

The Graduate Program in Immunology

Website for more information and links: <http://www.med.umich.edu/immprog/>

The Immunology Program offers a Ph.D. degree through the Rackham School of Graduate Studies. No Masters degree is offered. Students will complete their degrees in about 5 years.

Why Study Immunology?

Students learn to think independently while pursuing individual research interests in a diverse and flexible program. Faculty provide graduate training by incorporating concepts of molecular biology, biochemistry, genetics and biophysics into the curriculum. The Immunology Program will give a foundation that will enable students to pursue a broad range of career choices spanning from academics to industry and from the theoretical to the translational.

- Holistic Science
- Incorporates every aspect of biological sciences
- Crosses many disciplines
- An essential component to many human diseases

The Interdepartmental Immunology Program's 45 faculty come from several different departments: internal medicine, surgery, microbiology & immunology, urology, pediatrics, chemistry, biological chemistry and pathology. Faculty members also have appointments in other centers including the Cancer Center, the Geriatrics Center, the Rheumatic Disease Core Center, the Transplant Center, the Center for Biologic Nanotechnology, and the General Clinical Research Center. These different departmental perspectives provide a richly diverse learning environment for students.

Research Opportunities

Basic studies: adhesion molecules, antigen processing/presentation, apoptosis, cell homing/trafficking, cell signaling, cytokine networks, hematopoiesis, immunoglobulin switching, immune suppression, innate immunity, macrophage biology, MHC class I and II molecules, T cell activation, t cell biology.

Translational/applied immunology: animal models of disease, ex vivo cell expansion, gene delivery, vaccine development. Conditions: aging, allergy, arthritis, autoimmunity, bone marrow transplantation, cancer, inflammation/tissue repair, lupus, organ transplantation, pulmonary, trauma/burn, viral infections.

Program Requirements

The following courses are required: PIBS 501, Biochem 550, CDB 530, Human Genetics 541, Micro 640-641-642, Pathology 643, Immunology 850 – Special Topics in Immunology, taken for two semesters in year two, Immunology 815 – Journal Club seminars, once a week.

There is no teaching requirement.

Seminar series and retreat – formal noon presentations by outside speakers with diversified immunology expertise and interests. In the spring the Program sponsors an off campus retreat where students and research fellows have the opportunity to present their thesis work. An external keynote speaker is invited.

Preliminary Exam

Generally, the preliminary exam will be completed by the end of the student's second year. The prelim exam will consist of a written proposal distinct from the student's thesis research, and an oral exam defending the proposal before a committee of 3-4 faculty members. The emphasis on the oral exam is on hypothesis testing and experimental design, as well as general knowledge in the field of immunology.