

Welcome to

The Animal Biology Graduate Group (GABG)

A Survival Guide for Entering Students 2018-19

Graduate Group Program Coordinator Office. 1249 Meyer Hall
(530) 752-2382; Fax: (530) 752-0175
Website: <http://animalbiology.ucdavis.edu>

THINGS TO DO AT THE START OF THE FALL QUARTER:

- Meet with your assigned Graduate Advisor (not your major professor). Your advisor has access to your file and will help you design an *individualized program* to meet your specific research interests. Your advisor can answer your questions about the graduate program requirements.
- After meeting with your Graduate Advisor and Major Professor, register for Fall classes using SISWeb or Schedule Builder at <https://registrar.ucdavis.edu/registration/register/sisweb.cfm> .
- If you have not paid your fees by **November 14th** the Registrar may have charged you a \$110.00 late fee. If you have a TA or GSR appt. for Fall quarter we need to process your hiring paperwork no later than **Sept. 13th** for your fee remissions to apply without a late fee. **If you still have not seen the Account Manager to process your hiring documents you must do so ASAP.**
- Look into the Student Health Insurance Plan (SHIP) which provides medical, dental, and vision coverage. You are automatically enrolled in SHIP as a registered graduate student. You have the option of voluntarily enrolling your dependents as well (students are responsible for the fees associated with dependent enrollment). If you do not want coverage through the school then you need to file a waiver by **September 10th**. SHIP details can be found at <https://shcs.ucdavis.edu/insurance-services>
- Get your 'Aggie Card' student photo ID card at 1210 Dutton Hall or go online to the Aggie Card Photo Upload Tool at [website http://registrar.ucdavis.edu/records/aggiecard-photo-submit/](http://registrar.ucdavis.edu/records/aggiecard-photo-submit/)
- TA and GSR salaries are paid through payroll. Other financial awards including loan disbursements, fellowship fee and tuition awards, and stipends are paid through Student Aid Accounting in Dutton Hall. You are encouraged to establish direct deposit for both forms of payment, but they are two separate enrollments.
- Student Aid Accounting in Dutton Hall begins disbursing financial aid loans and grants (and some fellowship stipend awards) as early as mid-September; TA and GSR appointments first paydate will be on or around **November 1st**. Your first payroll check will always come as a physical paper check. For students employed in the Department of Animal Science, it will be delivered to the Animal Science Main Office on the 2nd Floor of Meyer, regardless if you have enrolled in direct deposit.
- There are alphabetical graduate student mailboxes located in the Animal Science Department Mail Room on the second floor of Meyer Hall. Important mail such as direct deposit statements and ANS TA and fellowship offers will be placed in these boxes. **Please be sure to check them often.**

GROUP REQUIREMENTS

It is your responsibility to understand and meet group requirements. Students pursuing a Master's Degree and students pursuing a Ph.D. will have different requirements. Below are general outlines of coursework requirements, please see the Animal Biology website Current Student Advising section for detailed mentoring forms and specifics at <http://animalbiology.ucdavis.edu/csa/>. In addition to required Coursework and research requirements, **all students are required to attend the annual Animal Biology Colloquium each Fall.**

MS (Plan I) Program

A minimum of 30 units of course work (100 and 200 level):

Of that 30 units:

~at least 6 units should be graded graduate level (>200) course work.

~at minimum of 2 units should be Animal Biology 290, Graduate Research Seminar (each seminar is 1 unit, so you must enroll in at least 2 quarters)

~a minimum of 6 units (and maximum of 12 units of the 30 units required for graduation) should be Graduate Research Units, Animal Biology 299.

~1 unit ABG 298, Mastering your Masters

Completion of an original research project written as a MS thesis and signed by major professor and at least two additional thesis committee members. *Ideally*, the original data will be published as a scientific paper.

Ph.D. Program

Coursework:

~Integrated Animal Biology I and II (ABG 200A, 200B, (3 units each))

~Interdisciplinary Area of Interest (8-20 units) at least 6 units should be graded graduate level (>200) Coursework.

