The UTHSC College of Graduate Health Sciences

The College of Graduate Health Sciences at the University of Tennessee Health Science Center has a vital and active role in the university’s mission of education, research, clinical care and public service. The college has ten degree programs providing a wide range of biomedical research training options. We offer degrees leading to the Doctor of Philosophy, the Master of Science and the Master of Dental Science through programs in Biomedical Engineering, Dental Sciences, Epidemiology, Health Outcomes and Policy Research, Integrated Biomedical Sciences, Nursing Science, Pharmaceutical Sciences, and Speech and Hearing Science.

The college is located on the Health Science Center campus in Memphis, but we reach much further through our partners in graduate education and our distance students. Many of the college’s more than 500 faculty have primary jobs at a partner institution. These institutions include St. Jude Children’s Research Hospital, Le Bonheur Children’s Hospital, the Veterans Affairs Medical Center, the University of Memphis, the University of Tennessee, Knoxville, Oak Ridge National Laboratory, Vanderbilt University, and the University of Alabama. For their graduate education, some of our students are located at these or other sites throughout the state and the country.

Graduates from our programs move on to exciting careers in academcis, industry, patient care and public service, where the comprehensive training they received in the college ensures their success. The College of Graduate Health Sciences at UTHSC has much to offer a student interested in biomedical research, and we invite you to take a moment to find out more about our programs.

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An Important Role

Founded in 1928, the College of Graduate Health Sciences (CGHS) is one of six colleges at the UT Health Science Center. The CGHS offers graduate instruction leading to the Doctor of Philosophy, Master of Science, and Master of Dental Science degrees related to:

- Biomedical Engineering
- Biomedical Sciences (Laboratory Research and Management)
- Biomedical Sciences
- Dental Sciences
- Epidemiology
- Health Outcomes and Policy Research
- Nursing Science
- Pharmaceutical Sciences
- Pharmacology
- Speech and Hearing Science

More than 2,800 students are enrolled on the UT Health Science Center campus, including approximately 330 students in the College of Graduate Health Sciences.

Education – Beyond a Bachelor’s

The principal aim of all ten of our graduate programs is to provide specialized education beyond the baccalaureate level through advanced study and research training.

Our programs prepare students for research careers in academia, industry and government. The College of Graduate Health Sciences has awarded more than 1,500 Doctor of Philosophy, Master of Science and Master of Dental Science degrees.

On average we receive five or six applications for every available space.

Combined DDS/PhD, DNP/PhD, MD/PhD, and PharmD/PhD curricula in the Colleges of Dentistry, Nursing, Medicine and Pharmacy are available for exceptionally qualified students.

Graduate Health Sciences Enrollment

<table>
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<th>Total</th>
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<tbody>
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<td>Gender:</td>
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Outside the Lab

In addition to working on groundbreaking research to improve the lives of others, Graduate Health Sciences faculty, staff and students also make time to change the community in which they live.

Recent participation and contributions to the community include:
- Memphis Chapter of Habitat for Humanity building projects
- Clothing Drive, Blood Drive and Food Drive
- Clean-up days to care for historic Zion Cemetery
- Judges at the Memphis-Shelby County Elementary Science Fair
- Fundraising for research at the American Heart Association's Heart Walk

An Established Research Environment

Located in the heart of Memphis’ Medical Center, the UT Health Science Center and its College of Graduate Health Sciences are uniquely positioned to enable students to participate in groundbreaking research at a number of established research institutions.

