Graduate Student Handbook
2025 - 2026

Mathematical, Computational, and Systems Biology Graduate Programs

UNIVERSITY *of* CALIFORNIA · IRVINE

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Program Overview

Goals of the MCSB Program

The goal of UCI's program in Mathematical, Computational and Systems Biology (MCSB) is to provide students from a variety of educational backgrounds with Ph.D. training suitable for research careers in the nascent field of Systems Biology. The program emphasizes in-depth classroom study, interdisciplinary research rotations, and individualized advising.

The graduate program in Mathematical, Computational and Systems Biology (MCSB) is designed to meet the interdisciplinary training challenges of modern biology and function in concert with existing departmental programs (Departmental Option) or as an individually tailored program (Interdisciplinary Option) leading to an M.S. or Ph.D. degree. The degree program provides students with both opportunity for rigorous training towards research careers in areas related to systems biology and flexibility through individualized faculty counseling on curricular needs, and access to a diverse group of affiliated faculty and research projects from member departments. Current member departments include Biomedical Engineering, Biological Chemistry, Computer Science, Developmental and Cell Biology, Ecology and Evolutionary Biology, Mathematics, Microbiology and Molecular Genetics, Molecular Biology and Biochemistry, Chemistry, and Physics.

Statement of Purpose

The field of Mathematical, Computational and Systems Biology (MCSB) is an inherently broad and multidisciplinary area of scientific pursuit and scholarship. It has intellectual links to numerous and diverse fields in biology, medical science, mathematics, physics, chemistry, engineering, and computer science. Although it is not a new field, it is becoming increasingly important to progress in the biological sciences. This reflects the increased focus of many biologists on system-level approaches, in which complex network architectures, non-linear dynamics, and large data sets must often be explored and understood.

The breadth, multidisciplinary, and growing importance of MCSB make it an attractive and important area for graduate study. After the rigorous first year "gateway", the PhD program allows the flexibility to transfer into 10 departmental PhD programs or remain in the interdisciplinary PhD program.

The MCSB seeks to attract highly qualified students to UCI, and to provide them with an academic experience of the highest quality. In particular, the MCSB program:

- Provides students with an opportunity to begin their training in Mathematical, Computational and Systems Biology with a broad academic introduction.
- Provides students with an opportunity for individualized attention to curricular needs.

- Provides students with an opportunity to conduct initial research projects with a large and diverse group of faculty in a wide variety of departments.
- Provides students with an opportunity to choose and conduct thesis research in any of a large and diverse group of laboratories in a wide variety of departments.
- Provides UCI Faculty in Biological Sciences, Engineering, Medicine, Information and Computer Science, and Physical Sciences with enhanced opportunities to compete for and obtain training grants from extramural sources.

MCSB Executive Committee

The **MCSB Executive Committee** serves as the primary governing body of the MCSB Program. The committee is responsible for overall decision making and overseeing the organization of the MCSB Graduate Program. The committee exercises approval authority over course exemption requests, Advancement to Candidacy committees, and other matters of the program.

Directors
John Lowengrub, Director, MS and Ph.D. Program, Department of Mathematics and Biomedical Engineering
Arthur D. Lander, Associate Director, Department of Developmental & Cell Biology and Biomedical Engineering
Qing Nie, Associate Director, Department of Mathematics and Developmental & Cell Biology
Tim Downing, Director of MCB Gateway Program, Department of Biomedical Engineering

Diversity Statement

The MCSB program is committed to excellence through diversity and to the goal of reflecting diversity in our faculty, student, and staff populations, as well as our teaching, research and public service endeavors. We aim to foster and fortify a campus culture in which faculty and students alike expect equity, support diversity and practice inclusion.

It is our commitment that all MCSB students deserve to be treated with respect by faculty, staff, and each other.

We pledge to provide avenues for all student voices to be heard, especially voices of criticism or concern. We welcome the participation of diverse individuals in running and growing our program.

Academic Matters

Course Enrollment:

You may use WebReg to enroll in courses and make schedule changes during both the 'Enrollment by' Window and 'Open Enrollment' periods. Please refer to the Quarterly Academic Calendars for the enrollment window dates:
https://www.reg.uci.edu/navigation/calendars.html

It is the student's responsibility to check when their enrollment window is open for each quarter. You must be enrolled in a **MINIMUM of 12 units** of graduate-level academic coursework (including units for supervised research with your advisor) per quarter by the enrollment deadline. Failure to register for the minimum-required number of units to maintain a full-time academic registration before the fee payment deadline could cause you to lose your student status.

Summary Ph.D. Program Timeline

Year 1
- Participate in first year bootcamp
- Complete 7 required core courses (achieve at least B+ (3.5) average in core courses).
- Complete at least 2 laboratory rotations (1 in wet lab, 1 in dry lab)
- Select Thesis Advisor by the end of Spring quarter
- Participate in required MCSB/CCBS Activities – Annual Retreat, etc.

Year 2
- Continue work on thesis research.
- Enroll in 1-2 Courses each quarter to complete 5 breadth course requirements (achieve at least B+ (3.5) average in courses).
- Enroll in Systems Biology Journal Club (Dev Bio 212) in either Fall, Winter, or Spring.
- Participate in MCSB/CCBS and your departmental activities

Year 3

- Continue work on thesis research.
- Complete all required course work.
- Enroll in Systems Biology Journal Club (Dev Bio 212) in either Fall, Winter, or Spring.
- Select Advancement to Candidacy Committee.
- Advance to Candidacy before the fall quarter of the 4th year.
- Participate in MCSB/CCBS and your departmental activities

Years 4+

- Continue to work on thesis research.

