LEARN MORE AT WWW.BCM.EDU/GRADSCSCHOOL
Graduate School of Biomedical Sciences - Admissions
Baylor College of Medicine, One Baylor Plaza
MC Code BCM215
Houston, Texas 77030, U.S.A.
Email: gradappboss@bcm.edu
Page II Photo Credit: Visit Houston
TABLE OF CONTENTS

4  IMPACTFUL RESEARCH
6  RESEARCH RESOURCES TO SUPPORT YOUR SUCCESS
8  LEARN WITH EXPERTS
10 LOCATION, LOCATION, LOCATION
12 WHERE WILL A BCM PH.D. TAKE YOU?
14 BENEFITS
15 ADMISSIONS
16 FIND YOUR FIT
24 DIVERSITY AND INCLUSION
25 LIFE BEYOND THE LABORATORY

---

**Accreditation**

Baylor College of Medicine is accredited by the Southern Association of Colleges and Schools Commission on Colleges to award masters and doctorate degrees. Contact the Commission on Colleges at 1866 Southern Lane, Decatur, GA 30033-4097 or call (404) 679-4500 for questions about the accreditation of Baylor College of Medicine. The commission should be contacted only if there is evidence that appears to support Baylor’s significant non-compliance with a requirement or standard.

**Public Safety**

The Texas Medical Center Police/Security Department provides the medical center campus with security patrol. Baylor College of Medicine’s Security Office is responsible for security within BCM. In accordance with the Jeanne Clery Disclosure of Campus Policy and Campus Crime Statistics Act (Clery Act), BCM issues an Annual Security Report which reflects campus crime statistics, policies, and safety information. All prospective students, faculty, or staff may view this report online at https://www.bcm.edu/about-us/our-campus/compliance/crime-reporting or by contacting a BCM security administrator at 713-798-3000.

**Baylor College of Medicine Diversity and Inclusion Policy**

Baylor College of Medicine fosters diversity among its students, trainees, faculty, and staff as a prerequisite to accomplishing our institutional mission, and setting standards for excellence in training healthcare providers and biomedical scientists, innovation, and providing patient-centered care.

- Diversity, respect, and inclusiveness create an environment that is conducive to academic excellence, and strengthens our institution by increasing talent, encouraging creativity, and enlarging a broader perspective.
- Diversity helps position Baylor to reduce disparities in health and healthcare access and to better address the needs of the community we serve.
- Baylor is committed to recruiting and retaining outstanding students, trainees, faculty, and staff from diverse backgrounds by providing a welcoming, supportive learning environment for all members of the Baylor community.

**Notice of Nondiscrimination**

Baylor College of Medicine is committed to a safe and supportive learning and working environment for its learners, faculty and staff. College policy prohibits discrimination on the basis of race, color, age, religion, gender, gender identity or expression, sexual orientation, national origin, veteran status, disability or genetic information. Harassment based on any of these classifications is a form of discrimination and also violates College policy (02.2.25, 02.2.26) and will not be tolerated. In some circumstances, such discriminatory harassment also may violate federal, state or local law.
DISCOVER ALL WE HAVE TO OFFER

Baylor College of Medicine Graduate School of Biomedical Sciences provides the resources, opportunities, research environment, support, mentorship, and education you need to reach your full potential as a scientist, a professional, and an individual.

We are renowned for our collaborative and innovative research environment. Located in the heart of the Texas Medical Center - the world’s largest medical complex - we prepare students to shape the future of biomedical sciences.

BAYLOR COLLEGE OF MEDICINE
GRADUATE SCHOOL OF BIOMEDICAL SCIENCES
BY THE NUMBERS

STUDENTS
613 NUMBER OF STUDENTS
409 DOMESTIC (After the state of Texas the largest groups are from California and New York)
204 INTERNATIONAL (After the U.S. the largest groups are from China, India, and Taiwan)
312 MALE
301 FEMALE
74 UNDERREPRESENTED IN SCIENCES

TIME TO DEGREE
5.94 years BCM AVERAGE

JOB PLACEMENT/ADVANCED TRAINING UPON GRADUATION*
71%
6% POSTDOCTORAL FELLOWSHIPS
4% MEDICAL SCHOOL AND/OR CLINICAL TRAINING
8% INDUSTRY/BUSINESS
11% ADMINISTRATION
71% ACADEMICS, FACULTY

* This data is for graduates from July 2016 through June 2017. Data was unavailable for 7% of graduates.
These numbers only tell a small part of the story. The true measure of our research is in its impact. For more than a century, BCM researchers have defined new fields of study, identified causes of diseases, developed new treatment and diagnostic tools, and blazed new trails for others to follow across many fields of biomedical research.

In 2016, *Nature* ranked Baylor College of Medicine as the second-fastest growing research institution in North America based on publications in high impact journals.

BCM is also ranked among the top 50 most innovative universities in the world. Building on our history of success in research, BCM is on a trajectory to reach new heights as one of the world’s leading centers for biomedical research. Join us!
A hundred years of achievement in biomedical research, exceptional scientists and trainees, and a resource-rich research enterprise create an outstanding environment for basic, clinical, and translational research. A few examples of recent findings are highlighted here.

A. This mosaic montage of still images of live natural killer (NK) cells from the human immune system shows the cells preparing to deliver a lethal strike to diseased cells. The NK cells’ skeleton of microtubules is shown in green fluorescent color. NK cells, the first responders to viral infections, use this cytoskeleton to mobilize and deliver the toxic content of lytic vesicles (here colored in red) into cells either infected by viruses or transformed during cancer progression, in order to destroy them. 

*Courtesy of Dr. Jordan Orange.*

B. A Drosophila motor neuron expressing normal human ATAD3A gene. Neurons are labeled in blue. Boutons, areas of synapsis between neurons and muscles, are in bright pink. Mitochondria are labeled in green. 