~Statistical and Research Methods (at least 6 units graded graduate level (>200) from a series), **PLS 205/206 recommended**

~Scientific Writing/Grant Writing (1 course): ABG 202, NPB 270 or NUT 492C recommended

~Ethics and Professionalism in Animal Biology (ABG 401, 2 units) This course is offered alternating years, if approved by your Academic Advisor, you may take an alternating course. Talk to your Advisor

~Disciplinary Seminar (2 quarters)

~Teaching experience and course for guidance (ABG 300 recommended)

Pass Preliminary Exam

Pass Oral Qualifying Exam

Completion of an original research project written as a Ph.D. dissertation.

Student will orally discuss completed dissertation with their committee in a private meeting and present an Exit Seminar on their dissertation research.

****A minimum of annual meetings with the mentoring committee are required before and after the qualifying

WHAT CLASSES SHOULD BE TAKEN IN THE FIRST YEAR?

It is highly recommended that you only take 12 units your first quarter here. This allows for ample time to get used to graduate student life and adjust to the course load. During the first quarter, most people will take a required course, fulfill any recommended missing prerequisites, and fill out the rest of their schedule with their research units, a seminar, a statistics class, or an elective.

PhD Students are required to enroll in ABG 200A in Fall, and ABG 200B in the Spring quarter of their first year. MS Students are required to enroll in ABG 298 in the Fall of their first year.

International Students may be required to take additional courses to satisfy English as a Second Language requirements (UWP 25, UWP225, UWP 226 and LIN 391)

ABG GRADUATE COURSE DESCRIPTIONS

[course #, title, # units, description, quarter offered (F= Fall, W= Winter, S= Spring)]

200A. Integrated Animal Biology (3)

Lecture/discussion—3 hours. Prerequisite: graduate standing; Biological Sciences 101 or the equivalent or the consent of the instructor. Natural history, management, historical and current uses, and specialized disciplinary features of model and novel animal systems used in research. Development of conceptual approaches in organismal biology to improve experimental design and interpretation of interdisciplinary research studies. Limited enrollment; first pass restricted to Animal Biology Graduate Group students. (F)

200B. Integrated Animal Biology (3)

Lecture/discussion—3 hours. Prerequisite: course 200A. Natural history, management, historical and current uses, and specialized disciplinary features of model and novel animal systems used in research. Development of conceptual approaches in organismal biology to improve experimental design and interpretation of interdisciplinary research studies. Limited enrollment; first pass restricted to Animal Biology Graduate Group students. (S)

202. Grant Procurement and Administration (2)

Lecture—1 hour; discussion/laboratory—1 hour. Prerequisite: course 200A. Topics include structure of grants, attention to specifications, concise persuasive writing, and grant budgeting. Students will learn how to identify grant opportunities, write a persuasive research grant proposal, and administer grants. Limited enrollment; Pass1 restricted to Animal Biology Graduate Group students. (F)

255. Physiology of the Stress Response (2)

Lecture/discussion—2 hours. Prerequisite: graduate student status. Definition of Stress; Physiological mechanisms of adaptation to stress; Hormonal control of the systemic stress response; Mechanisms of the cellular stress response; Discussion of current trends in stress physiology and current methods for studying the stress response. (Same course as Molecular, Cellular, and Integrative Physiology 255.) (S)

290. Seminar in Animal Biology (1)

Seminar—1 hour. Prerequisite: graduate standing. Seminar on advanced topics in animal biology. Presentations by members of the Animal Biology Graduate Group and guest speakers. May be repeated for credit. (S/U grading only.) (F, W, S)

290C. Research Conference (1)

Discussion—1 hour. Prerequisite: graduate standing and consent of instructor. Student presentations of research in Animal Biology and discussions among participating students and Animal Biology faculty. May be repeated for credit. (S/U grading only.) (F, W, S)

298. Group Study in Animal Biology (1-5)

Prerequisite: graduate standing.

