



BIOLOGICAL SCIENCES  
GRADUATE PROGRAM

# 2018 – 2019 Student Handbook

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## **BIOLOGICAL SCIENCES (BISI) GRADUATE PROGRAM**

This handbook provides the policies and procedures for the Biological Sciences Graduate Program. In general the University policies present guidelines, while the program policy outlines in this handbook detail program specifics.

Use this handbook as a reference for the appropriate steps and considerations when you have a question or a problem. If you have concerns that are not addressed in the handbook please email them to the BISI office at [bisi@umd.edu](mailto:bisi@umd.edu).

### **Resources: University policies**

These are some of the University policies that pertain to BISI students which you are expected to review; for a more comprehensive list of University policies, please see the [Graduate School website](#).

- [Graduate Assistantship Policies](#) (teaching and research)
- [Registration Policies](#)
- [Tuition, Fees, and Expenses](#)
- [Doctoral Dissertation and Examination](#)
- [Code of Academic Integrity:](#)
- [Honor Pledge](#)
- [Equal Opportunity Statement](#)
- [University Policy & Procedures on Sexual Harassment:](#)

## **OVERVIEW OF GRADUATE PROGRAM**

### **Program Structure**

The Biological Sciences Graduate Program (BISI) is an interdepartmental umbrella graduate program that was established in 2009 and includes four areas of concentration:

- Behavior, Ecology, Evolution, and Systematics (BEES)
- Computational Biology, Bioinformatics, and Genomics (CBBG)
- Molecular and Cellular Biology (MOCB)
- Physiological Systems (PSYS)

The program is housed in the College of Computer, Mathematical, and Natural Sciences (CMNS) and serves the Department of Biology (BIOL), Department of Cell Biology & Molecular Genetics (CBMG), and the Department of Entomology (ENTM). Of these only ENTM has its own departmental graduate program. Faculty are members of the departments; once a BISI student joins a research lab, then they are technically members of their advisor's department while simultaneously being part of the BISI Graduate Program.

The program's administrative structure includes a Director of Graduate Studies (DGS), a Program Manager (PM), and four concentration area (CA) directors. This core makes up the central Executive Committee (the PM is an ex officio, non-voting member of the group). The DGS reports to the chairs of BIOL, CBMG, and ENTM and is responsible for the overarching goals of the

program. The PM, with the assistance of a program coordinator, handles all of the administrative work and data management associated with the program. The CA Directors work with their faculty to develop the content and policies for each concentration area.

Faculty associated with the BISI Graduate Program are from multiple departments across campus, research institutions, and at federal laboratories in the Washington D.C. metro area. BISI has faculty from Plant Sciences (PSLA), Animal Sciences (ANSC), Chemistry and Biochemistry (CHEM, BCHM), and Veterinary Medicine on campus; faculty at the National Museum of Natural History (NMNH) and the National Zoo (NZ) at the Smithsonian and faculty at various institutes within the National Institutes of Health (NIH). BISI faculty are also associated with the USDA and with NIST. Students in the BISI graduate program are welcome to work with any faculty member listed on the BISI website and, in some cases, with faculty that wish to be part of BISI.

## Admissions

BISI practices a holistic approach to admissions and the process is designed to determine whether the applicant has the ability to be successful as a graduate student and also whether the program is a good fit for the applicant's scientific background, education, and research interests.

In general, successful applicants have:

- Earned a Baccalaureate degree from an accredited college or university with at least a 3.0 grade point average (on a 4.0 scale)
- At least one year of research experience
- Strong letters of recommendation from people that can speak of their academic and research strengths
- GRE scores in the 70<sup>th</sup> percentile or higher and analytical scores of at least 4.0
- A demonstrated academic focus in a relevant or related scientific field
- International applicants must also complete the Test of English as a Foreign Language (TOEFL) or IELTS exam<sup>1</sup>

These characteristics describe many successful BISI applicants, however they are not fixed metrics. During application review, the holistic admissions process requires that the admissions committee assess the entire application to determine how well each applicant's academic background and research experiences and interests fit with the opportunities provided by the faculty in the program.

Once students are admitted to the Biological Sciences Graduate Program, and choose a concentration area that reflects their research interests. Each Concentration Area has its own independent admissions committee; final offers of admission are determined by the BISI Executive Committee.

Students may find that their research interests overlap several of these concentration areas and, once admitted, are free to move from one area to another.

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<sup>1</sup> *Students who will be awarded a degree from the U.S., United Kingdom, Anglophone Africa, Anglophone Canada, Ireland, Australia, New Zealand, Singapore, and the Commonwealth Caribbean prior to enrolling in the University of Maryland are not required to submit TOEFL or IELTS.*

Outstanding students who lack preparation in particular areas may be admitted to the program, contingent upon prior arrangements made to correct said deficiencies with the Concentration Area Director, in consultation with the prospective student's faculty advisor and the Graduate Admissions committee. Any deficiencies identified will be required to be made up within two years of the entrance date.

### **Selection of an Advisor**

Students may be matched with an advisor prior to matriculation or may do laboratory rotations during their first year to identify an appropriate lab. Students in the BEES and PSYS concentration areas are often matched at matriculation, but may also choose to do rotations if unable to decide on one particular lab. Students in CBBG and MOCB, however, all do rotations in the first year.

***Students are free to change advisors if it becomes appropriate to do so, but, after the first year, every student must have a committed faculty advisor(s) to remain in the Program.***

### **Research with Animals or Humans**

Campus and Federal requirements stipulate that any research project using animals or humans must be approved by the appropriate Campus committees prior to the initiation of research. This applies not only to research being conducted on campus, but also to all research conducted by UMD faculty or students at other sites around the world. **Research conducted off-campus, even if covered by an approved protocol at the off-campus site, must also be approved by our campus committees. Students should discuss approvals with their on-campus advisors before beginning research.**

### **Responsible Conduct of Research**

All students are required to take a Bioethics course during their time in the Biological Sciences Graduate Program. This course is usually taken during the student's first year in the program. NSF supported students are also required to renew their training every four years. This can be via an approved workshop or online course. More information (including the full University of Maryland policy) on RCR training and workshops and programs approved for this training can be found on the University research website at: <http://www.umresearch.umd.edu/RCR/>.

## **REQUIREMENTS FOR THE DOCTOR OF PHILOSOPHY IN BIOLOGICAL SCIENCES**

The BISI Ph.D. program is a primarily research-oriented program designed to provide maximal opportunity for students to evolve and develop their capacity for scholarship and independent work. The program is individually tailored to each student to enable them to explore a specific area of research "in-depth", and to make an original contribution to that particular field of science. Because the program is designed individually, the research direction may be modified as research evolves.

## Advisement

Due to the individual nature of the Ph.D. program, the Faculty Advisor-Graduate Student relationship is fundamental to the education and growth of the graduate student. It is important to remember that this relationship will be an integral part of your life not only while in graduate school, but also as you continue your life as a scientist. Your advisor should be your advocate as you look for permanent work after graduation and be able to guide you in this search. Look for an advisor whose temperament, teaching style, and research mentorship complement your learning and working style. Look for a research group that you feel is supportive and provides you with the intellectual challenge that will inspire you. Lastly, look for an advisor that can support you financially as detailed in your offer letter. Laboratory rotations give you the opportunity to experience each lab without making a commitment, so be sure to use this time wisely.

Students may choose any BISI faculty member as an advisor, however, to be eligible to accept a student, an advisor or their home unit/department/institution must be able to satisfy the student's financial requirements as detailed in the offer letter.

Students that choose to work with an off campus faculty member must have an on campus advisor. The student becomes a member of that faculty member's department. Students are also encouraged to seek advice, guidance, and help from several faculty members to gain additional knowledge, concepts, or techniques that may be useful to them in their research.

## Changing Research Labs

When appropriate, due to divergent research interests or other factors, either the student or the advisor is permitted to initiate a change in advisor. All parties involved must be notified in writing of the change, with a copy of the letter provided to the BISI Program office for inclusion in the student's file. It is the student's responsibility to obtain a new advisor within the same semester that the change occurred. Under exceptional circumstances, the Director of Graduate Studies may allow the student an additional semester to obtain another advisor. Failure to obtain a faculty advisor within a year of the change may result in cancellation of matriculation.

*Student initiated:* In some cases students may opt to leave a research group if mediation and conflict resolution do not solve issues. In order to retain departmental/programmatic support, the student should secure a position in another research group before resigning a position in their current lab. Written notification of the change from both the student and the student's new mentor is required and should be sent to the CA Director and copied to the BISI Director and Associate Director.

*Advisor initiated:* In some cases, students may be asked to leave their research group. If an advisor requests that a student leave his/her research group, the student must take initiative to find another advisor within 1 semester (summer counts as 1 semester). Failure to join another lab group will result in withdrawal of financial support and dismissal from the graduate program.



## Laboratory Rotations

Although any student in the BISI Graduate Program can choose to do laboratory rotations (including those that have identified an advisor prior to matriculation), the MOCB & CBBG Concentration Areas require that the students complete 3 laboratory rotations of 7 weeks. Two of these rotations occur during the first semester with the third rotation beginning during the January winter 'term' or 'break'. The third rotation can be less than 7 weeks if agreed upon ahead of time as the students are available to be in the lab more frequently when there are no classes in session. If students are interested in rotating in an off campus laboratory (e.g. at a lab located on the NIH campus), BISI recommends that this rotation occur during the third rotation period. Students set up rotations after (1) identifying and meeting with faculty performing research that interests the student and (2) consulting with the CA Director.