*Courtesy of Dr. Hugo Bellen.*

C. Neurons and their connections are visualized in blue/green colors in this image of a section of the hippocampus from a mouse model of juvenile Batten disease. The red dots mark the aberrant proteolipid storage that characterizes the disease. 

*Courtesy of Dr. Marco Sardiello.*

--Andrew Lopez, Graduate Student and Officer in the Association of Graduate Student Diversity

DISCOVER THE LATEST RESEARCH ADVANCES FROM BAYLOR COLLEGE OF MEDICINE. FOLLOW OUR RESEARCH BLOG AT https://fromthelabs.bcm.edu
RESEARCH RESOURCES TO SUPPORT YOUR SUCCESS

As a student of the Baylor College of Medicine Graduate School of Biomedical Sciences, you will leverage the resources from one of the nation’s preeminent research institutions in the world’s largest medical complex. Exceptional facilities available at Baylor College of Medicine include:

advanced technology core laboratories that provide state-of-the-art instrumentation and technologies as well as consultation on experimental design, data analysis, and training. Through the cores, students not only gain access to tools and techniques that support cutting-edge research, they also receive training and mentorship in how to leverage these tools to develop innovative approaches to scientific challenges.

- Advanced MR Imaging
- Antibody-Based Proteomics
- BioEngineering
- Biostatistics and Informatics
- Cell-Based Assay Screening
- Cytometry and Cell Sorting
- Drug Discovery
- Genetically Engineered Mouse
- Gene Vector
- Genomic and RNA Profiling
- Human Stem Cell
- Human Tissue Acquisition and Pathology
- Integrated Microscopy
- Mass Spectrometry Proteomics
- Metabolomics
- MHC Tetramer
- Mouse Embryonic Stem Cell
- Mouse Metabolism
- Mouse Phenotyping
- Optical Imaging and Vital Microscopy
- Patient-Derived Xenograft & Advanced In Vivo Models
- Population Sciences Biorepository
- Protein & Monoclonal Antibody Production
- RNA In Situ Hybridization
- Single Cell Genomics
- Small Animal MRI

Advanced Technology Cores support cutting-edge research including the work represented by these images.

A. 3D reconstruction of a natural killer cell. This image highlights the abundance of actin branches and uses false colors to represent the height of the structures.

B. Immunofluorescence staining of porcine cardiac fibroblasts that were transduced with lentivirus co-expressing GFP and co-cultured with mouse cardiomyocytes.

C. Browser representation of mCG density in the adult mouse brain (black). Shown are ChIP-seq profiles for MeCP2, a methyl-CpG binding protein, from pluripotent ES cells (green), adult mouse brain (blue) and adult mouse hypothalamus (red).
COLLABORATIVE CENTERS
Through building relationships among BCM researchers and colleagues throughout the Texas Medical Center and beyond and providing critical infrastructure, numerous BCM research centers create dynamic environments in which faculty and students collaborate across traditional scientific divides. Many graduate school faculty are members of these centers, facilitating participation by students in center research and activities. Seminars and workshops organized by research centers are open to graduate students, providing additional opportunities to learn from and network with leading scientists from BCM and around the world.

BCM RESEARCH CENTERS INCLUDE:

- Alkek Center for Metagenomics and Microbiome Research
- Cardiovascular Research Institute
- Center for Drug Discovery
- Center for Cell and Gene therapy
- Dan L Duncan Comprehensive Cancer Center
- Dan L Duncan Institute for Clinical and Translational Research
- Huffington Center on Aging
- Human Genome Sequencing Center
- Stem Cells and Regenerative Medicine Center
- The Computational and Integrative Biomedical Research Center

FOR MORE INFORMATION ON RESEARCH RESOURCES VISIT www.bcm.edu/research

Due to the resources available in the Texas Medical Center, I believe my research has no limitations. Beyond the physical resources such as the flow and microscopy cores, the knowledge resources at my fingertips have moved my research forward. My project, focused on designing chimeric antigen receptors, was completely new to the small laboratory in which I chose to work. A quick search of BCM resources led me to the Center for Cell and Gene Therapy where experts trained me on techniques and thought processes necessary for my work. They say it takes a village. The Texas Medical Center provides that village.

– ANISHA MISRA, GRADUATE STUDENT
LEARN WITH EXPERTS

Immersed in the field they are teaching, Baylor College of Medicine faculty members draw from the knowledge they glean in their own labs and the latest publications to discuss current advances in the course's subject.

The core curriculum provides a foundation of knowledge for students who come from varying backgrounds. This foundation supports students as they move on to program-specific courses that delve deeply into field-specific content.

Most students complete the required course in their first year, which frees time throughout the rest of the program to focus on their research while also attending journal clubs, seminars, and workshops in topics related to their field. In addition to attending program-based offerings, graduate students are able to take advantage of the many lectures and seminars presented in the Texas Medical Center by world-renowned leaders in diverse fields.

I came to graduate school to do research. So one year of classes was great. It is a difficult year, but it is really worth it and it is amazing the amount of information you learn in that time.

— MARAN SPROUSE, GRADUATE STUDENT

Students have many opportunities to present their work at on-campus events as well as at local, national, and international scientific meetings.

OPPORTUNITIES TO MATCH YOUR GOALS

Enrolling in the Baylor College of Medicine Graduate School of Biomedical Sciences opens doors to educational opportunities both within the College and with other outstanding institutions and allows our students to customize their training to fit their individual career goals. You may choose to gain teaching experience, complete an internship, work with young students, or take courses at other institutions.
Run by graduates students for graduate students, the First-Year Initiative helps new students transition into and thrive in graduate school by providing a peer-mediated support network. Orientation and social events help students become familiar with the campus and Houston. These events also help new students begin to build their support network as they meet fellow students who are just starting out as well as those further along in their education. Graduate students serve as mentors to new students, reaching out to them throughout their first year to answer questions about school or life in general.

