Thematic Program: Graduate Program in Immunology
Program Director: Peter Burrows, Ph.D.
Program Co-Director: Scott Barnum, Ph.D.

Thematic Program Description *(provided by Program)*

The Graduate Program in Immunology broadly encompasses the study of multiple facets of innate and adaptive immunity. Immunology faculty have research interests that are frequently cross-disciplinary within immunology (e.g., the role of innate immune systems that modulate adaptive immune responses), but that also merge with other fields such as neuroimmunology, stem cells or cancer. Students can choose from topics in innate immunity including the acute phase response, complement biology, cytokines in immune responses, macrophage biology, and many others. Studies of adaptive immunity include lymphocyte biology, developmental immunology, mucosal immunology, immunology of the eye, stem cell biology, cell signaling, dendritic cell biology, immunologic hypersensitivity, adhesion molecules in immune responses, and host immune responses to pathogens. A number of immune models in autoimmunity (arthritis, asthma, colitis, diabetes, demyelinating disease, lupus and others) are employed. Outstanding state of the art core facilities support your research efforts and include antibody production, live animal imaging, and production of transgenic and knockout mice. Immunology students will take a core course covering basic biochemistry, molecular biology, genetics and biostatistics along with seminars and basic immunology courses in the first year, followed by advanced immunology electives and journal clubs.

Thematic Program: Microbiology
Program Director: Janet Yother, Ph.D.
Program Co-Directors: Casey Morrow, Ph.D, Michael Niederweis, Ph.D., & Peter Prevelige, Ph.D.

Thematic Program Description *(provided by Program)*

The Microbiology Graduate Program is an interdisciplinary program emphasizing the study of bacteria, viruses, fungi, and parasites. Comprehensive and diverse resources provide a stimulating and supportive environment for the education of independent scientists at the Ph.D. level. Our goal is to train Doctorates who will make excellent contributions to the fields of microbiology. Over 30 faculty members from the Departments of Microbiology, Cell Biology, Genetics, Pathology, Biochemistry, Medicine, Pediatrics, and Dentistry are involved in internationally renowned research and training of graduate students. Currently, more than 70 students are in training in the laboratories of our faculty. Primary areas of research interest include the genetics, physiology, and molecular biology of microbes and how microbial pathogens cause disease. Basic cellular processes, host-pathogen interactions, and the design of innovative strategies for the prevention and treatment of infectious diseases are under study in the laboratories of our faculty.

In the first semester of study, all students will take a core curriculum emphasizing fundamental concepts of biochemistry, genetics, and cell biology. Separate tracks within the Program will allow students to specialize in Virology or Bacteriology through the selection of specific courses, journal clubs, seminars, and research training relevant to viral and bacterial genetics, physiology, structure, regulation, pathogenesis, antimicrobials, and vaccines. Individual programs will be developed for students interested in the study of other microbes. Students graduating from the Program will be well-versed in modern microbiology and will have the experience to pursue a diversity of career opportunities.