299. Research (1-11)

Prerequisite: graduate standing and consent of instructor. Research with a faculty member in Animal Biology Graduate Group. May be repeated for credit. (S/U grading only) (F, W, S, SU)

300. Methods in Teaching Animal Biology (2)

Lecture/discussion—2 hours. Prerequisite: graduate standing and consent of instructor. Practical experience in the methods and problems of teaching animal biology. Includes analysis of laboratory exercises, discussion of teaching techniques, grading scientific essays, preparing for and conducting discussion or laboratory sections, formulating quiz and exam questions under supervision of instructor. May be repeated up to three times for credit. (S/U grading only.) (F, W)

396. Teaching Assistant Training Practicum (1-4)

Variable—3-12 hours. Prerequisite: graduate standing and consent of instructor. May be repeated for credit. (S/U grading only) (F, W, S)

401. Ethics and Professionalism in Animal Biology (2)

Discussion—2 hours. Prerequisite: graduate standing; first pass Animal Biology graduate group students. Case studies and discussion of ethical and professional issues for animal biologists, including the use of animals in research and teaching, patenting and intellectual property, consulting and conflict of interest, scientific integrity, dealing with the media, and mentoring relationships. ***(F) **offered every other Fall***

ANS GRADUATE COURSES

291. Current Research in Animal Science (1)

Seminar—1 hour. Prerequisite: graduate standing. Current research in animal science explored at weekly seminars presented by guest lecturers. Discussion of research presented. May be repeated for credit. (S/U grading only) (F, W, S)

*****offered every quarter, and seminars are traditionally always during the Monday noon hour.*

GRADUATE SEMINARS

290 seminar courses are offered by most departments. Ph.D. students but not M.S. students can take a course outside animal biology as long as it applies to your research interests **and your Graduate Advisor approves!** Most of the time, 290 courses are NOT listed in the UC Davis Class Schedule. The best place to find out about seminar series is through the individual departments and through the various e-mails they send out with seminar announcements.

ELECTIVE CLASSES

Unfortunately, there is no single listing of all animal or biology oriented classes in the UC Davis Class Schedule. The best way to find an elective class is to look through the General Catalog (<http://registrar.ucdavis.edu/ucdwebcatalog/>) course offerings for each department and by talking to your major professor and mentoring committee. Some good departments to check out are:

MCP (Molecular, Cellular and Integrative Physiology)
NPB (Neurobiology, Physiology and Behavior)
NUT (Nutrition)
ANS (Animal Science)

The veterinary school (VMD) also has several different programs such as APC (Anatomy, Physiology, and Cell Biology) and PMI (Pathology, Microbiology, and Immunology) which often have interesting and varied listings.

Professional courses numbered 300 and 400 must be approved for graduate credit to count towards degree requirements. **Please see your Graduate Advisor prior to enrolling; if you are near university minimums, check with Graduate Studies (or the Graduate Group Office) as well to verify specific courses of interest have been approved at the campus level.**

DESIGNATED EMPHASIS

The Designated Emphasis is awarded in conjunction with the Ph.D. degree and is signified by a transcript designation; for example, "Ph.D. in Animal Biology with a Designated Emphasis in Biotechnology."

Graduate students in ABG may participate in the following Designated Emphasis:

Biotechnology <http://www.deb.ucdavis.edu>

The designated emphasis in Biotechnology provides a very effective multidisciplinary biotechnology concentration, which includes exposure to bioethics, business and legal aspects of biotechnology as well as a 3-6 month internship in a biotechnology company or research laboratory in another college or national laboratory. Judith Kjelstrom, the Program Coordinator assists the students in locating internships, preparation of a strong cover letter and curriculum vitae, and the development of professional skills related to the business environment.

Chair: Abhaya Dandekar, Professor, Plant Sciences- amdandekar@ucdavis.edu

Reproductive Biology <http://animalscience.ucdavis.edu/DERB/index.htm>

The DE in Reproductive Biology offers research opportunities ranging from molecular to organismal and from basic research to applied studies in agricultural and health related sciences. The astonishing breadth and depth of the campus's research programs in this field have created a dynamic research environment that promotes collaborative investigations and provides outstanding opportunities for graduate education.