As part of Team Launch, students have the opportunity to work on real-world scientific challenges as members of a team. In 2017, students presented the results of their project focused on bringing a promising cancer therapy to market.

We of course have great classes that teach us about science and everything you need to know to be a great scientist. But, one of the strengths of BCM that puts it above anywhere else is how much emphasis there is on learning to present well and write well.

— MARISSA SCAVUCCO, GRADUATE STUDENT

TEAM LAUNCH: TEAMWORK SKILL FOR CAREER SUCCESS

Team Launch provides innovative, interdisciplinary learning opportunities that prepare students for careers in team-based science. The growing importance of team-based science in accelerating discovery is well documented. Research generated by scientific teams is cited more frequently and increasingly has more impact than contributions by solo investigators. For the more than 60 percent of new science Ph.D.s in the U.S. who go onto careers outside of academic research, team-based learning provide broadly applicable career skills. Team Launch ensures that Baylor graduates are well prepared and equipped with the tools needed to access careers of their choosing in important, often emerging, fields.

TEAM LAUNCH: TEAMWORK SKILL FOR CAREER SUCCESS

We of course have great classes that teach us about science and everything you need to know to be a great scientist. But, one of the strengths of BCM that puts it above anywhere else is how much emphasis there is on learning to present well and write well.

— MARISSA SCAVUCCO, GRADUATE STUDENT

FIRST YEAR INITIATIVE

Run by graduates students for graduate students, the First-Year Initiative helps new students transition into and thrive in graduate school by providing a peer-mediated support network. Orientation and social events help students become familiar with the campus and Houston. These events also help new students begin to build their support network as they meet fellow students who are just starting out as well as those further along in their education. Graduate students serve as mentors to new students, reaching out to them throughout their first year to answer questions about school or life in general.
When selecting where to pursue your doctoral degree, you are choosing your professional and personal home for the next several years. As with any home, location is the key. Baylor College of Medicine’s location is ideal for anyone wishing to pursue a career in biomedical sciences while maintaining a high quality of life.

A LEADING HEALTH SCIENCES UNIVERSITY
Baylor College of Medicine is home to researchers, clinicians, and educators dedicated to improving lives for individuals and communities locally and globally. The healthcare, education, and research programs of BCM consistently rank among the best in the nation. The College’s students and faculty receive numerous prestigious awards and honors for their contributions.

BCM fosters diversity among its students, trainees, faculty, and staff. In the AAMC Diversity Engagement Survey, BCM’s community ranked in the top third among institutions for having an inclusive environment.

Houston has one of the largest numbers of diverse activities to pursue of any city. I have enjoyed going to city parks, the theater, professional sporting events, historical sites, the symphony, camping, food trucks, dance performances, and more, much of it presented free at Hermann Park next to the medical center. All of this is available in the cost-friendliest top 10 city in the United States.

THE WORLD’S LARGEST MEDICAL COMPLEX
Along with Baylor College of Medicine, many of the top-ranked research and clinical institutions in the nation are members of the Texas Medical Center, including:

- Baylor St. Luke’s Medical Center
- MD Anderson Cancer Center (the world’s largest cancer hospital)
- Rice University
- Texas Children’s Hospital (the world’s largest children’s hospital)
- Texas Heart Institute

The exceptional size and scope of the TMC biomedical research community creates unique opportunities to leverage resources as well as the talents and experience of faculty, staff, and students. The culture and environment of a large medical center provide students with opportunities to obtain education and practical experience in both basic and applied research.

TMC FACTS

- 50 MILLION DEVELOPED SQUARE FEET
- 8TH LARGEST BUSINESS DISTRICT IN THE U.S.
- 10 MILLION PATIENT VISITS PER YEAR
- 180,000+ SURGERIES ANNUALLY
- $3 BILLION IN CONSTRUCTION PROJECTS IN PROGRESS
- 106,000+ EMPLOYEES
THE CITY OF HOUSTON

We’ve discovered that many people who have never been to Houston have some preconceived notions about the city that are, well, just plain wrong.

HOUSTON FACTS & FIGURES

1ST AMONG NATION’S 10 MOST POPULOUS CITIES IN TOTAL ACREAGE OF PARK LAND

3RD LARGEST CONCENTRATION OF FORTUNE 1000 COMPANIES IN THE U.S.

4TH LARGEST CITY IN U.S.: 2.3 MILLION RESIDENTS

25.9% BELOW THE AVERAGE COST OF LIVING IN THE 20 MOST POPULOUS U.S. CITIES

60 DEGREE GRANTING COLLEGE, UNIVERSITIES, AND TECHNICAL SCHOOLS

145+ LANGUAGES SPOKEN

500+ INSTITUTIONS DEVOTED TO PERFORMING AND VISUAL ARTS, HISTORY, AND SCIENCE

THE MOST DIVERSE LARGE METROPOLITAN AREA IN THE U.S.

PLENTY OF OPTIONS TO OCCUPY YOUR FREE TIME:

• Professional, collegiate, and recreational sports leagues
• Theater, ballet, concerts, opera, and museums
• Nightlife options around town
• Shopping galore
• 350 parks; 95 miles of nature, hiking, and bike trails; and three state parks nearby
• More than 10,000 restaurants representing 70 countries and U.S. regions
• Water recreation within a short drive (Galveston beaches, Clear Lake, Lake Conroe, and Lake Livingston)

BOTTOM LINE: IT’S A GREAT PLACE TO LIVE, LEARN, WORK, PLAY, AND RAISE A FAMILY.

“I went from Brazil to Washington, D.C. and from Washington to Texas. Because of the southern hospitality, the way people treat you, how open things are, and how diverse Houston is, it was a fairly easy transition. I love this place!”

— Wanderson Rezende, Graduate Student
From the beginning, we encourage students to think deeply about their career choices.

