

The University of Chicago



**COMMITTEE ON MOLECULAR
METABOLISM AND NUTRITION**

**Student Handbook
2023 – 2024**

Revised August 2023

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**ACADEMIC CALENDAR
2023-2024**

AUTUMN 2023

Date	Event/Deadline
September 18-22	Orientation
September 18	Registration
September 26	Quarter Begins
November 20-24	Thanksgiving Break
December 9	Quarter Ends

WINTER 2024

January 3	Quarter Begins
January 15	Martin Luther King, Jr. Day
March 9	Quarter Ends

SPRING 2024

March 18	Quarter Begins
May 27	Memorial Day
June 1	Quarter Ends
June 1	Convocation

SUMMER 2024

June 10	Quarter Begins
June 19	Juneteenth
July 4	Independence Day
August 17	Quarter Ends

(Calendar subject to change)

UChicago Calendar: <https://www.uchicago.edu/academics/calendar/>

**BSD DIVISIONAL ADDRESS LIST
OFFICE OF GRADUATE AND POSTDOCTORAL AFFAIRS**

Name	Location	Phone
Mark Anderson <i>Dean of the Biological Sciences Division (BSD)</i> dean@bsd.uchicago.edu	AMD S-106	2-3004
David Kovar <i>Dean and Director, Office of Graduate Affairs</i> <i>Professor, Department of Molecular Genetics and Cell Biology</i> drkovar@uchicago.edu	BSLC 104	2-5890
Nancy Schwartz <i>Dean and Director, Postdoctoral Affairs</i> <i>Co-Director, Graduate Affairs</i> nbs0@uchicago.edu	BSLC 104	2-5890
Diane Hall <i>Associate Dean,</i> d-hall@uchicago.edu	BSLC 104	2-5853
Tracie DeMack <i>Training Grant Oversight Manager</i> tdemack@uchicago.edu	BSLC 104	4-2091
Melissa Lindberg <i>Graduate Student Affairs Administrator</i> mlindber@bsd.uchicago.edu	BSLC 104	2-3905
Michele O'Neill <i>Training Grant Administrator</i> mao2@uchicago.edu	BSLC 104	4-9936
Christina Roman <i>Program Manager Diversity and Inclusion</i> chroman@uchicago.edu	BSLC 104	
Amber Chatellier <i>Director of Academic Administration and Operations</i> achatellier@uchicago.edu	BSLC 104	4-2105

CMMN ADMINISTRATION

Chairperson

Dr. Matthew Brady, PhD
mbrady@medicine.bsd.uchicago.edu
Office Phone : 773-702-2346
Fax : 773-834-0851
Lab: 773-702-6938
KCBD 8134

Director of Graduate Education Committee on Immunology

Beth Morrissey
ermorrissey@uchicago.edu
Office Phone: 773-834-3899
BSLC R013

Graduate Education Administrator Committee on Cancer Biology Committee on Molecular Metabolism & Nutrition

Carolyn Gresham
cgresham@uchicago.edu
Office phone: 773-702-3940
BSLC R013

Admissions Committee

Matthew Brady, Chair
Ronald Cohen
Eugene Chang
Erin Hanlon
Yan Chun Li
Raghu Mirmira
Catherine Reardon

Biomedical Sciences Cluster: biomedsciences.uchicago.edu

Office of the President, The University of Chicago:
<https://president.uchicago.edu/en>
Office of Graduate & Postdoctoral Affairs Website:
biosciences.uchicago.edu

COMMITTEE ON MOLECULAR METABOLISM AND NUTRITION FACULTY

Phone exchanges 773-702- or 773-753- or 773-834- or 773-795-

Professor	Office	Lab	E-mail address
Francis Alenghat, M.D., Ph.D	4-0705		alenghat@medicine.bsd.uchicago.edu
Ryan Anderson, Ph.D	4-6974		ryananderson@uchicago.edu
George L. Bakris, M.D.	2-7930		gbakris@medicine.bsd.uchicago.edu
Lev Becker, Ph.D.	4-6456		levb@uchicago.edu
Graeme Bell, Ph.D.	2-9116	2-9117	g-bell@uchicago.edu
Antonio Bianco, M.D., Ph.D	2-1605		abianco1@uchicago.edu
Marc Bissonnette, M.D.	2-8598	2-0052	mbissonn@medicine.bsd.uchicaho.edu
Ran Blekhman, Ph.D			blekhman@uchicago.edu
Matthew Brady, Ph.D.	2-2346	2-6938	mbrady@medicine.bsd.uchicago.edu
Deborah Burnet, M.D.	2-4582		dburnet@medicine.bsd.uchicago.edu
Eugene Chang, M.D.	2-6458	2-2283	echang@medicine.bsd.uchicago.edu
Arlene Chapman, M.D.			achapman1@medicine.bsd.uchicago.edu
Jing Chen, M.D., Ph.D	4-6519		jingchen@medicine.bsd.uchicago.edu
Ron Cohen, Ph.D.	4-1012	2-3334	roncohen@medicine.bsd.uchicago.edu
Laurie Comstock, Ph.D.	2-5541		lecomstock@bsd.uchicago.edu
Diane Deplewski, M.D.	2-6432		ddeplews@peds.bsd.uchicago.edu
Alexandra Dumitrescu, M.D., Ph.D.	2-6577		adumitre@medicine.bsd.uchicago.edu
David Ehrmann, M.D.	2-9653		dehrmann@medicine.bsd.uchicago.edu
Shannon Elf, Ph.D.	4-6031		shannonelf@uchicago.edu
Daria Esterhazy, PhD	2-0402	5-1917	desterhazy@bsd.uchicago.edu
Yun Fang, Ph.D.	2-0940	4-9138	Yfang1@medicine.bsd.uchicago.edu
Brandon Faubert, Ph.D.	2-5442		bfaubert@medicine.bsd.uchicago.edu
Godfrey Getz, M.D., Ph.D.	4-4856	4-4852	getz@bsd.uchicago.edu
Siri Greeley, M.D., Ph.D.	5-4454		sgreeley@peds.bsd.uchicago.edu
Erin Hanlon, Ph.D.	4-5849		ehanlon@bsd.uchicago.edu
Bana Jabri, M.D., Ph.D.	4-8670	5-1252	bjabri@bsd.uchicago.edu
Andrew Koh, Ph.D.	4-5702		akoh@uchicago.edu
Yan Chun Li, Ph.D.	2-2477	5-1805	cyan@medicine.bsd.uchicago.edu
Sam Light, Ph.D.	2-3435		samlight@uchicago.edu
Kay F. Macleod, Ph.D.	4-8309	2-5531	kmacleod@uchicago.edu
Jeremy Marks, M.D., Ph.D.	5-4650		jmarks@uchicago.edu
J. Michael Millis, M.D.	2-6319		mmillis@surgery.bsd.uchicago.edu
Mark Mimee, Ph.D.	4-7013		mmimee@uchicago.edu
Raghu Mirmira, M.D., Ph.D.	2-2210		mirmira@uchicago.edu
Alex Muir, Ph.D.	4-6506		amuir@uchicago.edu
Gokhan Mutlu, M.D			gmutlu@medicine.bsd.uchicago.edu
Cathryn Nagler, M.D., Ph.D.	2-6317		cnagler@bsd.uchicago.edu
Scott Oakes, M.D.	2-3797		soakes@bsd.uchicago.edu
Silvana Pannain, M.D.	2-3275		spannain@medicine.bsd.uchicago.edu
Louis Philipson, M.D.	2-9180	2-1661	l-philipson@uchicago.edu

