OVERVIEW

The University of Mississippi is recognized as a major research institution and is a part of the R-1: Doctoral Universities (Highest Research Activity by the Carnegie Classification of Institutions of Higher Education) group.

The School of Pharmacy’s extramural research funding reached $21.2 million in 2019, which ranked sixth in the nation among colleges of pharmacy.

Three of the school’s four academic departments offer a Master of Science in Pharmaceutical Sciences and a Doctor of Philosophy in Pharmaceutical Sciences: BioMolecular Sciences (emphases in Environmental Toxicology, Medicinal Chemistry, Pharmacognosy and Pharmacology), Pharmaceutics and Drug Delivery, and Pharmacy Administration.

Each of these programs offers opportunities to study with nationally and internationally recognized research scientists. Taught in a supportive environment, these programs prepare students for teaching and research positions in academia, or administrative and research positions in the pharmaceutical, chemical, agrochemical, food and health care, and government agencies. Our diverse graduate community includes outstanding faculty and students from around the globe, and their cutting-edge research and scholarship reflect tremendous vitality, impact and significance.

BIOMOLECULAR SCIENCES DEPARTMENT

Environmental Toxicology
Environmental Toxicology includes research and educational activities that seek to identify and resolve problems related to environmental and human health issues. This work includes basic and applied research approaches to empower individuals, resource managers, regulators, and communities with the knowledge to improve human and environmental health. Research in the division addresses issues related to drinking water, air quality, pesticides, chemical spills, marine and freshwater ecosystems, and developmental and multigenerational toxicity of contaminants. The division’s goal is to contribute high quality educational opportunities and related research results that will lead to evidence-based decisions for complex environmental problems.

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Pharmacology
Pharmacology is the science that studies the effects of drugs on humans and animals. Areas of research in this field are as incredibly diverse as the natural products and the biological systems targeted by researchers. The division has faculty studying mediators of cardiovascular, endocannabinoid, endocrine, immune, and endomicrobial systems with applications to aging, cardiovascular diseases, drug abuse, diabetes, obesity, neurodegenerative disease, cognitive function, and the biochemical responses to particulate pollutants in our air, land, and water. Research techniques used by the researchers include mass spectrometry-based technologies to study structurefunction relationships of proteins and carbohydrates of biomedical interest, clinical, preclinical and behavioral assessments, and a variety of cell culture based techniques.

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Pharmaceutics
Pharmaceutics is the art and science of delivering the right amount of therapeutic agents to the right places at the right times. Faculty conduct research to identify problems related to drug delivery (e.g., biological barriers, physical and chemical characteristics of molecules) and develop solutions to overcome them. Students come to understand the biopharmaceutical principles of drug delivery through course work and research that expose them to all facets of product research and development, including a variety of cutting-edge technologies. In addition to pre-formulation, formulation and novel drug-delivery systems, areas of current faculty interest include product R&D, drug metabolism, drug dependence and tolerance, pharmacodynamics, solid-state characterization and molecular modeling of physical processes.

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Industrial Pharmacy
In addition to offering a M.S. and Ph.D. in Pharmaceutical Sciences programs, the department offers a non-thesis track master’s program in Industrial Pharmacy. This program is designed to provide fundamental and applied knowledge of pharmaceutical R&D, manufacturing and regulatory sciences to prepare B.S. level chemical engineers and scientists (pharmacy, biology and chemistry) for a career in the pharmaceutical industry. The pharmaceutical industry critically needs M.S. level pharmaceutical scientists who are prepared to assume positions in formulations, process development, manufacturing and regulatory affairs.

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Pharmacy Administration
The pharmacy administration faculty includes experts in the fields of pharmaceutical marketing and management, sociobehavioral sciences and health outcomes research. Some areas of inquiry include the marketing and economics of pharmaceuticals, patient and provider behaviors in the healthcare system, the evolving role of pharmacists in delivering quality health care, pharmacy management strategies, health-related quality of life and outcomes associated with the use of pharmaceuticals. The unifying goal of these topics is to find solutions aimed at improving the use of pharmaceuticals and patient outcomes in a cost-effective manner. Graduates of the program often pursue careers in academia, the pharmaceutical industry, managed care and government agencies.

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