

## Faculty



### BIOLOGICAL CHEMISTRY PROGRAM

An Interdisciplinary Graduate Experience

[1]

Faculty participating in the program hold appointments in either the Department of Chemistry and Biochemistry, or the Department of Pharmacology and Toxicology.

Faculty	Research Interests
<a href="#">Craig A. Aspinwall</a> [2] Chemistry/Biochemistry	Cellular Function at the Interface of Analytical Chemistry and Cell Physiology
<a href="#">Vahe Bandarian</a> [3] Chemistry/Biochemistry	Biosynthesis of secondary metabolites; mechanistic enzymology
<a href="#">Michael Brown</a> [4] Chemistry/Biochemistry	NMR spectroscopy; membrane proteins and lipid bilayers; receptors and biological signaling; vision
<a href="#">Eli Chapman</a> [5] Pharmacology and Toxicology	Protein-guided therapeutic discovery; Chemical biology to study p97 biochemistry and biophysics; Small-molecule based therapeutic discovery and development
<a href="#">Pascale Charest</a> [6] Chemistry/Biochemistry	Signaling mechanisms and directed cell motility
<a href="#">Matthew Cordes</a> [7] Chemistry/Biochemistry	Structural Evolution and Conformational Switching in Proteins
<a href="#">Indraneel Ghosh</a> [8] Chemistry/Biochemistry	Signal Transduction Pathways, Anti-Cancer Agents and Protein Based Biosensors
<a href="#">Richard S. Glass</a> [9] Chemistry/Biochemistry	Mechanistic, Synthetic and Structural Chemistry
<a href="#">Andrew Hausrath</a> [10] Chemistry/Biochemistry	Constructing quantitative theories about biomolecules and their assemblies and testing these theories with biophysical and structural techniques
<a href="#">Michael Heien</a> [11] Chemistry/Biochemistry	Measuring neurotransmitters and neuromodulators. Specifically to figure out how chemicals affect individual neurons and behavior. The goal of his research is to understand the molecular mechanisms behind synapse formation, the role of supporting cells in modulation of neurotransmission, and how these work to regulate behavior.

## Faculty

## Research Interests

[Nancy Horton](#) <sup>[12]</sup>

Chemistry/Biochemistry

Macromolecular structure and function; X-ray crystallography

[Victor J. Hruby](#) <sup>[13]</sup>

Chemistry/Biochemistry

Asymmetric Synthesis; Biologically Active Peptides/Mimetics; Conformation Activity Relationships

[Christopher Hulme](#) <sup>[14]</sup>

Chemistry/Biochemistry

Enabling chemistries and platform technologies for the construction of targeted small molecule libraries that span possible applications across multiple target families

[Laurence H. Hurley](#) <sup>[15]</sup>

Pharmacology and Toxicology

Development of antitumor agents

[John Jewett](#) <sup>[16]</sup>

Chemistry/Biochemistry

Chemical virology - Developing chemical tools to study dengue virus

[Serrine Lau](#) <sup>[17]</sup>

Pharmacology and Toxicology

Environmental causes of disease; Mechanisms of prostanoid mediated cytoprotection against environmental chemical-induced toxicity; Development of mass spectrometric-based proteomics approaches to study chemical-induced protein modifications which impact on specific cellular functions.

[Hong-Yu Li](#) <sup>[18]</sup>

Pharmacology and Toxicology

Organic Synthesis; Medicinal Chemistry; Chemical Toxicology

[Eugene A. Mash, Jr.](#) <sup>[19]</sup>

Chemistry/Biochemistry

[Megan M. McEvoy](#) <sup>[20]</sup>

Chemistry/Biochemistry

Structure/Function of Protein Complexes

[Katrina M. Miranda](#) <sup>[21]</sup>

Chemistry/Biochemistry

Chemical Biology of Nitrogen Oxides; New Detection Techniques and Donors of Nitrogen Oxides; Drug Development

[Osamu Miyashita](#) <sup>[22]</sup>

Chemistry/Biochemistry

Theoretical and Computational Biophysics, Molecular Dynamics Simulations, Protein Electron Transfer, Protein Allostery

[William R. Montfort](#) <sup>[23]</sup>

Chemistry/Biochemistry

Protein structure, function and dynamics; X-ray crystallography

[Jon Njardarson](#) <sup>[24]</sup>

Chemistry/Biochemistry

Organic synthesis, medicinal chemistry and drug development

[Mark Pagel](#) <sup>[25]</sup>

ARL/Cancer Center

Magnetic Resonance Imaging; assessments of cancer and anticancer therapeutics

[Robin L. Polt](#) <sup>[26]</sup>

Chemistry/Biochemistry

Cell-surface Carbohydrates

## Faculty

## Research Interests

[S. Scott Saavedra](#) <sup>[27]</sup>

Chemistry/Biochemistry

Interfacial Optics, Biofilms, Biosensors

[Steve Schwartz](#) <sup>[28]</sup>

Chemistry/Biochemistry

Understanding the atomic reaction coordinate of chemical reactions when catalyzed by enzymes and the function of complex protein motor assemblies

[Catharine L. Smith](#) <sup>[29]</sup>

Pharmacology and  
Toxicology

Epigenetic mechanisms of gene expression, their regulation through signaling pathways and modulation by anti-cancer drugs

[Deakyu Sun](#) <sup>[30]</sup>

Pharmacology and  
Toxicology

Regulation of gene expression with chemicals

[Florence Tama](#) <sup>[31]</sup>

Chemistry/Biochemistry

Computational Structural Biology, Function and Dynamics of Macromolecular Assemblies, Multi-Scale Modeling, Methods Development to Interpret Experimental Data

[Elisa Tomat](#) <sup>[32]</sup>

Chemistry/Biochemistry

Biological inorganic chemistry of oxidative stress, wound healing, cell proliferation and cancer

[Tsu-shuen Tsao](#) <sup>[33]</sup>

Chemistry/Biochemistry

Obesity and type II diabetes mellitus; Hormonal regulation of energy homeostasis; Signal transduction pathways involved in cellular and whole body energetics; Structure function relationship of adipocyte-derived hormones

[Koen Visscher](#) <sup>[34]</sup>

Physics

Molecular Motors

[Georg Wondrak](#) <sup>[35]</sup>

Pharmacology and  
Toxicology

Molecular pathways of skin photocarcinogenesis that involve cellular photooxidative and carbonyl stress; Developing chemical reagents into potent drugs that target reactive chemical intermediates

[Danzhou Yang](#) <sup>[36]</sup>

Pharmacology and  
Toxicology

Structure and Function of DNA and DNA-interacting Proteins as Anticancer Drug Targets; High-field NMR spectroscopy

[Donna Zhang](#) <sup>[37]</sup>

Pharmacology and  
Toxicology

The Nrf2/Keap1 signaling pathway that is activated by oxidative stress and chemopreventive compounds; Regulation of gene expression by the ubiquitination and proteasomal degradation pathway

[Graduate](#) <sup>[38]</sup> [Faculty](#) <sup>[39]</sup> [Directory](#) <sup>[40]</sup>

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