The Biochemistry and Cell Biology (BCB) Graduate Program is a rigorous interdisciplinary graduate program that focuses on understanding the fundamental basis of life and disease at the molecular and cellular levels. Our faculty apply biochemistry and cell biology approaches to understand fundamental mechanisms governing almost all types of biological processes and systems including neurobiology, cancer biology, immunology, physiology, and pharmacology. Graduates of this program will have extensive training traversing from single molecules to human disease pathogenesis. Our well-funded faculty and student teams collaborate to make high-impact discoveries relevant to human health.

The BCB program has faculty from over 25 departments and divisions from both UTHealth and MD Anderson, leading to a truly interdisciplinary training environment. In addition to formal classroom and laboratory training, students participate in enriching activities including seminar series, research workshops, and an annual off-campus retreat as well as social and community service events. The BCB program provides an exceptional training environment that effectively prepares students for the next steps in their careers.

Throughout their training, all BCB students receive full financial support for tuition and fees as well as a stipend. In addition, BCB students are highly competitive for fellowships, awards, and travel scholarships to present their work at scientific meetings and workshops.

Tristen Tellman, Ph.D. student
One of the best things about BCB is the diversity in research that our program represents. From structural modeling to cell signaling, you will walk out of this program with a wealth of knowledge to propel you into your future.

Ashabari Mukherjee, Ph.D. student
I’d like to say how happy I am to have found a small community within GSBS. Not only are the students extremely welcoming and friendly, the faculty and administration are also the most approachable of any department I worked in. It is so easy to get help for anything in the BCB program, research related otherwise, all you have to do is ask.
The interdisciplinary nature of the BCB program creates a unique environment that exposes students to a wide range of research subjects and approaches and compels students to think about research problems from different perspectives. Ultimately this provides students with an added breadth of knowledge that can benefit their future careers. Students in BCB also benefit from a very high faculty to student ratio. BCB faculty have an “open door” policy and encourage students to stop by and discuss technical challenges, progress on their thesis project, or career development. Because our program comprises faculty and research staff with diverse expertise, BCB students have a tremendous opportunity to gain conceptual and technical help as their projects inevitably take them in exciting, unexpected directions.

The BCB program maintains a collegial and relaxed atmosphere that is conducive to student learning. The program provides students with many opportunities for interaction and feedback from their fellow students, including student-only break rooms, student-run lunches, and student-only social outings to local eateries and bars.

The BCB Graduate Program is proud that our students actively participate in program management through the Biochemistry and Cell Biology Student Organization (BCBSO), serving on program standing committees and forming ad hoc committees to organize recruitment, the annual retreat and other events. Student leadership activities include inviting guest speakers, honoring program faculty, assisting the BCB faculty in orientation and recruitment initiatives, participating in community service activities, and organizing social activities to promote interactions among students and between students and faculty. The BCB Director provides strong support to the BCBSO, especially in fostering the students’ skills in management and fiscal matters, often seeking input and help from the students on all aspects of program governance.

BCB STUDENT SUCCESS

Many BCB students are successful in obtaining fellowships from both intramural and extramural sources. Most students also obtain scholarships through the GSBS. BCB students also receive many awards for research excellence such as the McGovern Medical School Deans’ Scholarship Award, the Presidents’ Award, McGovern Award for Presentations, as well as travel fellowships. These awards provide students with records of achievement and a degree of independence that enormously benefits their careers. BCB students often publish their work in high impact journals and such as Nature, Cell, Proceedings of the National Academy of Sciences, and Current Biology, to name a few. The average BCB student time to graduate with a Ph.D. is five years, faster than the average time to graduation in GSBS and nationally. After graduation, BCB students are extremely competitive for postdoctoral fellowships at prestigious universities nationwide. Many BCB students also find success in non-academic career paths.
Course requirements for program students are designed to accommodate the diversity of the research environments in which Program students will be trained. BCB students can expect to finish all of the required didactic courses in the first year of study. The second year of study will focus on electives specific to your field of interest. The second year is also when BCB students take the qualifying examination. In BCB the qualifying examination is “on topic.” The written component is a grant application based upon your thesis project, which is then orally defended. We encourage submission of this grant to funding agencies after the successful defense of the proposal.

**BCB COURSE REQUIREMENTS**

**Fall Year 1**
- GS21 1017 Foundations of Biomedical Research
- GS21 1051 Ethical Dimensions Biomedical Sciences
- GS00 1514 Tutorial Research Experience

**Spring Year 1**
- GS03 1023 Current Methods in Biochemistry and Cell Biology
- GS13 1024 Molecular Basis of Cell Signaling
- GS00 1514 Tutorial Research Experience

**Summer Year 1**
- GS03 1111 Scientific Writing for Grant Proposals
  (Any GSBS-approved writing course may be substituted in a different semester, prior to candidacy exam)
- GS00 1520 Research in Biomedical Science
  (Required for all BCB students every semester)

**Fall Year 2**
- GS04 1751 Design and Delivery of Advanced Research Seminar Course
- GS12 1051 Seminars in Life Sciences
  (Required for all BCB students every semester)
- GS12 1011 BCB Research in Progress
  (Required for all BCB students every semester)

**Spring Year 2**
Take candidacy exam.
Take two 1-unit electives
(Any elective approved for credit by GSBS, including approved courses around TMC)

**Years 3+**
- GS12 1011 BCB Research in Progress
- GS00 1520 Research in Biomedical Science

The best thing is the breadth of science: from atoms to behavior!
Student Luncheons
BCB students participate in monthly, student-only lunch meetings that provide opportunities for discussion and feedback on a myriad of subjects, including thesis research, presentations for thesis committee meetings, preparation for candidacy exams, or even interesting journal articles.