Phone exchanges 773-702- or 773-753- or 773-834- or 773-795-

Professor	Office	Lab	E-mail address
Vivek Prachand, M.D.	4-8360		vprachan@surgery.bsd.uchicago.edu
Simon Schwoerer, Ph.D.			sschwoerer@bsd.uchicago.edu
Esra Tasali, M.D.	2-1497		etasali@medicine.bsd.uchicago.edu
Sarah Tersey, Ph.D.	4-6928		stersey@bsd.uchicago.edu
Eve Van Cauter, Ph.D.	2-0169		evcauter@medicine.bsd.uchicago.edu
David Wu, M.D., Ph.D.	2-6575		dwu1@medicine.bsd.uchicago.edu
Rongxue Wu, M.D., Ph.D.			rwu3@medicine.bsd.uchicago.edu
Yingming Zhao, Ph.D.	4-1561		yzhao4@uchicago.edu
Xiaoxi Zhuang, Ph.D.	4-9063		xzhuang@drugs.bsd.uchicago.edu

COMMITTEE ON MOLECULAR METABOLISM AND NUTRITION STUDENTS

Name	Lab	E-mail address
Andy Anderson	Mirmira Lab	caraa@uchicago.edu
Nabeel Abbas Attarwala	Koh Lab	attarwala@uchicago.edu
Taryn Beckman	Hubbell Lab	tarynbeckman@uchicago.edu
Althea Adriana Bock-Hughes	Macleod Lab	abockhughes@uchicago.edu
John James Colgan	Chang/Blekhman Labs	jjcolgan@uchicago.edu
Christian Checkinco	Mirmira Lab	ccheckci@uchicago.edu
Jonathan Dowgielewicz	Brady Lab	jdowgielewicz@uchicago.edu
Joyce Ghali	Light/Mimee Labs	jghali@uchicago.edu
Benjamin Haugen	Tasali/Mutlu Labs	haugen@uchicago.edu
Wenceslao Martinez-Navarrete	Weinstock Lab	wenceslaom@uchicago.edu
Sandra Elizabeth McClure	Mimee Lab	mclures@uchicago.edu
Joshua McKeever	Koh Lab	jmckeever@uchicago.edu
Matthew Piron	Brady Lab	piron@uchicago.edu
Alexandra Ware	New Student	asware@uchicago.edu
Moriah Wilson	New Student	moriah@uchicago.edu
Jingwen Xu	Chang Lab	jingwenx@uchicago.edu
Freya Zhang	Chen Lab	fqzhang@uchicago.edu
Leah Ziolkowski	Macleod Lab	ziolkowski@uchicago.edu

PROGRAM OF STUDY

The Molecular Metabolism and Nutrition Program at the University of Chicago embodies a unique structure that takes full advantage of the strengths and character of the University of Chicago. The Committee on Molecular Metabolism and Nutrition is an interdepartmental, degree-granting body that draws its faculty from the ranks of basic science and clinical science. This is possible because both basic and clinical science programs share the same campus and often the same building. This provides the student with the opportunity to acquire sound training in both areas. At the same time, this training is tempered by constant exposure to the impact of nutrition on human health and well-being. This provides integrated training in the basic biochemical mechanisms through which foods and nutrients interact to optimize health, the pathological consequences of malnutrition, and the interplay of nutrition and human behavior.

THE BIOMEDICAL SCIENCES CLUSTER

The Committee on Molecular Metabolism and Nutrition is integrated within a cluster of graduate programs from the Committee on Cancer Biology, the Committee on Immunology, and the Committee on Microbiology Graduate Program. The four 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, students have extensive opportunities for interaction with the three other clusters within the Biological Sciences Division: the Molecular Biosciences Cluster; the Darwinian Sciences Cluster; and the Neurobiology, Pharmacology, and Physiology Cluster. These clusters offer courses and sponsor seminars and symposia open to Metabolism students.

PROGRAM PHILOSOPHY

The philosophy of the program is to provide students with a wide range of educational opportunities in a research-rich environment that will stimulate the student to engage in the life-long pursuit of knowledge through self-learning. Didactic courses during the first year provide education in the principles of basic science. In the summer and continuing into the second year, coursework gives way to interactive training that stresses the evaluation of literature, effective communication, and hypothesis testing combined with early exposure to research. This is enriched by a strong seminar program that exposes the student to the national leaders in metabolism research and nutrition policy.

CORE CURRICULUM

Each student will be required to take 5 formal courses for the completion of the degree requirements. An additional credit will be given for a successful completion of two laboratory rotations to bring the total number of credits required up to 6. Three program classes are required and described below. The remaining classes may be selected from a variety of classes

offered in other departments. A list of suggested courses follows. Students appointed to specific training grants may have additional course requirements to fulfill the training program associated with that particular award.

To remain in good academic standing students must maintain a B average in all graded, formal courses, and receive a B or better in CMMN courses. Any C's must be balanced by an A by the end of the student's second year.

**THE PROGRAMMATIC CORE IN
MOLECULAR METABOLISM AND NUTRITION (350 UNITS)**

1. Molecular Nutrition 1 (Autumn)
2. Molecular Nutrition 2 (Winter)
3. Grant Writing (Spring)
4. Topics in Metabolism Research (Autumn, Winter, Spring)

THE GENERAL BASIC SCIENCE CORE (100 UNITS)

Students will be required to take 1 course in the following 4 areas.

Biochemistry

- Protein Fundamentals (Autumn)
- Structure and Function of Membrane Proteins (Winter)

Cell Biology

- Cell Biology I (Autumn)
- Cell Biology II (Winter)

Genetics

- Genetic Analysis of Model Organisms (Autumn)
- Human Genetics 1 (Autumn)

Molecular Biology

- Fundamentals in Molecular Biology (Winter)
- Molecular Biology 1 (Winter)
- Molecular Biology 2 (Spring)

ELECTIVES (100 UNITS)

The remaining course(s) may be selected from available courses in the areas listed below. At least one advanced metabolism course must be selected (denoted by *). Statistics is recommended. Students who have completed their academic requirements are encouraged to formally audit additional advanced courses.

- Endocrinology I: Cell Signaling*
- Cellular Engineering*
- Introduction to Cancer Biology

Molecular Defense Mechanisms
Protein Post-Translational Modifications*

Finally, a divisional Ethics course is held in the spring where a variety of speakers discuss issues of scientific integrity and the ethical conduct of research as it relates to scientific research. This course is required and graded pass/fail.

Students may petition the Ph.D. Curriculum Committee regarding changes in required areas of coursework. Up to two (2) required areas may be modified to provide a specific focus of study in metabolism. Specific changes and the justification for those changes must be submitted in writing.

COURSE DESCRIPTIONS

CMMN PROGRAMMATIC CORE

Molecular Nutrition 1 (MOMN 36500). Students are exposed to a comprehensive review of metabolic physiology, with a focus on cutting edge experimental methodologies in use. Various lecturers specialized in specific areas of metabolic research participate throughout the quarter. Students will give two oral presentations on recent high profile metabolism-related research articles. *Weinstock and Staff.* Autumn.

Molecular Nutrition 2 (MOMN 36600). This course is an extension of Molecular Nutrition 1 and investigates the physiological control of systemic metabolism. Heavy emphasis is placed on the coordinate regulation of glucose and lipid metabolism by skeletal muscle, liver, adipose tissue, pancreas, and brain. The format of the course is a combination of lectures and student presentations of primary literature. At the end of the course, students are expected to write a grant application to investigate a current area of metabolism research and then present and defend the proposal to the lecturers and students. *Brady and Staff.* Winter.

Grant Writing (MOMN 30910). Students will gain extensive exposure to the grant writing and review processes. Several speakers will lecture on the various funding agencies, types of grants, and general approaches to grant writing. Students will read funded applications from CMMN faculty to learn the proper approaches for successful grant writing, including responding to reviewers' critiques. Students will be expected to complete a 20–25-page R01 style grant application by the end of the quarter, which will fulfill the mock grant proposal requirement for the CMMN students. The course culminates with a mock grant review panel in which the students read and critique each other's applications. *Brady.* Spring.

