

## Physiology & Biophysics

### Welcome to the Department of Physiology & Biophysics

The Department of Physiology & Biophysics conducts research encompassing many facets of Cell Biology, Molecular and Cellular Physiology, Structural Biology, and Molecular Biophysics. Graduate education plays a key role in the vibrancy of our scientific research. Through our two Ph.D. programs (Physiology and Biophysics), we work to provide comprehensive graduate training. Our alumni have launched extremely successful careers in all areas of academic, pharmaceutical and industrial science upon completion of their program of study.

The Department emphasizes interdisciplinary work and collaboration. Our department is home to about 100 people, one third of whom are graduate students, and this size facilitates interactions with other investigators within the Department, the School and with other academic and biomedical institutions.

### Program Highlights

Our faculty is dedicated to teaching and mentoring graduate students so that they become successful independent scientists with strong research, presentation, and writing skills.

The Department has state-of-the-art research instrumentation with full-time technical support staff including laboratories for NMR (both spectroscopy and imaging), X-ray diffraction and cryo-crystallography, electron cryo-microscopy and 3-D image reconstruction, spectroscopy, micro-calorimetry, light and fluorescence microscopy, optical tweezers, microfluidic devices, surface chemistry, electrophysiology, tissue culture, and molecular biology.

Graduate Trainees and faculty are extremely well supported by research grants from the National Institutes of Health, the American Heart Association and other funding agencies.

### Research Interests

Actin, Myosin and Muscle  
Atherosclerosis and Lipoproteins  
Cytoskeleton Structure and Mechanics  
Electrophysiology and Ion Channels  
Enzym Structure and Function  
Protein-Nucleic Acid Interactions  
Filaments and Helices  
Membrane and Receptor Biology  
Microbial Pathogenesis  
Multiple Antibiotic Resistance  
Neural Regeneration  
Obesity and Diabetes  
Protein Folding  
Signal Transduction  
Structural Biology

### Career Paths

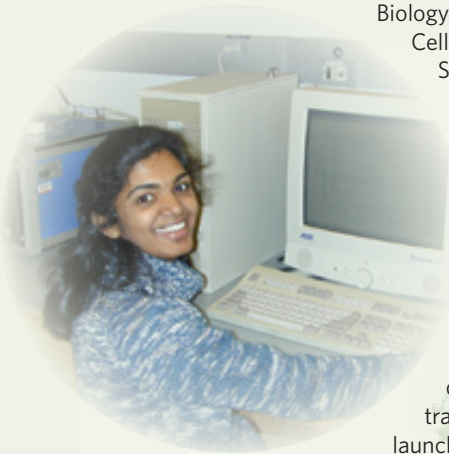
The career paths for our graduates are varied because of the strength and diversity of the training that they received while students. Approximately 80 Ph.D. degrees have been awarded from our programs over the last 20 years.

Our recent graduates (within the last 10 years) have gone on to Postdoctoral Fellowships at leading research institutions, including Harvard University, UC Berkeley, MIT, Dana-Farber Cancer Institute, Skirball Institute of Biomolecular Medicine at NYU, Memorial Sloan-Kettering, Naval Medical Research Center, Albert Einstein College of Medicine, Princeton University, Brandeis University, University of Chicago, National Institutes of Health, Brown University, Johns Hopkins University, University of Pennsylvania, and Stanford University.

Recent program graduates who have pursued academic science careers have obtained faculty positions at the University of Massachusetts Medical Center, University of Texas, American University in Beirut, Children's Hospital in Los Angeles, and Wellesley College.

A number of recent Ph.D. recipients have also pursued industrial careers at leading firms including Novartis, AstraZeneca, BioCyst, Epsom Pharmaceuticals, and Genzyme.

Other recent graduates have taken positions at the Protein Data Bank, *Nature*, or the consulting field. Others have chosen to pursue law or business degrees to augment their science training.



## Boston and Boston University Community

Boston University is located in the heart of Boston- one of the nation's most dynamic and vibrant cities. Boston is a hub of cosmopolitan style, intellectual inquiry, and cultural opportunity. Boston is also an accessible city and the "T"- Boston's network of subways, trolleys, and buses- makes it easy to explore the history and culture of the city.

Boston University is an independent, coeducational, nonsectarian university housed on the Charles River and the Medical Center campuses, which are located 3 miles from one another in Boston. Boston University's academic diversity meets the needs of one of the largest bodies of scholars in the world. Its sixteen schools and colleges provide students with the advantages of a large contemporary educational complex, including opportunities to conduct interdisciplinary research, meet students from other schools and colleges, and participate in a wide array of extracurricular activities and sports.

Boston University is home to nearly 500 social, athletic and artistic organizations. The South End Fitness Center, located near the Medical Campus, and the Boston University Fitness and Recreation Center on the Charles River Campus, provide superb state-of-the-art facilities for exercise, fitness and wellness programs. Boston University competes in 23 NCAA Division I varsity sports and our Terriers were the 2009 NCAA Men's Hockey Champions.

Boston and the surrounding areas offer a rich selection of cultural and recreational activities, including museums, music and theater, major league sports teams, and skiing, to name a few. Close by are Cape Cod, the White Mountains, and the picturesque New England countryside.

populations in the city. It is a short walk to shops, restaurants and a thriving arts community. Boston University Medical Campus is linked to its Charles River Campus by The Bus, a free shuttle service. Division of Graduate Medical Sciences students take advantage of the tremendous academic and extracurricular opportunities on both campuses.

Doctoral students become part of our diverse community through the Division of Graduate Medical Sciences and the Graduate Medical Sciences Student Organization (GMSSO), a well-organized student group representing graduate students from our 14 doctoral programs. The GMSSO arranges social activities, coordinates

campus-wide social action initiatives, and publishes the Graduate Student Survival Guide, a handy overview of housing, transportation, attractions and FAQs for new students.



## Student Services

The Division of Graduate Medical Sciences office is the primary resource for graduate student services at the School of Medicine. The Division office provides travel grants for students to present their work at scientific conferences and offers professional development workshops to help students launch their scientific careers. The Division hosts special events such as Henry I. Russek Student Achievement Day to celebrate student research accomplishments, Arts Day to showcase the artistic talents of all members of our community, and Hockey Night to cheer the Boston University team on to victory. The Division of Graduate Medical Sciences office collaborates with the Office of Diversity and Multicultural Affairs to foster an appreciation of cultural competence and health disparities and their role in biomedical science research.

## Student Life

*"I was impressed by the state-of-the art facilities and the broad scope of techniques and research being used for the determination of protein structure at Boston University School of Medicine. What I like the most about the Physiology & Biophysics Department is how different labs and faculties with completely different projects and interests always merge together to achieve one common goal, the success of each individual member of the Department."*

Boston University Medical Campus, home to the School of Medicine, Goldman School of Dental Medicine, and School of Public Health, is located in the historic South End neighborhood of Boston. Many streets in the area have elegant Victorian brownstone buildings and homes built in the 1800s. The South End has one of the most diverse

## Financial Support

All students in good standing in the Ph.D. program in the Department of Physiology & Biophysics receive tuition and health benefits as well as a stipend.

## Contact Information:

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