Research Seminars and Workshops
BCB students are required to attend weekly scientific seminars presented by faculty from within the Texas Medical Center and research institutions nationwide. All students also participate in a one-credit course called BCB Research in Progress, which is a forum for students, postdoctoral fellows and occasionally faculty to present their current work in a 45-minute seminar. The setting is informal and intended to generate insightful discussion. Students receive feedback on their work during the seminar and on their presentation style afterward, with the goal of improving their public speaking skills.

Annual BCB Retreats
The BCB program sponsors an annual retreat in the Texas countryside to provide students with the chance to present their work and unwind. Over the span of two days, students and faculty participate in both scientific and social activities designed to foster communication and scientific interactions. This annual event is a favorite activity of students and faculty.

Travel Awards
The BCB program offers travel awards to all students to enable attendance of at least one scientific meeting or workshop per year. Participation in a scientific conference is an important part of student education. It provides the student with an opportunity to interact with scientists from around the world and gain exposure to new ways of thinking about research problems.
HOUSTON LIVING

Houston is the fourth largest city in the United States with an ethnically diverse and dynamic population. We enjoy a low cost of living compared to other large U.S. metropolitan areas, and the diverse economy of Houston offers a wide array of job opportunities for spouses and family members. As the cultural center of the Southwest, Houston is home to the world-renowned Houston Ballet, the Houston Grand Opera, the Houston Symphony, the Tony Award-winning Alley Theatre and the Theater Under the Stars, which presents Broadway-quality musicals in the fabulous Hobby Center for the Performing Arts. If museums are more your interest, the Museum of Fine Arts, the Contemporary Arts Museum, the Menil Collection, the Museum of Natural Science, and the Children’s Museum are all within a mile of the Texas Medical Center. Houston is located 50 miles from the Gulf of Mexico and enjoys a sub-tropical climate that enables year-round outdoor activities. Houston is also home to major league sports teams such as the Astros, Texans, Rockets, and Dynamo. The low cost of living, mild climate, wealth of cultural and entertainment activities, and friendly people combine to make Houston a great place to live.

GSBS students generally live near the Texas Medical Center, either in student housing or in affordable nearby housing. The university maintains a recreation center near the student apartments with an Olympic-size swimming pool. The university is adjacent to Rice Village, which offers a wide variety of shopping and dining opportunities.

TEXAS MEDICAL CENTER

The BCB program is based in labs at the McGovern Medical School and MD Anderson Cancer Center, in the heart of the Texas Medical Center (TMC). The TMC includes over 20 academic institutions and hospitals, all within walking distance, including Baylor College of Medicine, the Texas Heart Institute, and Rice University. This unique concentration of institutions provides a wealth of opportunities for seminars and collaboration.

HOW TO APPLY

Students interested in the BCB program must first apply to the GSBS. Once accepted, students join a program at the end of their first year. Applications to the GSBS are accepted from September 1st through January 4th. Qualified applicants are interviewed from January to April, and admitted applicants begin school in August of that year.

Early applications are encouraged.
gsbs.uth.edu/admissions

Randi Fitzgibbon, Ph.D.
2017 graduate,
Berdeaux lab

I greatly benefited from discussions with other BCB students and professors outside of my exact field of study as this has widened my scientific perspective and has helped me develop skills for communicating my findings to a broad audience.
BCB: INNOVATIVE MODEL SYSTEMS AND COLLABORATIVE APPROACHES

BCB faculty and students utilize a wide range of animal and cell-based systems for their research. Common animal model systems include yeast, fruit fly, zebrafish, mice, and rats, as well as less common models such as snails and squid. Cell-based approaches often leverage the state-of-the-art Center for Advanced Microscopy, a Nikon Center of Excellence within the Department of Integrative Biology and Pharmacology. BCB labs are very interactive and often work together to achieve unique solutions to research questions. Moreover, faculty and students within BCB enjoy networking opportunities through participation in topic-focused research groups throughout the Texas Medical Center.

Dr. Dessauer and Ph.D. student Tanya Baldwin
State-of-the-art imaging facility
Brittany Jewell, UT System’s new student regent for 2018-2019, and her advisor is Dung-Fang Lee, Ph.D.

Model of Ras protein dimerization
Artistic rendering of a fly brain

GRADUATE PROGRAM IN BIOCHEMISTRY & CELL BIOLOGY

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THE UNIVERSITY OF TEXAS MD Anderson Cancer Center
UTHealth Biomedical Sciences
Graduate School of Biomedical Sciences