- Enroll in Systems Biology Journal Club (Dev Bio 212) in either Fall, Winter, or Spring.
- If not advanced to candidacy in Year 3, advance to candidacy in Year 4.
- Select and meet with the Doctoral Committee.
- Participate in required MCSB/CCBS and your departmental activities
- Prepare Doctoral Dissertation.
- Take Final Examination – Thesis Defense.

Summary M.S. Program Timeline

Year 1

- Participate in first year bootcamp
- Complete 7 required core courses (achieve at least B+ (3.5) average in core courses).
- Complete at least 2 laboratory rotations (1 in wet lab, 1 in dry lab)
- Select Thesis Advisor by the end of the Spring quarter
- Participate in required MCSB/CCBS Activities – Annual Retreat, etc.

Year 2

- Continue work on thesis research.
- Enroll in either 2 or 5 breadth courses, depending on Research or Literature Thesis option (achieve at least B+ (3.5) average in courses).
- Enroll in Systems Biology Journal Club (Dev Bio 212) in either Fall, Winter, or Spring.
- Participate in MCSB/CCBS and your departmental activities
- Select Master's Thesis Committee
- Advance to candidacy at least 1 quarter before defending
- Take Final Examination - Master's Thesis (research or literature) defense.

Detailed Program Timeline

First Year (Ph.D. and M.S. programs)

The major goal of the first year in the program is to prepare the students to become independent researchers. The following three components of the first-year curriculum, namely, the Boot Camp, core courses, and laboratory rotations, are designed to achieve that goal and help students identify a thesis advisor.

Boot Camp:

Incoming students will be required to attend a 3-4 week "boot camp" in biology, mathematics and computation, during the period just prior to the start of the fall quarter. These intensive training experiences, which involve lectures, demonstrations, and one-on-one instruction, are designed to help students achieve a basic understanding in areas in which they may have

received little formal education.

Core Courses:

All first-year students normally take seven four-unit MCSB **Core Courses** listed below, three in mathematical and computational methods for biology and four in biological sciences. Students are expected to take a minimum of 7 didactic courses in preparation for thesis research.

Fall:
Biological Physics (Physics 230A)
Mathematical and Computational Biology I (Math 227A)
Critical Thinking in Systems Biology (Dev Bio 203A)
Systems Biology Journal Club (Dev Bio 212)

Winter:
Systems Cell Biology (Dev Bio 232)
Mathematical and Computational Biology II (Math 227B)
Systems Biology Journal Club - Topics (Dev Bio 212B)

Spring:
Systems Developmental Biology (Dev Bio 203C) *OR Population Dynamics (Eco Evo 251)*
Stochastic and Statistical Methods in Biology (Math 227C) *OR Computational Systems Biology (CompSci 284C)*
Systems Biology Journal Club (Dev Bio 212C)
Responsible Conduct of Research (M&MG 250)

Research Laboratory Rotations:

Laboratory rotations constitute an important component of the first year training program, providing you with intensive introductions to experimental design and quantitative data analysis as well as familiarizing you with available research opportunities. You are expected to conduct at least two rotations in different labs prior to choosing a thesis advisor. Because of the interdisciplinary nature of the MCSB Program and the diversity of the participating students, it is important that you become familiar with both "wet" experimental biology labs as well as with "dry" mathematical/ computational labs. Therefore, you are expected to do at least one rotation in each environment. Students are also encouraged to pair up for interdisciplinary, collaborative work experiences.

A third rotation is optional, though most students do complete three rotations in their first year. If you successfully find a thesis advisor during your first two rotations, third rotation can be omitted with the approval from the program directors and the confirmed thesis advisor.

In rare situation, a fourth rotation (summer after the first year) may be permitted. If needed, students would need to discuss this option with the program directors during the Spring quarter, or as soon as possible.

Quarterly rotation reports are due at the end of each quarter.

Lab Rotation Registration - It can be tricky to enroll in the proper course for your lab rotation. Each department on campus has different policies concerning lab rotation courses. We recommend that you speak with your rotation advisor about enrolling in his/her lab rotation course, requesting that you enroll in the appropriate course with a minimum of 2 credit hours (units). Some departments offer different rotation courses – some with a pass/fail option and some offering a letter grade.

Lab Rotation Evaluation Reports – Laboratory Rotation Selection forms are due at the start of each rotation. These forms are sent to the students by DocuSign from the MCSB Coordinator. Within two weeks after the start of each quarter, students should complete the **Lab Selection Form** briefly describing the hypothesis and description of the quarter research project. Signature approval of the faculty rotation advisor is required. The **End of Rotation Form** is due during the finals week of each quarter. A thorough project description is required, as well as any additional related work you completed during the quarter, including symposiums attended, additional training activities, publications. Comments about the program or the rotation are also solicited and encouraged during this reporting period. Signature approval of the faculty rotation advisor is required again on this form.

Selection of a Thesis Advisor and/or Department:

At the end of the first year, each student will choose a primary **Thesis Advisor** from among the participating faculty. The primary thesis advisor will provide or arrange for your financial support for three summer months following your first nine months at UCI.

For students who choose to transfer to another department, a faculty member in a participating department must agree to serve as the your thesis advisor, including a full financial commitment to support you through the entirety of your doctoral education. Completion of the Ph.D. will be subject to the degree requirements of the departmental Ph.D. program in which you enroll. Participating departments accept both the course work and research conducted during the "gateway" year in partial fulfillment of such requirements. Students are encouraged to consult with the department of choice for specific information on additional requirements well in advance of the end of the spring quarter. All department student advisory committees will be established according to the rules of the participating department.

MCSB students enrolled in degree programs, in other departments, will be encouraged to continue to attend the Systems Biology Journal Club, the Center for Complex Biological Systems (CCBS) Interest Group activities, Systems Biology Seminar Series, Annual Retreat and Research in Progress seminars. These activities will provide opportunities to maintain contact between the Gateway Program and MCSB students after they have completed the program requirements.

