Welcome
Welcome to the Department of Integrative Biology and to the Biology M.S. Program Graduate Student Orientation. You have become part of an exciting and dynamic team of students, faculty and staff. You will find graduate school and the Biology M.S. Program challenging, invigorating and rewarding.

Faculty members in the Department are leaders in their fields of specialization. Students graduating from the Biology M.S. Program go on to careers in medicine, research, teaching, and industry. As an evolving program, the Biology M.S. Program offers opportunities for students to conduct cutting-edge research, to teach, to present at scientific conferences, to network nationally and internationally with scientists, to publish, and to establish a defined career path or identify a new career. The next 2-3 years will present you with unanticipated opportunities for professional and academic development.

I am looking forward to working with you and to seeing you achieve great successes.

Regards,
Dr. Timberley Roane
Associate Chair for Graduate Studies
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Relevant websites
Department of Integrative Biology: http://clas.ucdenver.edu/biology/

College of Liberal Arts and Sciences (CLAS):
http://www.ucdenver.edu/academics/colleges/CLAS/Pages/CLAS.aspx

Graduate School:
http://www.ucdenver.edu/academics/colleges/Graduate-School/Pages/default.aspx

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Preregistration Agreement Form
Application to Candidacy Form
Request for Graduate Examination Form
At a Glance

Research (thesis) M.S. degree

Minimum credits required: 30

Required coursework:

- 2 semesters of the Biology graduate seminar (BIOL 6655)
- 4 – 6 credits of thesis (BIOL 6950) no more than 6 can be applied toward degree
- *No more than 7 credits of independent study/internship can be applied toward degree

Required exams:

- Biology comprehensive written exam (when: end of first fall semester in the program)
- Two specialty comprehensive written exams (when: in last 1-2 semesters in the program)
- Oral comprehensive exam (when: last 1-2 semesters in the program)
- Oral research defense and written thesis (when: last semester in the program)

Minimum required GPA: 3.0

Estimated time to completion: 2-2.5 years

Coursework (non-thesis) M.S. degree

Minimum credits required: 32

Required coursework:

- 2 semesters of the Biology graduate seminar (BIOL 6655)
- *No more than 6 credits of independent study/internship can be applied toward degree

Required exams:

- Biology comprehensive written exam (when: end of first fall semester in the program)
- Two specialty comprehensive written exams (when: in last 1-2 semesters in the program)
- Oral comprehensive exam (when: last 1-2 semesters in the program)

Minimum required GPA: 3.0

Estimated time to completion: 2 years
Your First Semester

This is likely to be an exciting and crazy time for you—a lot happens this first semester. In addition to taking your first graduate level courses, some of you will also be teaching, doing research, and trying to balance a social/family life. Here are a few things to expect your first semester:

**Completion of the Pre-registration Agreement Form:** This form (available on the Biology graduate program website) should ideally be completed prior to registering for class your first semester. This form is filled out in consultation with your faculty advisor. It lays out a tentative academic plan for your M.S. program. It is up to you and your faculty advisor to determine which courses are relevant to your program focus. It is important to keep in mind, however, that your two specialty comprehensive exams (see below) will be based on aspects of your area of specialization within the program. Your coursework (and research) will center on this area. You and your advisor should keep a copy of the Pre-registration Agreement Form; a copy should also be given to the Associate Chair for Graduate Studies.

**Studying for the Biology Comprehensive Exam:** A study guide for the Biology Comprehensive Exam will be sent to all incoming students around mid-October, for an anticipated December/January administration of the exam. While the study guide is not meant to provide a detailed analysis of exam topics, it will provide general exam material. Included in the study guide are relevant chapters in a predetermined general biology textbook. The Biology Comprehensive Exam is a 3 hr multiple choice exam. You must pass the exam prior to continuing in the M.S. program. Students who fail the exam may be required to leave the Biology M.S. program.

**Research students:** You will be expected to begin, if not complete, your research proposal. Details for the proposal should be discussed with your faculty advisor. However, you will be expected to write your proposal, work through several drafts of your proposal, and prepare your proposal in a professional and academic manner for distribution to your research committee members. Most students will present their proposed research to their committee members* in the first/second semester in the program.

