BIOLOGICAL CHEMISTRY, PHD

Program Overview
The Graduate Program in Biological Chemistry (GPBC) is designed
to train the next generation of independent research scientists, while
simultaneously supporting the professional development and career
choices of all our students. The core of our Ph.D.- granting program
is learning through research, augmented by an advanced curriculum,
supportive mentorship, professional development, and career training.
GPBC’s focus on discovery-based education is consistent with the
founding of Johns Hopkins as the country’s first research university
and its current position as one of the world’s preeminent research
universities. The Department of Biological Chemistry is dedicated not
only to the advancement of science, but also to the health, well-being, and
dignity of its diverse members and the diverse community within which
it resides. We recruit, retain and inspire the next generation of diverse
trainees, faculty and staff members at our school of medicine and in our
health system.

Admissions
Candidates for admission should show a strong academic foundation
with coursework in biology, chemistry, physical sciences, and
mathematics. A bachelor’s degree from a qualified college or university is
required.

The Biological Chemistry (http://biolchem.bs.jhmi.edu/Pages/
default.aspx) website has up-to-date information on “How to Apply”
(http://biolchem.bs.jhmi.edu/Pages/application-information.aspx).

Inquiries regarding admissions, please contact:
Darlene Sutton (dsutton5@jhmi.edu)
Program Coordinator
(410) 955-3086

Graduate Admissions Office:
Email: GradAdmissions (gradadmissions@jhmi.edu)

For more information about the program, please contact:
Stephen Gould, Ph.D. (sgould@jhmi.edu)
Program Director
(410) 955-3424

Ryuya Fukunaga, Ph.D. (fukunaga@jhmi.edu)
Associate Program Director
(410) 955-3790

Tamara O’Connor, Ph.D. (toccoño7@jhmi.edu)
Admissions Director
(410) 955-7134

Daniel Raben, Ph.D. (draben@jhmi.edu)
Associate Admissions Director
(410) 955-1289

Program Requirements
The Graduate Program in Biological Chemistry trains students through
a diverse curriculum that emphasizes discovery-driven education.
While the focus is on laboratory research, students also benefit from
outstanding courses, immersive scientific activities, strong mentorship,
professional development, and a commitment to publishing.

Research is the primary activity of GPBC students. Research starts
immediately upon matriculation with a series of research rotations, and
thereafter continues in their thesis studies.

Courses: Required and elective courses ensure that GPBC students
acquire a solid foundation in biomedical research.

Immersive Scientific Activities: Students receive additional training
by attending and participating in seminars, journal clubs, symposia,
colloquia, and retreats within the Department of Biological Chemistry
as well as those offered by other Departments, Centers, Institutes and
Schools across the University

Mentorship: GPBC provides multidimensional mentorship from the
moment students arrive on campus through and beyond their graduation,
with direct support from the student’s research advisor(s), co-mentor,
Thesis Committee, and GPBC Director.

Professional Development: The GPBC supports the long-term career
success of its graduates by providing:

• Outstanding, mechanistically-oriented research training
• OPTIONS career training curriculum
• Full access to all services of the School’s Professional Development
  Office (PDO)

Publishing: Students complete their research requirement by publishing
their dissertation, peer-reviewed articles, reviews, etc.

Courses:
The first year required courses are as follows:

• ME.100.716 Analysis of Macromolecules
• ME.330.709 Organic Mechanisms in Biology
• ME.260.709 Molecular Biology and Genomics
• ME.110.733 Principles of Genetics
• ME.110.728 Cell Structure and Dynamics
• ME.360.728 Pathways and Regulation
• 3rd Quarter Elective I
• 3rd Quarter Elective II
• Rigor, Reproducibility & Experimental Design in Biological Chemistry,
  Yr. 1
• Take and complete first year ethics training

Required courses beyond the first year:
Rigor, Reproducibility & Experimental Design in Biological Chemistry, Yr. 2
Four additional electives

GPBC Activities, By Year
Year 1:
Student orientation day (day 1)
Biological Chemistry Bootcamp (week 1)
Participate in research rotations (3-4 rotations of 2 months-long duration
each)
Participate in immersive scientific activities (seminars, journal clubs,
colloquia, interest groups, etc.), both required and elective
Select thesis advisor/home laboratory & initiate thesis research

Year 2:
Thesis research
Participate in immersive scientific activities
Write a thesis proposal
Take and pass the Doctoral Board Orals exam
Take and pass the required second-year class:
Rigor, Reproducibility & Experimental Design in Biological Chemistry, Yr. 2
Take and complete second year ethics training
Participate in OPTIONS career development curriculum
Form a thesis committee and identify a co-mentor
With the thesis advisor, draft and sign an individual development plan (IDP)
Participate in Thesis Committee meeting & GPBC Director meeting

**Years 3, 4, & 5:**
Thesis research
Publish papers
Participate in immersive scientific activities
Take and pass any remaining elective classes
Annually: IDP, Thesis Committee meeting, and GPBC Director meeting
Work with mentors to develop/implement a career plan

**Year 5+:**
Thesis research, with an emphasis on prompt graduation
Publish the dissertation and peer-reviewed articles
Participate in immersive scientific activities
Hold Thesis Committee meetings & GPBC Director meetings every 6 months
Implement the student’s career plan