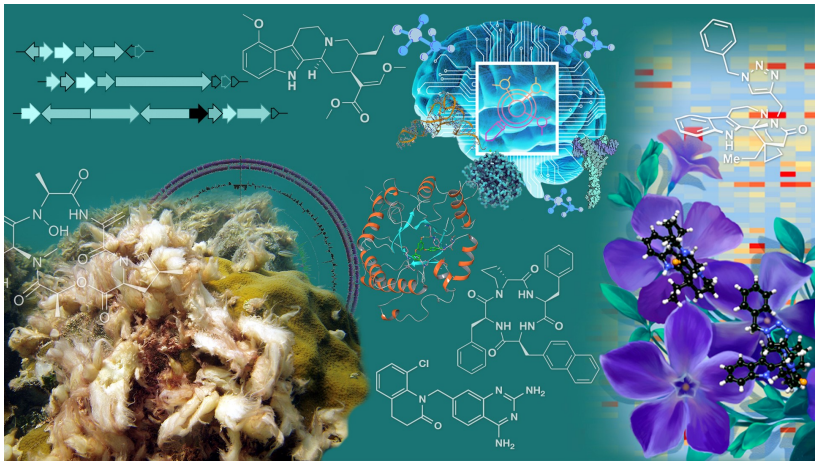
UF College of Pharmacy
UNIVERSITY of FLORIDA

DEPARTMENT OF MEDICINAL CHEMISTRY



The department of medicinal chemistry is located in the University of Florida College of Pharmacy and is an integral part of UF Health. The department has excellent research facilities dedicated to major areas of medicinal chemistry research, and faculty in the department have been highly successful in attracting extramural research support. UF's preeminence initiative in drug discovery and development has supported an expansion of the department in focus areas such as natural products, cancer, anti-infectives, drug abuse and pain research. The department is also leading UF's Artificial Intelligence, or AI, initiative for drug discovery and molecular therapeutics. In addition to medicinal chemistry students, faculty supervise Ph.D. students housed in other graduate programs across UF departments and colleges.

Mission

To conduct basic and translational research in chemistry and biochemistry as it relates to drug discovery, to teach these principles in the professional and graduate programs and to provide service to the scientific community.

Focus

The department focuses on all aspects of drug design, discovery and development with a unique blend of the physical and biological sciences. The depth and scope of the field offers entering graduate students with many different science backgrounds a rewarding and challenging program of study.

Education and Training

Graduates of the program earn a Ph.D. in pharmaceutical sciences, with a major in medicinal chemistry. Recent graduates have secured postdoctoral fellowships and landed faculty positions at major research universities, and they have acquired positions in government agencies, pharma and at biotech companies. Several departmental faculty are leading UF Master of Science in Pharmacy online degree programs, including graduate programs in forensic science, pharmaceutical chemistry and clinical toxicology. The department also leads the NIH T32 training grant titled "Chemistry-Biology Interface Training Program at the University of Florida."

Drug Discovery and Development

Department faculty have been co-founding startup companies based on UF intellectual property generated in their academic labs. Other preclinical and clinical discoveries have been licensed to pharmaceutical and biotech companies.

Top 5

The UF College of Pharmacy is ranked among the top public pharmacy colleges by U.S. News & World Report.

DEPARTMENTAL FACTS

29
Ph.D. students

13
postdoctoral fellows

12
faculty in Ph.D. program

10
clinical and research faculty

ACADEMIC YEAR 2022-23

$8.2 million
in research awards

95
publications

28
new patents and patent applications

Department of Medicinal Chemistry
Hendrik Luesch, Ph.D., Professor and Chair
Debbie and Sylvia DeSantis Chair in Natural Products Drug Discovery and Development
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Chengguo (CX) Xing, Ph.D.,
Professor and Associate Chair
352.294.8511

Robert W. Huigens, III, Ph.D.,
Associate Professor and Graduate Coordinator
352.273.7718

11/27/23

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Faculty Research Areas in Ph.D. Program

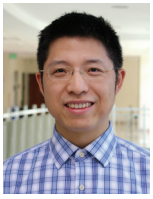
Hendrik Luesch, Ph.D., *Professor and Chair*

Debbie and Sylvia DeSantis Chair in Natural Products Drug Discovery and Development
Director of the Center for Natural Products, Drug Discovery and Development

Marine natural products drug discovery, synthesis and development; a multidisciplinary research program at the interface of chemistry and biology, combining classical natural products chemistry with high-throughput screening and chemical genomics.