Beyond the first year: MCSB Ph.D. Degree Program

Year 2:

Students will have selected a thesis advisor before the beginning of the second year. The second-year students will continue to take courses, begin work in their thesis lab, and participate in MCSB programmatic activities and events.

Course work:

Students will take a total of 5 breadth courses in Years 2 and 3. Additionally, the Systems Biology Journal Club is required to be taken one quarter per academic year. MCSB PhD students are encouraged to enroll in any Journal Club offered by a relevant department during the other two quarters. All required coursework, 7 core courses and 5 breadth courses must be satisfactorily completed prior to advancing to candidacy. The breadth courses denoted by an asterisk can count either as core or breadth courses. All courses listed below are 4 units. Students may request to have a course that is not listed below to be counted toward the breadth course requirement by submitting the course syllabus to the MCSB Coordinator. Requests for one-time exception will be evaluated by the MCSB Executive committee at the end of each quarter.

Category I (Mathematics, Computation and Modeling)

Mathematical and Computational Biology I (Math 227A, Fall)*
Dynamical Systems in Biology and Medicine (BME 233, Fall)*
Quantitative methods in ecology and evolutionary biology (EcoEvo 207, Fall)
Continuum Mechanics (Physics 222, Fall)
Computational Methods (Physics 229A, Fall)
Representations and algorithms for molecular biology (CS 284A, Fall)
Machine Learning (CS 273A, Fall)
Probabilistic Learning: Theory and Algorithms (CS 274A, Fall)
Introduction to Bayesian Data Analysis (Statistics 205, Fall)
Statistical Methods 1: Linear Models (Statistics 210, Fall)
Introduction to Numerical Analysis & Scientific Computing (Math 225A, Fall)
Introduction to Numerical Analysis & Scientific Computing (Math 225B, Winter)
Computational Partial Differential Equations (Math 226A, Fall)
Computational Partial Differential Equations (Math 226B, Winter)
Methods in Applied Mathematics - S. Cao (Math 290A, Fall)
Methods in Applied Mathematics (Math 290B, Winter)
Probabilistic Modeling of Biological Data (CS 284B, Winter) Image Understanding (CS 216, Winter) Learning in Graphical Models (CS 274B, Winter)
Neural Networks and Deep Learning (CS 274C, Spring)
Bayesian Statistical Analysis – H. Stern (Stats 225, Fall)

Intermediate Probability and Statistical Theory (Stats 200A, Fall)
Intermediate Probability and Statistical Theory (Stats 200B, Winter)
Intermediate Probability and Statistical Theory (Stats 200C, Spring)
Statistical Methods II: Generalized Linear Models (Stats 211, Winter)
Quantitative Physiology: Organ Transport Systems (BME 221, Winter)
Linking Modeling and Experiments in Bioengineering (BME 215, Spring)
Biophysics of molecules and molecular machines (Physics 230B, Winter)
Introduction to Numerical Analysis and Scientific Computing (Math 225C, Spring)
Statistical Methods for Data Analysis II (Stats 203, Spring)
Statistical Methods III: Methods for Correlated Data (Stats 212, Spring)
Modern Data Analysis Methods – B. Shahbaba (Stats 235, Spring)
Introduction to Computational Biology (MolBio 223 Spring)
Data Structures – M. Dillencourt (CS 261, Spring)
Computational Systems Biology (CS 284C, Spring)*
Deep Generative Models – S. Mandt (CS 274E, Spring)
Mathematics and Computational Biology III (Math 227C, Spring)*

Category II (Biology and Biomedical Engineering)

Protein Structure and Function (MolBio 204, Fall)
Systems Neuroscience – R. Frostig (NeuroBio 208, Fall)
Principles of Genomics (DevBio 214, Fall)
Fundamentals of Informatics (Eco Evo 282, Fall)
Advanced Informatics for Biologists (Eco Evo 283, Winter)
Introduction to Proteomics (PhySio 252, Winter)
Cell and Tissue Engineering (BME 210, Winter)
Developmental Genetics and Genomics (DevBio. 210, Fall)
Cell Biology (Dev Bio 231B, Winter)
Epigenetics in Health Disease (BioChem 225, Winter)
Spectroscopy and Imaging of Biological Systems (BME 238, Winter)
Linking Modeling and Experiments in Bioengineering (BME 215, Spring)
Advanced Developmental Genetics (DevBio. 210, Spring)
Regulation of Gene Expression (M&MG 206, Spring)* Needs approval from CMB, (Gary Roman). Advanced Molecular Genetics (BioChem 207, Spring)
Signal Transduction and Growth Control (BioChem 212, Spring)
Population Dynamics (EcoEvo 251, Spring)*
Developmental Systems Biology (Dev Bio 203C, Spring)*
Cardiovascular Tissue Engineering (BME 212, Spring)
Eng. Human Potential – T. Downing (BME 295, Spring)
Neural Time Series (BME 295, Spring) Neuroimaging Analysis (BME 234, Spring)
Puzzles in Modern Biology - S. Frank (EcoEvo 203B, Winter) (Needs Dr.Steve Frank's approval).

Preliminary Exam

Students who do not meet these requirements:
- Minimum 3.5 GPA (B+)
- B+ or better in 10 of the 12 core/breadth courses
- No grade lower than a B

will be assessed, by an oral exam, on the materials from the courses by a committee of four MCSB faculty members. The examination is a presentation of a paper analysis/critique. The exam committee provides the student with a scientific paper 7 days before the exam date. The exam is typically 45 minutes, followed by 15 minutes for committee discussion without the student. The main purpose is to assess the student's ability to work in the area they have chosen. The student prepares a presentation on the paper but does not need to get through their full presentation. This way, the committee can interject with questions without concern about going overtime. Students may take the preliminary exam twice, but the exam must be completed by the start of Year 3.

