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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

<table>
<thead>
<tr>
<th>623</th>
<th>NUMBER OF STUDENTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>417</td>
<td>DOMESTIC (After the state of Texas the largest groups are from California and New York)</td>
</tr>
<tr>
<td>206</td>
<td>INTERNATIONAL (After the U.S. the largest groups are from China, India, and Taiwan)</td>
</tr>
<tr>
<td>313</td>
<td>MALE</td>
</tr>
<tr>
<td>310</td>
<td>FEMALE</td>
</tr>
<tr>
<td>74</td>
<td>UNDERREPRESENTED IN SCIENCES</td>
</tr>
</tbody>
</table>

TIME TO DEGREE

6 years BCM AVERAGE

JOB PLACEMENT/ADVANCED TRAINING UPON GRADUATION*

- 66%
- 5%
- 5%
- 9%
- 3%
- 12%

* This data is for graduates from January 2015 through June 2016. Data was unavailable for 10% of graduates.
IMPACTFUL RESEARCH

FACTS

$376.8 million total research funding

20th rank in NIH funding to medical schools

8 top 10 departments in NIH funding

>1 million square feet of basic science and computational research space on main campus

250,000 square feet of basic and clinical research space throughout Texas Medical Center occupied by BCM faculty and staff

9 members of the National Academy of Sciences

13 members of the National Academy of Medicine

12 fellows of the American Association for the Advancement of Science

41 national career development awards

Theses 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 exceptional environment for basic, clinical, and translational research. A few examples of recent findings are highlighted here.

A. A heart-shaped aggregate of microparticles, which were formulated for the development of a vaccine against Chagas disease at the Sabin Vaccine Institute and Texas Children’s Hospital Center for Vaccine Development, National School of Tropical Medicine at BCM. Photo courtesy of Mr. Leroy Versteeg.

B. A team from the BCM Center for Genome Architecture demonstrated that by manipulating certain DNA motifs it is possible to destroy, move, and create new loops in the genome. Photo courtesy of the laboratory of Dr. Erez Lieberman Aiden.

C. This cryo-electron-microscopy image of the venezuelan equine encephalitis virus structure suggests mechanisms for nucleocapsid assembly, virulence attenuation, host recognition, and neutralization. Photo courtesy of Dr. Wah Chiu.

“ As the largest medical center in the world, the Texas Medical Center provides the ideal playground for forming clinical collaborations and bringing new technologies from bench-to-bedside. Where else could be better to conduct translational research?

– AMY HURWITZ
GRADUATE STUDENT
CO-FOUNDER OF ENVENTURE, A GRASSROOTS NON-PROFIT FOR MEDICAL ENTREPRENEURS THAT LISTENS TO THE COMMUNITY’S NEEDS, PUTTING STUDENTS AND ASPIRING ENTREPRENEURS FIRST.
(WWW.ENVENTURE.ORG)
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 MRI
Antibody-Based Proteomics
Bioengineering
Bioinformatics
Cell-Based Assay Screening
Cytometry and Cell Sorting
DNA Sequencing and Gene Vector
Drug Discovery
Genetically Engineered Mouse
Genomic and RNA Profiling
Human Stem Cell
Human Tissue Acquisition and Pathology
Integrated Microscopy
Mass Spectrometry Proteomics

Metabolomics
MHC Tetramer
Monoclonal Antibody/Recombinant Protein Expression
Mouse Embryonic Stem Cell
Mouse Metabolic Research
Mouse Metabolism
Mouse Phenotyping
Optical Imaging and Vital Microscopy
Population Biosciences Repository
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. Triple immunofluorescence of MCF7 breast cancer cells demonstrating marked cellular heterogeneity. Image from the Integrated Microscopy Core.

B. Time-lapse imaging showing vessel sprouting and fusion in E8.5 mouse yolk sacs from the Optical Imaging and Vital Microscopy Core.

C. RPPA analysis on 205 antibodies shows differential expression of a subset of proteins between stem cells and luminal cells. Image from the Antibody Based Proteomics Core.
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
LOCATION, LOCATION, LOCATION

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 in 2016.

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
- 8 MILLION PATIENT VISITS PER YEAR
- 180,000+ SURGERIES ANNUALLY
- $3 BILLION IN CONSTRUCTION PROJECTS IN PROGRESS
- 106,000+ EMPLOYEES

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.

– TRACE STAY GRADUATE STUDENT
A VIBRANT CITY
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.

HOME TO THE 2ND LARGEST CONCENTRATION OF FORTUNE 1000 COMPANIES IN THE U.S.

OVER 145 LANGUAGES SPOKEN.

MORE THAN 500 INSTITUTIONS DEVOTED TO PERFORMING AND VISUAL ARTS, HISTORY, AND SCIENCE.

60 DEGREE GRANTING COLLEGE, UNIVERSITIES, AND TECHNICAL SCHOOLS.

12% BELOW THE NATIONAL AVERAGE FOR COST OF LIVING.

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

CONSISTENTLY RANKED AMONG MOST DIVERSE CITIES IN U.S.

PLENTY OF OPTIONS TO OCCUPY YOUR FREE TIME:

- Professional, collegiate, and recreational sports leagues
- Nightlife options around town
- Theater, ballet, concerts, opera, and museums
- 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.
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 identifying and 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
ADMISSIONS

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.