Many students begin a Ph.D. program envisioning a lifetime spent in an academic lab. If this is your goal, your mentors and faculty at BCM will help you realize your dream and follow in the footsteps of hundreds of our alumni who hold faculty and leadership positions at prestigious academic centers around the world.

For a growing number of Ph.D. graduates, career ambitions lie along alternate pathways in business, industry, consulting, law, and more. Wherever your ambition leads, you will receive the support you need to follow a path well worn by BCM alumni who have built successful careers across diverse endeavors.

The quality of training I received at BCM helped me to successfully compete for one of the first NIH Director’s Early Independence Awards, which allow graduates to bypass traditional postdoctoral training to pursue independent research. Although this award was transportable, I chose to stay at BCM because the resources available to pursue my interests were unparalleled. I realized that by choosing to stay I would be taking the right step forward in establishing my career as an independent investigator in a very supportive environment.

— RODNEY C. SAMACO, PH.D.
ALUMNUS
DIRECTOR OF THE BCM INTELLECTUAL AND DEVELOPMENTAL DISABILITIES RESEARCH CENTER NEUROBEHAVIORAL CORE IN THE JAN AND DAN DUNCAN NEUROLOGICAL RESEARCH INSTITUTE
INDIVIDUAL DEVELOPMENT PLAN
Every graduate student has an Individual Development Plan (IDP). The IDP enables each of our trainees to identify professional goals that match their interests and values for the purpose of developing the appropriate career-specific skills. The creation and regular review of the IDP encourages discussions between students and mentors about career goals early in the training process and implements a course of action to achieve these goals.

CAREER DEVELOPMENT CENTER
Our Career Development Center works with students at every stage of their education to help them explore options and learn about different career paths. Through affiliations and connections with institutions and companies throughout the Houston area and beyond, the center staff, as well as faculty and leadership at BCM, help students find opportunities to gain experience and build connections that match their career interests.

NETWORKING
Student organizations such as the Consulting Club, the STEM Education Interest Group, and the Association of Women in Science provide opportunities for students to learn about careers and network with individuals with shared interests. Institutional entities, including the BCM Innovations Development Center and the TMC Innovation Institute, host programs and seminars that connect students with individuals working in a variety of fields.

“...My training at BCM was translational and revolutionary in several ways. Not only was I on the cutting-edge of Alzheimer’s research, but I was also able to see firsthand in the clinic how experiments that I was running on the bench were directly translated to the bedside. This training is serving me exceptionally well as I look to build an innovative research program incorporating both clinical and non-clinical research collaborations.”
— TABASSUM MAJID, PH.D.
ALUMNA
DIRECTOR OF RESEARCH, INTEGRACE INSTITUTE AT COPPER RIDGE
I chose Baylor College of Medicine because it offers a combination of opportunity and affordability that is unmatched by other options for my graduate training. The collaborative culture was also one of the key attributes that drove me to choose BCM. My colleagues and I have ongoing projects with labs from across the hall to around the world. These relationships are essential for networking and exploring future opportunities in ways that would not be possible without support of collaborative efforts at all levels of the institution.

— PATRICK MITCHELL, GRADUATE STUDENT

BENEFITS

At BCM we are focused on you and your training. If your vision for your future includes teaching, you may choose to gain experience as a teaching assistant for graduate courses as well as through other opportunities available to our students. If you do not want to teach, you have the freedom to focus exclusively on your education and research as well as to work with your mentors to take advantage of other BCM resources that match your career interests.

Students receive:
$32,000 stipend in 2018/19
Health and dental insurance
Students do not pay tuition.

Students who successfully compete for outside funding receive a $3,000 bonus.*

Baylor College of Medicine provides academic and support services to promote academic excellence, health and wellness, and student engagement.

FOR A FULL LISTING OF ACADEMIC AND SUPPORT SERVICES, VISIT
www.bcm.edu/student-services

* Baylor College of Medicine reserves the right to increase, decrease, or alter benefits. Up-to-date information on benefits is provided at www.bcm.edu/gradschool.
We look at every applicant as a whole person, not a collection of statistics. We search out students who are pursuing science because their interest in it is so strong they cannot imagine doing anything else.

Of course we look at your GPA and test scores. But, these are not the primary factors we value in our students. So what are we looking for?

Research Experience
Motivation
Commitment
Diversity

Applicants are encouraged to select both a first-and second-choice program. If the first program you list is unable to accept your application, it will automatically be sent to the second for consideration.

“I had a really positive interview experience. I met with a lot of faculty members. What stood out to me was not only were they outstanding scientists, but they were also friendly, approachable and they had a strong sense of collaboration amongst themselves and with researchers at other institutions.”

— GREG CALL, GRADUATE STUDENT

**IMPORTANT DATES**

**SEPT. 1** ................. FREE APPLICATION SYSTEM OPENS.

**JAN. 1** ................. APPLICATION DEADLINE. Applications received by **Dec. 1** will be considered for early review and are strongly encouraged. Late applications will be considered on a space-available basis.

**FEB./MARCH** ............ INTERVIEWS ARE HELD BY INDIVIDUAL PROGRAMS.

**FEB./MARCH/APRIL** ...... ADMISSION OFFERS ARE EXTENDED.

**APRIL 15** ................. FINAL DECISIONS BY STUDENTS TO ACCEPT AN OFFER.

TO BEGIN YOUR APPLICATION, VISIT https://education.bcm.edu/gsbs/admissions
There are more than 600 students and 540 faculty members within the graduate school, providing a diverse array of potential colleagues, mentors, and advisors.

But no need to worry that you will be lost in the crowd. Our 12 graduate programs provide each student a smaller community within the whole.

While strongly grounded in BCM’s collaborative, innovative culture, each program has its own personality and unique offerings.

Many of our renowned faculty members participate in more than one graduate program. Therefore, you are encouraged to consider both the individual faculty members and the program as a whole to find the right fit for you. Explore each program on our website and contact program leadership for more information to help you select your first and second choice before you apply.