Year 3:

The third-year students continue to work on their thesis project and finish taking the required courses. Students whose research is progressing well are encouraged to advance to candidacy in their 3rd year. For complete UCI policy on PhD advancement to candidacy and Candidacy Committee, refer to page 78 of Graduate Policies & Procedures.

Course work

Students will complete the course requirements in Year 3 (if not done so in Year 2). Additionally, the Systems Biology Journal Club is required to be taken one quarter per academic year. MCSB PhD students are **encouraged** to enroll in any Journal Club offered by a relevant department during the other two quarters. All required coursework, 7 core courses and 5 breadth courses, must be satisfactorily completed prior to advancing to candidacy.

Advancement to Candidacy

Once the 12 required courses are satisfactorily completed, students can take the Advancement to Candidacy exam. The exam consists of a written proposal for the dissertation and an oral presentation of the proposal, followed by a Q&A period.

MCSB Ph.D. program faculty should comprise a simple majority of the Candidacy Committee. At least one member of the committee must be from outside of MCSB. If your PI has a financial conflict of interest in your project, you must appoint an oversight member to your committee. Students must notify the MCSB Coordinator of their committee selection and for verification of satisfactory completion of required courses

BEFORE scheduling the advancement exam. The normative time for advancement to candidacy is 3 years; this must be completed by the end of the fall quarter of year 4.

Year 4 and beyond:

Students will continue to work on their original research. Students are required to advance to candidacy by the end of the fall quarter of the 4th year in the program. After advancing to candidacy, students must meet once a year with their Doctoral Committee to present their research progress. A Doctoral Committee must be selected based on the Academic Senate Regulation 920.

Course work

Students are required to take one quarter of Systems Biology Journal Club and are **encouraged** to enroll in any Journal Club offered by a relevant department during the other two quarters.

Final Examination (thesis defense)

Students must publicly present and defend their doctoral research thesis to the academic community. Once the defense date is determined, notify the MCSB Coordinator to make necessary arrangements for the defense. The dissertation is subject to unanimous approval by the student's dissertation committee (Academic Senate Regulation 935 and 466). Students must submit the complete draft dissertation to their Doctoral Committee at least one week prior to the scheduled Final Examination date. Students should refer to the Theses and Dissertations Manual for specific formatting requirements.

The normative time to the Ph.D. degree is 5 years, and the maximum time to the Ph.D. degree is 7 year*s.*

Beyond the first year: MCSB M.S. Degree Program

Students will have selected a thesis advisor before the beginning of the second year. Students will continue to take courses, begin work in their thesis lab, and participate in MCSB programmatic activities and events. Students will select their M.S. Thesis Committee based on the membership requirements as outlined in the Graduate Policies & Procedures. Normative time to M.S. degree is 2 years.

Course work:

Students will either take 5 breadth courses (literature thesis option) or 2 breadth courses (research thesis option) in Year 2. The breadth courses denoted by an asterisk can count either as core or breadth courses. All courses listed below are 4 units. The breadth courses should be selected from Categories I and II listed under the Ph.D. Degree Program and Category III listed below.

Category III (Biotechnology and Entrepreneurship)

Statistics for management (MBA 201A, Fall)
Biomedical microdevices (BME 261, Fall)
Foundations of Clinical and Translational Science (PH 290, Fall)
Entrepreneurship for scientists and engineers (ENG 280, Winter)
Technology for life (ENG 260A, Winter)

Advancement to Candidacy

Students must be advanced to candidacy prior to the beginning of the final quarter of enrollment. The Application for Advancement to Candidacy is initiated by the MCSB Program Coordinator and approved by the academic unit prior to the start of the quarter in which the degree is expected. For quarterly advancement deadlines, please visit Graduate Divisions website.

M.S. Thesis

Plan 1: Research Thesis

Students must publicly present and defend their Master's research thesis to the academic community. The research thesis is subject to unanimous approval by the student's Master's Thesis Committee. Students must submit the complete draft dissertation to their Thesis Committee at least one week prior to the scheduled Final Examination date (M.S. thesis defense). Students should refer to the Theses and Dissertations Manual for specific formatting requirements.

Plan 2: Literature Thesis

Students must submit a written thesis, which is subject to unanimous approval by the student's Thesis Committee.

Advising

First-year Peer Mentors:

First-year students will be assigned to a peer mentor, an upper-year MCSB student, through the student-run MCSB Peer Mentoring Program. The first-year students can meet with their peer mentor as frequently as their schedules will allow, and at minimum once per quarter. The meetings are informal and mandate no specific discussion topic.

Thesis Advisor:

Thesis Advisor's supervise student's thesis research and serves as the chair of your Doctoral Committee. In addition to advising and monitoring the academic progress of their students and assuming financial responsibility for your graduate education, Thesis Advisors are expected to be attentive to the future of their students and encourage the professional development of their students.

Co-Advisors:

Based on a student's choice of thesis lab, the composition of a student's mentoring committee may be adjusted. Other adjustments may be made based on the area of the student's research, or by request of the student, thesis advisor or committee member.

MCSB PhD Candidacy Committee:

The role of the PhD Candidacy Committee is to administer an oral examination to admit students to candidacy for an MCSB graduate degree.

Per Academic Senate Irvine Division Regulation 918, Candidacy Committee must be:

- comprised of at least five faculty.
- majority of the committee must be affiliated with the MCSB Program.
- one member of the committee must be an "outside member," who is not part of the MCSB Program.
- if any of the committee members has a financial interest in an outside entity that carries

a possibility of conflict of interest, potentially harmful to the student, an "oversight member," who does not bear any possible conflict of interest potentially harmful to the student in serving this role, must be appointed.