IMPORTANT DATES

<table>
<thead>
<tr>
<th>Date</th>
<th>Event</th>
</tr>
</thead>
<tbody>
<tr>
<td>SEPT. 1</td>
<td>FREE APPLICATION SYSTEM OPENS.</td>
</tr>
<tr>
<td>JAN. 1</td>
<td>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.</td>
</tr>
<tr>
<td>FEB./MARCH</td>
<td>INTERVIEWS ARE HELD BY INDIVIDUAL PROGRAMS.</td>
</tr>
<tr>
<td>FEB./MARCH/APRIL</td>
<td>ADMISSION OFFERS ARE EXTENDED.</td>
</tr>
<tr>
<td>APRIL 15</td>
<td>FINAL DECISIONS BY STUDENTS TO ACCEPT AN OFFER.</td>
</tr>
</tbody>
</table>

TO BEGIN YOUR APPLICATION, VISIT https://education.bcm.edu/gsbs/admissions
There are over 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.

BIOCHEMISTRY AND MOLECULAR BIOLOGY

45 STUDENTS
48 FACULTY


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.

I plan to become a board certified laboratory geneticist. We have such a great genetics community, both clinical and research based. More than that, so many of the faculty truly wish to help students develop to be productive members of the research community, rather than just pushing you to finish whatever work it is you’re doing. They truly cared about my future plans and asked questions that directed me towards my end goals.

— MICHAEL DAVID FOUNTAIN, JR., PH.D.
RECENT GRADUATE
POST-DOCTORAL FELLOW AT BCM
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 Program in Developmental Biology 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.

68 FACULTY

IMMUNOLOGY PROGRAM

24 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.

62 FACULTY
INTEGRATIVE MOLECULAR AND BIOMEDICAL SCIENCES

95 STUDENTS

RESEARCH AREAS: biology of aging; cancer, cell cycle, and growth control; developmental biology; epigenetics/epigenomics; functional genomics/proteomics; gene expression and regulation; human gene therapy; genetics, genomics, and genome organization; microbiology and microbiome, molecular virology and immunology; molecular mechanisms of disease; neuroscience signal transduction and membrane biology; and structural and computational biology.

PROGRAM HIGHLIGHTS: IMBS is a large, multidisciplinary program that includes faculty who are members of the National Academy of Sciences, Howard Hughes Medical Institute Investigators, and recipients of numerous other prestigious awards. IMBS students who desire advance training in cancer or aging may join a Cancer Biology Track or a Biology of Aging Track, which provide opportunities to integrate basic research findings with a translational perspective. IMBS co-directors provide academic advice, meeting individually with students to recommend courses and lab rotations based on the student's individual interests and academic background. Students keep up-to-date with the research in other IMBS labs, maintaining the program's integrative theme well after students join a specific laboratory. An intensive Directors' Course for IMBS students teaches scientific reasoning and analysis. Our students frequently earn nationally competitive fellowships from the National Institutes of Health, Ford Foundation, Department of Defense, and National Science Foundation. The IMBS program has been supported for over 25 years by a competitive training grant from the National Institute of General Medical Sciences (GM008231).

140 FACULTY

MOLECULAR AND CELLULAR BIOLOGY

47 STUDENTS

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 third in the nation 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, and 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 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.
MOLECULAR AND HUMAN GENETICS

89 STUDENTS

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 interactive atmosphere.

MOLECULAR PHYSIOLOGY AND BIOPHYSICS

21 STUDENTS

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.
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; bloodborne infections: HIV and hepatitis; emerging infectious diseases; viral gastroenteritis: rotovirus 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.

50 FACULTY

STUDENTS

NEUROSCIENCE

65 STUDENTS

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 Center 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.

72 FACULTY

STUDENTS
PHARMACOLOGY

13
STUDENTS

27
FACULTY

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 holds monthly seminars and journal clubs as well as a joint annual retreat with the Department of Biochemistry in Galveston, Texas. The retreat is a blend of scientific and social activities.

STRUCTURAL AND COMPUTATIONAL BIOLOGY AND MOLECULAR BIOPHYSICS

42
STUDENTS

100
FACULTY

RESEARCH AREAS: development of structural and computational biology and bioinformatics, genome informatics, epigenomics, proteomics, computational neuroscience, membrane biophysics, chemical biology, systems biology, biophysical chemistry of macromolecules, macromolecule design and engineering, synthetic biology, biostatistics of basic and clinical data, drug design, medical informatics, and personalized medicine.

PROGRAM HIGHLIGHTS: Our program brings together students and experts from a variety of computational, physical, chemical, mathematical, engineering, and statistical backgrounds to solve problems that can ultimately increase basic biomedical knowledge and improve human health.

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 SCBMB 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**

**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 program 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 sub-specialty 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.

**BCM SCHOOLS**

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

**SCHOOL OF MEDICINE:**
Ranked 20th for research and 9th 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 nurse 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.
“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

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 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 SMART 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.

LEARN MORE AT www.bcm.edu/diversityprograms
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/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, promoting scientific 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 ensuring 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.
LEARN MORE AT WWW.BCM.EDU/GRAD SCHOOL

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