New Insights into Metabolic Research (MOMN 40400). This course is conducted as a seminar series. Students will broaden their exposure to metabolism related research through bi-weekly faculty and student presentations of research data and primary literature. Additionally, prominent researchers from other institutions are invited to give a seminar and meet alone with the students to discuss their career paths, experiences in running successfully funded labs and use of cutting-edge experimental approaches. Attendance is mandatory for first- and second-

year students but, all students are strongly encouraged to attend. *Brady*. Autumn, Winter, Spring, Summer.

GENERAL BASIC SCIENCE CORE

BIOCHEMISTRY

Protein Fundamentals (BCMB 30400). The course covers the physical-chemical phenomena that define protein structure and function. Topics include: the principles of protein folding, molecular motion and molecular recognition; protein evolution, design, and engineering; enzyme catalysis; regulation of protein function and molecular machines; proteomics and systems biology. Workshop on X-ray Crystallography: The workshop is an addendum to Protein Fundamentals and is required for all BCMB students. This one-week workshop will provide students with an intensive introduction to protein structure determination by x-ray crystallography. In addition to lectures, an extensive laboratory component will give students the opportunity to carry out protein crystallization, data collection (at Argonne), structure determination, refinement, model building and validation. (e.g., BCMB 30100, which may be taken concurrently). *Koide, Keenan*. Autumn.

Structure and Function of Membrane Proteins (BCMB 32300). 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. *Perozo, Arac-Ozkan*. Autumn.

GENETICS AND SYSTEMS APPROACHES

Genetic Analysis of Model Organisms (HGEN 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. *Palmer*. Autumn.

Human Genetics 1: Human Genetics (HGEN 47000). This course covers classical and modern approaches to studying cytogenic, Mendelian, and complex diseases. Topics include chromosome biology, single gene and complex disease, non-Mendelian inheritance, cancer genetics, human population genetics, and genomics. The format includes lectures and student presentations. *Ober, Waggoner, Nobrega*. Autumn.

Genomics and Systems Biology (IMMU/CABI/HGEN 47300). This lecture course explores the technologies that enable high-throughput collection of genomic-scale data, including sequencing, genotyping, gene expression profiling, assays of copy number variation, protein expression and protein-protein interaction. We also cover study design and statistical 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 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 are drawn from the primary literature. *Gilad*. Spring

MOLECULAR BIOLOGY

Molecular Biology 1 (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. *Rothman-Denes, Bishop*. Winter

Molecular Biology 2 (MGCB 31300). The content of this course covers 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. *Staley, Ruthenburg*. Spring.

CELL BIOLOGY

Cell Biology 1 (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. *Turkewitz, Glick*. Autumn.

Cell Biology 2 (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. Cell Bio I 31600 is not a prerequisite. *Glotzer, Kovar*. Winter

REQUIREMENTS FOR THE PHD DEGREE IN MOLECULAR METABOLISM AND NUTRITION

FORMAL COURSEWORK

A minimum of 5.5 didactic course is to be selected from the 3.5 required courses plus electives. It is required that students maintain a minimum overall B average in their coursework.



LABORATORY ROTATIONS

- Directed Independent Research (Winter)
- Directed Independent Research (Spring)

In the winter and spring of their first year, students are required to perform 10-week, graded rotations through laboratories of interest. Rotations can also be arranged for fall quarter. Since the student will choose their thesis lab during these rotations, it is critical that serious thought and effort (reading papers, talking to the PI and lab members, etc.) be given before choosing the labs. Students will meet with Dr. Brady to discuss options and then students will contact

prospective laboratories in the preceding quarter to ensure that space/resources are available. A third, optional rotation can be performed during the summer quarter. It is expected that a student will have chosen their thesis research lab no later than the end of their first year. Once the student has decided on what lab he/she would like to rotate in, the student must fill out the Rotation form, which must be signed by the Chair and by the mentor. The form must then be returned to the Cluster office. The student will also need to register for the rotation (BSDG 40100) at the beginning of the quarter. Lastly, once the thesis research lab is chosen by the student, they must notify the Cluster Office to execute the student funding plan paperwork.

TOPICS IN METABOLISM RESEARCH (50 UNITS)

The Committee holds a seminar series throughout the year. Student attendance and participation are required autumn, winter, and spring quarters until graduation. Students will be graded pass/fail.

Prominent outside speakers will be invited periodically to give research seminars on cutting edge areas of Metabolism Research. All students will meet with the speaker immediately after the seminar to discuss a variety of topics: career paths, how to successfully run a lab balancing personal/professional lives, etc. Students will also likely be asked to discuss their ongoing research.

TEACHING ASSISTANTSHIPS

Teaching skills are an important component of a successful academic career. The Divisional requirements mandate that each student complete two TAs. A student may TA in two undergraduate biology courses or two graduate level courses, or one undergrad and one graduate course. The Curriculum and Student Affairs Committee has selected courses which are expected to provide a good educational experience for the TA, and these are listed in the Teaching Opportunities publication issued by the BSD Dean of Students Office of Graduate Affairs annually. Students can also discuss options with Dr. Brady. Responsibilities include leading discussion groups, writing problem sets, and running small group sessions. During Registration, the student MUST register for the TAship. At the end of each course, TA's are evaluated by the course director and the students. TA's will also evaluate themselves. All three evaluations must be returned to the BSD Office of Graduate Affairs (OGA) to receive credit for the TAship. Note: Students may TA the same course twice in fulfillment of their Teaching Assistantship requirement but only if significant additional responsibilities are added to the second TAship (e.g., giving a lecture). After completion of the two TA requirements, students interested in gaining further experience teaching may TA the same or different courses in the following years for a modest stipend.

Students who have no experience in teaching may register for a Teaching Assistant Training Course, offered every Autumn Quarter. This course may count as one of the two required teaching requirements. The TA course is led by two "Super TAs," who are students with extensive experience in teaching. Invited faculty speakers offer their insights on how to give a lecture and encourage class participation. Discussion sessions are led by students taking the course and cover a wide variety of teaching issues. Written assignments are also set. The course incorporates elements useful for all teaching assistants, such as a computer-based learning tools like Chalkboard and PowerPoint. At the beginning of the course, students prepare short lectures, which they deliver to the rest of the class, followed by a critique of their presentation by their

fellow students. These mini-lectures are videotaped and the student is required to replay and critique his or her own performance at leisure. Later in the course, students prepare a second, ten-minute talk, which is also videotaped and critiqued. Participants thus have the opportunity to assess how well they have incorporated the teaching techniques taught during the course. Students also sit in and evaluate college or graduate courses during the quarter, especially those given by faculty who have won awards for excellence in teaching, to examine and learn from teaching styles.

Students can fulfill one of the TAsip requirements through a Diversity Equity & Inclusion assistantship (DA-ship). For more information, please visit the [DA-ship page](#) on the BSD website.

MOCK GRANT PROPOSAL

In spring of every other year, students are required to enroll in the "Grant Writing" course. The course culminates with the preparation of a 13-page NIH style R01 grant proposal for second years, and 6-page NIH style R21 for first years, including supporting sections (Biosketch, Literature Cited etc.). The proposal should define an unaddressed research area in Metabolism, propose 2-3 specific aims to explore the problem and describe experiments that would be conducted over a 3-5-year period. Previous proposals will be available to be used as templates. Each student's proposal will be reviewed by two other students and the course director, and the class concludes with a mock grant review session where students prepare written critiques of their assigned grants and participate in an oral discussion of the strengths and weaknesses of each proposal. The proposal will also be read and evaluated by Dr. Brady and the student's thesis advisor.

