

Undergraduate Research and Mentoring (URM), a program funded by the National Science Foundation
 Participating Departments: Botany, Chemistry & Biochemistry, Microbiology, Zoology

RESEARCH OPPORTUNITIES IN THE URM PROGRAM

The research programs of 30 faculty members in four participating departments (Botany, Chemistry and Biochemistry, Microbiology and Zoology), involve a range of organisms (plants, animals and microbes), and a wide range of areas that includes neurobiology, developmental biology, cell biology, molecular genetics, gene regulation, and microbial pathogenesis.

Two 8 week research rotations are available during the Spring semester of each year as part of BCMZ 103 (Introduction to Research in Biology). Students must have taken BCMZ 102 (Fall) to be eligible for the research experience.

Student projects will have an overall theme of “**Signaling mechanisms and cellular responses**”, and will provide an understanding of how cells respond to their environment by regulation of gene expression, cellular physiology, cell and tissue morphogenesis, as well as behavior.

Faculty	Research Area
Luis Actis	Molecular mechanisms of bacterial pathogenesis
Phyllis Callahan	Neural regulation of anterior pituitary function
Michael Crowder	Mechanistic and structural characterization of metalloenzymes
Katia Del Rio Tsonis	Cellular and molecular events that take place during tissue regeneration
Joyce Fernandes	Cell Interactions during neuromuscular development; Regulation of muscle size
John Hawes	Evolutionary relationships in proteins structure and function,
Paul Harding	Molecular and Cell Biology: Growth hormone, Growth factors
Susan Hoffman	Molecular Evolution in Mammals
Lori Isaacson	Neuronal Survival; Aging and Neurodegeneration
Paul James	Molecular Physiology; Membrane Transport; Sodium Pumps
Jim Janik	Neural regulation of anterior pituitary function
Michael Kennedy	Structural genomics, NMR spectroscopy, x-ray crystallography
Kathleen Killian	Synaptic plasticity and integration, neural basis of behavior
John Kiss	Gravitropism in higher and lower plants, space biology,
Marcia Lee	Use of ice-nucleating active bacteria and fungi for biological control
Richard (Rick) Lee	Ecophysiological Cryobiology
Chun Liang	Bioinformatics; plant genomics, Biological databases and data mining.
Quinn Li	Genetic engineering of plant resistance to pathogens
Gary Lorigan	Properties of membrane-bound proteins; interactions within the lipid bilayer.
Chris Makaroff	Molecular and cellular biology of meiosis
Richard Moore	Evolutionary genetics and genomics, evolution of sexual reproduction systems
Nicholas Money	Mechanisms of fungal growth, reproduction, and pathogenesis
David Pennock	Cellular/molecular biology; microtubule-based motility
Jeff Potteiger	Whole human substrate metabolism during different metabolic conditions
Michael Robinson	Cell signaling events in lens development
Paul Schaeffer	Comparative Physiology, Muscle and Energy Metabolism
Jack Vaughn	Molecular evolution of genes and their introns- plasticity and integration