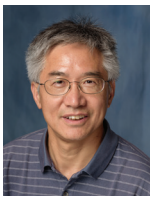
Jane V. Aldrich, Ph.D., *Professor*

Opioid peptide medicinal chemistry; the focus of research involves the design and synthesis of peptides and peptidomimetic analogs to examine structure-activity relationships, metabolic stability, and pharmacokinetic and pharmacological properties of opioid peptides.



Yousong Ding, Ph.D., *Associate Professor*

Biosynthetic engineering and biocatalysis; discovery and development of small molecules and biologics as new therapeutic leads for obesity, cancer, and cardiovascular and infectious diseases through deciphering and employing biosynthetic strategies.



Chenglong Li, Ph.D., *Professor*

Nicholas Bodor Professor in Drug Discovery

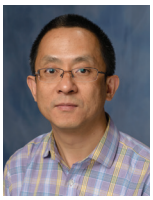
Structure-based computer-aided drug design; molecular recognition research combining molecular simulation, synthetic chemistry, artificial intelligence, or AI, structural biology, cellular techniques and animal models to explore molecular interactions, focusing on anticancer, autoimmune and neural diseases drug discovery.

Xingui Liu, Ph.D., *Assistant Professor*

Medicinal chemistry and chemical biology; Discovery of proximity agents as potential therapies for cancer and other diseases; Discovery of ligands for E3 ligases; Chemical biology assays development.

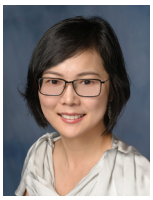
Wenjun Xie, Ph.D., *Assistant Professor*

Enzymology and drug discovery; designing therapeutic enzymes and covalent drugs, using artificial intelligence (AI), computational chemistry and biochemistry.



Chengguo (CX) Xing, Ph.D., *Professor and Associate Chair*

Pharmacognosy and drug discovery; isolation, design and synthesis of biologically active small molecules and translational development for novel therapies against multidrug-resistant malignancies, chemopreventive agents against primary carcinogenesis and dietary supplements on neurological disorders.



Lina Cui, Ph.D., *Associate Professor*

Molecular imaging and drug discovery; explores the activities of glycan processing enzymes in cancer progression and metastasis; develops therapeutic and diagnostic molecules or tools for various types of cancers.

Robert W. Huigens III, Ph.D., *Associate Professor and Graduate Coordinator*

Natural product-inspired synthesis of small molecules; pushing back boundaries of drug discovery using new and innovative strategies for complex molecule synthesis, antibacterial and biofilm eradicating agents, and thymidylate synthase inhibitors as anticancer agents.

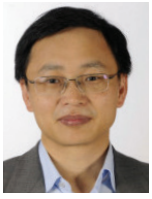
Yanjun Li, Ph.D., *Assistant Professor*

Artificial intelligence-driven drug discovery; Develop innovative AI algorithms to accelerate the discovery of novel functional molecules, focusing on deep generative modeling for de novo design of small molecules and proteins, and geometric deep learning for molecular recognition.

Christopher R. McCurdy, Ph.D., FAAPS, *Professor*

Frank A. Duckworth Eminent Scholar Chair and Director of the UF Translational Drug Development Core

Medicinal chemistry and drug development; research is focused on the design, synthesis and development of novel agents to treat pain and drug abuse and addiction using natural products and purely synthetic materials.



Guangrong Zheng, Ph.D., *Associate Professor*

Design, synthesis and structure-activity relationship study; synthetically derived and natural product-based compounds for potential therapeutic uses or as molecular probes for biochemical/pharmacological research.