Prior to starting each rotation, students and faculty should complete a Rotation Agreement (see [Appendix](#)). This form explicitly states the faculty member's expectations for the rotation period. At the conclusion of the rotation, the faculty advisor then provides the student with an assessment of their work. Both the student and faculty advisor should sign off on the assessment and a copy of the completed form should be submitted to the BISI Office. ***The forms must be submitted at the completion of each rotation.***

After the three required rotations, students must choose an advisor (in some cases, and with the permission of the CA Director, students may choose a lab after only two rotations). Occasionally, and with the approval of the CA Director, students may require a fourth rotation before choosing a lab.

All BISI students must identify an advisor within their first year or be dismissed from the program.

Once a student has chosen a lab, both the student and advisor sign the advisor agreement form and submit it to the BISI office. Although not required, the Statement of Mutual Expectations (see [here](#)) form can be used to clarify the expectations of both the advisor and student.

## Teaching

**BISI students must complete two semesters as a teaching assistant (TA)** during their time in the program. They are also required to enroll in BISI701 (Teaching & Professional Development for Biology), a course that focuses on the pedagogy of undergraduate education and provides an introduction to career and professional development for biology students.

Waivers of these requirements must be requested in writing by the student's advisor and approved by the Director of Graduate Studies.

## Course Requirements

A doctoral candidate must complete a minimum of 12 semester hours of post-candidacy doctoral research (BISI899), and a total of 30 hours of graduate academic credit. These courses should include:

- At least 9 credits of advanced coursework (required courses count toward this total)

- At least 3 credits of graduate seminar courses
- At least 2 credits of a professional development course
- A Bioethics (e.g BISI688B\*) course
- BISI701: Teaching Science & Professional Development for Biology

*\*Currently, these courses have temporary course designations. As the courses become permanent, these designations may change.*

#### *Additional course requirements by CA*

##### BEES

- BEES608A Seminar in Behavior, Ecology, Evolution and Systematics; Introduction to BEES (offered every other Fall semester)
- BIOL709F Selected Advanced Topics in Biology; Statistics & Modeling for Biologists (Offered in Spring semester)
- Biostats Course (to be offered Spring 2018 for the first time)
- Regular attendance at the weekly BEES seminar series.

##### CBBG

- CBMG688Y-[Bioinformatics and Genomics](#) (2 credits, 7 weeks), Fall
- CBMG688P-[Programming for Biology](#) (2 credits, 7 weeks), Fall
- CBMG699D- Molecular Genetics; Bioinformatics and Computation Biology Seminar Series (1 credit Fall, 1 credit Spring)
- 5 credits of electives

##### MOCB

*Required core courses in the 1st year:*

- CBMG 688D: Cell Biology I: Structure and Function (2 credits, 7 weeks) - Fall
- BCHM 661: Nucleic acids I (2 credits, 7 weeks), Fall
- CBMG 688F: Gene Expression (2 credits, 7 weeks), Spring
- CBMG 688I: Genetic Analysis (2 credits, 7 weeks), Spring
- BIOL709F Selected Advanced Topics in Biology; Statistics & Modeling for Biologists (Offered in Spring semester)

*Additional elective coursework (8 credits) is required. These credits can be a combination of 2 credit modular courses and 3 credit semester courses. All electives must be in science courses, 600 and above.*

Students are also expected to attend MOCB seminars. In some cases attendance may conflict with a teaching assistantship assignment. If this occurs the student should attend a seminar from one of the other BISI or Departmental seminar series. The general policy is that students should attend at least one seminar a week as part of their scientific development. The expectation is that this will continue through the student's time in the program.

##### PSYS

Since PSYS spans biological disciplines, *only two specific courses are required*: an ethics course and the graduate seminar. In addition, students should choose three core courses

to provide training in their research area, in consultation with their Advisory Committee:

- PSYS graduate seminar
- Three core graduate level courses (2-4 credits each) that address contemporary issues in physiology, biophysics, biomechanics, computational biology, development, endocrinology, neuroscience, and physiology.
- BISI Biostats course (to be offered Spring 2018 for the first time)

*Additional courses may be added with the permission of the Concentration Area Director and the first year committee.*

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## Research in Progress Seminars (RIPS)

All students in the BISI Graduate Program are required to give a Research in Progress seminar every two years, starting in the second year (i.e. years 2, 4, 6, etc.). These short (20 minute) talks (with 5 minutes for questions) typically report a research result. It is expected that the talk follow the typical scientific presentation format (background, method, data, results, and conclusions). RIP seminars are presented to an audience consisting of faculty, graduate and undergraduate students, and postdocs. Students may present in any of the following venues:

BEES: BEES seminars, Monday, 12:00 – 1:00 p.m., 1103 Bioscience Research Building

CBBG: CBCB RIPS: Thursday, 2:00 – 3:00 p.m., 3118 Biomolecular Science Building OR

MOCB/CBMG RIPS: Thursday, 12:30 – 1:30 p.m., 1103 Bioscience Research Building

MOCB: MOCB/CBMG RIPS: Thursday, 12:30 – 1:30 p.m., 1103 Bioscience Research Building

MOCB Retreat: Presentations at the annual MOCB retreat held in August

PSYS: Any formal setting that includes PSYS faculty and students

Students can present in any formal setting ***that includes faculty and students*** and provides ***them with some feedback on their presentation*** (this feedback does not have to be a grade).

The call for speakers for the MOCB and CBCB RIPS are usually distributed early in the semester. If you are a 2<sup>nd</sup> or 4<sup>th</sup> year student, you can sign up for a talk in either fall or spring and you only have to give one RIPS that academic year. Students that are advised by CBMG faculty are required to attend all RIPS unless teaching or taking a class during that time.

## Registration:

***All graduate students must register for courses and pay fees each fall and spring semester, until the degree is awarded.***

A student who fails to register, and who has not requested and received a waiver of registration or "Leave of Absence for Childbearing, Adoption, Illness or Dependent Care", will be notified by the Graduate School after the first day of classes that they must register for the current semester. If the student does not register, they will be dismissed from their graduate program immediately for failure to comply with the continuous registration requirement.

**Full time enrollment:** Students must enroll for 48 units of coursework each semester. A full

time on campus TA or RA counts as 24 units (half time = 12 units); an additional 24 (36) units of coursework is required to be full time. Students that work and are funded off campus will need to enroll for the full 48 units of coursework. The following table converts the conventional credit hours to units:

- Courses in the series: 000-399 = 2 units per credit hour.
- Courses in the series: 400-499 = 4 units per credit hour.
- Courses in the series: 500-599 = 5 units per credit hour.
- Courses in the series: 600-897 = 6 units per credit hour.
- Master's Research course: 799 = 12 units per credit hour.
- Pre-candidacy Doctoral Research courses: 898 = 18 units per credit hour.
- Doctoral Dissertation Research: 899 = 18 units per credit hour.
  - Upon reaching candidacy, doctoral students will be enrolled by the Registrar's Office for 6 credits of BISI 899 each semester until they graduate.
  - All doctoral candidates *must be registered for six (6) credit hours of BISI 899*; this defines all currently registered doctoral candidates as full-time.
  - Doctoral candidates are charged *flat rate candidacy tuition* and not per credit.

**It is the student's responsibility to ensure that they are enrolled each semester of their graduate career.**

### **Student Appointments, Support & Stipends**

All BISI students with on campus advisors should have 9.5-month appointments, although in some cases, a 12-month appointment may be necessary. Payroll personnel in Biology, CBMG, and Entomology set up your appointments and are aware of this policy. If your advisor is in a different department, please have the payroll person contact BISI to ensure that all BISI policies are met.

All BISI students admitted to the program receive 5 years of support providing that they remain in good standing in the program. Financial support can be in the form of teaching, research, or administrative assistantships, fellowships, or scholarships. Once a student chooses an advisor, that advisor and their department are responsible for providing this support. Students that choose advisors in BIOL and CBMG have priority for teaching assistantships in these departments, however all BISI students can request a teaching assistantship. Students that have an off campus advisor may receive support from that organization (e.g. National Institutes of Health) or through the University. Students that choose off campus advisors should meet with the Associate Director to discuss options for support.

All students that work in on campus labs and are supported on teaching or research assistantships receive up to 10 credits of tuition remission each fall and spring semester. Students that work in and are paid by off campus labs (e.g. NIH) do not receive tuition remission from the University; their tuition is paid by their off campus advisor. Students that are fully supported on fellowships (either external or internal) or training grants may either receive tuition remission as part of the fellowship (e.g. Wylie Dissertation Fellowship) or may request it from the Graduate School (e.g. pre-doc NSFGRF or NIH-NRSA).

Students being paid by on campus teaching or research assistantships are also eligible for access to employee health benefits. However, because fellowship recipients are not considered University employees, students fully supported on fellowships are not eligible for these benefits. The University Health Center provides an affordable student insurance plan for students supported on fellowships (many of the fellowships also provide funds to purchase individual health insurance plans).

## Vacations

BISI students can take up to 10 working days (2 weeks) of paid vacation per year. The vacation days must be discussed with the student's advisor prior to the student's absence from campus and approved in writing. Furthermore, students are not required to be on campus during times with the University is closed. More information about the University holiday calendar can be found [here](#).

