

Immunology

Director

Kevin L. Legge (Pathology)

Graduate degree: PhD in immunology

Faculty: <https://immuno.grad.uiowa.edu/people/faculty>

Website: <https://immuno.grad.uiowa.edu/>

The Immunology Program provides interdisciplinary training in the concepts and methodologies of basic and applied immunology. Faculty members are involved in a variety of research projects dealing with the immune system at all levels—structural, functional, cellular, biochemical, and molecular. Students take coursework in immunology and related disciplines and are directly involved in laboratory research throughout their study.

Programs

Graduate Program of Study

- Doctor of Philosophy in Immunology

Facilities

Training is conducted in laboratories and teaching facilities of the Carver College of Medicine departments of Internal Medicine, Microbiology and Immunology, Otolaryngology–Head and Neck Surgery, Pathology, Pharmacology, Urology, and the Stead Family Department of Pediatrics, and the College of Public Health Department of Epidemiology. Faculty laboratories and central research core facilities provide students with access to state-of-the-art research equipment.

Courses

Immunology Courses

IMMU:2040 Summer Undergraduate IDGP Research

0 s.h.

IMMU:6201 Graduate Immunology

3 s.h.

Immune cell ontogeny, activation, and function of T lymphocytes and B lymphocytes; innate immune effector mechanisms; major histocompatibility complex; antigen presentation; thymocyte positive and negative selection; signaling of T lymphocytes and B lymphocytes; emphasis on experimental methods for analysis of these processes and how they have led to current advanced concepts in immunology. Prerequisites: MICR:3147 or MICR:6247. Requirements: for IMMU:6201—college biology, general chemistry, and introductory immunology courses; for MICR:6201—courses in college biology, genetics, general chemistry, and introductory immunology. Recommendations: for IMMU:6201—courses in biochemistry and genetics; for MICR:6201—biochemistry course. Same as MICR:6201.

IMMU:6211 Immunology Graduate Student Seminar

1 s.h.

Requirements: immunology graduate standing.

IMMU:6221 Rigor and Reproducibility in Immunology

1 s.h.

Principles and concepts in rigor and reproducibility; rigorous experimental practices in immunology and study design including concepts in redundancy (e.g., replication, validation, generalization, perturbation, consistency), controls, authentication of key reagents and resources, biological variables, recognition of error, avoidance of logical traps, and intellectual honesty. Prerequisites: IMMU:6201.

IMMU:6231 Research in Immunology

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Laboratory research. Requirements: immunology graduate standing.

IMMU:6241 Writing a Scientific Proposal

2 s.h.

How to write a scientific proposal. Prerequisites: IMMU:6201. Requirements: enrollment in immunology graduate program.

IMMU:6247 Graduate Immunology and Human Disease

4 s.h.

Important principles and key concepts in immunology with a focus on the involvement of the immune system in disease pathogenesis; overview of innate and adaptive immune systems and their functions at cellular and molecular levels; learning enhanced by case-based, small-group discussion and writing exercises. Same as MICR:6247.

IMMU:7221 Advanced Topics in Immunology

3 s.h.

In-depth analysis of selected areas. Prerequisites: IMMU:6201 or MICR:6201. Same as MICR:7207.