Chair: Stuart Meyers, Professor, Anatomy, Physiology & Cell Biology (530) 752-9511

Host-Microbe Interactions <https://grad.ucdavis.edu/programs/designated-emphases/gdah>

One of the most influential areas of modern biomedical science is elucidating the ramifications and complexity of host-microbe interactions that affect animal and plant health, and dramatically influence micro- and macro-ecosystems. Fueled by technological advances, we are entering a new era of interdisciplinary approaches that enable investigators to delve deeply into the reciprocal influence of host and microbes. Training new scientists in this area will fill an unmet potential for UC Davis graduate education. The DE-HMI will synergize the campus' scholarly power to train scientific leaders that will drive new technological transformation both in the academic and private sector arenas. In addition, training students to work within an arena of interdisciplinary investigation will enable them to tackle pressing and difficult problems that they will encounter throughout their scientific careers. The DE-HMI will train students with various backgrounds to engage in science that requires a multidisciplinary approach. No graduate program at UC Davis provides the necessary educational background to enable students to rigorously investigate the complex mechanisms that underlie host-microbe interaction. The DE-HMI fills that need.

Chair: Charles Bevins, Professor, Microbio & Immunology (530) 754-6889

ROLE OF THE GRADUATE ADVISOR

Graduate advisors are sources of academic information, specifically whether a specific course will fulfill a specific requirement. The major professor and mentoring committee can provide more subject material specific advice including desirable courses to take. The advisors also serve as student advocates/neutral parties to discuss any items of concern

The **Graduate Advisors** are assigned to students by the Graduate Chair. The current **Graduate Advisors** are:

Dr. Pablo Ross (Master Advisor) (530) 752-0175 2239 Meyer Hall pross@ucdavis.edu	Dr. James Murray (530)752-3179 2119 Meyer Hall jdmurray@ucdavis.edu	Dr. Elizabeth Maga (530)752-5930 2125 Meyer Hall eamaga@ucdavis.edu	Dr. Anne Todgham (530)752-1897 2205 Meyer Hall todgham@ucdavis.edu
Dr. Stuart Meyers (530)752-9511 3219 VM3B smeyers@ucdavis.edu	Dr. Russ Hovey (530)752-1682 2145 Meyer Hall rchovey@ucdavis.edu	Dr Jennifer Larsen (530) 752-1393 Molecular BioSci: Vet Med jalarsen@vmth.ucdavis.edu	

A Graduate Advisor is nominated by the ABG Executive Committee and appointed to his/her position by the Dean of Graduate Studies. In all graduate programs at UCD, the Graduate Advisor's signature is the **only one** recognized by Graduate Studies as official on a variety of forms and petitions that you may need. Your advisor is responsible for signing off on many of the documents you will fill out in your graduate career. **Your Graduate Advisor will never be the same person that is your Major Professor.**

Your graduate advisor is responsible for an annual review of student progress, review of petitions for Planned Educational Leave, and for guidance with many other academic issues. Your graduate advisor can help you avoid all kinds of difficulties and solve problems before they become problems. You should talk to your advisor once a quarter to let him/her know your class schedule. At the end of each academic year, Graduate Studies requires that you fill out a progress report that is signed off by your advisor and your major professor.

Our Graduate Group Student Program Coordinator can answer all kinds of questions you may have about the rules and regulations of Graduate Studies and our program. You will find they are a great source of information on all kinds of issues, including funding. The Graduate Group Coordinator can be reached at:

Animal Biology Graduate Group Coordinator
1249 Meyer Hall
One Shields Avenue
Davis, CA 95616
(530) 752-2382
abggc@ucdavis.edu

COMMITTEES

The Animal Biology Graduate Group has an **Executive Committee** made up of a faculty Chair, the Master Advisor, 5 additional faculty members, and two student representatives that also serve as Graduate Student Association Representatives. The Executive Committee also serves as the Admissions and Fellowship Committee. Student members are excluded from all voting procedures which regard financial decisions.

M.S. Students:

Master's students will only have a Major Professor and a Graduate Advisor assigned to them as the only committee required is a Thesis Committee, and the Major Professor is always the Chair of the Thesis Committee.

PhD Students:

Each PhD student has a **mentoring committee** which comprises the student's Major Professor and two additional committee members who are specialists in their fields of research to provide disciplinary expertise and advice. The mentoring committee members are not required to be from the Animal Biology Graduate Group, but most often are. The Graduate Advisor is never a member of a mentoring committee (if the advisor's expertise is desired on the mentoring committee, a new advisor needs to be assigned.)