*Composition of the research committee:* The research (thesis) committee consists of 3 graduate faculty members (a minimum of 2 must be faculty within the Department of Integrative Biology; a 3rd member may, with the approval of the Department and the CLAS Dean’s office, be outside the Department). The faculty members chosen for the research committee should be done in consultation with your faculty advisor; and each member (one of which is your faculty advisor) should be able to directly contribute to your research program. For example, if your proposed research involves a lot of microbiology, then you want a microbiologist as a committee member.

In Between Semesters

**Comprehensive exam committee:** A minimum of one semester PRIOR to your specialty exams, you MUST have your comprehensive exam committee formed. This committee consists of three Department of Integrative Biology faculty members (the Associate Chair for Graduate Studies and your faculty advisor). The third member should be able to address your area of specialization. Work with
Comprehensive exams: The entire comprehensive exam process includes: the general biology comprehensive exam (administered in the 1st semester); two specialty comprehensive written exams; and an oral comprehensive exam. Each exam within the comprehensive exam series must be passed in order to complete the M.S. degree. Failure on any aspect of the comprehensive exams will result in remedial action, and failure to pass any aspect of the exam a second time will result in suspension and removal from the M.S. program. Failure on multiple aspects of the exam will result in suspension and incompletion of the M.S. program.

Research (thesis) students: research and meeting with your research committee: You are required to hold regular meetings with your research committee to discuss your research progress. These meetings may be formal or informal, but must include the presence of all committee members at once. For example, most students schedule a formal committee wide meeting once/semester. In between formal meetings, you may meet with individual committee members to discuss various aspects of your research.

Putting together the research thesis is a long, involved process. You should not expect to be able to write and complete their thesis within one semester. Throughout your program, you should be reading the literature, conducting research, troubleshooting and interpreting data, and composing various aspects of your thesis. This will make putting together the final version of your thesis a more pleasant and less stressful experience.

Writing your thesis: Guidelines and the required format for the M.S. thesis can be found on the CLAS website. Your thesis must undergo Graduate School review prior to completion and final submission. You are responsible for writing your thesis in an accurate and professional manner. You are responsible for the accuracy of its content. Your faculty advisor will help you in the process of putting together your thesis; however, the thesis is ultimately your responsibility. It is body of work that will be published with your name attached to it. It is not your advisor’s responsibility to write your thesis. That said, your advisor MUST approve of your thesis prior to submission to the Graduate School and any committee members.

Your Final Semester (e.g., end of year 2)

This is likely to be a very stressful semester. Not only will you be completing your academic requirements, but you may also be completing your research, applying to another graduate/professional program or to a job, completing your comprehensive exams, and possibly defending your thesis. It will be an exciting, but incredibly busy time that will require your utmost dedication and organization.

Completion of the specialty comprehensive and oral comprehensive exams: Many students complete their written specialty comprehensive exams and oral exam their final semester in the program (generally end of year 2). All students (coursework and research) must complete the two specialty written exams and the oral exam prior to graduation.

*Coursework (non-thesis) students only: you MUST complete the Request for Graduate Examination form by the stated deadline PRIOR to your oral comprehensive exam. This form and its
deadline are available on the CLAS website. Note, research (thesis) students, you are completing this form prior to and for your thesis defense (see below).

Submission of Intent to Graduate and Application for Admission to Candidacy forms: Both forms must be completed and submitted to the Dean’s office prior to the stated deadlines. Submitting either form after the CLAS deadline will result in a one semester delay in your graduation. It is imperative that these forms be filled out on time. These forms and their deadlines can be found on the CLAS website. Copies of both submitted forms must be submitted to the Associate Chair for Graduate Studies.

Thesis completion and oral defense (research students only): Your thesis is now close to completion and has been reviewed several times by your faculty advisor for readiness for your research committee members to evaluate. The thesis should be made available to your research committee members no less than 1 week prior to your scheduled oral defense date.

Oral defense: This is an oral PowerPoint presentation of your M.S. research. Included in your presentation should be, but not limited to, your project goals and objectives, project significance, methods and experimental approaches, results and discussion, and future directions. The oral presentation is an open forum format, e.g., many students coordinate their presentations with the Department’s spring seminar series. Following the oral presentation, all non-committee members will be asked to leave the room for a Q&A period with just the student’s committee members present.

*Prior to the oral defense, a Request for Graduate Examination form MUST be submitted to the CLAS Dean’s office prior to the stated deadline. Forms not submitted on time will not be processed and you will not be able to defend your research and graduate that semester. The form and corresponding deadline is available on the CLAS website.