- Laboratory facilities at UTHSC include research areas at St. Jude Children's Research Hospital, The Regional Medical Center (The MED), Le Bonheur Children's Hospital, Methodist University Hospital, and the Veterans Affairs Medical Center.
- Under the direction of individual faculty investigators, these labs are fully equipped with instrumentation necessary for modern biomedical and pharmaceutical research.
- Four new buildings dedicated to research have recently been built on campus:
  1. The Cancer Research Building opened in 2007 and is the Mid-South’s only adult cancer research facility, housing 32 research laboratories and more than 65 scientists.
  2. The Regional Biocontainment Laboratory is a $25 million facility that will serve as a regional resource to advance the fight against infectious diseases, support emergency preparedness efforts, and enhance emergency response capabilities in case of a bioterrorism event.
  3. The College of Pharmacy building, a $70 million, 183,857-square-foot facility, provides state-of-the-art equipment for pharmaceutical sciences and translational education. The Plough Foundation has awarded $4.5 million to the college to establish the Plough Center for Sterile Drug Delivery Systems.
  4. The Translational Science Research Building, adjacent to the Cancer Research Building, is a 135,000-square-foot facility that is scheduled for completion in fall 2013. The facility will house 40 laboratories working to move benchtop research to bedside results.
- Graduate training activities benefit from more than $88 million in grants and contracts UTHSC research faculty receive each year.
- Graduate programs are also enhanced by the Center for Integrative and Translational Genomics, the Molecular Resource Center of Excellence, the Neuroscience Institute, the Charles B. Stout Mass Spectrometry Lab, the Boling Center for Developmental Disabilities and the UT Hamilton Eye Institute.
- Each spring CGHS students have the opportunity to make presentations at Graduate Research Day. Students also travel to make research presentations throughout the year at both national and international meetings. To help defray the expense of such trips, travel awards are available from the John Autian Student Enrichment Fund.
- In addition to presenting their work, CGHS students are also successful in publishing their research in high impact journals.
- The college was the first in Tennessee to accept electronic theses and dissertations.
Areas of Interest

**Biomedical Engineering**
Biomedical Engineering, a joint program between the University of Memphis and the UT Health Science Center, stresses the application of engineering and physical science to biomedical problems, including research and development of new medical technologies. Research specialization involves such subdisciplines as biomechanics, including orthopedic implants, prosthetic devices, and design engineering, as well as cell and tissue engineering.

**Biomedical Sciences (Laboratory Research and Management)**
The masters level Biomedical Sciences program with a concentration in Laboratory Research and Management trains qualified individuals in the advanced technical, managerial, and administrative skills required to be a Senior Research Assistant/Lab Manager in basic and translational biomedical research laboratories in the academic, government and private biotech sectors. The program is a three-semester, accelerated program leading to the award of a Master of Science degree. Students in this program receive training in four integrated components: Basic Science, Technical, Administrative and Practical.

**Biomedical Sciences**
The Biomedical Sciences program provides the PhD degree-seeking student cross-disciplinary training that is essential in today's competitive research environment. The program consists of five tracks: Cancer and Developmental Biology; Cell Biology and Physiology; Microbiology, Immunology, and Biochemistry; Molecular and Systems Pharmacology; and Neuroscience.

**Dental Sciences**
The Master of Dental Sciences program is designed to provide a contemporary research experience in the areas of orally related sciences to dentists enrolled in the clinical specialty programs in the College of Dentistry. The courses and research requirements provide individuals with a knowledge of the role of research in the clinical management of orofacial abnormalities and diseases.

**Health Outcomes and Policy Research**
Health Outcomes and Policy Research is focused on outcomes, health disparities, and policies related to health care systems that impact access and economics. Research evaluates the cost of illness, cost effectiveness, cost-benefit, medication errors, patient perceptions of providers, cost of caregiving, and economic impacts.

**Pharmaceutical Sciences**
The Pharmaceutical Sciences program offers PhD degrees in two areas: medicinal chemistry and pharmaceutics. Medicinal chemistry research includes design, synthesis and evaluation of new compounds with potential for use in the treatment of diseases like cancer and disorders of the endocrine, cardiovascular, central and peripheral nervous systems. Pharmaceutics research includes the development and evaluation of drug delivery systems, injectables, and biotechnology drugs. It also involves the pharmacokinetics of drugs and metabolites in humans, animals and cells.

**Pharmacology**
The Pharmacology program is a single-year, accelerated program leading to the award of a Master of Science degree. The program is designed to provide the student with a comprehensive background in medical pharmacology, basic biochemistry and the physiologic and pathophysiologic basis for drug therapy. This program will fully prepare a candidate for additional medical or basic research training.

**Speech and Hearing Science**
Speech and Hearing Science is concerned with the evaluation of speech, language and swallowing disorders, as well as the study of auditory and balance systems. Researchers evaluate speech problems, such as fluency (e.g., stuttering), articulation, voice disorders, and language problems, which include delayed development and aphasia, as well as related problems, such as dysphagia (e.g., swallowing difficulties). They also assess amplifications systems such as hearing aids.

For more information about the UT Health Science Center College of Graduate Health Sciences, visit grad.uthsc.edu.