The Qualifying Examination committee members are nominated to the Graduate Studies Dean by the ABG graduate advisors as a group. The student in conjunction with their mentoring committee makes suggestions, and the Major Professor meets briefly with graduate advisors to discuss. Students should assume that some members will not be their choice, and one member must be from outside the group. The student's Major Professor **may not** be on qualifying examination, but other members of the mentoring committee may be. The Chair of the Qualifying Exam must be a member of the Animal Biology Graduate Group.

After passing the Qualifying Examination, the student chooses in consultation with their Major Professor a Dissertation Committee comprised of their Major Professor (as the Chair) plus two others.

GOALS AT THE GRADUATE LEVEL

Undergraduates master a field; graduate students contribute to a field. **Thus a major goal at the graduate level is the completion of an original, high quality research project.** We expect our PhD students to present their research at major national scientific meetings and publish their results in excellent, peer-reviewed journals. Students learn how to frame significant scientific questions and to design and execute precise experiments to rule out hypotheses, leaving one consistent with the data. Graduate students are in a new environment where time and attention is devoted to research. The game has changed. While outstanding undergraduate students master a field and get "A" grades, outstanding graduate students complete first-class research projects. You will have the opportunity to serve as a Teaching Assistant, which is an excellent way to learn to teach and communicate scientific ideas. The ability to communicate research findings and to field questions is a learned skill. Our best students excel at both teaching and research, and are well on the road to becoming lifelong scholars.

AN OVERVIEW OF THE "TYPICAL" M.S. PROGRAM

YEAR ONE

You will complete most if not all of your required coursework during your first year. You will begin work on a research project under the guidance of your major professor (How much of a beginning this is varies widely, ranging from identifying the project and wetting one's feet in techniques by the end of spring quarter to sufficient data for an abstract).

SUMMER ONE

You should Advance to Candidacy. To do so, you need to have identified your thesis committee members with the assistance of your major professor and concurrence of your Graduate Advisor, and complete the appropriate forms, pay the associated fee at the Cashier's Office, and submit the petition to the Office of Graduate Studies.

YEAR TWO

You will finish any remaining course requirements this year such as the second quarter of ABG 290, and complete your research work. You will be making progress on writing your thesis.

SUMMER TWO

You will finish writing your thesis, editing drafts with major professor input, send near final draft to other committee members, make final corrections and submit to the Office of Graduate Studies by September 1.

Then it's time to ~~celebrate!~~

AN OVERVIEW OF THE "TYPICAL" Ph.D. PROGRAM

YEAR ONE

During the first year, a great deal of time is spent taking classes. The core courses ABG 200A and 200B are designed to cover essential animal biology principles and provide background information needed for the Ph.D. Qualifying Examination. In addition, you should start to explore research opportunities. You should begin working on a research project and proposal. You will take the Preliminary Exam in September at the end of your first year, just prior to the beginning of your second year. The Preliminary Exam is a one to one and half hour oral exam administered by three Professors from the Animal Biology Graduate Group appointed by the Executive Committee. The exam covers basic animal biology breadth (based primarily on the required course material).

YEAR TWO

At the beginning of fall quarter of year two you will take your oral Preliminary Exam. This is a 75 minute oral exam covering your breadth of knowledge in the field of animal biology. In order to help you prepare for this exam in addition to your first year courses, there is a list of study questions available on our webpage.

You will complete your course requirements this year, and you should complete the two required quarters as a Teaching Assistant. By serving as a TA, you will develop teaching skills (good teachers are made, not born), which will help you to teach more confidently. Serving as a TA is also excellent preparation for the Ph.D. Qualifying Examination. You learn a subject well by teaching it.

By the end of the second year (or beginning of the third year), you should take the Ph.D. Qualifying Examination (see further details in the next section about the Qualifying Exam). During this examination, five professors will question you. This exam covers your depth of knowledge in your chosen areas of study and your ability to solve problems and design experiments. These details should be discussed with your exam Chair. Additional information is available on the web site <http://animalbiology.ucdavis.edu/csa>

QUALIFYING EXAM

In the Fall of your second year, you will be asked to submit a list of professors who you want/do not want on your Qualifying Exam Committee. This will be forwarded to your Graduate Advisor who will review it with the other advisors and your major professor, and send the recommendations to the Office of Graduate Studies for final approval. Your list should include eight professors who you would like on your committee. Keep in mind it

is required that one member of your QE committee not be a member of the Animal Biology Graduate Group. You should ascertain their ability to serve in your approximate exam time-frame (not away on sabbatic, etc.) It would behoove you to get in touch with the other ABG students as well as talking to your major professor and mentoring committee about which individuals you want to include. You will most likely be assigned one or two committee members that you did not request. Graduate Studies **MUST** approve of your committee!