## Advisory Committee

**The Advisory Committee is established by the end of the student's second year. The faculty advisor chairs the committee.**

The Advisor Committee consists of *at least five* people of whom **three** must be *full members of the UM Graduate Faculty* and **two** must be members of the BISI faculty. All on campus, tenure track faculty members are full members of the Graduate Faculty. One of these full members must be identified as the Dean's Representative. The Dean's Rep must be a *tenured faculty member with an on-campus tenure home different from your advisor* and is a voting member of the committee (they are expected to attend all committee meetings).

### Rules Specific to Graduate Faculty Membership at the time of the Dissertation Defense

- All committee members must have approved membership status with the Graduate Faculty prior to approval of the dissertation committee by the Graduate School.
- Emeritus Faculty retain their Graduate Faculty Status for 5 years.
- On campus, professional track faculty (e.g. research professors) and off-campus scientists can serve on dissertation committees, but must be approved and appointed as members of the Graduate Faculty.
- If a student has both an off-campus and on-campus advisor, then permission to allow both advisors to co-chair the committee must be requested from the Graduate School. The on-campus advisor still serves as the primary chair.
- A committee with two on-campus advisors also requires Graduate School approval to be co-chairs.

Membership in the Graduate Faculty for all non-tenure track individuals must be renewed every 2 - 5 years. If you would like to have an off-campus scientist as a member of your advisor committee, please check with the BISI Office to see if they have a current appointment. If they do not, the procedure for nominating off campus scientists to the Graduate Faculty is done once per semester in October and April. We advise that you obtain graduate faculty membership for any off-campus or professional track committee members the semester following your qualifying exam.

Once you have chosen your advisory committee, please file the appropriate form (found in the Appendix, [here](#)) in the BISI Office. If you need assistance with determining if your committee meets the program or University policies, please contact the Program Coordinator.

### **Mandatory Advisory Committee Meetings**

The number and frequency of advisory committee meetings depends on the concentration area, however, all students are expected to meet with their committee at least once a year to review their progress and to follow the policies for Advancement to Candidacy.

*\*Please file the appropriate paperwork with the BISI Office following each requirement.*

### **BEES & PSYS**

- **1<sup>st</sup> Committee Meeting\***
  - Occurs prior to registration in semester 1 and is organized between the student and advisor
  - Student meets with their advisor and a senior graduate student
  - To review the student's academic background and research interests prior to developing an appropriate schedule of classes for the first semester.
  - *If a student is rotating and therefore does not have an advisor at admission this meeting will be held with the CA director.*
- **2<sup>nd</sup> Committee Meeting\***
  - Occurs in semester 2
  - Student meets with advisor(s), three additional faculty members, and a senior graduate student (*note that this group should form the beginning of the student's advisory committee*)
  - Student should print and bring a current copy of their transcript
  - To review the student's background in their proposed research area and help develop research plans in anticipation of the student's preliminary meeting.
  - *If a student is rotating this meeting is held after the student identifies their lab and advisor.*
- **Semester 3 - Committee Selection\***
  - The adviser and the student should agree on suitable committee members, and it is the student's responsibility to contact potential committee members.
  - The CA Director must approve the Committee
  - Students must submit the committee names and affiliations to the BISI Program Office.\*
- **Preliminary meeting\***
  - To be held by the end of the 4<sup>th</sup> semester.
  - See policies below.
- **Qualifying exam\***
  - To be held by the end of 5<sup>th</sup> semester
  - See policies below
- **Yearly Advisory Committee meetings (after advancing to candidacy)\***

### **CBBG & MOCB**

- **Prior to Semester 1**
  - Students meet with Concentration Area Director during orientation
  - To review the student's academic background and research interests to develop an appropriate schedule of classes for the first semester and to discuss the rotation schedule.
- **Semester 3 - Committee Selection\***
  - The adviser and the student should agree on suitable committee members, and it is the student's responsibility to contact potential committee members.
  - The CA Director must approve the Committee
  - Students must submit the committee names and affiliations to the BISI Program Office.\*
- **Semester 4 – Committee meeting\***
  - The students must meet with their Advisory Committee to introduce themselves and their project and to get feedback on what background areas of knowledge the committee believes will be important to their success.
  - The adviser must submit a written report that addresses the committee's evaluation of the student's project and whether the student is making adequate progress consistent with their current standing in the program. Specific recommendations for improvement (if relevant) may be included.
- **Preliminary meeting\***
  - To be held by the end of 5<sup>th</sup> semester.
  - See policies below.
- **Qualifying exam\***
  - To be held by the end of 6<sup>th</sup> semester
  - See policies below
- **Yearly Advisory Committee meetings (after advancing to candidacy)\***

## PRELIMINARY MEETING

The goal of the preliminary meeting, which is not a test and is not assessed, is to give the student an opportunity to present their research proposal and meet with their committee in a relaxed setting to receive constructive feedback on the proposal and project, and to discuss clear expectations for topics and lines of questioning for the qualifying exam. The tone of this meeting is to be supportive, but students should expect to be questioned on their proposal and project. The student should leave the preliminary meeting with the scope of the qualifying exam clarified, and empowered with advice, guidance, and strategies to strengthen the dissertation proposal and prepare for the exam.

### Timing

The preliminary meeting takes place no later than the end of the student's 5th semester (or earlier as stipulated by the Concentration Area), and is generally 2-3 months in advance of the qualifying exam. A relatively short interval between the two meetings is strongly encouraged to maximize the value and retention of the information exchange facilitated at the preliminary meeting.

Preliminary meetings will generally be about 1.5 hours long (this can vary) .

Extensions for the preliminary meeting (beyond semester 5) are rare. Students who must delay their preliminary meeting past the end of their 5th semester must submit a written request for an extension, as do their mentors. Those forms, due 60 days before the end of the student's 5th semester, require a justification for the extension, acknowledgment from the advisor that the student is on track and making good progress, and a proposed revised date for the preliminary meeting. Both the student's and advisor's Request for Extension forms must be approved by the Concentration Area Director as well as the BISI Associate Director.

**Note:** Students do not need to have substantial amounts of preliminary data prior to their preliminary meeting; lack of sufficient data is not considered a valid excuse for delaying this meeting. By semester 5, students should have their thesis direction in reasonable focus. Those research questions and initiatives should enable students to proceed with this meeting on schedule even if work on all aspects of the project have not yet been designed or commenced.

### Advisory Committee

The preliminary meeting will be chaired by the student's advisor. All thesis committee members are required to attend (remote attendance permitted). At least 2 of the attending members of the thesis committee must be full members of the BISI faculty. *See the Committee section in this handbook for more information.*

### Written Proposal & Oral Presentation

Students will prepare a dissertation proposal according to their major advisor's instructions, often following either NIH or NSF guidelines. This proposal must be distributed to the student's preliminary meeting committee two weeks (10 working days) before the meeting.

Students should prepare a brief overview (around 15 slides) of the proposed thesis research, including questions and hypotheses, methods and experimental design, preliminary data, and broader context / significance of the project. Students should expect to be interrupted with questions during their presentation, so the actual duration of the presentation may be substantially longer.

### Committee Recommendations

Following the oral presentation and questions from the committee, the committee will provide the student with feedback (strengths and weaknesses; constructive suggestions for improvements) on the research project, the written proposal, the oral presentation, and the student's overall knowledge of the subject matter. There is no grade for the preliminary meeting.

The meeting will conclude with the committee providing the student with a list of 3 - 5 areas of specialization (level of breadth at the discretion of the committee) that will be focal topics for questioning at the Qualifying Exam. Topics directly pertaining to the student's research proposal will also be appropriate lines of questioning during the Qualifying Exam, as will general knowledge areas drawn from the student's graduate course work.



# QUALIFYING EXAM

## Objectives & Scope

To advance to candidacy, students must pass the qualifying exam.

The qualifying exam is a defense of the student's doctoral research proposal, including its context and significance, as well as an assessment of the student's understanding of broader biological concepts.

The developing thesis project provides the framework for the qualifying exam, but questioning will also focus on determining whether the student has sufficient background knowledge, along with the abilities to think, synthesize, integrate, and communicate information, required for successfully completing the Ph.D. degree.

## Timing

The qualifying exam takes place by the end of the student's 6th semester (or earlier as stipulated by the Concentration Area), and generally within 2-3 months of the preliminary meeting. Extensions beyond semester 6 are rare, and require an approved written request for extension from the student and faculty advisor, following the process described above for extensions of the preliminary meeting timeframe.

## Committee

The exam committee will be chaired by the student's advisor, and should include all members of the student's doctoral committee (remote attendance is permitted by no more than 1 person). At least 2 of the committee members must be full members of the BISI faculty.

## The Exam

### Revised Written Proposal

The revised proposal is due to the committee two weeks (10 business days) prior to the qualifying exam. It follows the format as described for preliminary meeting, with the inclusion of any/all revisions following the first draft edits/suggestions discussed at the preliminary meeting.

### Oral Presentation (may be waived by the Advisory Committee)

Students normally present at least a brief review of their research proposal at the qualifying exam to help initiate and guide discussion. Depending upon the student's performance at the preliminary meeting and following the advisor's and committee's recommendation, the student

may be asked to provide a full presentation of their proposal.

A full research presentation is particularly important if:

- There were significant deficiencies in the student's presentation at the preliminary meeting, or
- Enough time has passed since the preliminary meeting that the committee will need to be refreshed on the student's plans, or
- The substance of the proposal has changed.