THESIS REQUIREMENTS

Starting in the summer/autumn after the second year, a student should begin, in earnest, research work towards their thesis project. **By the autumn of the third year, the student must form their thesis committee and submit their thesis proposal** (see Divisional Policy appended).

The thesis committee will comprise of four members: the student's advisor, a committee chair (not the advisor) and two other faculty members. Three of the faculty members must be on CMMN, the fourth can be as well, or an expert from another University of Chicago graduate committee or from outside the institution. Students can consult with Dr. Brady in making their thesis committee choices. The thesis proposal should consist of a detailed background of the research area to be studied, preliminary data demonstrating the feasibility of the proposed experiments, 2-3 specific aims and a supporting experimental plan to address the research area. The thesis proposal must be in the 13-page R01 style format: one-page Specific Aims, 12 pages for Significance, Innovation and Experimental Design. In addition, students should prepare up to 5 pages covering detailed experimental methods that are normally not included in an NIH R01 style grant. The proposal should be given to committee members at least two weeks before the oral defense of the thesis proposal. The student will make a public presentation to students and faculty of CMMN, and then meet with their committee in private to answer questions and discuss the proposed experiments in detail. Once accepted by the committee, the student will then formally enter the Ph.D. program.

THESIS PROPOSAL

It is important to note that the thesis proposal is not a thesis defense. It does not require preliminary results although, if available, they can be used. The proposal demonstrates the student's ability to:

- a) Choose a topic, that is, formulate an important biological question (SIGNIFICANCE).
- b) Propose a coherent set of avenues to answer the question (SPECIFIC AIMS).
- c) Summarize critically the current literature on that topic (BACKGROUND).
- d) Describe a series of experiments taking into account possible pitfalls and therefore alternative approaches (EXPERIMENTAL METHODS).
- e) References.

All members of the student's thesis committee must be present for the thesis proposal.

MEETINGS WITH THE DISSERTATION COMMITTEE

Before each annual committee meeting, the student will submit to the committee members a written summary of his/her progress. The report should be approximately 2-4 pages in length and contain a concise summary of progress, including previous aims and outcomes as well as future goals and a timeline. At the beginning and end of the meeting, committee members will meet privately to discuss any confidential matters regarding the student. Following the meeting, the dissertation committee chair will submit a written evaluation of the student's progress. This report should provide an accurate account of the committee meeting and will be given to the student.

Thesis committee meetings must take place annually and the Graduate Program Administrator must be informed of the confirmed date, time, and location of each meeting.

INDIVIDUAL DEVELOPMENT PLAN (IDP) AND PROGRESS AND PLANS DOCUMENT

The Office of Graduate and Postdoctoral Affairs has required PhD students to complete an Individual Development Plan (IDP) for several years, in compliance with an NIH requirement.

Students fill out the IDP when they complete the Annual Report Survey sent to them as they begin their 2nd year. Part of the plan requires consultation with a mentor – this mentor may be the student's thesis advisor but may also be any individual with a mentoring relationship to the student (other faculty, advisors in the Graduate Affairs Office, other science professionals). Mentorship is a key facet of your training. The IDP is designed to facilitate honest and open discussions with your mentor and encourage thoughtful long-term planning to help you reach your goals.

IDPs may be discussed at the thesis committee meetings at the students' discretion; they are a confidential document that are presented only at the students' thesis meeting and in discussion with their PI and program director.

An important modification has been made to the IDP used by our senior students. The Progress and Plans document will be required beginning this year to frame discussion and organized standard information important to our students' professional development.

In advance of their thesis committee meeting, Year 3 students and more senior will now provide:

- updated CV
- research progress report
- a plan for the future, to include both their research goals and stage-appropriate professional goals (fellowship applications, completing the divisional professionalization requirements, presenting at meetings, plans to submit manuscripts, and other professionalization activities aligned with their career goals).

This will be in addition to any other information required by the thesis committee.

This document is available for [download](#).

STUDENT PROGRESS TOWARD DEGREE

Each student will be required to complete a dissertation documenting original research within six years of the thesis proposal. Students failing to meet these time limits must petition to continue in the Ph.D. Program. However, it is anticipated that students will complete their thesis during their fifth year in the program. Starting in the second year, students will meet individually with Dr. Brady in winter quarter, to review: progress from the preceding year, goals for the coming year and confidentially discuss any obstacles or issues with the student's project.

The thesis should consist of 2-3 chapters, and it is expected that these chapters will result in two first author publications in a prominent peer-reviewed journal and will be accepted for publication within this time frame. A single publication in a very high impact journal is also acceptable for graduation. It is also hoped that the student will be able to write at least one first author review article and serve as a co-author on other manuscripts.

If at the end of six years in graduate residence the student has not petitioned for the right to prepare the dissertation, the student will be required to petition the Curriculum Committee for the right to continue in the Program. The student will outline the reasons why progress toward degree completion has been delayed, and the Curriculum Committee will evaluate the student in light of the petition and student performance throughout the entire graduate career, and in consultation with the student's dissertation committee. Approval from the Curriculum Committee will allow the student to continue in the Program.

PETITIONING TO PREPARE THE DISSERTATION

After completion of a substantial research project, the student may request permission from the dissertation committee to write and defend his/her dissertation. Before this meeting, the student will submit to committee members an outline of the proposed dissertation, including a listing of ongoing investigations to be completed before the defense. Following a private discussion of the student's progress, the student should present his/her thesis research to the dissertation committee, and following this presentation, all committee members must agree in writing that the student is ready to proceed with the final stages of his research/dissertation writing and identify areas that need to be completed prior to the defense.

DISSERTATION DEFENSE GUIDELINES

Each student is responsible for the preparation of a written detailed discourse describing his/her thesis project in the form of a dissertation. The dissertation is written upon completion of the majority of the experimental work and approval by the thesis committee. The preparation of the dissertation document should also be considered an educational experience in which the mentor and the student extensively discuss the format and contents of the document and the philosophy of the process, and review drafts of the document during its preparation. The format should follow the guidelines posted on the Ph.D. Dissertation Office Website: lib.uchicago.edu/e/phd/. Once the mentor agrees that the document is well written and complete, the student can submit the dissertation to the other thesis committee members. The mentor should indicate his/her acceptance of the document by signing and dating the cover page. By signing the cover page, the mentor indicates that he/she and the student have reviewed the dissertation document and view it to be complete.

Once the dissertation has been submitted to the thesis committee, each member has two weeks to review the document and transmit any comments concerning major deficiencies to the student. The student is expected to prepare a revised version of the dissertation addressing these deficiencies (usually within a two-week period). The revised version of the dissertation document must be returned to the thesis committee members no later than one week before the oral defense date. The revisions that have been made should be highlighted in some way, either by the use of a different font or type style, or with vertical lines in the page margins.

It is recognized that each thesis project, and therefore each dissertation, will be different. As such, no specific requirements should be instituted for its length or content. However, it is expected that the vast majority of dissertations should conform to the following guidelines. The student is encouraged to review selected dissertations in the program office for examples of format, content and quality.

- a) The total length of the document should be 80 - 150 pages (including figures; excluding references), in order to provide the level of detail expected of a document of this nature.
- b) The Introduction should be 20 - 40 pages long. It should contain a focused description of the background to the thesis problem, not a comprehensive review of immunology.
- c) The Materials and Methods section should be 10 - 40 pages long. It should describe the details of all experiments used, even those that have been published elsewhere. This section should be able to serve as a useful laboratory resource for future generations of investigators in the research group.
- d) The Results section should be 60 - 100 pages long, including figures and tables. In general, the figures and tables should occupy 1/2 - one page each. Figures should be shown in the written thesis for all results mentioned as "data not shown" in publications by the student. Figures should be original or published by the author. Figures from review articles authored by others are not acceptable because of copyright restrictions, as the thesis dissertation is a public document. If published figures not generated by the student must be

used, the student must obtain written permission from the publisher. The numbers of figures and tables relative to text in the Results section should be determined by the mentor and the student.

