



Graduate Program Handbook

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THE UNIVERSITY OF
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A. General Description of the Arizona Biological and Biomedical Sciences Graduate Program

1. Overview

The ABBS program integrates recruiting and admissions for ten PhD degree-granting programs: Biochemistry or Molecular and Cellular Biology (BMCB), Cancer Biology GIDP (CBIO), Cellular & Molecular Medicine (CMM), Drug Discovery and Development (DDD), Genetics GIDP (GENE), Immunobiology (IMB), Medical Pharmacology (PCOL), Pharmacology and Toxicology (PHCL), Physiological Sciences GIDP (PS) and the School of Plant Sciences (PLS).

Students are admitted to ABBS with no formal commitment to any of the participating degree-granting programs. All students perform three laboratory rotations (two in fall and one in spring) during the first year. Students are free to complete these rotations with any faculty member associated with the participating programs. This provides maximum flexibility for students to explore diverse fields of study. Students with identified goals can focus immediately on a particular research area and program.

Upon completion of the third rotation (approximately nine weeks into the spring semester), students will select a faculty mentor and transition from ABBS to the degree-granting program associated with their faculty mentor.

2. Mentoring

The ABBS program Executive Committee is formed with one representative from each of the participating degree-granting programs. During your first year and prior to choosing a dissertation advisor, members of the EC will serve as your mentors. They will serve as contact persons to answer your questions and help you make important decisions, such as choosing rotations and coursework. However, you should feel free to discuss any questions you may have with any faculty members with whom you feel comfortable. The faculty is here to help train you to become their colleagues in the scientific endeavor. In addition to obtaining guidance from the faculty, you should utilize any resources the Graduate College makes available, including the online Graduate Catalog (<http://grad.arizona.edu/Catalog/>). Also take advantage of the expertise of the graduate program coordinators for the participating programs (see page 2), who know all the ropes with regard to the bureaucratic machinations of the Graduate College and the University at large (remember, the faculty did not have to complete a degree here!). You will also be assigned a student mentor. Your student mentor will be a good source of information because they have already completed the part of the journey you are now on.

B. Participating Graduate Programs - Contacts

1. ABBS Executive Committee

<u>Na me</u>	<u>Graduate Program</u>	<u>Contact</u>
Daniella Zarnescu, Director	Biochemistry, Molecular & Cellular Biology	626-1478 zarnescu@email.arizona.edu
Nathan Ellis	Cancer Biology GIDP & Cellular & Molecular Medicine	626-7979 naellis@email.arizona.edu
Samantha Harris, Co-Director	Cellular & Molecular Medicine	621-0291 samharris@email.arizona.edu
Georg Wondrak	Drug Discovery & Development	626-9009 wondrak@pharmacy.arizona.edu
Melanie Culver	Genetics GIDP	626-3775 mculver@email.arizona.edu
Mike Kuhns	Immunobiology	626-6461 mkuhns@email.arizona.edu
Shelly McMahon	Plant Sciences	621-7243 mcmahonm@email.arizona.edu
Cathy Smith	Pharmacology & Toxicology	626-8349 csmith@pharmacy.arizona.edu
John Konhilas	Physiological Sciences GIDP	626-6578 konhilas@email.arizona.edu
Frans Tax, AD Hoc	IMSD Training program	626-1186 fetax@email.arizona.edu
Ramin Yadegari	Plant Sciences	621-1616 yadegari@email.arizona.edu
John Streicher	Medical Pharmacology	626-7495 jstreicher@email.arizona.edu

Participating Graduate Programs – Contacts

2. Program Coordinators

Brian Paradis	ABBS Coordinator	621-4419 bparadis@email.arizona.edu
Denise Slay	Biochemistry, Molecular & Cellular Biology	621-7563 dslay@email.arizona.edu
Anne Cione	Cancer Biology GIDP	626-7479 acione@azcc.arizona.edu
Barbara Kahn-Sales	Cellular & Molecular Medicine	626-6655 bkansales@email.arizona.edu
Nicole Swinteck	Immunobiology	626-0710 nperri@email.arizona.edu
Cora Veras-Nelson	Genetics GIDP	626-1452 cowenc@email.arizona.edu
Vickie Healey	Medical Pharmacology	626-7218 joannalynnesmith@email.arizona.edu
Sonya Basurto	Pharmacy (DDD & Pharm/ tox)	626-7265 basurto@pharmacy.arizona.edu
Kate Quinlan	Physiological Sciences GIDP	626-2898 katieq@email.arizona.edu
Georgina Lambert	The School of Plant Sciences	621-1219 Georgina@ag.arizona.edu