MCSB PhD Doctoral Committee:

The role of the PhD Thesis Committee is to supervise the preparation and completion of the dissertation and the "final examination."

Per Academic Senate Irvine Division Regulation 920, Doctoral Committee must be:

- comprised of at least three faculty;
- majority of the committee must be affiliated with the MCSB Program;
- if any of the committee members has a financial interest in an outside entity that carries a possibility of conflict of interest, potentially harmful to the student, an "oversight member," who does not bear any possible conflict of interest potentially harmful to the student in serving this role, shall be appointed.

Master's Thesis Committee:

Per Academic Senate Irvine Division Regulation 830, Master's Thesis Committee must be:

- comprised of at least three faculty;
- a majority of the committee must be affiliated with the MCSB Program;
- if any of the committee members has a financial interest in an outside entity that carries a possibility of conflict of interest, potentially harmful to the student, an "oversight member," who does not bear any possible conflict of interest potentially harmful to the student in serving this role, shall be appointed.

Evaluations and Examinations

IDP – Individual Development Plan and Mentoring:

All MCSB students are **strongly encouraged** to complete an annual **Individual Development Plans (IDP)** in consultation with your faculty advisor. A well-maintained and freely available online version of the IDP can be found at https://myidp.sciencecareers.org/. The system allows you to continuously update the plan as skills and experiences accumulate (e.g., annually), and includes a "Mentoring Team" as an integral part of the system. A certification of completion will be required annually.

Further information regarding UC Irvine's Graduate Mentoring Policy is available for your

reference on Page 62-65 in the [Graduate Policies & Procedures Handbook](#).

Annual Mentoring Committee Meetings:

These are encouraged to review the student's IDP and may be a considered a pre-Advancement Meeting in the second and third years. A written record of these meetings is also encouraged, the MCSB Program [Committee Meeting Report Form](#) is posted on the MCSB website.

Advancement to Candidacy Exam:

The written proposal should be prepared, approximately 10-15 pages in length. The length of the proposal should be determined by the student's thesis advisor. It is recommended that the paper be submitted to the exam committee at least one week prior to the exam. Typically, the exam is scheduled for a 2-hour time block; the first hour for the student presentation, then the second hour for the committee's review, questions and comments. The Candidacy Committee will review the **outline of the proposed dissertation project and will determine by oral examination the student's competence in that area.** When, by unanimous vote, the Committee decides the student is qualified for the dissertation phase, it shall recommend advancement to candidacy to the Graduate Council via the Graduate Dean.

Written Doctoral Dissertation (or Master's Thesis) and Oral Defense (Final Examination):

The Master's thesis or Ph.D. dissertation is a permanent scholarly statement of your research. As such, it must be formatted according to the requirements established by UCI's Graduate Division, the Graduate Council of the Irvine Division of the Academic Senate, and the University Libraries. It is your responsibility to ensure that your student status is maintained, filing fees are paid, and the filing deadlines are met. UCI Libraries offers workshops, pre-submission critiques and in-person consultations to help you prepare your thesis/dissertation. [Thesis/Dissertation Formatting Manual](#).

Unsatisfactory Academic Progress:

In the event a student receives a grade lower than a B in any course during any quarter, or an unsatisfactory rotation grade, the student will be recommended for academic probation. The student's primary advisor will discuss the situation with the advisee and may also confer with relevant course instructors or rotation advisors regarding the trainee's performance. The student's primary advisor will inform the Executive Committee of the academic probation and recommend action(s) that should be taken to remedy the situation.

Grounds for Placement on Academic Conditional Status (*Graduate Policies & Procedures Handbook*)
Grounds for Disqualification (*Graduate Policies & Procedures Handbook*)

Other Programmatic Activities

Research-In-Progress Talks

Research-in-Progress (RIP) meeting is a student-initiated weekly meeting, in which students and postdocs present their work to each other, and provide a supportive, constructive venue for discussion. It is completely student run, with only occasional faculty attendance, providing an important peer-based compliment to the PI-based mentoring offered in other venues. The student-organizers receive funding for snacks and coffee, and funding for one annual invited speaker of their choosing.

CCBS Annual Retreat

Each year, a 2.5-day off-site retreat dedicated to Systems Biology is co-organized by UCI's Center for Complex Biological Systems, Center for Cancer Systems Biology, and Center for Multiscale Cell Fate, and the MSCB graduate program. Scientific presentations are given by faculty, postdocs, and students. Presentations are given on the current state of scientific funding and jobs in the U.S. and internationally, and on funding opportunities available to researchers at all levels. News items related to research conduct are also discussed. Social events (receptions, dinners) and working lunches are held to encourage interaction and community- building.

Student participation is an essential feature of the retreat, both in scientific presentations and discussions, and in providing program feedback. The retreat plays a major role in short-term program assessment and development of new education initiatives. At every retreat, several sessions, usually including one or more small-group break-out sessions, are devoted to issues of education, including evaluating the strengths and weaknesses of the MCSB program itself. Participants in the break-out sessions include current MCSB students, MCSB affiliates (students from other programs who take some of the MCSB courses), postdocs and faculty. The input received during these sessions help develop new curriculum elements.

Outreach Activities

CCBS administers outreach activities throughout the year aimed at fostering an appreciation and understanding of science outside the usual scientific community. A few examples include California State Summer School for Mathematics and Science (COSMOS), MathBioU and MathExplr. COSMOS is a 4-week, residential program, in which talented high school students explore advanced topics in a variety of STEM fields through didactic lectures and hands-on labs. MathBioU and MathExplr are 6-week programs held during the summer in which undergraduates or high school students, respectively, join a lab affiliated with the CMCF for a research project. MCSB graduate students can apply to mentor or TA in these outreach programs.