- e) The Discussion section should be 25 - 50 pages long. This section should be a scholarly discourse that puts the thesis work in the context of the relevant fields of immunology. Related work of others, and differences in experimental outcome or interpretation should be addressed. The student should clearly indicate what is new or unique about his/her work and how it contributes to the field. The quality of the Introduction and Discussion sections should be such that they could form the core of a review article good enough for publication in a peer-reviewed journal.

Some students may elect to prepare the Results Section as chapters that are directly from their submitted or published manuscripts. These chapters may contain the submitted/published introduction, results, and discussion. However, the Materials and Methods for published papers are generally not sufficient for a thesis, and thus a more thorough version should be included in the overall Materials and Methods section (described in section c above) of the thesis instead of in the individual chapters. Furthermore, in addition to the Materials and Methods section, the student is still required to write an overall Introduction and Discussion as described in sections b and e above.

THESIS DEFENSE

The thesis defense is composed of two parts. The first part is a public presentation of the thesis project in which the student presents his/her work orally before an audience of peers and answers questions relevant to the project. The seminar should be prepared and rehearsed with the mentor's guidance. The student should avoid complicated slides and focus the presentation on objectives, approaches and interpretation of results. Acknowledgments should be limited to less than 5 minutes at the end of the presentation. The second part is a private defense by the student of both the thesis project and the dissertation document in front of the ad hoc thesis committee. Since this is the last opportunity, the committee has to ensure the quality of our graduates, the private defense will continue until each member is satisfied with the student's performance or until the committee decides that the student has failed the defense examination. Even though the committee may feel comfortable that the student has passed the examination and will complete an acceptable dissertation document, no committee member should sign the completion form until he/she is completely satisfied with the revised version of the thesis document in hand.

Each student is responsible for scheduling his or her own Thesis Defense. Once the student has a date and time, he or she should notify the Cluster Office. A student can schedule a date for the defense at the time that the initial version of the dissertation document is submitted to all thesis committee members, to be set no earlier than four weeks after the reception of the dissertation by the committee members.

It should be noted that the thesis requirement is not considered fulfilled until the student has submitted the Dissertation electronically and received confirmation from the Dissertation Office that it is complete. Since the thesis requirement is necessary for the awarding of the Ph.D. degree, a student has not fulfilled the degree requirements until the thesis has been formally

submitted. Individuals cannot be hired as postdoctoral fellows without satisfying all Ph.D. requirements.

As a courtesy, the student should provide members of his/her committee with the final bound copy of the thesis, unless the committee member indicates otherwise.

(The "Thesis Requirement" document was adapted from the University of Texas thesis guidelines 2004)

The University web site has invaluable information regarding the preparation of the thesis and various deadlines. The link is lib.uchicago.edu/e/phd/.

A few deadlines to keep in mind:

- a) You must apply to graduate by the first week of the quarter that you plan to graduate.
- b) The deadline for submission of the approved thesis and all necessary documents is the Wednesday, 3.5 weeks before convocation for that quarter. The exact dates can be seen at the web site mentioned above.
- c) All Dissertations must now be submitted electronically. Please visit this website for detailed instructions: lib.uchicago.edu/e/phd/.
- d) Graduation without registration policy:
 - i. Doctoral candidates who submit their approved dissertation to the Dissertation Office by Friday of the first week of a quarter and apply to graduate in that quarter will not have to register as students in that quarter and thus will not pay the associated fees.
 - ii. The BSD policy is as follows:
Students who take advantage of the graduation without registration policy will not have any benefits or privileges in the nonregistered quarter in which they graduate. Benefits and privileges of registered students include stipend, access to the student health center and other university facilities tied to full-time registration, and continuing loan deferral.

GRADUATION

Once the student knows that he/she is ready to begin writing the dissertation and plans to graduate, the student should notify the Cluster Office immediately. The student will also need to update his/her expected graduation date via his/her myUChicago account. Once updated, the graduation form will populate within the account and must be completed no later than the first week of the quarter in which he/she plans to graduate. This is a hard deadline and the Registrar's office will not grant an exception if it is missed.

The Dissertation Office (<http://www.lib.uchicago.edu/e/phd/>) is the best source of information regarding your thesis and the graduation process. Dissertations are submitted online through the ETD website, and you must sign up for an account through the dissertation office website. Classes reviewing the ETD site and the submission process are available the 2nd or 3rd week of each

quarter – please sign up at <https://training.uchicago.edu>. The training is not a requirement but is only a half hour and will reduce stress later in the quarter. Once you register for graduation, the Dissertation Office will be in contact with you throughout the quarter in which graduation is expected regarding deadlines and requirements. The final submission of your dissertation on the ETD site is generally 4-5 weeks prior to the end of the quarter, but they will accept draft submissions prior to the deadline to ensure that all formatting issues are addressed. This is also a good service to utilize to ensure that the final submission goes smoothly, as the dissertation format is required to be identical to the university's uniform standards before being accepted as a final submission. It is good practice to give yourself at least 2 weeks between your defense and the final dissertation submission to make any changes required by your thesis committee (this puts the defense at least 7 weeks prior to the end of the quarter in which you are graduating).

After you notify the Cluster Office and register for graduation on your myUChicago account, you will need to schedule your defense date. If you are not able to schedule a room, the Cluster Office can assist you with this. The Cluster Office will send an announcement out once we receive all of your defense information.

All members of your committee must receive a copy of your thesis at least 1 week before your defense date and all members must be present during your defense. The Cluster Office will provide your student file to the chair of your committee with the official report of final exam that will be submitted to the Registrar's Office. The first part of your talk is open to the public. After your talk, your committee will discuss your thesis and have you make any changes that are needed. This discussion is not open to the public.

After your committee has signed off on your defense and any required changes to the thesis have been made, you should submit this on the ETD site. The Cluster Office will be notified when this is complete, and we will ensure that your program chair receives a copy of the thesis to review and signs off on the Departmental Approval Form that is submitted to the Dissertation Office as final approval. This is the final step in completing the graduation requirements.

Information regarding convocation can be found here: <http://convocation.uchicago.edu/>

ADDITIONAL EDUCATIONAL ACTIVITIES

SCIENTIFIC INTEGRITY AND ETHICAL CONDUCT OF RESEARCH

The University offers an annual course encompassing formal seminars by faculty lecturers in areas pertaining to proper handling/reporting of scientific data and ethical considerations in research. The University of Chicago requires that all predoctoral and postdoctoral trainees, clinical researchers, and junior faculty attend the program on the responsible conduct of research. Different aspects of scientific ethics are covered each week, each led by one-two faculty members. The format varies, including faculty presentations followed by group discussions, faculty presentations with question and answer periods within the presentation time, or case study discussion. The attendees are required to complete two written assignments based on video vignettes from AAAS and written case studies, and to make small-group presentations to the rest of the class.

SEMINARS

In addition to formal courses and seminars, there are many regularly scheduled research seminars that will help to keep students up-to-date on new developments in your field of research and related disciplines.

Students are required to attend their programs seminars, in addition to the Journal Club and Student Research Presentation, as well as any seminars funded by applicable training grants. First years shall also attend the weekly "All Stars" Course, which will allow Cluster faculty to present their research to the students. Schedules are provided by the Biomedical Sciences Cluster Office.