### Questions from Committee

The student is expected to answer questions that cover the dissertation proposal, its broader context and significance, and general knowledge within the areas of specialization identified at the preliminary meeting. The role of the chair is to facilitate discussion and ensure that all members of the committee have an opportunity to participate fully. The chair is expected to maintain an impartial tone, but may participate in questioning as appropriate.

### Evaluation

The committee will conclude that the student has passed or failed the exam on the basis of the student's performance during the qualifying examination and on the basis of the written research proposal. The exam should cover both defense of the research proposal and a test of general knowledge. The following outcomes are possible:

1. Pass with or without recommendations (not requirements)
2. Does not pass, has requirements to complete in order to pass, but there is no need to retake the formal exam
3. Does not pass, given the option to retake the formal exam
4. Does not pass, without option to retake the formal exam (results in dismissal from the program)

The student passes if all, or all but one, of the committee members cast positive votes. A vote to pass a student for admission to candidacy reflects an assessment that the student is now ready to move on to uninterrupted dissertation research. Any number of recommendations can accompany a "yes" vote, but these must not be mandatory.

If the committee feels that the student is required to do something to achieve readiness, then this must be accompanied by a "no" vote (option 2 or 3). In the event that a student does not pass, the committee can detail whatever remedies it deems appropriate. Whether or not it is necessary to meet a second time is at the discretion of the committee. The second (retake) exam will be scheduled when the major advisor considers appropriate, but no later than 9 months following the first exam.

Failure to pass the second qualifying exam results in dismissal from the program. In no case may a student repeat the exam a third time.

If the committee chooses option 4 above, the student will be dismissed from the program.

## Outcome

A written report of the qualifying exam results must be given to the BISI Office for inclusion in the student's file.

The research proposal written by a student who successfully completes the qualifying examination shall automatically fulfill the scholarly paper requirement for the non-thesis M.S. degree if a student leaves the program following Advancement. The student can apply for that degree if the coursework and 30-credit requirements have also been satisfied.

## ADVANCEMENT TO CANDIDACY

After passing the qualifying exam, the student must complete the Advance to Candidacy form (available from the BISI Office); this completed form must be submitted to the BISI Office within one week of passing the Qualifying Exam. The BISI Office will submit that form to the Graduate School. Please note that, for forms submitted prior to the 25th of the month, advancement to candidacy becomes effective on the first day of the following month. A copy of this form must be included in the student's file.

Students receive a pay raise (from Step II to Step III) upon advancement to candidacy. The raise usually goes into effect on the first day of the month following advancement to candidacy. An official email from the University serves as the official notice that the student has advanced. Your payroll person needs a copy of this notification to process the pay raise.

After students advance to candidacy, they will be automatically enrolled by the Registrar's Office for 6 credits of BISI899 for each semester until graduation. Registration can only be waived following Advancement by applying to the Graduate School for a Leave of Absence. Tuition for these credits is no longer calculated on a per credit basis, but rather as a flat fee. *See the bursar's office for the current candidacy tuition rate.*

Students must be officially admitted to candidacy at least six months prior to the conferring of their Ph.D. degree.

## DISSERTATION SEMINAR

All Ph.D. candidates must give a formal seminar that presents the final results of their dissertation research. The seminar is open to faculty, students, and other interested parties. It is usually presented immediately preceding the oral dissertation defense. Students are encouraged to schedule their dissertation seminar during one of the program seminar times (M: 12-1; W: 12-1; Th: 12:30-1:30; F: 12-1). The BISI program staff will ensure that the dissertation seminar is announced in accordance with the policies of the Graduate School.

The step-by-step procedure for students that are planning to graduate is included in the Appendix to this document.

The Graduate School policies regarding dissertation defenses can be found here:

<http://apps.gradschool.umd.edu/Catalog/policy.php?doctoral-degrees>

### Scheduling the Defense

Students usually have a meeting with their advisory committee prior to planning their defense. At this meeting the advisor, student, and committee decide on a timeframe for the defense. The student should work with the advisory committee and advisor to find an acceptable day and time for the defense. The student is responsible for distributing a complete copy of the dissertation to each member of the committee at least ten working days before the examination.

The doctoral dissertation must be completed and defended within four years after passing the qualifying examination, but no later than nine years after admission to the program. Students requiring additional time may appeal to the Dean of the Graduate School.

Extensions of time for doctoral students must be requested from the Graduate School by the doctoral program. The request for an extension of the deadline for completion of the doctoral dissertation requires a letter of support from the Graduate Director. The letter must include a timetable listing specific goals to be accomplished at various points during the extension period. Normally, the extension will be for a maximum of one year.

### Composition of the Dissertation Committee

The composition of the dissertation committee must meet both the program and university policies (see [here](#)). Students in the BISI program usually choose their dissertation committee during their second year in the program, but the committee is not official (and, therefore can be changed) until the submission and approval of the *Nomination of Dissertation Committee* form. This form should be completed by the student, approved by their advisor, and then submitted to the BISI program office within the deadlines described by the Graduate School (at least six weeks before the date of the expected dissertation examination, but not later than the deadline imposed by the Graduate School, see: <https://gradschool.umd.edu/calendar/deadlines/academic-deadlines>). Once the program approves the committee, the form is sent to the Graduate School where it is then approved by the Dean of the Graduate School. The dissertation examination cannot be held until the Graduate School approves the composition of the Dissertation Examining Committee. Furthermore, if the Graduate Faculty status of any member of an approved Dissertation Examining Committee changes, the approval of the Dissertation Examining

Committee may be void, and a new Dissertation Examining Committee nomination form may be required and be approved by the Graduate School.

### **Suggested Procedures for the Final Oral Examination**

The student's major advisor is responsible for chairing the examination. The chairperson has some latitude in the manner of conducting the examination, but the following major steps are usually to be followed:

- Any member of the Graduate Faculty is permitted to attend a doctoral examination, but only members of the appointed committee may question the student and vote at the conclusion of the examination.
- The student, the committee, and any attending members of the Graduate Faculty convene in closed session.
- The Dean's Representative is identified, and their special functions explained.
- The student may briefly present high points of the dissertation, emphasizing the important aspects and giving an explanation of the reasoning that led to the conclusions reached.
- The chairperson invites questions in turn from members of the Committee, going through the whole group. The questioning may continue as long as the Committee feels necessary to properly examine the student.

### **Conclusion of the Defense**

After questioning has been completed, the student is asked to leave the room, and the Committee discusses whether the defense has been satisfactory. The committee has the following alternatives:

- To accept the dissertation without any recommended changes and sign the Report of Examining Committee.
- To accept the dissertation with recommendations for changes and, except for the chair, sign the Report of the Examining Committee. The chair will check the dissertation and, upon his or her approval, sign the Report of Examining Committee.
- To recommend revisions of the dissertation and not sign the Report of Examining Committee until the student has made the changes and submitted the revised dissertation for the Dissertation Examining Committee's approval. The Dissertation Examining Committee members sign the Report of the Examining Committee if they approve the revised dissertation.
- To recommend revisions and convene a second meeting of the Dissertation Examining Committee to review the dissertation and complete the student's defense.
- To rule the dissertation (including its defense) unsatisfactory. In that circumstance, the student fails.

Following the defense, the chair, in the presence of the Dean's Representative, must inform the student of the outcome of the defense. The chair and the Dean's Representative both sign a statement indicating which of the above alternatives has been adopted. A copy of the statement is to be included in the student's file at the graduate program office, and a copy is given to the student.

## Passage or Failure

The student passes as long as all but one member of the Dissertation Examining Committee agree to approve the dissertation and sign off, either before or after the approval of recommended changes. Two or more negative votes constitute a failure of the candidate to meet the dissertation requirement. In cases of failure, the Dissertation Examining Committee must specify in detail and in writing the nature of the deficiencies in the dissertation and/or the oral performance that led to failure. This statement is to be submitted to the program's director of graduate studies, the Dean of the Graduate School, and the student. A second defense is permitted if the student will be in good standing at the time of the proposed second defense. A second defense requires the approval of the program's director of graduate studies and the Dean of the Graduate School. If the student fails this second defense, or if a second defense is not permitted, the student's admission to the graduate program is terminated.

If the defense is satisfactory, then the dissertation in its final form is to be submitted electronically to the Graduate School by the announced deadline.

## REVIEW OF GRADUATE STUDENT PROGRESS

### Graduate Student Activity Reports (GSAR)

Once a year, all BISI students must submit an electronic student activity report; this report includes a short synopsis of the research carried out in the previous academic year as well as a listing of student awards, presentations, and publications. *It is essential that this report is accurate and reflects the student's professional activities over the previous 12 months.* The student's advisor will then review the GSAR and write an evaluative statement about the student's progress. The student and advisor should then meet to review the report and both student and faculty member sign the report (this can occur concurrently with the student's annual advisory committee meeting). A copy of the signed report is then filed with the BISI Office to be placed in the student's file. *Failure to submit all requested forms by required deadlines will result in "administrative probation."*

### Review of Graduate Student Progress

At the end of each semester, the cumulative grade point average (GPA) is examined to determine whether or not the student has maintained a GPA of 3.0 in courses receiving graduate credit.