PROGRAM HIGHLIGHTS: Our faculty members form a close-knit community of interactive investigators with links to a dozen other departments and programs at Baylor College of Medicine. During the first year, students pursue a flexible curriculum, tailored to meet their own educational interests and needs. At the same time, BMB students rotate through as many as five different laboratories to gain hands-on research experience. We also offer a specialized track in biophysics for students with a strong interest in biophysics, computational, and structural biology. BMB trains students through program-specific activities, including a specialized course to develop abilities in critical thinking, analytical reasoning, and scientific writing; a student seminar series, with individual mentoring, to improve communication skills; a two-day annual retreat; and other informal discussions of research ideas in a critical and constructive, yet friendly environment. From the beginning, students are encouraged to think deeply about their career choices, with discussions, individual development plans, and student-oriented career seminars.
DEVELOPMENTAL BIOLOGY

54 STUDENTS

RESEARCH AREAS: developmental biology, neurobiology, stem cell biology, cell division and cancer biology, aging, neurodegenerative and metabolic human diseases, reproductive biology, molecular basis of human disease, and cell lineage specification and differentiation.

PROGRAM HIGHLIGHTS: The Developmental Biology Graduate Program is an interinstitutional and interdepartmental program with faculty from Baylor College of Medicine, the University of Texas MD Anderson Cancer Center and Health Science Center, and Rice University, all within easy walking distance. The program provides a wide spectrum of exciting research possibilities and broad cross-disciplinary training. In order to understand complex biological processes, DB laboratories employ molecular biology, cell biology, biochemistry, imaging, physiology, genetics, and genomics. The DB labs use organisms as diverse as social molds, worms, flies, frogs, chickens, fish, mice, and humans. The training allows DB students to unravel principles and mechanisms that guide embryonic development, the maintenance and differentiation of stem cells, the differentiation of adult cell types, regeneration of organs and tissues, and the mechanisms underlying aging and neurodegeneration. The average number of publications per graduate student is above five, with an average of more than two first-author papers. More than 50 percent of DB graduates are principal investigators of research labs all around the world.

IMMUNOLOGY PROGRAM

23 STUDENTS

RESEARCH AREAS: autophagy, hematopoietic stem, dendritic, natural and T killer cells including mechanisms of the immune synapse; airway inflammatory diseases, including COPD, asthma and lung cancer; autoimmunity, including diabetes, lupus, elastic tissue diseases, and multiple sclerosis; immunodeficiency; immunotherapy of cancer, infectious disease, and vaccines; and inflammatory responses to the microbiome.

PROGRAM HIGHLIGHTS: Our intent is to develop highly successful scientists. The program is organized through the Department of Pathology & Immunology but students work with highly collaborative faculty from more than six basic science and clinical departments. Immunology solves molecular, cellular, and translational problems related to recognition of and response to safe and dangerous cells and organisms and mechanisms of acquired and innate immune memory. Student projects range from a focus on molecular mechanisms to in-bed therapies. Students develop a sophisticated understanding of molecular and translational immunology problems and techniques, logic and skills for critiquing and presenting research, and approaches to translating knowledge into successful grant proposals. Qualifying exams are based on students’ proposed research, and qualified students can be funded through a training grant. Some students elect to have two official mentors who serve complementary functions in guiding them throughout their training.

73 FACULTY

62 FACULTY
## INTEGRATIVE MOLECULAR AND BIOMEDICAL SCIENCES

### MOLECULAR AND CELLULAR BIOLOGY

**Research Interests:** bioinformatics, cancer biology (breast, ovary, prostate), developmental biology, diabetes, endocrinology, gene expression, gene therapy, hormone action, molecular genetics, neurobiology, proteomics, reproductive medicine, stem cell biology, and translational biology.

**Program Highlights:** Our program is based in the Department of Molecular and Cellular Biology, which is ranked among the top departments in the country in funding from the National Institutes of Health in this discipline. The department is recognized internationally for research in regulation of gene expression, hormone action, cancer biology, molecular genetics, gene therapy, and reproductive medicine. It occupies extensive, modern facilities that are generously equipped with a full range of instrumentation, including state-of-the-art imaging and proteomics, required for research in cellular, molecular, developmental, and endocrine biology. The high level of cooperation among the various departments and centers at the College and other institutions in the Houston scientific community provide additional facilities and interactions that enhance the research of our students. Our annual Graduate Student Symposium provides an opportunity for students to showcase their research projects. The department hosts a Distinguished Guest Lecture Series through which leading scientists from around the world present their work and meet with students for dinner and discussion. Our faculty take a keen interest in our graduate students, their development as research scientists, and their future career options.

### INTEGRATIVE MOLECULAR AND BIOMEDICAL SCIENCES

<table>
<thead>
<tr>
<th>STUDENTS</th>
<th>FACULTY</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>94</strong></td>
<td><strong>140</strong></td>
</tr>
</tbody>
</table>

**Research Interests:** bioinformatics, cancer biology (breast, ovary, prostate), developmental biology, diabetes, endocrinology, gene expression, gene therapy, hormone action, molecular genetics, neurobiology, proteomics, reproductive medicine, stem cell biology, and translational biology.

**Program Highlights:** Our program is based in the Department of Molecular and Cellular Biology, which is ranked among the top departments in the country in funding from the National Institutes of Health in this discipline. The department is recognized internationally for research in regulation of gene expression, hormone action, cancer biology, molecular genetics, gene therapy, and reproductive medicine. It occupies extensive, modern facilities that are generously equipped with a full range of instrumentation, including state-of-the-art imaging and proteomics, required for research in cellular, molecular, developmental, and endocrine biology. The high level of cooperation among the various departments and centers at the College and other institutions in the Houston scientific community provide additional facilities and interactions that enhance the research of our students. Our annual Graduate Student Symposium provides an opportunity for students to showcase their research projects. The department hosts a Distinguished Guest Lecture Series through which leading scientists from around the world present their work and meet with students for dinner and discussion. Our faculty take a keen interest in our graduate students, their development as research scientists, and their future career options.