View all current event listings in the BSD: <https://events.uchicago.edu/all/groups/BSD>

REGISTRATION

GENERAL INFORMATION

About one week before the dates designated for registration, the Graduate Program Administrator will email the students informing them of the days and times when they should register. Students register online at: my.uchicago.edu. First year students will meet with the Committee Chair and the Graduate Program Administrator to discuss procedures during Orientation Week.

LEAVE OF ABSENCE

During Scholastic and Research Residence a student may, if necessary, apply for a Leave of Absence from the PhD program to be approved by the Committee Chair. A Leave of Absence may only be taken for a maximum of 6 months.

PRO-FORMA REGISTRATION

Students in Advanced Residence, whose dissertation research requires residence away from Chicago, may register pro-forma. It provides registration as a full-time student with reduced tuition. Pro-forma status establishes a good faith relationship between the student and the University. The following regulations apply:

- a) Pro-forma registration is approved for only one academic year at a time.
- b) Applications for pro-forma registration must be approved in writing by the Program Chair. The Chair's signature confirms that the student will be working at another institution 100+ miles away from the University of Chicago and that the work is recognized as essential to the dissertation. Students applying for pro-forma status must have been admitted into candidacy and have had dissertation topics approved. For students on the Graduate Residence Track, pro-forma status will normally begin only after completion of Scholastic Residence.
- c) An applicant for renewal of pro-forma status must show the Program Chair that good use has been made of the time already spent "on location" and that additional time is

essential to completing the original task. Renewals of pro-forma status must be approved by the Dean of Students.

- d) A student on pro-forma status may not be gainfully employed for more than 19 hours per week.
- e) Pro-forma students may not use the facilities of the University or the time of its faculty, except for progress reports that may be required by the students' departments.
- f) A copy of the approved applications must be filed with the Registrar.
- g) The Registrar will certify that a pro-forma student is duly registered at the University to any agency requiring such certification.
- h) The fact that a registration is pro-forma will be noted on the student's academic record.
- i) Pro-forma registrations do not count toward satisfying a student's residence requirements toward a degree.
- j) Students must have satisfied all course requirements, including Scientific Ethics and completed TAs.

FINANCIAL AID

All students registered in the PhD program are provided with adequate financial aid. **Financial aid is guaranteed to all incoming students, subject to satisfactory academic performance.** Support for subsequent years of study is subject to the student's satisfactory research progress, as determined by the faculty sponsor, the Committee, and the Division of Biological Sciences.

SOURCES OF SUPPORT

Students receive tuition, payment of fees, plus a stipend. The various sources of support are:

- Training grants
- External fellowships
- University fellowships
- Research assistantships

Payment of Stipend Checks

University fellowships and NIH checks are paid on a monthly basis on the last working day of each month. Taxes are owed on, but not deducted from, these stipend checks (see section on "Taxes" below).

Advanced students are generally paid from their advisors' funds under the title "Research Assistant Type B" (RA-Type B). RA-Type B students are paid on a monthly basis on the last working day of each month. Taxes will be deducted from the RA-Type B checks.

If you have any questions about your stipend checks, please contact your Graduate Program Administrator.

Taxes

Graduate student stipends are taxable by the State of Illinois and the Federal governments. Students on fellowships and NIH training grant support must calculate and pay estimated quarterly taxes. IRS Federal Form 1040 ES and Illinois Form 1040 ES help you estimate your federal and state taxes. IRS publications 505 and 970 provide information on determining what portion of your stipend is taxable and how and when to pay taxes you owe. The forms are available from the IRS. Regenstein Library also carries tax forms (Reserve room, First Floor), particularly after January 1.

Educational Supplies

In general, costs of research supplies and equipment are covered by grants or contracts held by the faculty member in whose laboratory you are working.

Travel to Scientific Meetings

Attendance at scientific meetings is an important part of the educational process. Travel funds are normally available on training grants and are distributed by the Training Grant Administrator. In general, funds are only given to students scheduled to present a paper or a poster at the meeting.

Should you wish to apply for such support, you should submit a formal request (with your advisor's approval) in writing to the grant administrator supplying the following information: purpose of meeting and relevance to the research; title, place and time of the meeting; (if applicable) title and author of paper being presented; amount requested for travel, registration fees, food, and lodging.

MISCELLANEOUS CAMPUS INFORMATION

THE GORDON CENTER FOR INTEGRATIVE SCIENCE (GCIS)

This interdivisional research facility encompasses 420,000 square feet providing offices and laboratories for approximately 100 faculty (929 East 57th Street). The GCIS houses BSD departments including the Ben May Department for Cancer Research, the Department of Biochemistry and Molecular Biology, and the Howard Hughes Medical Institute. Physical Science Department (PSD) includes the Institute of Biophysical Dynamics, the Materials Research Science and Engineering Center, the James Franck Institute and the Chemistry Department.

THE BIOLOGICAL SCIENCES LEARNING CENTER (BSLC) AND JULES KNAPP MEDICAL RESEARCH BUILDING (JFK)

The Biological Sciences Learning Center and Jules F. Knapp Medical Research Building is located at 924 East 57th Street, across from the GCIS Building Atrium Entrances. The Learning Center (south half of the building) provides classrooms for undergraduate, graduate, and medical programs. In addition, the Office of Graduate and Postdoctoral Affairs (OGPA) and Office of Medical Education (OME) for the Division of Biological Sciences are located in the Learning Center. The Knapp Building (JFK - north half of the building) houses laboratories, research

facilities and faculty offices in the areas of molecular cardiology, immunology, oncology, and neurobiology.

THE GWEN AND JULES KNAPP CENTER FOR BIOMEDICAL DISCOVERY BUILDING (KCBD)

The Gwen and Jules Knapp Center for Biomedical Discovery Building is located next to the BSLC & JFK Buildings (900 East 57th Street). The Center includes the Ludwig Center for Metastasis Research; Beverly Duchossois Cancer Laboratories; Kovler Diabetes Center; Institute for Genomics and Systems Biology; and researchers from the Department of Pediatrics; Department of Biochemistry and Molecular Biology; and Department of Medicine's Gastroenterology, Endocrinology, and Hematology/Oncology Sections.

LIBRARIES

The John Crerar Library, 5738 South Ellis Avenue, 702-7715, combines the University collections in biological sciences, medicine, and the physical sciences. Users with valid University of Chicago ID's or Library cards have access to all floors and stack areas during all library hours. Present your Chicago Card I.D. to the attendant at the front door. The library is adjacent to the Cummings Life Science Center and is connected by tunnels to Cummings, and the Medical Center.

The first floor of Crerar contains the major service units. The Circulation Desk (2-7409) is located to the left of the entrance atrium. Reserve materials for all science courses except math, computer science, and statistics are held at the Circulation Desk, as well as a permanent reserve collection of current medical textbooks and very heavily used science periodicals. The Science Reference Department (2-7715) is located to the right of the entrance atrium, together with the science microforms. The Library subscribes to an extensive collection of electronic journals and several online databases.

For library hours and other info: lib.uchicago.edu

BURSAR'S OFFICE – LOCATION SUBJECT TO CHANGE

The Bursar's Office, located at 6030 South Ellis Avenue, 2nd floor. (Hours: Monday through Friday, 9:00 am to 4:00 pm).

Information can be found at: bursar.uchicago.edu

Main Phone Number	2-8000
Tuition Inquiries & Bursar Restrictions	2-7086

UNIVERSITY TICKET CENTER

The University Ticket Center, located in the Reynolds Club, sells tickets to most campus events including Major Activities Board concerts, Rockefeller Chapel productions, Music Department concerts, and Summer Nights productions.