Once each academic year, the CA Directors and the graduate office conducts an analysis of the student's progress toward the completion of the degree by reviewing all files to insure that adequate progress is being made toward the completion of his or her degree program and, in conjunction with the Director, Associate Director, and student advisor, may place a student on academic probation for failure to make satisfactory progress toward the degree. In this case, both the advisor and the student are notified of the student's probationary status, the conditions for retention in the graduate program and the date by which they must be met.

## ACADEMIC PROBATION

### Grades/GPA

Students whose cumulative grade point average falls below 3.0 are placed on academic probation by the Graduate School. Both the student and the BISI Graduate Director will be notified; BISI will then inform the student's advisor and CA Director. Permission of the student's faculty mentor and the BISI CA Director are required for a student on probation to register for courses. Probation is lifted when the student achieves a cumulative GPA of 3.0.

Consistent with Graduate School policy, students who have completed either fewer than 12 credits, or two semesters or less, and have a cumulative GPA less than 3.0 will have until the end of their first year to raise their GPA to 3.0 or higher before the Graduate School places the student on academic probation. Once on academic probation, the student will have one semester to raise their GPA to 3.0. Students who have completed 16 or more hours of course work and whose cumulative GPA falls below 3.0 will also have one semester in which to raise their GPA to 3.0. Failure to meet these timelines will result in dismissal from the program.

The BISI graduate program requires that the student, their advisor (or a faculty member in the student's general field of interest if an advisor has not yet been selected), and the CA Director create a specific plan, including timeline, to provide the student with the opportunity to raise their GPA above 3.0. Copies of this plan, signed by student, mentor, and CA Director, must be given to the BISI Office to be placed in the student's file and to inform the BISI Director and Program Manager. BISI will send a copy to of the plan to Assistant Dean of the Graduate School.

Graduate students who receive a grade below a B- in a course required either by the program or advisory committee must repeat that course and earn a B- or higher. Students who repeat required courses and fail to achieve that B- or higher mark in that course will be dismissed from the program.

If a grade below B- is earned in a course that is not required, the student is not required to repeat the course, however cumulative GPA requirements hold.

While B- (2.7) grades are accepted for required courses, students must maintain a GPA  $\geq$  3.0 or risk being placed on academic probation, as described above.

Independent study (699) courses count toward cumulative GPA, however students may enroll in a 699 course only after the CA Director has discussed ramifications of such a course with the mentor. The courses must have clear, written (brief sentences or bullets are fine) objectives and expectations discussed in advance with the student and approved by the CA Director.

### Research

BISI students must make satisfactory progress in meeting programmatic requirements and

benchmarks, must demonstrate the ability to succeed in their research, and must attain performance minima as specified by the program and the advisor.

If an advisor feels that a student is making insufficient progress, the advisor must notify the student of the concern, in writing (email fine) or via comments in the annual progress report (to be shared with the student). Following discussions with the CA Director and other colleagues if desired, the faculty mentor must develop a reasonable plan for the student to attempt to remediate. This plan should include benchmarks for the student to meet and a timeline for completion (within 1 semester; a summer counts as 1 semester). Ramifications for not completing the plan within the given time limit should be stated clearly. The student, advisor, and CA Director must sign the plan and a copy will be placed in the student's record.

Students may remain on Probation for a particular problem for a maximum of 1 academic semester (summers do not count as a semester in this context) before they are dismissed from the program. *For example: Students that are placed on probation during Fall semester have until the end of Spring semester to remediate.*

## **ADMINISTRATIVE PROBATION**

All graduate students in the BISI program must submit annual progress reports and must respond to the support request made each fall and spring semester. Timely response to important deadlines is part of professional training, responsibility, and success. Failure to submit the annual report or the support documents following two reminders from the BISI administrative staff results in *Administrative Probation*.

Students placed on Administrative Probation are not considered to be in good standing with the program and therefore:

- Have low priority in opportunity and course choice in TA assignments
- BISI will not participate in nominating the student for campus / college / program / external awards (including travel awards), and
- Will not receive supporting letters from the BISI Graduate Program

Students who remain on Administrative Probation for 2 consecutive semesters (in this case a summer counts as 1 semester) will be considered to be making unsatisfactory progress and thus fall under the Probation policy pertaining to unsatisfactory progress (as above)

## **MEDIATION, CONFLICT RESOLUTIONS, AND APPEALS**

Students experiencing conflict with their advisor, committee members, other faculty, or with lab members should discuss their concerns with their Concentration Area Director and/or the BISI Associate Director or Director as soon as possible. Conflicts with teaching supervisors or faculty should be brought to the attention of the Associate Director immediately, who will work with the Instructor, Department Chair, or appropriate



administrator to resolve the conflict. If a student requests mediation, it will be provided via the Graduate School Ombudsperson. The student may meet with the Graduate School Ombudsperson at any time for advice and guidance.

### **Consultation with the Ombudsperson for Graduate Students**

Students are invited to consult with the [University's Ombudsperson for Graduate Students](#) at any time regarding any issue, options, to help resolve conflicts, and to work toward resolution of any area of concern.

### **Appeals**

If a student wishes to appeal any BISI Probation decision or consequence, the appeal must be submitted directly to the Graduate School.

## MASTER'S DEGREE

### Overview

While the Biological Sciences Graduate Program is a Ph.D. program, a M.S. degree is available as an option for students that either did not, or will not, pass their advancement to candidacy exam, or have decided on a different career path after being admitted to the Ph.D. program. Students are not directly admitted into a Master's Program.

Students that pass their qualifying exam are eligible to receive a non-thesis Master's degree providing that they have completed the coursework requirements at the time of the exam. Their research proposal can be used as a scholarly paper. This option is not offered to students in the Ph.D. program, but rather for students that are interested in leaving the program after advancing to candidacy.

There are two options for students that decide on pursuing a Master's degree, a thesis and non-thesis option. Students that have completed a significant amount of research and that have been able to analyze the data collected may choose to write a Master's Thesis. Students that have not yet reached that stage in their career may choose instead to write a scholarly paper and leave with a non-thesis Master's.

The [guiding policies](#) for earning a thesis Master's Degree are determined by the Graduate School. Briefly, these include both minimum credit hour requirements and a policy and procedure for the Master's Thesis defense. A general overview of these policies as well as those within the BISI program is described below.

## REQUIREMENTS FOR MASTER OF SCIENCE IN BIOLOGICAL SCIENCES (THESIS OPTION)

The thesis Master of Science degree option is available only for doctoral students who wish to leave the graduate program without completing the Ph.D. External applications for the thesis master's option are not accepted. The thesis Master of Science degree program provides qualified students with the opportunity to receive recognition for advanced course work and a research project.

### Advisement

Students that decide to leave the Ph.D. program should meet with the Program Manager to discuss degree and professional development options. The student should then meet with the program coordinator, who will review the student's academic background and specify any additional preparatory work deemed necessary. The program coordinator will annotate the student's electronic record to reflect the change in status.

Each student's thesis project is developed individually with a faculty advisor. If it is

appropriate, at any point during the degree program, the student or the advisor is free to initiate a change in advisor. A student whose thesis research is being done under the direction of an adjunct (i.e. off campus) professor must have an on campus advisor.

### Credit Hour Requirements

A minimum of thirty semester hours in courses acceptable for credit towards a graduate degree is required.

### Coursework

Students interested in receiving a **thesis M.S.** degree in the biological sciences must complete the following courses (all contained within the 30 credits of coursework required by the University)

1. A minimum of 6 and no more than 12 credits of BISI799: Master's Thesis Research
2. 18 credits must be at the 600-level or above (not including 799, 898, 899 courses) and include the following classes:
  - a. Teaching Science (BISI688z, CBMG688z, BIOL701, or ENTM701)
  - b. 1 course in Bioethics
  - c. 3 courses within a single specialization within biology

It is possible to convert credits of 898 (Pre-candidacy research) to Master's Thesis research. Please note that courses used to fulfill degree requirements at UMD or other institutions are not permitted as part of the coursework used either a thesis or non-thesis Master's degree.

### Thesis Defense

#### Submission of Thesis

It is the student's responsibility to furnish copies of the thesis to the committee members at least seven working days before the examination. The oral examination may be conducted whenever the thesis is completed to the satisfaction of the advisor, providing the student has completed all other requirements for the degree and has at least a "B" average on all graduate work.

#### Composition of the Examining Committee

The oral defense of the Master's thesis is conducted before a committee composed of a minimum of three members. The student's advisor chairs the committee. The other members of the committee are persons who are familiar with the student's program of study. Students must submit a signed Nomination of Thesis Committee form, signed by the committee chair, according to the deadlines set by the Graduate School. Once the defense has been scheduled, a copy of the abstract of the thesis must be submitted to the BISI program office. Office personnel will announce the defense approximately 10 days prior the scheduled date.

#### Evaluation of Thesis

*The committee vote to pass a student on their oral examination must be unanimous. One dissent constitutes a failure.* At the discretion of the committee, the student who fails may be permitted a second examination after acting on suggestions for improvement of the thesis (collection of more data, use of a different statistical analysis, rewriting of the discussion, etc.) and at such time as the

major advisor may consider appropriate.

### Outcome

The report of the examining committee is submitted to the Graduate School and a copy placed in the student's program file.

### Completing the Program

It is the responsibility of both student and advisor to meet the Graduate School deadlines for certification of thesis completion and for the report on the outcome of the oral examination. The thesis in its final form (incorporating changes required by the committee) must be submitted electronically to the Graduate School by the announced deadline.

