

Graduate Programs in Medicinal Chemistry



COLLEGE OF PHARMACY AND
PHARMACEUTICAL SCIENCES
THE UNIVERSITY OF TOLEDO

The focus of the medicinal chemistry educational program is on the theory and practice of drug design, with additional advanced-level instruction in the appropriate underlying scientific areas. One of the program's strengths is the integration of training in both chemistry and advanced biology. Biological techniques are used to identify and characterize targets, while chemical approaches design the drugs or probes to affect the targets identified. This intermingling of chemistry and biological knowledge enhances job opportunities for our graduates.

The University of Toledo College of Pharmacy and Pharmaceutical Sciences features state-of-the-art facilities on the University's Main Campus and on its integrated Health Science Campus. This distinction allows the college to expand its research and educational goals in an academic health science community.

Medicinal Chemistry Graduate Programs

Course work during the first year of the program centers on advanced medicinal chemistry and biological courses, which are offered in small-group tutorial sessions. Students are expected to concentrate on fundamental concepts from the drug design literature and then formulate their own ideas about possible new directions based on recent advances in the field.

During the second year, masters students normally complete a research project and write a thesis. Ph.D. students participate in a comprehensive examination, which includes both a written and an oral component, leading directly to Ph.D. candidacy. Research leading to the Ph.D. dissertation usually requires two to three years to complete after the initial one to two years of course work. Research seminars are listed on the program website.

Graduate students, postdoctoral fellows, research assistants, and visiting scholars all contribute to an increasingly interesting and vital research environment.

Medicinal Chemistry Faculty

The Department of Medicinal and Biological Chemistry consists of 16 primary and joint faculty members. In addition to basic biochemistry, our faculty members are involved in research in neuroscience, autoimmunity and basic immunology, cancer therapy and vaccines, inflammation and obesity, kidney and cardiovascular diseases, toxicology, organic synthesis, and targeted drug design and development. Our faculty members are recognized authorities in their areas of specialization, conducting research that contributes to the development of new treatments, practices, and innovations.

The department is equipped with state-of-the-art computer-assisted instrumentation, providing facilities that allow for a wide variety of research approaches. These facilities are available for use by all students involved in graduate research.

The department is associated with the Center for Drug Design and Development, a university-wide resources and a focal point for developing collaborative research efforts with the pharmaceutical industry.



**Department
of Medicinal and
Biological Chemistry**

MAIN CAMPUS

Mail Stop 606
2801 W. Bancroft St.
Toledo, OH 43606

HEALTH SCIENCE CAMPUS

Mail Stop 1015
3000 Arlington Ave.
Toledo, OH 43614

Medicinal Chemistry Graduates

Graduates have been successful in obtaining positions in academia and in industry.

Employment of some of our M.S. and Ph.D. graduates:

- Associate Project Leader, Kendle International, Cincinnati, OH
- Scientist I, Codexis Inc., Redwood City, CA
- Technology Transfer, Patent Specialist, Los Angeles Children's Hospital, CA
- Assistant Director, Division of Medicinal Chemistry Beta Pharma New Haven, CT
- Research Scientist II, Avon Products, Inc. Suffern, NY
- Assistant Dean of Pharmaceutical Sciences, University of Jordan
- Assistant Professor, Medicinal Chemistry, University of Findlay
- Assistant Professor of Biomedical Engineering, Vanderbilt University
- Toxicologist, The Lubrizol Corporation
- Senior Research Technologist, Department of Molecular Cardiology, Cleveland Clinic
- Senior Scientist/Project Leader, Wellstat Biologics
- Pharma Specialist, Chemical Intermediates at BASF
- Scientist and senior scientist positions at Parke Davis, GlaxoSmithKline, Shering-Plough, Amgen, Inc., Bristol Myers Squibb and others
- Postdoctoral research associates at Stanford University, University of Michigan, University of Utah, Northwestern University, UCLA and others
- M.D. from Columbia University, Ohio State University, The University of Toledo Medical Center

Financial Aid

Graduate Fellowships and Teaching and Research Assistantships are available on a competitive basis through the College of Graduate Studies for outstanding applicants who have appropriate undergraduate preparation in the biological, chemical, and pharmaceutical fields. Students in the Ph.D. program are normally supported in the later stages of the program as teaching assistants or as research assistants by equivalent funding from research grants. Assistantships generally involve both teaching and research.

Additional Information

The department's deadline for priority fall admission is January 15; applications received after this date will be considered on a space-available basis. Please allow ample time for transcripts, letters of recommendations, etc. to arrive in support of your application.

Apply directly online at the College of Graduate Studies website: utoledo.edu/graduate. From that site, either fill out the online application and forms or download them for hard copy submission.

Learn more about faculty research interests, recent graduates and course work at utoledo.edu/pharmacy/academic_programs.