

# BCP Program Framework



## BIOLOGICAL CHEMISTRY PROGRAM

An Interdisciplinary Graduate Experience

[1]

### Biological Chemistry Program Overview

The Biological Chemistry Program (BCP) is an NIH supported graduate training program that can be joined as a track through two departments: Chemistry and Biochemistry, and the Drug Discovery and Development of Pharmacology and Toxicology. The program is interdisciplinary and students undertake research rotations, courses and seminars involving all three Graduate Programs: Biochemistry, Chemistry, and Drug Discovery and Development. The background for BCP students is expected to include a year of biochemistry and a year of physical chemistry. In our program, students:

- **Satisfy all home program requirements.** It is expected that students will remain in good academic standing in their home program, and will achieve candidacy and the Ph.D. degree through that program.
- **Undertake research rotations in at least two programs.** Generally, 2 rotations are taken in the fall and 2 in the spring of the first year, and, for BCP students, laboratories in at least two BCP programs must be included. Students often choose their thesis advisor by spring break and the fourth rotation can be in this lab even if previously visited. A rotation poster session is held during our Research Forum (Journal Club) after each rotation period. Students are expected to devote 10-15 hours per week to the rotation and will receive a grade. Rotations are an excellent hands-on opportunity to learn about a new area of research as well as for learning more about a potential thesis lab. Students are encouraged to use one of their rotations for something completely out of their experience – for example, a synthetic chemist might try cloning and expressing a protein.
- **Undertake one cross-disciplinary core course and an ethics course.** BCP students must use one of their electives for a core course outside of their home discipline, in addition to satisfying all requirements for their home degree program. In general, students must have at least one course from the Biological and Chemical core courses listed below. Students must also take an ethics course such as MCB695e.
- **Undertake thesis research with any of the ~35 BCP faculty, regardless of home department.**

Although most students will have a thesis advisor from their home department, we offer the opportunity for BCP students to work with any of the BCP faculty.

- **Assemble a thesis committee with at least one member outside of their home program.** Generally this person will be a BCP faculty member with cross-disciplinary interests in the student's research area. Students are encouraged to use this as a means for initiating cross-disciplinary collaborations.
- **Attend the weekly BCP Research Forum (also called Journal Club.)** The BCP Research Forum provides opportunities for discussion of subjects of contemporary interest from the literature and also for members of the BCP program to share their research results. Students are expected to attend throughout their graduate careers. Generally, students will present rotation posters in the Research Forum during their first year and will subsequently give two 50 minute presentations during their graduate career. The first presentation will be in the third year of study, and could be a presentation of a journal article from the literature or a talk about their research project if desired. The second talk will be a full research seminar, to be held in the fourth year of study or later.
- **Are eligible for BCP fellowships.** Applications are solicited each spring for NIH Training Grant Fellowships; awards are made based on merit, generally within the second and third years of study. Unfortunately, only Domestic Students are eligible for NIH Fellowships.

Currently Approved Core Courses*	
Biological	Chemical
BIOC 565 <i>Proteins &amp; Enzymes</i> BIOC 568 <i>Nucleic Acids</i> PHSC 670 <i>Principles in Drug Discovery, Design, and Development</i>	CHEM 550 <i>Synthetic and Mechanistic Organic Chemistry</i> CHEM 541 <i>Physical Organic Chemistry</i> CHEM 510 <i>Advanced Inorganic Chemistry</i> CHEM 521B <i>Advanced Analytical Chemistry</i> CHEM 580 <i>Introduction to Quantum Chemistry</i>
Other Requirements: BIOC 595e <i>BCP Research Forum (Journal Club)</i> MCB 695e <i>Science, Society &amp; Ethics</i> or equivalent course	

\*Last Updated in 2012

[Graduate](#)<sup>[2]</sup>

Department of Chemistry and Biochemistry at The University of Arizona  
P.O. Box 210041, 1306 East University Blvd., Tucson, AZ 85721-0041  
Phone: 520.621.6354      Fax: 520.621.8407

[UA NetID Login](#)

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**Links:**

[1] [http://www.cbc.arizona.edu/graduate/bcp/phd\\_program](http://www.cbc.arizona.edu/graduate/bcp/phd_program)

[2] <http://www.chem.arizona.edu/taxonomy/term/12>