Be sure that you receive an official, *signed* document from Graduate Studies before you take your exam. Once you receive word from Graduate Studies about the members of your committee, you should let committee members know that they are on your committee and begin trying to schedule a date to take the exam. It is your responsibility to contact your committee members and schedule a date. Keep in mind that this may take several weeks, as professors are busy people. The doodle calendar is an excellent way to accomplish this scheduling <http://www.doodle.com/>

You will present a brief description of your research ideas/goals (20 minutes) before beginning the research and depth questions from your committee. Expect these exams to last three or so hours.

There are three possible outcomes to your Qualifying Exam: Pass, No Pass, or Fail. Passing your Qualifying Exam allows you to Advance to Candidacy for the Ph.D. If you receive a non-passing evaluation, you have the option of taking the exam again. Failure at that point may result in termination of your appointment.

ADVANCEMENT TO CANDIDACY

Once you pass your Qualifying Exam, the Chair of your committee should provide you with a signed Advancement to Candidacy Form. You must complete the form, pay the associated fee at the Cashier's Office, and submit the petition to Graduate Studies. Advancement to Candidacy signifies that you have met all the qualifications of a doctoral candidate and have only to submit your dissertation.

YEARS THREE to FIVE

After passing your Ph.D. Qualifying Examination, you will form a Dissertation Committee and Advance to Candidacy (within the quarter you take your exam). Your Dissertation Committee is composed of your research advisor (as the Chair) and two additional professors. This committee will guide your research. The Dissertation Committee must be approved by your Graduate Advisor and Graduate Studies. During the last two or three years, you will devote all your time to your doctoral research (taking a course load of 11 units of ABG 299, and 1 ABG 290C unit each quarter).

The successful completion of an original, significant research project is determined by the Dissertation Committee. When your dissertation is completed, the three professors making up your committee sign the cover sheet of your dissertation. You will give a private and informal dissertation defense to your committee and a public exit seminar for the group on your research. The exit seminar is also a great opportunity to develop a presentation which may prove useful for interviews with potential employers.

Then it's time to ~~celebrate!~~

ABG COLLOQUIUM

Each Fall ABG holds an annual colloquium. The Fall 2017 Colloquium is scheduled to be held on **Monday, October 22nd, 2018**. Third and fourth year PhD students will give oral presentations on their current research. Second year graduate students (M.S. and Ph.D.) present a poster of their ongoing research (sometimes this is advanced with significant data and sometimes this is still in the concept and experimental design stage). This provides students the opportunity to speak publicly and to share their research with the students and faculty of the graduate group, as well as a chance to interact with members of the graduate group.

2018-19 IMPORTANT EVENTS

September 24, 2018	ABG New Student Orientation and Luncheon
October, 2018	Fall Quarter Travel Award Application DUE
October 22, 2018	Annual ABG Colloquium
January 15, 2018	Internal Fellowship, and Summer Fellowship Applications DUE
March 1, 2018	Animal Science Department TA Applications DUE

March 1, 2018	Jastro Shields Application DUE
March 15, 2018	Spring Quarter Travel Award Application DUE
April 1, 2018	Student Progress Assessment Begins
Fall Quarter	ABG Annual Meeting
June 30, 2018	Student Progress Assessment Completed

ANIMAL BIOLOGY WEBSITE: <http://animalbiology.ucdavis.edu>

The website provides a source of information for students regarding courses offered, programs, news, events, and a directory of faculty and students. This is a great resource to find faculty members and students with similar research interests and to stay up to date on current events.

OTHER RESOURCES

The Office of Graduate Studies posts an online Graduate Student Guide that provides a myriad of information about orientation activities at the beginning of the year, campus resources, money matters, life in Davis, and many other relevant policies and topics. It can be found at:

<https://gradstudies.ucdavis.edu/sites/default/files/upload/files/publications/gs201-gradstudentguide.pdf>