**STUDENTS** | **FACULTY**
---|---
**94** | **140**
Molecular and Human Genetics

**Research Areas:** genetic basis of human disease, genomics and personalized medicine, bioinformatics, epigenetics, the principles of DNA replication, recombination and repair, aging, cancer, development, learning, memory, social behavior, neurodevelopment, and neurogenetic disorders.

**Program Highlights:** We have consistently ranked first in total NIH funding and number of grants for genetics departments. Our faculty includes members of the National Academy of Sciences, the National Academy of Medicine, and Howard Hughes Medical Institute Investigators. A variety of model organisms are used, from E. coli, yeast, and Dictyostelium to flies, mice, and human cells, and we have a strong research program in bioinformatics and genomics. As global leaders in the translation of genomic technologies to clinical diagnostics, and with 80,000 tests performed per year, our students witness the tremendous impact of these technologies on the evaluation of Mendelian disorders and can apply this information in their research. Students may elect to join the Bioinformatics, Genomics, and Systems Biology Track (BiGSB). The department also sponsors an annual two-day research retreat where faculty, students, and postdoctoral trainees present and discuss their research in an informal and interactive atmosphere.

<table>
<thead>
<tr>
<th>Students</th>
<th>Faculty</th>
</tr>
</thead>
<tbody>
<tr>
<td>87</td>
<td>76</td>
</tr>
</tbody>
</table>

Molecular Physiology and Biophysics

**Research Areas:** biophysics and bioengineering, cardiovascular sciences, metabolism, neural and muscle physiology, and physiology of cancer.

**Program Highlights:** The Molecular Physiology and Biophysics Graduate Program trains students to investigate how fundamental cellular processes impact the health of the organism as a whole. Our mission is to employ innovative basic science to inform and facilitate real-life clinical interventions that will improve human health. The program’s training laboratories leverage a broad range of molecular, genetic, biochemical, biophysical, and genomic approaches in both cellular and animal models of human disease. Within this context, we strongly emphasize personalized training and academic mentoring, and provide a flexible curriculum designed to tailor the development of students toward their ultimate career of choice. Students with interests outside of traditional academic research can benefit from internships with local biotechnology companies and interactions with the Baylor Licensing Group, the Dan L Duncan Institute for Clinical and Translational Research, and the Texas Medical Center Accelerator. Our graduates routinely publish in top scientific journals, receive competitive grants and fellowships, and enter a wide variety of satisfying careers.

<table>
<thead>
<tr>
<th>Students</th>
<th>Faculty</th>
</tr>
</thead>
<tbody>
<tr>
<td>21</td>
<td>63</td>
</tr>
</tbody>
</table>
NEUROSCIENCE

RESEARCH AREAS: cell and molecular neuroscience; computational and systems neuroscience; sensory processing; neural mechanisms of perception, learning, memory, and attention; neural development and regeneration; new technologies to observe and manipulate neural activity; use of modern techniques of functional magnetic neuroimaging, transcranial magnetic stimulation, and two-photon microscopy.

PROGRAM HIGHLIGHTS: Our program provides students with a broad background in modern neuroscience while also encouraging them to think deeply about the specialized topic of their dissertation research. Coursework exposes students to the multidisciplinary nature of this field, covering molecular genetics, cellular biology, electrophysiology, biophysics, behavior, and computation. In addition to more than 20 primary faculty, our secondary faculty hail from both basic science and clinical departments across the College. The department is further strengthened by interactions with other institutions in the Texas Medical Center. Our state-of-the-art resources include the Core for Advanced Magnetic Resonance Imaging, the Memory and Brain Research Center, and the Bioengineering Core. Collectively, our faculty rank among the top 10 U.S. neuroscience departments in funding from the National Institutes of Health.

MOLECULAR VIROLOGY AND MICROBIOLOGY

25 STUDENTS

RESEARCH AREAS: viral and microbial pathogenesis; viral oncology; vaccine development and evaluation; antibiotic resistance; host response to infection; human microbiome, metagenomics, microbial genomics and proteomics; blood borne infections: HIV and hepatitis; emerging infectious diseases; viral gastroenteritis: rotavirus and norovirus; biodefense agents: tularemia and anthrax; transcriptional and translational regulation.

PROGRAM HIGHLIGHTS: The Molecular Virology and Microbiology Graduate Program allows students to pursue interests in both basic and translational aspects of the microbial sciences and infectious diseases. Research interests of the MVM faculty span a wide range of microbiological topics, including genomics, pathogenesis, replication, structure, immunology, antibiotic resistance, host response to infection of viruses and bacteria, and the human microbiome and its role in health and disease. The MVM program places emphasis on research training and the development of critical skills necessary for a successful career in science. We strive to engage students in inquiry, to develop critical and creative thinking and analytical reasoning, and to improve communication skills. The student body is small so that student-faculty interactions are frequent and intense. Our students win prestigious awards and publish in the top peer-reviewed journals.

39 FACULTY

25 STUDENTS

21 39
PHARMACOLOGY

RESEARCH AREAS: chemical biology; clinical pharmacology; computational biology; drug delivery; drug discovery; medicinal chemistry; molecular probe and sensing; molecular genetics and genomics; protein structure, function, and evolution; and psychopharmacology.