## REQUIREMENTS FOR MASTER OF SCIENCE IN BIOLOGICAL SCIENCES (NON-THESIS OPTION)

The non-thesis Master of Science degree option is available only for doctoral students who wish to leave the graduate program without completing the Ph.D. External applications for the non-thesis master's option are not accepted. In addition, the non-thesis master's degree program provides the opportunity for Ph.D. candidates to earn an M.S. degree while completing the course work appropriate for their Ph.D. program.

### Advisement

Students that decide to leave the Ph.D. program should meet with the Associate Director of Graduate Studies to discuss all options available. Following this meeting, the student should then meet with the program coordinator who will review the student's academic background and specify any additional preparatory work deemed necessary. The program coordinator will annotate the student's electronic record to reflect the change in status.

### Credit Hour Requirements

A minimum of thirty semester hours in courses acceptable for credit towards a graduate degree is required.

### Coursework

Students that wish to earn a *non-thesis M.S.* degree must complete 30 credit hours of coursework including:

1. A maximum of 12 credits of independent study\* exclusive of the requirements below.
2. At least 18 credits of coursework at the 600-level or above (not including courses numbered 799, 898, or 899).
3. Of these 18 hours, students must take
  - a. Teaching Science (BISI688z, CBMG688z, BIOL701, or ENTM701)

- b. Bioethics (1 course)
- c. At least 6 credits of coursework within a single specialization within biology.

\*In order to receive credit for BISI 898 pre-candidacy research, BISI 899 Doctoral Research or BISI 799 Master's Research towards a non-thesis M.S. it must be converted to Independent Study using the course numbers appropriate for the student's CA or department.

Please note that courses used to fulfill degree requirements at UMD or other institutions are not permitted as part of the coursework used either a thesis or non-thesis Master's degree.

### **Scholarly Paper**

One scholarly paper must be written in an area of biology approved by the student's advisor. The paper is to be developed apart from course work. The source material for the paper can be current scientific literature, laboratory work, or field observations, and must contain a synthesis of the subject that goes beyond the current literature. During the semester before the paper is to be written, the student, advisor, and an additional faculty member, who will serve as a second reader of the paper, will meet to decide the area, topic, and scope of the paper. After this meeting, the student will write the paper obtaining advice from the advisor as necessary. The final paper must be submitted for approval by the advisor and second reader at least 2 weeks prior to the final date specified by the Graduate School for submission of forms certifying degree completion. The paper must receive the written approval of both faculty members. After such approval is obtained, an electronic copy of the paper must be placed in the student's file in the BISI Program Office.

The thesis from a failed M.S. thesis defense may not be submitted to fulfill the scholarly paper requirement for the non-thesis M.S. unless appropriate revision has occurred. Such papers require approval by two BISI faculty members.

The proposal prepared for a successful preliminary examination for Ph.D. candidacy shall automatically satisfy the scholarly paper requirement for the non-thesis M.S.

### **Completing the Program**

Prospective candidates for the non-thesis Master's degree must submit an application for their diploma and other required paperwork to the Graduate School by deadlines announced each semester.

## APPENDIX

### Registration

All graduate students must be registered for classes every fall and spring semester in order to remain in a graduate program. The only exception to this is for medical/maternity/paternity leave.

- Students register for classes at [www.testudo.umd.edu](http://www.testudo.umd.edu) under the “Registration” link.
  - Log in with either your university directory ID (the part of your email address before @umd.edu) OR your university ID number, either way, the password that you use will be the one for your university email.
  - Course offerings can be found here: <https://ntst.umd.edu/soc/> (be sure that you are looking at the correct semester).
  - If you need special permission to take a course, contact the instructor and they will let you know how to gain access to a course. The BISI Office can also help you get access to a course.

### Course electives

#### MOCB Electives:

Current elective offerings include:

- Virology
- Microbial Pathogenesis
- Microbial Genetics
- Immunology and Host Defense
- Bioinformatics
- Cell biology II (Signal Transduction)
- Plant Biology: Plant Development and Physiology

Each of these courses is listed as CBMG688 (letter). The different letters indicate the different courses.

#### PSYS Electives

Additional courses may be added with the permission of the Concentration Area Director and the first year committee (all are 3 credits except where noted:

- BIOE603: Electrophysiology of the Cell
- BIOE602: Cellular and Tissue Biomechanics
- BIOL622: Membrane Transport Phenomena
- BIOL651: Physical Chemistry for Biologists
- BIOL708L: Quantitative Analysis of Biological Data
- BIOL708o: Cell Biology from a Biophysical Perspective
- CBMG688W: principles of Microscopy
- NACS643: Computational Neuroscience
- NACS644: Cellular and Molecular Neuroscience
- Developmental Biology
- Microscopy

#### CBBG Electives

Current elective offerings suggested for CBBG elective credit include (but are not limited to):

- BIOM688E: Topics in Biometrics: Computational and Statistical Genomics
- CMSC422: Introduction to Machine Learning
- CMSC432: Bioinformatic Algorithms, Databases, and Tools
- CMSC702: Computational Systems Biology
- CMSC858D: Advanced Topics in Theory of Computing; Computational Proteomics
- STAT420: Introduction to Statistics
- CBMG688F: Gene Expression
- CBMG688I: Genetic Analysis
- BIOL608K Characterization and Evolution of Developmental Networks
- BIOL671: Molecular Evolution
- BIOL709E: Developmental Genetics (
- ENTM798V: Introduction to R for Computation and Analysis in Ecology and Evolutionary Biology
- BSCI410: Molecular Genetics

**Elective Courses taken by BEES students since 2010**

BEES608A	Introduction to BEES
BEES608J	Topics in Ecology and Evolution
BIOL600	Ethics in Scientific Research
BIOL608D	Evolution & Development Seminar
BIOL608F	Scientific Communication
BIOL608G	Population Genomics
BIOL608J	Recent Developments in Sexual Selection
BIOL608X	Introduction to Social Network Analysis of Animal Behavior
BIOL608Z	Key Ideas in Evolution
BIOL609	Biology Seminar
BIOL671	Molecular Evolution
BIOL708B	Principles of Animal Behavior
BIOL708I	Biology of Sex
BIOL708P	Electronics for Biologists
BIOL708R	Concepts in Plant and Animal Ecology
BIOL708T	Theoretical Ecology
BIOL708V	Population Genetics
BIOL708Y	Neural Systems
BIOM405	Computer Applications in Biometrics
BIOM601	Biostatistics I
BIOM602	Biostatistics II
BIOM603	Biostatistics III
BIOM621	Applied Multivariate Statistics
BSCI430	Developmental Biology
CBMG688F	Gene Expression
CBMG688I	Genetics II
CBMG688O	Molecular Systematics
CBMG688P	Programming for Biology
CBMG688Y	Bioinformatics and Genomics
CBMG688Z	Teaching Science
ENST622	Advanced Soil Microbial Ecology
ENST689R	Invasive Ecology
ENTM612	Insect Ecology
ENTM622	Principles of Systematic Entomology
ENTM699J	Arthropod Evolution
ENTM701	Teaching Science
ENTM798E	Topics in Ecology
ENTM798Q	Ecological Genetics
ENTM798V	Intro to R for Computation and Analysis in Ecol & Evol Biology
ENTM798G	Insects & Climate Change
GEOG342	Introduction to Biogeography
GEOG373	Geographic Information Systems
GEOG673	GIS Modeling
GEOG674	GIS Spatial Databases
MATH240	Introduction to Linear Algebra
MATH462	Partial Differential Equations
MEES608X	Theoretical Stream Ecology
MEES614	Landscape Ecology
MEES698B	Biometry
NACS728Q	Biological Bases of Behavior Lab

## Program Directory

Name	Position or Department	Contact information	Can answer questions about...
Dr. Charles Delwiche	Director, BISI Grad Professor, CBMG	<a href="mailto:delwiche@umd.edu">delwiche@umd.edu</a>	Issues with the BISI office staff/assoc. director, faculty mentors, or course instructors;
Dr. Zakiya Whatley	Program Manager, BISI	<a href="mailto:zwhatley@umd.edu">zwhatley@umd.edu</a>	Program and university policy; Academic and administrative probation; Teaching/TA assignments; general graduate school angst
		301.405.3273	
Ms. Gwen Warman	Program Coordinator, BISI	<a href="mailto:gwarman@umd.edu">gwarman@umd.edu</a>	Registration, forms, student accounts, courses, graduation, prelim meeting, qualifying exam, required paperwork
		301.405.6905	
Ms. Geri Hunger	Finance and Travel Associate		All travel related paperwork including travel grants. All recruitment expenses.
Dr. Nate Swenson	BEES CA Director	<a href="mailto:swenson@umd.edu">swenson@umd.edu</a>	CA Directors help with rotations, course selection, research questions, travel funds
Dr. Steve Mount	CBBG CA Director	<a href="mailto:smount@umd.edu">smount@umd.edu</a>	
Dr. Wade Winkler	MOCB CA Director	<a href="mailto:wwinkler@umd.edu">wwinkler@umd.edu</a>	
Dr. Ricardo Araneda	PSYS CA Director	<a href="mailto:araneda@umd.edu">araneda@umd.edu</a>	
Magna Gray	CMNS Payroll	<a href="mailto:msgray@umd.edu">msgray@umd.edu</a>	Payroll for students that TA 105, 106, 207, 222, 103 or 189i
KeCia Harper	BIOL Payroll	<a href="mailto:kharper1@umd.edu">kharper1@umd.edu</a>	Payroll & Benefits for Biology Department or Biology TAs (see your contract letter)
Molly Burke	CBMG Payroll	<a href="mailto:mburke1@umd.edu">mburke1@umd.edu</a>	Payroll & Benefits for CBMG Department or CBMG TAs (see your contract letter)
Judy Leung	CMNS Awards	<a href="mailto:jleung@umd.edu">jleung@umd.edu</a>	Dean's Fellowship disbursement