Teaching Assistants (TA) and TAPDP:

Currently, the MCSB Program does not manage any "stand-alone" courses, therefore, we cannot offer any TA-ships directly through the MCSB program. However, it is possible that an opportunity to TA with your Thesis Advisor or Thesis Advisor's department may arise. So that you are prepared for these opportunities, we urge every MCSB student to register for the **TA Professional Development Program (TAPDP) training**, after completion of the MCSB First Year.

Typically, the TAPDP training is held in September (with makeup dates in January). The MCSB Administrators will inform you of the registration process as soon as possible. Further information on the TAPDP Training can be found at this link: http://dtei.uci.edu/ta-professional-development-program/

TOEP/ SPEAK Tests for International Students:

All international applicants are required to demonstrate English proficiency for admissions considerations. Applicants are waived of this requirement if they earned a bachelor's or master's degree from an institution at which English was the sole language of instruction according to the World Higher Education Database.

Students can fulfill this requirement by passing one of the following exams:

- Test of English as a Foreign Language Internet-based Testing (TOEFL iBT) is administered by ETS in U.S. centers and abroad. Total score minimum: 80.
    o Minimum Speaking score: 26.
- International English Language Testing System (IELTS) is available in over 135 countries. Minimum Score: 7.
- Spoken Proficiency English Assessment Kit (SPEAK) which is available at UCI only after a student is admitted. Minimum Score: 50

- Test of Oral English Proficiency (TOEP) which is administered at UCI and is only an option if a student fails to pass the TSE or SPEAK. Minimum Score: 5

The only exemptions to this exam are given to students who have:
1. US citizenship
2. Completed a 4-year high school or college degree in the US.
3. Citizenship in a country where English is either the primary or dominant language, as approved by UCI Graduate Council

Administrative Matters

Department Location:
The MCSB Graduate Programs is administered by the **Center for Complex Biological Systems**. Department offices are in Biological Sciences III, Suite 2620.

Administration:
Emi Embler, CCBS Office Administrator – eembler@uci.edu
TBD, MCSB Program Coordinator
Hanna Johnson, CCBS Financial Analyst – hannanj@uci.edu

Housing:

UCI offers guaranteed graduate housing for incoming PhD students. For more information, or to apply, please see http://www.housing.uci.edu/. It is important that you pay attention to the steps involved and the posted deadlines in this process in order to secure guaranteed housing.
1. Students must apply for housing by 4pm on May 1st of the year you are admitted.
2. Students must accept your Community Match by May 15th (Students that decline the offered community match, may jeopardize their status. Please see the Guaranteed Housing Terms & Conditions for more details.)
3. Students must accept an apartment offer before classes start in Fall Quarter.
4. Students must maintain good academic standing to continue to qualify for the guarantee.

Students who miss the application or contract return deadlines may apply to be on the housing waitlist. Housing offers are made to the waitlist as space allows once all guaranteed students have been served.

If you have any concerns about housing or even concerns about paying your rent, do not hesitate to contact us.

Once you receive your new campus address, please make sure you update your Student Access account right away.

Parking:

All vehicles must display a valid UCI parking permit when parked on campus or using metered spaces. The Parking and Transportation Services Office is located in the Public Services Building (Building #7 on the Campus Map – at the intersection of E. Peltason and Pereira Drive). Information about the fees for a student parking pass can be found at http://www.parking.uci.edu

UCI Parking & Transportation also provides a complimentary VIP Service Program (e.g. vehicle unlock, car or bike tire inflation, emergency ride home, etc.) for all UCI affiliates.

UCI NetID:

Your UCInetID is your electronic identification used for many online services at UC Irvine. To activate your UCInetID please follow instructions at: https://activate.uci.edu/cgi-bin/applicant. **You will need your Student ID number and Social Security Number for this process.**

Student Photo ID card:

UCI photo ID cards are often required when conducting business with various campus services (e.g., UCI libraries). **The UCI Photo ID** cards are available from The Hill located at the UCI student center. Once you arrive to campus, please take your student ID number and photo ID (Driver's license, or passport) with you to obtain your UCI photo ID card.

Common Areas:

In the CCBS suite, Room 2641 workroom and the CCBS Conference Room are available for your use. CCBS conference room can be reserved through the CCBS Administrator. We ask that you treat these areas as you would your home and be respectful of others. Cleaning service and trash removal in office areas is taken care of by the CCBS staff; therefore, your contribution to a clean and pleasant environment will be highly regarded. Biological Sciences III is currently a mixed-use facility. A vivarium facility, as well as research labs and office space are housed in this building. We ask that you respect the confidential nature of the activities taking place here. **Please feel free to call Campus Police, #949/824-5223, if you see any type of suspicious activity occurring.**

Computers and Copy Machines:

Self-service copy machines are in Biological Sciences III, in the Department of Developmental and Cell Biology's mail room and in the Natural Sciences 1, Room 2112, "Image Works" Facility.

Mail:

Campus and U.S. mail can be deposited in the Central outgoing Mailbox located at the front of

the Biological Sciences III building. US Mail is delivered every day at 11:00AM; and we are happy to accept mail or packages from UPS or FedEx on your behalf. The Department address is:

Center for Complex Biological Systems
University of California Irvine
2620 Biological Sciences III
Irvine, CA 92697-2280
Please be sure to include the "2280" (which is the CCBS "ZOT code") to ensure expedient delivery to our office.