PROGRAM HIGHLIGHTS: Our program provides students with multidisciplinary training in modern pharmacology including biophysical analysis of proteins, chemical synthesis, combinatorial chemistry, structural biology, and protein design and engineering. The array of topics under investigation includes analysis of enzymes responsible for antibiotic resistance, study of the molecular basis of recognition in protein-protein interactions, identification of new anticancer agents from herbal medicine, design and development of small molecule inhibitors as treatments for infectious diseases and cancer, and the study of the regulation and targeting mechanisms of cGMP-dependent protein kinases. Graduates are equipped with the tools and knowledge required to attack the unsolved problems of human diseases through investigation of drug action, drug-resistance mechanisms, gene regulation, and the development of new drugs and approaches to these medical problems. The Department of Pharmacology and Chemical Biology holds monthly seminars and journal clubs as well as a joint annual retreat in Galveston, Texas with the Department of Biochemistry. The retreat is a blend of scientific and social activities.

QUANTITATIVE AND COMPUTATIONAL BIOSCIENCES

RESEARCH AREAS: structural and computational biology, data science, bioinformatics, cancer informatics, genome informatics, metabolomics and proteomics, microbiome, deep learning, computational neuroscience, membrane biophysics, computational biophysics and biochemistry of macromolecules, macromolecule design and engineering, chemical biology and drug discovery, systems biology, medical informatics and precision medicine.

PROGRAM HIGHLIGHTS: Our program brings together students and faculty from a variety of computational, physical, chemical, mathematical, statistical and engineering backgrounds to discover new biomedical knowledge and improve human health through quantitative modeling, advanced computing and data science. Our full-time faculty are drawn from members of basic and clinical science departments from seven institutions – Baylor College of Medicine, Methodist Research Institute, Rice University, University of Houston, University of Texas Health Science Center, University of Texas Medical Branch at Galveston, and University of Texas MD Anderson Cancer Center. Because of the interdepartmental and interinstitutional nature of the QCB program, students are able to take classes and work in any of our institutions. Through the program’s membership in the Keck Center of the Gulf Coast Consortia, students have numerous options for funding, including multiple training grants overseen by the Keck Center.
TRANSLATIONAL BIOLOGY AND MOLECULAR MEDICINE

63
STUDENTS

210
FACULTY

RESEARCH AREAS: The goal of this program is to develop a new biomedical workforce with firsthand experience in translational research and leadership training to serve as a catalyst between bench and bedside. Students work across a broad array of human diseases and research areas tied together through a consistent focus on translational biology.

PROGRAM HIGHLIGHTS: We provide a unique paradigm, designed to train Ph.D. and M.D./Ph.D. students to conduct research in translational and preclinical biology. Our faculty includes members of every department and research center at Baylor College of Medicine. The program facilitates interactions between graduate students, medical students, residents, postdoctoral fellows, and faculty. This is achieved through a number of unique program features including dual mentorship – every student has both a clinical and basic science mentor, Bench-to-Bedside Seminars focused on translational research, and participation by graduate students in clinical rounds and research projects. The course curriculum teaches cell, molecular and human biology, physiology, methods and logic for translational research, research ethics, regulatory aspects of clinical research, biostatistics, clinical research design, and leadership skills. The TBMM program was initially supported by the Howard Hughes Medical Research Institute Med into Grad Initiative and is now supported by a Molecular Medicine T32 training grant from the National Institute of General Medical Sciences.

PHYSICIAN-SCIENTIST TRAINING PROGRAMS

BCM offers two programs designed to prepare graduates with passions for discovery and patient care to become independent investigators in both basic research and clinical investigation.

THE MEDICAL SCIENTIST TRAINING PROGRAM (MSTP) provides integrated scientific and medical training leading to the dual M.D./Ph.D. degree to highly motivated students with outstanding research and academic potential seeking a career as a physician-scientist. Students complete the Ph.D. portion from among the diverse graduate program options at Baylor College of Medicine as well as Rice University Bioengineering Graduate Program.

THE CLINICAL SCIENTIST TRAINING PROGRAM, designed for junior faculty and senior residents or subspecialty fellows at Baylor College of Medicine, offers Ph.D. (for faculty only) and M.S. (for faculty and senior residents/fellows) degrees in clinical investigation.
I've been involved in Saturday Morning Science, a program aimed at inner city middle and high school students who are interested in science and medicine. Graduate and medical students mentor a small group of students throughout the program. The program is really valuable for the kids, but it’s also great leadership training for the graduate and medical students and helps us inspire the next generation of scientists and physicians.

— JESSICA SCOTT, GRADUATE STUDENT

DIVERSITY AND INCLUSION

We view fostering diversity and inclusion as a prerequisite to accomplishing our institutional mission and promoting scientific innovation. We are committed to recruiting students from diverse backgrounds by providing a welcoming, supportive learning environment for all members of our community.

Through the NIH Initiative for Maximizing Student Development (IMSD), BCM has received funding since 1998 to educate and train scientists from populations that have been traditionally underrepresented in the sciences. The IMSD at BCM offers comprehensive, individualized education, including a summer bridge program that provides individualized support for success, monthly Association of Graduate Student Diversity activities, an underrepresented scientist seminar series, and skills-building workshops to help you thrive, not just survive as a scientist. There are currently 74 underrepresented students in Ph.D and M.D./Ph.D. programs at BCM, as well as more than 120 Ph.D. and M.D./Ph.D. alumni. Our alumni have jobs in academia, industry, and other biomedical fields across the country.

Graduate students volunteer with Saturday Morning Science, engaging students from diverse backgrounds in science from an early age.

Through undergraduate programs and post-baccalaureate programs, BCM reaches out to students across the country to encourage individuals from groups underrepresented in science to pursue science as a career. The Summer Medical and Research Training (SMART) program and BCM PREP program provide opportunities for research-oriented individuals to gain valuable experiences in biomedical research in a supportive environment with supplemental educational activities. The Institutional Research and Academic Career Development Award (IRACDA) program is a combination of a traditional mentored postdoctoral research experience and an opportunity to develop teaching skills through mentored assignments at a minority-serving institution. The IRACDA program motivates the next generation of scientists at minority-serving institutions. Through inclusion of underrepresented post-doctoral fellows when possible, IRACDA provides excellent role models for undergraduates.