## Additional Contacts

### Department of Biology

Dr. Bill Fagan	Department Chairperson	<a href="mailto:bfagan@umd.edu">bfagan@umd.edu</a>
Teresa Simmons	Executive Admin. Assistant	<a href="mailto:tsimmons@umd.edu">tsimmons@umd.edu</a>
Claire Goebeler	Exec. Dir. of Admin & Operations	<a href="mailto:cgoebele@umd.edu">cgoebele@umd.edu</a>
KeCia Harper	Payroll Coordinator -Payroll and benefits for Biology Department RAs and TAs.	<a href="mailto:kharp1@umd.edu">kharp1@umd.edu</a>
Janie Brown	Grants coordinator for Biology	
James Parker	Handles key distribution for students with Biology Dept advisors	
Jennie Gouker	Undergraduate Office - Handles summer TA assignments for bsci201 and bsci202	<a href="mailto:jgouker@umd.edu">jgouker@umd.edu</a>
Wan Chan	IT Manager-Handles IT issues for BIOL department faculty and their graduate students	<a href="mailto:wanchan@umd.edu">wanchan@umd.edu</a>
Timothy Maugel	Dir., Lab for Biol Ultrastructure Manages the operation of the CCLS central facility for biological electron microscopy	<a href="mailto:tmaugel@umd.edu">tmaugel@umd.edu</a>

### Department of Cell Biology & Molecular Genetics

Dr. Jon Dinman	Department Chairperson	<a href="mailto:dinman@umd.edu">dinman@umd.edu</a>
Errica Philpott	Coordinator – Chair’s Office	<a href="mailto:errica@umd.edu">errica@umd.edu</a>
Pamela Moffett	Director of Administrative Services	<a href="mailto:painswor@umd.edu">painswor@umd.edu</a>
Molly Burke	Payroll Coordinator -Payroll and benefits for CBMG Department RAs and TAs.	<a href="mailto:mburke1@umd.edu">mburke1@umd.edu</a>
Dr. Vera Stupina	Pre-award Coordinator & Research Associate	<a href="mailto:vstupina@umd.edu">vstupina@umd.edu</a>
Dorothea O’Toole	Coordinator: Facilities & Labs	<a href="mailto:dotoole@umd.edu">dotoole@umd.edu</a>
Megan Leung	Undergraduate Office	<a href="mailto:mleung3@umd.edu">mleung3@umd.edu</a>
Wan Chan	IT Manager-Handles IT issues for CBMG department faculty and their graduate students	<a href="mailto:wanchan@umd.edu">wanchan@umd.edu</a>
Amy Beaven	Director of Shared Instrumentation: Imaging and Genomic Core	<a href="mailto:abeaven@umd.edu">abeaven@umd.edu</a>

## FAQs

### Who do I contact for:

#### Registration issues?

- If you need to gain permission for a course, speak with the course instructor
- If you need access to CBMG688Y or CBMG688P, BISI can help register you
- If you don't know which course to take, speak with your advisor or CA Director

#### Account issues?

- For problems with your student account, email the BISI Office and include a copy of your most recent statement
- For tuition remission problems (i.e. tuition remission has not shown up) contact the BISI office to find out if tuition remission has been applied yet. If it has, the BISI Office can help make sure it shows up.

#### Issues with Flagship or Dean's Fellowships:

- If you have not received your fellowship OR you see that your fellowship has been revoked. You must be enrolled FULL time (48 units) to receive a fellowship. Check to make sure that you have the right number of units.
- If you are enrolled full time and are supposed to be receiving a Dean's Fellowship and it does not show up on your account, please contact Ms. Judy Leung ([jleung@umd.edu](mailto:jleung@umd.edu)) in the CMNS Finance Office (please copy BISI on your email)
- If you are enrolled full time and are supposed to receive a Flagship Fellowship and it is not on your account, please contact the Graduate School ([gradschool@umd.edu](mailto:gradschool@umd.edu)) and copy BISI on your email message.
- International students that have been on campus for less than 3 years, receive their Dean's Fellowships via payroll.

#### A TA Assignment

- BISI makes all of the TA assignments.
- The process for applying for a teaching assistantship is overseen by BISI.
- If you've accepted a teaching assistantship and subsequently received funding from your advisor, contact BISI immediately to see if a replacement is available. You can only back out of your teaching contract if, and only if, a replacement is available.

#### Graduation Issues

- First, look over the checklist provided in the handbook (found [here](#))
- The BISI Office can help with any issue that you have with preparing for graduation.

## BISI Procedures

### Registering for Classes

1. Pay attention to the registration deadlines. If you fail to register on time, it could cost you more money (there is a penalty for registering after the start of classes) or, if you don't register at all, you could be removed from the graduate program.
2. If you're in your first year, you should confer with your advisor or CA Director to decide which courses to take. Remember that you have to fulfill the program and CA requirements.
3. Enroll at [www.testudo.umd.edu](http://www.testudo.umd.edu). You can log in with either your Directory ID (the part before @umd.edu in your email address) or your University ID (9 digit number on your ID), but in either case, the password is your email password.
4. You will need to be enrolled as a full time graduate student (48 units)
  - a. If you are a full time TA or RA, you automatically receive 24 units (half time TAs and RAs get 12 units).
  - b. Credits to units conversion for courses:
    - i. Courses numbered 400-499: 4units/credit
    - ii. Courses numbered 500-599: 5 units/credit
    - iii. Courses numbered 600-897: 6 units/credit
    - iv. Research courses numbered 798/799: 12 units/credit
    - v. Research courses numbered 898/899: 18 credits/unit
5. If you are not taking course work, have not advanced to candidacy, and want to enroll for research credits only:
  - a. Full time TAs and RAs should take ONLY 2 credits of BISI898. (2 credits of 898 = 36 units, plus the 24 units from teaching makes you full time)
  - b. Half time TAs and RAs can also take only 2 credits of BISI898 (36 units from 898 PLUS 12 units of teaching makes you full time).
  - c. If you're on a fellowship (e.g. Wiley, NSF, NIH, Graduate Deans, etc.) then you must take 3 credits of BISI898 (or 2 cr of BISI898 and 2 credits 600+ coursework) to be full time.
  - d. Similarly, if you're being paid off campus (e.g. at the NIH, NCI) you also must take 3 credits of bisi898 to be full time.
6. If you are post candidacy, *you should NOT be taking any coursework **except** BISI 899*. The Registrar's Office will automatically enroll you for 6 credits of BISI899. However, because this is done by hand, sometimes students get missed, so make sure that you're enrolled before classes start by logging into Testudo OR by checking your student account to see if tuition charges are there.
  - a. Your account is charges a flat fee for post candidacy credits. You still need to pay fees out of pocket, but your advisor (RAs) or the university (TAs) are charged a single rate rather than a per credit cost.

7. Do not take more than 8 credits. The cost for fees increases dramatically once you exceed 8 credits.
8. If you have a fellowship that is paid through your student account, your fees will be deducted from it before you can receive the funds (this is true of any money that is disbursed via your student account, any account balance will be paid before the funds are disbursed).
9. You will be charged a 2% processing fee if you pay fees by credit or debit card.

## STEPS TO GRADUATION - CHECKLIST

All Graduate School paperwork is due to the BISI office *1 week prior to the Graduate School's official deadlines and these deadlines could be earlier than listed below so be sure to check them\**

### Preparing for your dissertation defense

Inform the BISI office you intend to graduate.

- Send an email to [bisi@umd.edu](mailto:bisi@umd.edu) by 1 month before the semester in which you plan to defend begins.

Apply for Graduation through Testudo

- Apply for graduation by the first week of the semester in which you plan to defend. <http://www.testudo.umd.edu/candstat> (If you do not graduate this rolls over)

Submit the *Nomination of Dissertation of Committee Form* to the BISI office during the first month of the semester in which you plan to defend

- Found on the UMD Graduate School website under Forms tab —If, applicable, you must provide confirmation that pertinent research approvals have been received.
- At this time if you have any off-campus members of your committee (including co-chairs) confirm their eligibility with BISI. Additional paperwork may be necessary.

### Scheduling Your Defense: Rules & Processes

BISI suggests defending no later than 2 weeks before the deadline to submit your final dissertation

- The seminar presentation must occur before the defense committee meeting and they are to be held on the same day.
- If possible defend during a BISI or Departmental Seminar or in a Research in Progress Seminar. To determine available dates for these, contact the BISI office.
- If you cannot defend during these designated times, then send the BISI office 3 different dates and times when your entire committee is available. The office will determine if any rooms are available and work with you to finalize the logistics with your committee.
- Dissertation seminars are generally 50-60 minutes long.
- The dissertation seminar requires that a larger seminar rooms is booked for 2 hours, which includes 30 minutes before and after your seminar for set up and take down. This should be booked through the BISI Office.
- For the actual dissertation seminar, a smaller conference room should be reserved for 3 hours. This should be booked through the BISI Office.
- **One month prior to your defense:** Confirm defense date, time, and location with BISI

### Previously Published and Copyrighted Works

- Review the policies on the inclusion of previously published and copyrighted works in the Doctoral Degree Policies section of the Graduate Catalog.
- If you have sections in your dissertation that have previously been published, notify the

BISI office **no less than one month before the defense**. BISI will provide you and your advisor with a form letter to complete and include in your dissertation.