Library:

The Science Library is located next door to Biological Sciences III. This library consolidates scientific holdings of the Main Library, the Biological Sciences Library, the Physical Sciences Library and the Biomedical Library. Research librarians are assigned to specific areas of interest, http://www.lib.uci.edu/about/contact/subject-librarians.html and can help with a variety of library needs.
  - ❖ Student ID cards may be activated at the library for check-out privileges. The Interlibrary Loan (ILL) service enables UCI students, faculty, and staff to borrow materials from other libraries that are not available at the UCI Libraries. Before requesting an item through ILL, make sure it is not available at any UCI library by searching Library Search

Accidents:

We always hope that no one will be hurt when they are working or teaching, but accidents do happen. All employees are covered under Workers' Compensation Insurance for injuries and/or illnesses that arise out of or in the course of their employment. If your injury or illness requires medical attention, please go immediately to Student Health Center. If that unit is not open, assistance can be sought from any hospital or emergency unit. Whether or not you seek medical assistance, **an accident report form must be completed within 24 hours**. Accident reports can be filed via this link https://www.ehs.uci.edu/forms/report-injury/.

Emergency Preparedness:

UCI endeavors to protect employees and students, to minimize program interruption, and to reduce property damage during disaster. An Emergency Operations Center (EOC) has been established and will be activated as the central command center for managing a campus emergency or disaster. Every building has a "Building Coordinator", and each floor of each building has a "Floor Warden." In a disaster, Floor Wardens will assist in evacuation and report damage to Building Coordinators, who in turn, coordinate efforts with "Zone Captains". In a disaster response situation, Zone Captains provide the prime linkage between each campus zone and the EOC. To find out who your disaster response team is, contact your lab advisor or e-mail your request to police@uci.edu. Advance planning is your best protection and your

responsibility; forethought and preparation prevent panic:

- The UCI Emergency Preparedness website: https://em.uci.edu/
- The UCI Environmental Health & Safety Office coordinates campus training programs for disaster preparedness (http://www.ehs.uci.edu/).

Wellness, Health and Counseling Services:

The mission of the Wellness, Health & Counseling Services cluster is to support the campus' goal of being first in class by providing services that support students' physical and mental health and wellness to enhance their academic success. We believe that academic excellence is facilitated when students have a strong mind, a healthy body, an enlivened spirit and a clear aspiration, nurtured in a supportive environment. Please see the Wellness, Health and Counseling Services website, https://whcs.uci.edu/. We also encourage you to contact Phong Luong for academic support, time management skills, or an ear for when you feeling overwhelmed.

Campus Recreation:

The Anteater Recreation Center (ARC) is equipped with two different gymnasiums, an elevated running track, a rock-climbing wall, a fitness lab—a 10,000 square foot space with free weights and cardiovascular training equipment and several activity rooms. Its Aquatics Plaza contains a 25 yard by 25 meter heated recreational lap pool. Students can pursue their own fitness programs or participate in a full myriad of campus recreation programs. Programs include in-line skating, scuba, kick boxing, aerobics, sailing and more! Please see the Campus Recreation website, http://www.campusrec.uci.edu/.

Funding and Financial Support

The MCSB program supports all first year PhD Graduate students with a stipend and remission of all UCI tuition and student fees. Typically, financial support for the three summer months after the first academic year at UCI will be through research funding provided or arranged by a student's primary thesis advisor. Foreign students are advised that additional tuition costs are incurred, for which the MCSB program or the relevant academic department cannot necessarily provide reimbursement during the subsequent years. Support for this additional tuition may be paid directly by the student or may be provided by one of our faculty members.

The MCSB Program is supported by funding from UCI's Graduate Division, and by a training grant from the National Institute of General Medical Sciences.

Please note that all MCSB Students that are U.S. Citizens must prepare a FAFSA (Free Application for Federal Student Aid) online. Graduate Division may deny our request for

Fellowship support for you if this form has not been filed with the Federal government by June 30th of each year. Program fellowships are provided by state and federal funding to the University of California, and all students receiving fellowship support are asked to complete a FAFSA. These forms rely on your tax return filed for the previous year.

Fee and Tuition Remission:

All annual fees and any non-resident tuition will be paid on your behalf by payment deadline. Should you receive any notifications from financial aid or the cashier's office warning you about your tuition or fees due or a financial hold, first check that you do not have personal outstanding balance in your account. Contact the MCSB Coordinator if you have concerns about the tuition/fee charges on your account.

Zot Account:

The UCI Zot Account is the Student Billing System (SBS). The information in your ZOT Account Online is from student records and is governed by Federal and State laws, and University policies. You will be asked to create a login using your UCI NetID for your ZOT account: https://zotaccount.uci.edu/

Although CCBS will be paying your fees and stipend, it is important to check your account in case any FEES are assessed. If you are late to register for a quarter, you will be assessed a $50 late fee. If you receive a parking ticket, you will be charged on your zot account. If you do not address or pay these fees promptly, your student status will be negatively affected. Please notify your Program Administrators if you have any outstanding fees on your Zot Account.

Direct Deposit:

It is strongly encouraged that you sign up for direct deposit with your UCINetID.

Stipend (1st year students):

Your first stipend check for living expenses will arrive toward the end of September. Your Fellowship officially begins in September and ends in June. Please make sure you update your current address on your Student Access account or your stipend check will be mailed to your old (application) address. The Disbursement Electronic Fund Transfer (DEFT) system is used by STUDENTS ONLY to set up direct deposit of their financial disbursements, such as financial aid and refunds, to their banks. Student employees should not use DEFT to setup direct deposit of their paychecks: they should use UCPath. Note links below. Fellowship stipends are issued by Graduate Division, and you must enroll in the Disbursement Electronic Fund Transfer portal to receive your check directly: https://fs.uci.edu/student-billing/direct-deposit-deft.php.