C. Participating Faculty

For a complete list of participating faculty, please visit the participating program websites:

Biochemistry and Molecular & Cellular Biology: <http://bmcb.biology.arizona.edu/>

Cancer Biology GIDP: <http://www.azcc.arizona.edu/academics/cbio>

Cellular & Molecular Medicine: <http://cmm.arizona.edu/graduate-program/PhDoverview>

Drug Discovery and Delivery:

<http://www.pharmacy.arizona.edu/grad-pgms/drug-discovery-development>

Immunobiology: <http://immunobiology.arizona.edu/>

Genetics GIDP: <http://www.genetics.arizona.edu/>

Medical Pharmacology: <http://pharmacology.arizona.edu/>

Pharmacology & Toxicology: <http://www.pharmacy.arizona.edu/grad-pgms/pharm-tox>

Physiological Sciences GIDP: <http://physiological-sciences.arizona.edu/>

D. Financial Assistance

1. Basic stipend

The basic graduate stipend is \$27,000 (pro-rated the first year due to August start date). Depending on the source of funding, you may receive this stipend in the form of bi-weekly paychecks or in larger lump-sum amounts deposited in your Bursar account. In addition to your stipend, tuition is waived and single only health insurance is paid. Miscellaneous fees incurred each semester are the student's responsibility to pay. Check www.registrar.arizona.edu for payment deadlines to avoid late payment penalties. Please contact Denise Slay with questions.

Direct deposit (SurePay) for paychecks is an available benefit for those compensated through the payroll system. This can be done on the web via UAccess Employee (Employee/Manager Self Service). Students on stipends can sign up for direct deposit through UAccess Student.

2. Health insurance

All UA graduate students are required to maintain student only health insurance. Health insurance premiums are covered as a benefit for ABBS graduate students. Note that health insurance premiums paid during the spring semester provide coverage through summer. For additional information please visit <http://www.health.arizona.edu/insurance.htm>.

3. Sources and duration of funding

All first-year students are funded from multiple university sources. By the middle of the second semester, students should have identified a dissertation advisor. From that point forward, financial responsibility for the student resides with the dissertation advisor. During dissertation research, students are typically paid as graduate research assistants (via payroll) for a period of up to five years, contingent on the availability of funds and continued satisfactory progress.

4. Competitive fellowships

All eligible students are encouraged to submit applications for pre-doctoral fellowship support from external sources, such as the National Science Foundation and the National Institutes of Health, Department of Defense and Department of Energy. Pre-doctoral fellowship support is available from these agencies; however, in some instances eligibility is limited to students in their first year of graduate school. Information about these applications and their deadlines will be made available early in the Fall semester. Deadlines are typically early November. Be alert for availability of application information.

E. Coursework

1. General description of coursework

Students will take most of their coursework in the first two years. ABBS advisors will help each student plan their first year courses. Once a student has joined a lab, the Ph.D. advisor and the student's committee members will help the student plan the coursework for the second and subsequent years. All students are required to enroll in a journal club and seminar course every semester until graduation. For the Ph.D., the Graduate College requires a minimum of 36 units in the major, of which 18 must be in courses with letter grades (A, B). The Graduate College also requires a nine unit minor. First year students are free to explore various course offerings. However, students who are already focused on a particular area can begin specific program requirements immediately.

The University of Arizona has a grading scale with very discrete cutoffs: an A is a 4.0, a B is a 3.0, there are no intermediate grades. The expectation for graduate students is that you are enrolled in a PhD program because you want to learn, and that you will earn all As. B grades are not a major issue in terms of eligibility, but they send a sign that you are not fully engaged. Also keep in mind that you must maintain a 3.0 or higher or you will be placed on academic probation by the graduate college.

