defense. Notice of the examination and a copy of the thesis abstract is sent to all members of the Committee on Neurobiology at least one week before the examination.

The oral examination consists of a public seminar on the subject of the research that forms the thesis. This will be followed by a brief period for public questioning of the student. The student will then meet in closed session with the Final Examination Committee to answer additional questions. The Final Examination Committee will decide if the thesis is acceptable. If revisions are required, it shall be up to the judgment of the Final Examination Committee whether an additional oral examination must be scheduled. Once the thesis is accepted in final form by a majority of the Final Examination Committee, the procedural chair of the Final Examination Committee will forward a recommendation for awarding the Ph.D. degree to the OGPA. The thesis must be accepted in final form in time for the student to graduate no later than one quarter following the oral defense. The student is responsible for fees incurred if graduation is delayed two quarters or more beyond the successful defense. If the thesis has not been accepted in final form, the student *will not* be considered to have attained the Ph.D. degree, and the transcript and official communications from the University will reflect this fact.

Master of Science degree

The Committee on Neurobiology does not have a specific Master's degree program. However, a student who decides not to complete the all Ph.D. requirements but has completed all course requirements with an average of B or better, grades of B or better in all required classes, and has successfully passed the qualifying exam, may write a Master's thesis on original research completed in the laboratory of a Committee on Neurobiology faculty member. Once completed, this thesis will be distributed to an appointed committee. If the Executive Committee or appointed committee and the faculty member within whose lab the research was completed agree that the thesis is a clear report of the research conducted, then the student will be awarded a M.S. degree.

A student who has failed the qualifying examination twice will not be allowed to write a M.S. thesis.

Student Resources

Dissertation

The University of Chicago Dissertation Office serves doctoral students helping them to understand and meet the university-wide requirements for the Ph.D. dissertation. The Dissertation Specialist and her student assistants provide guidance and support with issues related to formatting the dissertation, submitting the dissertation online, and publishing the dissertation through ProQuest UMI Dissertation Publishing. Deadlines and important information relating to formatting are listed on the Dissertation Office webpage (<http://phd.lib.uchicago.edu>). Prior to submitting your finalized dissertation students are encouraged to submit their text to the Ph.D. office for a draft review. This will significantly reduce the time spent revising later on.

Teaching

The Center for Teaching and Learning (CTL) collaborates with faculty, and graduate students, to promote a university culture committed to excellent teaching across departments, emphasizing the importance of attending to student learning as the primary way to improve teaching. The Center offers workshops, seminars, and conferences, which address topics including course and assignment design, teaching with technology, and academic job market preparation. Electronic and bibliographic resources, as well as consultation services, are also available to the University community. Visit the CTL website (<http://teaching.uchicago.edu/>) to find more information about upcoming events and other services.

Emergency and Crisis

Student Emergency Response Systems are coordinated by the Assistant Director of Student Emergency Response Systems. The Assistant Director oversees and manages the development and implementation of policies and procedures for critical incidents involving students, through the Dean on Call (<http://deanoncall.uchicago.edu/>), Sexual Assault Dean on Call, and Bias Response Team programs (<http://brt.uchicago.edu/>). This person is responsible for coordinating the Campus and Student Life response to critical incidents involving students, and plays a crucial front-line role in dealing with students, parents, and staff in representing the Office of Campus and Student Life in interpreting policies, responding to concerns, and handling complex situations. Responsibilities include supervision of the Dean on Call program, which is tasked with handling individual student emergencies, and coordinating responses to special incidents in collaboration with the University of Chicago Police Department.

Emergency and Crisis Contact Information

(773) 702-8762

(773) 834-(HELP) 4357: Dean on Call/Sexual Assault Dean on Call

(773) 702-(HELP) 4357: Bias Response Team

(773) 702-8181 (or 123): University of Chicago Police Department

Student Counseling

The Student Counseling Service provides diagnostic assessments, emergency services, crisis intervention, individual, couples, and/or group psychotherapy, medication management, academic skills counseling, and referral services: <http://counseling.uchicago.edu/>