### Dissertation Seminar and Defense

- Provide a copy of your completed dissertation to your committee at least 10 business days before the defense.
- **Three weeks prior to your defense**, provide BISI with your title and abstract so that the office can send official notification of your dissertation seminar and defense to the BISI community (failing to do this could result in the cancellation of your defense).
- On the day of the defense, the official paperwork will be available in the BISI Office. Only you or your advisor can pick up your file.
- Student files and paperwork (finished or not) should be returned at the end of the meeting. Your advisor should NOT keep the paperwork.
- BISI retains all paperwork until the dissertation is ready for submission.

### Exam Report Signatures

- This should occur no less than 3 days prior to the final Graduate School deadline
- Finish all revisions to the dissertation and get final approval from your advisor and, or, committee to submit it to ProQuest
- The BISI office will obtain the final signatures necessary for the Final Exam Report and Publication Form and then submits them.

### Final day to submit Defended & Approved Dissertation to the Graduate School

- Submit the Final Dissertation to the Graduate School using ProQuest ETD by the close of business on the Graduate School deadline (or earlier).
- You may purchase a bound hard copy of your dissertation at this stage.

### After submitting your dissertation:

- Complete the Graduate School Surveys – [Linked on the Graduate School website](#)
- Pay any balance on your student account – required before you can receive your diploma.
- Confirm your address is accurate in the UMD system
- You are technically a student until the conferral date. You cannot move to a non-student appointment on campus until after that date, nor should you register for OPT to begin before that.
- Provide BISI with your permanent contact information and any placement information.
- If necessary, request Proof of Degree letter from [registrar-graduate@umd.edu](mailto:registrar-graduate@umd.edu). This is primarily used during the job search if you defend early in a semester and need to prove you are finished.

### Optional - Register for CMNS Commencement (Mid-Semester, Fall & Spring)

- Check the [CMNS](http://cmns.umd.edu/graduate/graduation-info) website for Commencement information  
[cmns.umd.edu/graduate/graduation-info](http://cmns.umd.edu/graduate/graduation-info)

- Confirm who will be available to hood you.
- RSVP to CMNS and order regalia through the University Bookstore.
- Those defending in the semester before or after commencement are also eligible to walk in the ceremony if their defense has been scheduled. This is especially useful for Summer graduates, as there is no summer commencement.
- If you wish to register for Lavender Commencement do so at this time through the LGBT Equity center.

You are officially a graduate on the date of Commencement (regardless of if you attend or not)

## **BISI Forms**



**BISI Rotation Agreement**

Name: \_\_\_\_\_ Date: \_\_\_\_\_

Concentration area: BEES CBBG MOCB PSYS

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**First Rotation**

Advisor: \_\_\_\_\_ Start date: \_\_\_\_\_ Finish date: \_\_\_\_\_

Advisor expectations for rotation:

Advisor signature \_\_\_\_\_ Date \_\_\_\_\_

Student signature \_\_\_\_\_ Date \_\_\_\_\_

*At the conclusion of the rotation, the advisor and student should meet to discuss the student's performance.*

Advisor assessment of performance (circle one below):

Exceeded expectations      Met expectations      Did not meet expectations

Comments (or attachment):

Signature of advisor \_\_\_\_\_ Date \_\_\_\_\_

Signature of student \_\_\_\_\_ Date \_\_\_\_\_

**Second Rotation**

Advisor: \_\_\_\_\_ Start date: \_\_\_\_\_ Finish date: \_\_\_\_\_

Advisor expectations for rotation:

Advisor signature \_\_\_\_\_

Student signature \_\_\_\_\_

*At the conclusion of the rotation, the advisor and student should meet to discuss the student's performance.*

Advisor assessment of performance (circle one below):

Exceeded expectations

Met expectations

Did not meet expectations

Comments (or attachment):

Signature of advisor \_\_\_\_\_ Date \_\_\_\_\_

Signature of student \_\_\_\_\_ Date \_\_\_\_\_

**Third Rotation**

Advisor: \_\_\_\_\_ Start date: \_\_\_\_\_ Finish date: \_\_\_\_\_

Advisor expectations for rotation:

Advisor signature \_\_\_\_\_

Student signature \_\_\_\_\_

*At the conclusion of the rotation, the advisor and student should meet to discuss the student's performance.*

Advisor assessment of performance (circle one below):

Exceeded expectations

Met expectations

Did not meet expectations

Comments (or attachment):

Signature of advisor \_\_\_\_\_ Date \_\_\_\_\_

Signature of student \_\_\_\_\_ Date \_\_\_\_\_



## Description: Statement Of Mutual Expectations

A Statement of Mutual Expectations (SME) is a written document that outlines the fundamental duties of the graduate research assistant and describes the responsibilities of the graduate research assistant and certain processes related to the assistantship. Its purpose is (1) to assist the graduate research assistant in better understanding his/her duties, how to fulfill them and how to meet the supervisor's expectations and (2) to better assist the supervisor with oversight and supervision of the graduate research assistant, and how to facilitate a successful graduate research assistantship for the student. The Graduate School recommends that a SME be prepared at the start of every graduate research assistantship, and for continuing assistantships, updated at least annually. All graduate research assistantships are subject to University of Maryland (UM) policies and procedures as set forth in the Graduate Catalog. Graduate research assistants are not employees, the SME is not a contract, and nothing in the SME supersedes UM policies. In the event of a conflict between UM policies and the SME, UM policies control.

The SME is intended to be a flexible document that provides a structure to help both the graduate research assistant and supervisor understand the nature and obligations of the graduate research assistantship; because of the great diversity of assistantships at Maryland, some of sections of the standard document may not be applicable to all assistantships. Suggested sections to include in the SME are as follows:

**Responsibilities of Research Assistant:** Include the most important duties of the assistantship. Potential topics would be: specific responsibilities, goals, deliverables (if any) and how they are to be submitted.

**Responsibilities of Supervisor:** Specify the most important responsibilities of the supervisor (with regard to the assistantship). Potential topics would be: information on how the graduate research assistant will receive continuing guidance and support, times when the supervisor will be available, supervisor office hours, training schedule, a description of the process for project design, how the graduate research assistant will be supervised, procedures for ordering supplies.

**Scheduling:** When the assistantship is to be performed, including work hours, regularly scheduled meetings, degree of flexibility in work schedule, and/or vacation and holiday procedures.

**Procedures and Best Practices:** Required training, standard methods, key contacts, required record-keeping, safety and security protocols, and/or procedures for ordering supplies.

**Professional Development and Individual Development Plan:** Topics include skills to be learned during appointment (if any), training resources other than those provided directly by the supervisor, whether academic publication is expected or desired as a part of the assistantship, and/or potential expectations for travel.

**Organizational Culture:** Considerations such as office space, work space, dress codes, appropriate titles and means of address, and/or team norms.

**Useful Resources:**

Department of Environmental Safety: <http://des.umd.edu>

Disability Support Services: <http://counseling.umd.edu/DSS/>

Institutional Review Board (IRB): <http://www.umresearch.umd.edu/RCO/New/index.html>

Institutional Animal Care and Use Committee (IACUC):

<http://www.umresearch.umd.edu/IACUC/index.htm>

Individual Development Plan (IDP) tool offered by AAAS: <http://myidp.sciencecareers.org/>

## Form: Statement of Mutual Expectations

**Graduate Research Assistant:** \_\_\_\_\_ **Supervisor:** \_\_\_\_\_

Period of time of Graduate Research Assistantship covered below: \_\_\_\_\_

This Statement of Mutual Expectations (SME) is intended to describe and clarify the duties, responsibilities, and procedures that make for a productive appointment as a Graduate Research Assistant. All graduate research assistantships are subject to University of Maryland (UM) policies and procedures as set forth in the Graduate Catalog. Nothing in this SME supersedes UM policies. See [http://apps.gradschool.umd.edu/catalog/assistantship\\_policies.htm](http://apps.gradschool.umd.edu/catalog/assistantship_policies.htm). In the event of a conflict between UM policies and this SME, University policies control.

**Responsibilities of Graduate Research Assistant** (e.g., specific duties, goals, deliverables, reporting)

**Responsibilities of Supervisor** (e.g., availability, project design, supervision, office hours, training)

**Scheduling** (e.g., work hours, meetings, vacation and holiday procedures)

**Procedures and Best Practices** (e.g., training, standard methods, safety and security protocols, ordering)

**Professional Development and Individual Development Plan** (e.g., skills, training, publication, travel)

**Organizational Culture** (e.g., office space, work space, dress codes, titles and means of address)

**Other Notes:**

We have met in person to review and discuss this agreement on the date noted below. The GRA was given an opportunity to ask and receive answers to any questions about the assistantship:

**Graduate Research Assistant**

Name: \_\_\_\_\_ Signature: \_\_\_\_\_ Date: \_\_\_\_\_

**Supervisor**

Name: \_\_\_\_\_ Signature: \_\_\_\_\_ Date: \_\_\_\_\_