Payroll Checks:

Summer research assistant positions, or Graduate Student Researchers, are normally paid from a faculty member's research grant and are considered regular UCI employment; this is the typical funding mechanism when you begin working with your thesis advisor. At this time, you may need to re-enroll for direct deposit. Before July 1st, enroll in the online electronic deposit account for payroll at this UCPath Link: https://accounting.uci.edu/payroll/direct-deposit.html.

Also note that taxes are **not** withheld from your stipend checks if you are a U.S. Citizen but are USUALLY withheld if you an F-1 or J-1 visa holder. Taxes are withheld at a very low rate from wages earned as well. Please consult a tax professional if you have any questions regarding tax withholding or liability. We can answer any general questions you may have or point you to campus resources concerning tax matters; however, everyone's tax situation is unique, and we are not knowledgeable in these areas.

GSHIP - Medical Insurance and Immunization:

In addition to offering a superior educational curriculum, UCI is also pleased to offer one of the best, most comprehensive healthcare packages in the nation to its graduate students: UC Student Health Insurance Plan (UC SHIP) is a comprehensive health insurance plan that includes medical, mental health, dental, vision and pharmacy benefits. With such a basic yet important need met, students are free to concentrate on their academic studies.

Assuming that you have continuous enrollment during the academic year, coverage is provided year-round with the policy term beginning on September 22, 2025, and ending September 20, 2026. Dependent coverage is available for an additional cost.

The University requires, as a condition of registration, that all graduate and professional students, including international graduate students, have medical insurance coverage therefore enrollment in UC SHIP is automatic. Students with existing health insurance plans may waive UC SHIP enrollment during the open waiver period. Additional waivers must be submitted at the beginning of each academic year. For more information please visit: https://shc.uci.edu/insurance/waiving-ship

Detailed information on the UC SHIP plan can be found on the web at: https://shc.uci.edu/insurance

Immunizations: To protect the campus from outbreaks of vaccine-preventable diseases, all students entering UCI for the first time are required to provide **proof of compliance with specific immunizations and tuberculosis screening**. Further information regarding immunization requirements can be found at this link: https://shc.uci.edu/new-student-information/immunization-requirements

California Residency:

The MCSB PhD Program covers non-resident tuition during your first year in the program. Graduate students who are U.S. citizens are expected to establish California residency so that they will not be liable for non-resident tuition in subsequent years. A form is available on-line from the Registrar's office "Petition for Resident Classification" that may be submitted to the Resident Officer in the Registrar's office, usually the summer after your first year in the MCSB Program.

The following items are useful in demonstrating residence: California Driver's License, California automobile registration, California voter registration card, bank statements, utility bills and rent receipts.

For international students, tuition is reduced to the California resident rate after advancement to candidacy. This reduction in rate is a very important savings for the grant that is paying the stipend.

Travel:

If you are presented with an opportunity to attend a conference or present your research, please be aware of a few basic UCI policies concerning travel:

1. You must receive **approva**l from your primary academic advisor, in writing (email confirmation is fine).
2. All travelers must pay for ONLY their own travel. Do not pay for another traveler's meals or registration expense, even if you are traveling together on what is considered university business. Do not register for a conference for you and your lab mate!
3. **Airfare** – Investigate flights you may be interested in taking. We can book your flight on your behalf. All flights should be booked on US Carriers, using the most economical fare.
4. **Car rental** - UCI will NOT reimburse you for EXTRA insurance on a rental car. UC has agreements with all major rental car companies, which INCLUDE insurance in their rates. Please let us know if you need to rent a car and we will insure you reserve the rental with the appropriate UC account number.
5. **Meals and ground transportation** – You must provide itemized receipts for meals and taxis (including Uber and Lyft). Alcoholic beverages are NOT a reimbursable travel expense.
6. Package deals are unallowable, that is, airfare, hotel and car rental bundled, even if it appears there is a savings to UCI.
7. When you return from your trip, please provide us proof that you attended the conference. Having your badge, or a copy of the program will suffice as proof to federal and state auditors that we are reimbursing you for university business.

We encourage you to meet with the CCBS staff prior to making any travel arrangements.

Graduate Division Policies, Procedures and Resources

Additional Resources:

Additional UCI policies and procedures may be found at the UC Irvine, Graduate Division website:
http://www.grad.uci.edu
Graduate Policies & Procedures
Professional Success - UCI Graduate Division

Other Available Student Resources:

- Graduate & Postdoctoral Scholar Resource Center
  https://grad.uci.edu/services/gpsrc/index.php
- Graduate Interconnect Program *(international students)*
  https://grad.uci.edu/inclusion/gic/
- International Center https://ic.uci.edu/
- UCI Libraries https://www.lib.uci.edu/
- Student Wellness https://studentwellness.uci.edu/
  - Wellness Workshops https://studentwellness.uci.edu/services/workshops
- Counseling Center https://counseling.uci.edu/
- GSHIP, Graduate Health Insurance https://shc.uci.edu/insurance#GSHIP
- DECADE (Diverse Education Community and Doctoral Experience)
  https://www.grad.uci.edu/about-us/diversity/decade/
- GPS – STEM https://gps.bio.uci.edu/
- Division of Career Pathways https://career.uci.edu/graduate/#left-nav
- LGBT+ Resource Center https://lgbtrc.uci.edu/
- Childcare Services https://childcare.uci.edu/
- Disability Services Center https://dsc.uci.edu/
- UCI Police https://police.uci.edu/
- Parking https://parking.uci.edu/
- FRESH Basic Needs Hub https://basicneeds.uci.edu/
- Student Affairs Centers & Services https://studentaffairs.uci.edu/services-for-students/

Additional and updated information about the MCSB Program can be found at
http://mcsb.uci.edu/.