Academic integrity

The University of Arizona Student Code of Conduct and other policies apply and can be found on the following website: <http://catalog.arizona.edu/policies/974/acacode.htm> Principle: (from the above website) Integrity is expected of every student in all academic work. The guiding principle of academic integrity is that a student's submitted work must be the student's own. This principle is furthered by the student Code of Conduct and disciplinary procedures established by ABOR Policies 5-308 - 5-403, all provisions of which apply to all University of Arizona students. This Code of Academic Integrity (hereinafter "the Code") is intended to fulfill the requirement imposed by ABOR Policy 5-403.A.4 and otherwise to supplement the student Code of Conduct as permitted by ABOR Policy 5-308.C.1.

The most common issues for graduate students involve giving credit for ideas in writing. When answering a question about a paper, students need to paraphrase the language in their own words. It is not appropriate to lift phrases or sentences directly from the paper. Cutting and pasting anything from a document or the internet without attribution is easily detected within the University D2L online course system and is strongly cautioned against. The penalties can be very severe, so be sure that you understand the rules.

2. Registration & Course listings

Students are responsible for registering for classes via their UAccess student account. All course descriptions and a listing of courses being offered each semester (Schedule of Classes) can be found online at <http://www.arizona.edu/students/registering-classes>.

In the first year, students will be registered by a Program Coordinator for four rotation credits each semester. Students should register for a seminar and journal club each semester as well as two

additional multiple unit courses.

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3. **Required/recommended coursework – see:
Appendix I Fall Course offerings,
Appendix II Spring Course offerings**

4. **Year One Overview**

FALL

1. **Enroll in two courses.**
IMSD students will be registered for MCB 595e
2. **Arrange and complete laboratory rotations.**

Rotation Schedule and Rotation Symposia

Two rotations are standard, and students make a brief presentation of their work to the ABBS program at the conclusion of each rotation period. This brief 10-minute report should provide some background in an introduction and summarize findings and conclusions. An overhead projector and a computer are available.

Students should arrange the first rotation during orientation. ABBS advisors can help with this choice. Students should give the next rotation advisor plenty of advance notice so that they have time to prepare for the student's experiments.

4. **Attend a weekly seminar and journal club.**
5. **Attend the joint BMCB/CMM/IMB research retreat (All ABBS students welcome, registration information to follow)**

Some other quick facts:

Location - Biosphere 2 (<http://www.b2science.org/>)

Talks - Fourth year students and new faculty members; ~10-12 minutes

Poster Session - Second year students, anyone not giving a talk.

SPRING

1. **One additional rotation.**
2. **Complete core coursework and/or minor electives**
3. **Choose a laboratory by the end of February, supervisory committee by May, and have first committee meeting.**
The committee will be very helpful in recommending second-year course work.
4. **Attend weekly seminar and journal club.**

5. Enroll in GRAD 696c-ABBS colloquium

F. Laboratory Rotations

During each rotation, you have full status as a member of the laboratory and participate in all activities normally expected of lab personnel. Laboratory rotations are an important opportunity not only to discover the “fit” between the student and advisor but also to experience a variety of scientific approaches and philosophies. For these reasons, our faculty suggests students immerse themselves in the research experience during rotations and maximize their time in the lab. Laboratories are available to students at all hours, and it is expected that students will take advantage of this availability on evenings and weekends to efficiently manage the experiments they are conducting.

Upon completion of each rotation, the student is evaluated by the faculty mentor, and the student and faculty member discuss the potential for choosing the lab as a thesis lab. (This form is found at the end of the handbook). The student also writes a summary of their project, and the report is then forwarded to the ABBS graduate program coordinator’s office where it is placed on file to become part of the student’s record. The student will also present their work in a group setting (Rotation Presentation).

G. Choosing Laboratories for Rotations (see also Choosing an Advisor)

Students are encouraged to choose rotation mentors based on information they obtain from faculty and other students in the program. It is the student’s responsibility to arrange the various rotation experiences based on information provided with regard to faculty availability. While it might be necessary to arrange one or two of the rotations in advance, you are not expected to arrange all three at one time. Additional perspective for future rotations will be gained as the year progresses. You are encouraged to rotate with faculty with space and funding available for additional students. Once a faculty member has agreed to your rotation, please notify Holly Lopez of your laboratory choice.