STUDENT CARE CENTER

Please refer to documentation distributed during University and Divisional orientation. The website is: wellness.uchicago.edu

STUDENT COUNSELING CENTER

Student counseling is a separate service from the Student Health Center. They are located at 5555 S. Woodlawn Avenue and provide a broad range of mental health services, including needs assessment, psychotherapy, psychiatric consultation, academic skills assessments (time management, stress management, interpersonal issues), support groups, referrals, emergency services and health promotion and wellness programs. Their website is: <https://wellness.uchicago.edu/>.

COMPUTING FACILITIES

Academic and Public Computing runs computing facilities in Regenstein and Crerar libraries, as well as the USITE (Central Users' Site) at Harper Library (WB 310; 2-7894). The facilities provide access to a variety of computing equipment, including IBM PS/2, a variety of Macintosh and NeXT workstations, and they also supply manuals and documentation. Students may apply for personal computing accounts in the Academic and Public Computing Office (Culver Hall, 2-7167). The USITE provides information about microcomputing and other microcomputing sites on campus. While the computing facilities in Regenstein and Crerar are not staffed, telephone assistance is available by calling the USITE (2-7894) from telephones in the facilities.

Much of the communication between students and faculty alike is via email. It is imperative that all Program students establish email accounts and sign-on to those accounts regularly (at least once a day). Email accounts can be set up at the Academic and Public Computing office on the first floor of Culver Hall.

PHOTOCOPYING

Photocopying machines are located in all libraries. For more information regarding copying services please visit <https://printing.uchicago.edu/>. You may purchase a copy card from machines on the first floor of Regenstein, in Crerar, in Harper, or in the D'Angelo Law Library. You may also choose to add cash value to the magnetic strip on the back of your student ID card at any of the centers located around campus. This money can be used for photocopying or the purchase of snacks or drinks at machines located around campus and the food courts. In addition, Kinko's is located at 1319 East 57th Street 773-643-2424.

LOST AND FOUND

The Office of the Registrar (Administration 103, 2-7891) serves as a collection point for items found in the University's academic buildings and quadrangles. For items found in the University Medical Center, the Office of Medical Center Security (Room AMB M-12, 2-1583 or Security Dispatch AMB M41, 2-6262) serves as the collection point.

TRANSPORTATION

CAMPUS BUS

The Office of Transportation and Parking for Facilities Services coordinates with the Office of Community Affairs and works closely with the Aldermen's offices, the City of Chicago, and the Chicago Transit Authority (CTA). The campus bus service is comprised the #170 Midway, #171 Hyde Park, #172 Kenwood routes.

For Transportation information, please visit:

safety-security.uchicago.edu/transportation

Students ride the #170, 171, and 172 free with a UCID. Regular CTA fares apply for the other bus routes. Passes can be purchased at the Chicago Card Office in the Regenstein Library, Room 100F, Monday-Friday, 8:30 am-5:00 pm or by visiting transitchicago.com or calling 1-888- YOUR-CTA.

The University also operates a free Evening Bus Service that covers the Hyde Park-Kenwood neighborhood. The buses operate on 30-minute schedules between 6:00 pm until about 1:00 am Sunday through Thursday, and until 2:00 am on Friday and Saturday. They depart from in front of the Regenstein Library and from the Main Quadrangle. The schedule changes during University breaks and Summer Quarter. Maps and other information can be found at: safety-security.uchicago.edu/transportation.

Route maps and schedules for all buses are available at the UC Office of Graduate Affairs, Reynolds Club Information Desk, University Bookstore, Regenstein Library Reference Desk, and Law School Reception Desk and online.

UGO NIGHTRIDE SHUTTLES

The NightRide Program is a shuttle service for the entire campus community on a fixed schedule along highly used routes. The goal is to provide safe, timely and reliable transportation during late-night hours to faculty, students and staff throughout campus and the surrounding area. The program operates from 5:00 p.m. to 4:00 a.m. on Sunday through Wednesday, and 5:00 p.m. to 6:00 a.m. on Thursday, Friday and Saturday.

This service will run approximately every 20-30 minutes throughout the evening. The routes are accessible within 1-2 blocks of nearly every campus building; all residence halls are a designated stop, and each route operates in a forward and reverse direction. A map of the routes can be found here on the Transportation website (http://safety-security.uchicago.edu/services/ugo_nightride_shuttles/) and the TransLoc system (<http://uchicago.transloc.com/>) allows for up-to-date tracking information.

Please forward any feedback of this program to nightride@lists.uchicago.edu.

UMBRELLA SERVICE

Anyone within the University Police coverage area may request a police escort at any time if they feel uncomfortable with their surroundings. Call 773-702-8181 and give your location; the first available patrol car will be dispatched to accompany you as you walk to your destination. You may also call the University Police dispatcher at 123 from any campus phone.

Website: <https://safety-security.uchicago.edu>

PARKING

The Parking unit of Transportation & Parking Services is responsible for the development and execution of approved parking policies, administration of the parking system, collection of approved fees and the enforcement of parking regulations. You may obtain an assigned parking space on campus by paying a monthly fee. Assignments for campus lots are available at the Campus Parking Office, 2-8969, located at 5525 South Ellis Avenue.

Website: <http://safety-security.uchicago.edu/transportation/>

Email: parking@uchicago.edu

RECREATION ON AND NEAR CAMPUS

GENERAL INFORMATION

Facilities

The Reynolds Club, located at 5706 S. University Ave., is the University's primary student center and is often thought of as the hub of student life. The building offers a variety of dining options, as well as performance spaces and meeting rooms to be reserved for students free of charge.

Also located in the building:

The Reynolds Club is home to *Hutchinson Commons*, a food facility serving a plethora of food options, including pizza, Indian cuisine, sandwiches, sushi, and more. The building also houses two coffee shops: *The C-Shop*, where you can get milkshakes for \$1 on Wednesdays, and *Hallowed Grounds*, the student run coffee shop on the second floor.

Website for Coffee Shops: <http://studentactivities.uchicago.edu/reynolds-club>

WHPK, the University's legendary radio station, is located in the Bell Tower of the Reynolds Club. WHPK, "The Pride of the South Side", has been broadcasting to Hyde Park and the South Side of Chicago for over 50 years and is dedicated to playing non-mainstream music and providing a voice to the community and local politicians about local and global concerns. WHPK Website: whpk.org

University Theater, located the Reva and David Logan Center for the Arts, is the oldest running College Theater program in the country. Since its inception in 1898 University Theater has been responsible for the production of over 3,000 productions. Website for University Theater: taps.uchicago.edu

Ida Noyes Hall, located at 1212 E. 59th Street, is an 82,000 square foot facility originally designed to be a women's gymnasium and social center at the University of Chicago. Over the years, the facility has undergone modest changes and has hosted many events, large and small, for the University community. The central goal of Ida Noyes Hall is to provide facilities and services to student organizations and university departments.

Ida Noyes Hall is also home to Career Advising and Planning Services (CAPS)*, which is located on the 3rd floor of the building, the Maroon* (located in the Lower Level), and The Pub* (also located in the Lower Level). Each year, Ida Noyes Hall hosts a variety of RSO activities, department events, corporate recruiting sessions, parties, and special events.

The Ida Noyes gymnasium was converted into Max Palevsky Cinema* in 1987. Since that time, Doc Films has been screening movies every night of the academic year.