The Annual Diversity Admissions Symposium provides assistance to accomplished underrepresented in medicine and science (URMS) and other “non-traditional” students from colleges and universities across Texas interested in applying to graduate or professional programs.

LEARN MORE AT
www.bcm.edu/diversityprograms
“Wow! Everyone here is really intense.” We hear this pretty frequently from prospective students. It is true. Our faculty, staff, and students work hard. They talk about their work with passion. But, our intensity is not limited to the laboratory and work.

We have similar intensity about other facets of our lives as well. Whether raising a family, honing musical or artistic talents, competing in sports, or leading community service initiatives, all your interests and commitments that make you a better human being, also make you a better scientist.

It has been very rewarding to see ideas sponsored by the Graduate Student Council result in positive changes for students. More than anything else, I think serving on the Graduate Student Council has taught me to be organized and efficient with my time and the time of those working with me. I believe those skills will be critical as I progress in my scientific career.

– CAMERON LANDERS, M.D./PH.D. STUDENT
PRESIDENT OF THE GRADUATE STUDENT COUNCIL
ABOUT BAYLOR COLLEGE OF MEDICINE

MISSION
Baylor College of Medicine is a health sciences university that creates knowledge and applies science and discoveries to further education, healthcare and community service locally and globally.

VISION
Improving health through science, scholarship and innovation.

VALUES
Respect
Integrity
Innovation
Teamwork
Excellence

BCM SCHOOLS
In addition to the Graduate School of Biomedical Sciences, Baylor College of Medicine includes:

SCHOOL OF MEDICINE:
Ranked 21st for research and 8th for primary care by U.S. News & World Report, Baylor College of Medicine’s School of Medicine is the least expensive private medical school in the U.S. Exceptionally diverse clinical affiliates set BCM apart as a leader among the world’s best medical schools.

Many clinician-scientists within the School of Medicine also serve on the faculty of the graduate school, bridging the clinic and the laboratory to provide graduate students with a clear perspective of the impact of their research on health.

SCHOOL OF ALLIED HEALTH SCIENCES:
At BCM, health professions education include genetic counseling, anesthesia, physician assistant, and orthotics and prosthetics.

The Doctor of Nursing Practice-Nurse Anesthesia program is ranked second in the nation and the Physician Assistant Program is ranked 13th in the nation by U.S. News & World Report.

NATIONAL SCHOOL OF TROPICAL MEDICINE:
Baylor is home to one of the first-of-its-kind schools in North America devoted to the neglected diseases that disproportionately afflict “the bottom billion,” the world’s poorest people.

Researchers from Tropical Medicine also serve on the faculty of the graduate school, through which students can conduct research on neglected tropical diseases.

Baylor College of Medicine is also co-owner of Baylor St. Luke’s Medical Center and Baylor Genetics.

I didn’t really know exactly what field I wanted to enter. So, I was looking for a school that had a lot of faculty that I could choose from. BCM had that. When I looked online there was just a really long list of people that were doing research I wanted to learn more about.

— KASSIE MANNING, GRADUATE STUDENT
TABLE OF CONTENTS

4 IMPACTFUL RESEARCH
6 RESEARCH RESOURCES TO SUPPORT YOUR SUCCESS
8 LEARN WITH EXPERTS
10 LOCATION, LOCATION, LOCATION
12 WHERE WILL A BCM PH.D. TAKE YOU?
14 BENEFITS
15 ADMISSIONS
16 FIND YOUR FIT
24 DIVERSITY AND INCLUSION
25 LIFE BEYOND THE LABORATORY

Accreditation
Baylor College of Medicine is accredited by the Southern Association of Colleges and Schools Commission on Colleges to award masters and doctoral degrees. Contact the Commission on Colleges at 1866 Southern Lane, Decatur, GA 30033-4097 or call (404) 679-4500 for questions about the accreditation of Baylor College of Medicine. The commission should be contacted only if there is evidence that appears to support Baylor’s significant non-compliance with a requirement or standard.

Public Safety
The Texas Medical Center Police/Security Department provides the medical center campus with security patrol. Baylor College of Medicine’s Security Office is responsible for security within BCM. In accordance with the Jeanne Clery Disclosure of Campus Security Policy and Campus Crime Statistics Act (Clery Act), BCM issues an Annual Security Report which reflects campus crime statistics, policies, and safety information. All prospective students, faculty, or staff may view this report online at https://www.bcm.edu/about-us/our-campus/compliance/crime-reporting or by contacting a BCM security administrator at 713-798-3000.

Baylor College of Medicine Diversity and Inclusion Policy
Baylor College of Medicine fosters diversity among its students, trainees, faculty, and staff as a prerequisite to accomplishing our institutional mission, and setting standards for excellence in training healthcare providers and biomedical scientists, innovation, and providing patient-centered care.

- Diversity, respect, and inclusiveness create an environment that is conducive to academic excellence, and strengthens our institution by increasing talent, encouraging creativity, and enabling a broader perspective.
- Diversity helps position Baylor to reduce disparities in health and healthcare access and to better address the needs of the community we serve.
- Baylor is committed to recruiting and retaining outstanding students, trainees, faculty, and staff from diverse backgrounds by providing a welcoming, supportive learning environment for all members of the Baylor community.

Notice of Nondiscrimination
Baylor College of Medicine is committed to a safe and supportive learning and working environment for its learners, faculty and staff. College policy prohibits discrimination on the basis of race, color, age, religion, gender, gender identity or expression, sexual orientation, national origin, veteran status, disability or genetic information. Harassment based on any of these classifications is a form of discrimination and also violates College policy (02.2.25, 02.2.26) and will not be tolerated. In some circumstances, such discriminatory harassment also may violate federal, state or local law.