**After Graduation**

Congratulations, you are now an alumnus of the Department of Integrative Biology and the University of Colorado Denver. Keep in touch by providing updated contact information for announcements of special alumni events, Department happenings, and University news. Keeping in touch with the Department post-graduation is one way to keep up with professional and academic contacts and references as you proceed in your career.

**Additional Information**

Professionalism and demeanor: As a member of the Biology M.S. program, you are a professional. You will be treated with professionalism and respect, and likewise the program expects the same from you. Any violations of institutional policies, advisor expectations, or program expectations will be dealt with promptly and severely. Unprofessional and unethical behavior will not be tolerated and will be considered for grounds for removal from the program.

What are the comprehensive exams?: The comprehensive exams are a series of exams designed to assess your mastery of biological and scientific concepts. The Biology Comprehensive Exam, taken upon
entry to the program, assesses your working knowledge of general biological concepts. The specialty and oral exams assess your mastery of biological information and concepts in your area of specialization. These exams further help you develop your ability to communicate scientific information in both written and oral formats, a skill difficult to teach in the classroom and a skill highly valued by graduate/professional schools and employers.

**How to prepare your thesis:** You should work with your faculty advisor on the development and progress of your thesis. For many, the thesis is their first scientific publication. This is a professional document that can be used to demonstrate your mastery in your area of specialization. Guidelines for the preparation of and deadlines for the submission of the thesis are available on the CLAS website.

**How to prepare for your thesis defense:** Your research thesis defense is a scientific presentation. To your defense, you should dress appropriately and conduct yourself in a professional, scientific manner. Practice your oral presentation several times in advance of your actual defense. Work with your faculty advisor on presentation style and content. You should be able to openly discuss your research, methodologies, results, etc., and be prepared to answer related questions from the audience. The actual oral defense presentation should be approximately 45-50 min with several minutes for questions. No one knows your research better than you. Demonstrate how well you know your own work. No one project is perfect and there are always limitations to the work. This is okay. Be prepared to address any limitations in your work and be prepared to suggest solutions/alternatives. How prepared you are and how you conduct yourself is part of the evaluation of your defense.

**Teaching:** Many students choose to teach during their M.S. program. Teaching provides you with experiences beyond standing in front of a classroom. You learn to communicate information, handle difficult personnel situations, organize materials, keep accurate records, supervise individuals, and think on your feet. Even if you do not plan to go into teaching as a career, employers recognize the skills above and will value you and your experiences even more, as every job requires these skills. Students in the Biology M.S. program may teach an individual course or multiple courses.

**Travel to professional meetings:** Students in the Biology M.S. program should seek opportunities to present at scientific meetings. Students should work with their faculty advisors for clarification of these opportunities. Should you travel/present at a meeting, you are representing yourself, the Department and the University. Behave in a professional manner. Any cases of unethical, inappropriate, or unprofessional behavior will be dealt with in accordance to the University's codes for academic and professional behavior.

**Meeting deadlines:** There are a number of deadlines to keep track of. Do so. It is your responsibility (not your advisor’s) to keep track of deadlines and make sure you are getting the appropriate paperwork turned in complete and on time. Violations of deadlines and/or missing paperwork are reported to the Department, the CLAS Dean’s office, and the Graduate School. Missing paperwork/deadlines will result in a delay in graduation and can result in suspension from the University and incompletion of the degree.
Transfer credits: Students may take a limited number of courses (a limited number of credits) outside of the Department of Integrative Biology. To take a course in another Department (at UCD or at another institution), you must first discuss this with your faculty advisor. Upon approval by your faculty advisor, you must then discuss this with the Associate Chair for Graduate Studies. Following approval by the Associate Chair, you may need to seek approval by the CLAS Dean’s office and the Graduate School. Transfer credits are limited to courses that are (1) an important component of the student’s training and development; (2) not offered on the downtown campus of UCD (courses taken at the Anschutz Medical Campus are considered transfer credits); (3) not offered in the Department of Integrative Biology; and (4) taken at the graduate level. In exceptional cases, a course may be taken outside of the graduate level upon the necessary approval. See the Associate Chair for Graduate Studies for more information.

*A student may not have more than 12 total transfer credits apply toward their M.S. degree.

Time for completion of the degree: Students must complete the Biology M.S. degree within 5 years of their start date in the program.
Example Forms

(please check the relevant websites for updated forms and deadlines)