Websites:

Main Portal Website for Office of the Reynolds Club & Student Activities:
studentactivities.uchicago.edu

CAPS: careeradvancement.uchicago.edu
Maroon: maroon.uchicago.edu or chicagomaroon.com
The Pub: studentactivities.uchicago.edu/orcsas-pub
Doc Films: docfilms.uchicago.edu/dev/
Dining: dining.uchicago.edu

YOUR UNIVERSITY OF CHICAGO CONNECTIONS

Quick Links List:	uchicago.edu/quicklinks
UChicago Home:	uchicago.edu
About UChicago:	uchicago.edu/about
UChicago Chronicle:	chronicle.uchicago.edu
Maroon Athletics:	athletics.uchicago.edu
The UChicago Maroon:	chicagomaroon.com
The University of Chicago Magazine:	mag.uchicago.edu
University News Service:	news.uchicago.edu

CHICAGO

Chicago is a fantastic city for music, theatre, and dining out. The Chicago Symphony, the Lyric Opera, Music of the Baroque, jazz, and blues clubs, the Goodman Theatre, and off-loop theatres are all excellent. Both inexpensive ethnic restaurants and expensive special-occasion restaurants abound.

Information on events in Chicago is plentiful, particularly on the internet (see below). One of the best sources is the monthly *Chicago Magazine*, available at most newsstands. *Chicago Magazine* rates restaurants, compiles a complete calendar for the coming month, and generally includes a feature or two on getting the most out of the city. The Friday and Sunday *Sun-Times* and *Tribune* have good sections on the week's events. In addition, the *Reader*, available free in the Reynolds Club, the Bookstore, and Regenstein Library (delivered Thursday night or Friday morning), has the best information on music, movies, dance and shows.

CHICAGO ON THE WEB

City of Chicago: cityofchicago.org
Centerstage Chicago (music, food, bars, film, theater, etc.): chicago.com
Metra Train Schedules: metrarail.com

FESTIVALS AND EXHIBITS

Ravinia Music Festival - all summer long, a wide variety of music: ravinia.org

Chicago Symphony Orchestra, jazz, country and more in a beautiful outdoor park: cso.org

Movies in the Park – Movies in various parks in Chicago throughout the summer months:
<http://www.chicagoparkdistrict.com/events/movies/>

Millennium Park Concert Series – Various music and dance events at Millennium Park:
http://www.cityofchicago.org/city/en/depts/dca/supp_info/millennium_park_-_upcomingevents.html

57th Street Art Fair - First weekend in June. 57th Street & Kimbark Avenue: 57thstreetartfair.org

Old Town Art Fair - Mid June. 1800 block of Orleans Street and Lincoln Park West and adjacent Menomonee, North Park and Wisconsin Streets: oldtowntriangle.com

Chicago Blues Festival – Typically held the 2nd weekend in June in Grant Park - Petrillo Music Shell. World famous blues sounds of "Sweet Home Chicago" as well as showcasing talent from coast to coast. Call the Mayor's Office of Special Events for more information, 312-744-3315 or visit: chicagofestivals.net/music/blues-2/blues

The Japan Festival - A month-long series of unique Japanese cultural and educational events, including contemporary theater and film, concerts and exhibits. Visit: japanfest-chicago.org

Chicago Gospel Festival - At Millennium Park in June. World's largest free outdoor gospel festival. Call the Mayor's Office of Special Events for more information, 312-744-3315 or visit: www.choosechicago.com/things-to-do/chicago-events/chicago-gospel-music-festival

Printer's Row Book Fair- On South Dearborn from Congress to Polk, in June. Old, new, rare, antique and special books are for sale by booksellers in historic Printer's Row. Food vendors from Burnham Park's restaurants. Sponsored by the Chicago Tribune, 312-222-3986 or visit: chicagotribune.com/entertainment/books/printersrowlitfest

Grant Park Concerts – June through August at Petrillo Music Shell. America's largest free Symphonic Music Festival featuring international soloists and conductors with the Grant Park Symphony Orchestra and Chorus. Call Grant Park Music Festival Offices for more info, 312-742-7638 or visit: grantparkmusicfestival.com

Taste of Chicago - Held during the Summer in Grant Park. Over 75 restaurants participate; there are nightly concerts at Petrillo Music Shell and live broadcasts from major radio stations. Call the Mayor's Office of Special Events for more information, 312-744-3315 or visit: cityofchicago.org/city/en/depts/dca/supp_info/taste_of_chicago.html

Air and Water Show - Spectacular entertainment in the air and on the water at the North Avenue Beach in August. Sponsored by the Chicago Park District, 312-294-2200 or visit: cityofchicago.org/city/en/depts/dca/supp_info/chicago_air_and_watershow.html

Buckingham Fountain - The fountain runs from 8am to 11pm daily, typically from April to mid-October, depending on the weather. Every hour on the hour for 20 minutes the fountain produces a major water display. The center jet shoots 150feet in the air. At dusk, lights and music are added to the display. Located on Congress and Lake Shore Drive. History and fact can be found at:

chicagoparkdistrict.com/parks/clarence-f-buckingham-memorial-fountain

Chicago Jazz Festival - Labor Day weekend in Grant Park. This event highlights Chicago's rich jazz tradition. Sponsored by the Mayor's Office of Special Events: cityofchicago.org/city/en/depts/dca/supp_info/chicago_jazz_festival.html

Oktoberfest - Usually late in September on Lincoln Avenue. Bands from Heidelberg and Chicago entertain daily; traditional German food and beer is served under giant tents. Information is posted at: chicagoevents.com/event.cfm?eid=222

Chicago International Film Festival - The end of October at various Chicago theaters. This event features films from 40 countries. Online at chicagofilmfestival.com

Other Chicago Event and Location information: choosechicago.com

City Pass - Chicago CityPASS is a booklet of admission tickets to Chicago's 5 must-see attractions at 50% off the combined admission price:
citypass.com/chicago/things-to-do-chicago

APPENDIX

**Divisional policy requirements
for admission to candidacy to the Ph.D. and for the Ph.D. degree
5.2020**

1. Admission to candidacy for the degree of Ph.D. requires:
 - a) Completion of Divisional Course requirements (a minimum of five formal courses).
 - b) A “B” average (GPA =3.0) to be maintained.
 - c) Submission of a written thesis proposal and its defense to the satisfaction of the candidate’s thesis committee (note in some programs this defense also has a public component).

2. Admission to candidacy must occur, or be scheduled to occur, before the end of the student’s **ninth** quarter in residency (typically Autumn Quarter of the 3rd year).

3. If admission to candidacy has not occurred by the end of the student’s ninth quarter then he/she will be unable to register at the beginning of the tenth quarter unless OGPA has approved a detailed plan from the program, student, and thesis advisor in which:
 - a) The program adequately explains why candidacy has not yet been achieved.
 - b) The student lays out a detailed plan for completion of the thesis proposal, with a timeline that does not extend beyond the end of their **eleventh** quarter in residency
 - c) The thesis advisor provides a detailed plan, which includes frequency and nature of mentoring meetings, to assist the student in satisfactorily completing and defending the thesis proposal

4. Completion of the Ph.D. degree additionally requires:
 - a) Completion of Divisional TA-ship requirements
 - b) Completion of Divisional Ethics training requirements
 - c) Completion of all graduate program-specific requirements.
 - d) Submission and oral defense, to the satisfaction of the student’s thesis committee and graduate program, of an original dissertation

5.2020

Students must complete a minimum of five formal courses for a letter grade in order to be admitted to candidacy for the Ph.D.

Admittance to candidacy typically requires that a “B” average (GPA =3.0) be maintained (note that graduate classes allow +/- grades). See the “Recommendation to dismiss” policy for additional guidance.

A “B-“ average (GPA 2.75) is sufficient for a terminal Master’s degree.

Graduate programs may require course work over and above the divisional minimum.

Non-traditional courses, such as half-credit bearing micro courses, may count towards divisional and programmatic requirements at the discretion of the graduate program.

Laboratory rotations and research experiences are to be graded P/F and do not count towards the minimum course requirements

Students must also meet Divisional TA training and Ethics training requirements; these courses are taken P/F and do not count towards the minimum course requirements.

Combined degree students in the graduate phase of their program must follow the same policies as the other PhD students.