H. Rotation System

The rotation schedule for all ABBS students will consist of three mandatory rotations during the first year. A matching process will take place at the end of the third rotation.

In the event you have not identified an advisor after completing three rotations, every effort will be made to secure additional funding for a fourth rotation. However, if a student is not able to find a permanent lab after four rotations, they may be asked to leave the program.

I. Vacation and Leaves

Once you have entered graduate school, you are basically a full year employee until you earn your PhD. Vacations are negotiated with your PI and your department. Like with any job, there are standards about vacations. Most students take a week or ten days of holiday break in December/January and a similar amount of time in the summer, plus the standard holidays during the year. Please talk to your mentor or fellow students about the expectations in your program. Note that there is a positive correlation between the amount of time spent towards your thesis and the time it takes to finish, but also that it takes some experience to become efficient in juggling courses and labwork.

The ABBS program realizes that there are personal and/or medical reasons for a student to require a limited break in their studies. Although the University has no formal policy for such contingencies, the program recognizes the general policies of the Federal Family and Medical Leave Act of 1993 and will allow students to take a break in their studies without applying for a formal University leave of absence. Under the federal policy, a personal or medical absence of 12 work weeks can be arranged for: (1) the birth of a child and to care for such child*, (2) to care for another individual in the student's household or immediate family, or (3) the student's own health conditions. Students in the ABBS program who wish to take a personal or medical leave of more than one week that is not a vacation should request a leave in writing to the executive committee before the leave begins. The committee will evaluate the request and determine the student's standing after the student returns.

*The Graduate College offers paid parental leave (up to six weeks) for Graduate Assistants. Please see <http://grad.arizona.edu/parentalleave> for eligibility and application information.

J. Choosing a Dissertation Advisor and Major

Points to consider when choosing a lab and advisor:

Choosing a dissertation advisor is one of the most important decisions that you will make in your graduate career. Also, your major choice will be limited to the participating program(s) the faculty member is associated with. Since the laboratory rotations are the mechanism through which you will narrow down your choice of advisors, it is very important that you consider the following issues at the very beginning of your graduate career:

Does your potential advisor work in a field that truly fascinates you? Does s/he have a project that you are passionately interested in? Having a passion for your research subject will motivate you to expend the effort that is necessary for completing your studies. Does your potential advisor have a personality that you believe to be compatible with yours? Do you consider him/her to be approachable and easy to talk to? What is his/her mentoring style? How often does s/he meet with students? Can you pop into his/her office or do you need to make an appointment? Is s/he away a lot? Would s/he value your opinion and grant you some degree of autonomy on your research project? Be aware that you will be reliant upon your advisor to guide your professional development during this phase of your career and that you will probably need your advisor's assistance in developing your career well beyond the completion of your degree.

Ask what your potential advisor expects and requires of you in order for you to complete your dissertation. What is the nature of the feedback you will receive on your work? Are there regular lab group meetings? Is there an intellectual climate in the lab? Does the advisor send students to meetings?

You should discuss with your potential advisor how you will be financially supported during your stay in his/her laboratory. Sources of support may come from research grants to the advisor, student fellowships or other awards, institutional training grants, and teaching assistantships. Note that few labs can guarantee a consistent period of funding from the same source. Thus, it is likely that your support may be derived from different sources during your graduate years. You should also be aware that teaching assistantships frequently are quite demanding of one's time. Consequently, you

may not be able to devote as much time to your research project, and the length of time required to complete your degree may be extended if much of your support is based on a teaching assistantship.

However, teaching assistantships do provide relevant experience that contributes toward your professional development.

Talk to other students, postdocs, and faculty about a potential advisor. Their familiarity and knowledge of a potential advisor's capabilities and personality can be enormously important in helping you to come to a decision about an advisor. However, different individuals interact in different ways. Be aware of your own strengths and needs and make your own final decision.

Your major choice will be limited to the programs your advisor is associated with. Your major change from ABBS to the program you choose will be effective the fall semester of your 2nd year. A major change after this will require the submission of a new Graduate College application.

APPENDIX I- Fall Course Listings

APPENDIX II-Spring Course Listings

