

# Pathology

## Chair

Nitin J. Karandikar

## Director, Clinical Functions

Brad Seaton

**Graduate degree:** MS in pathology

**Faculty:** <https://pathology.medicine.uiowa.edu/our-people>

**Website:** <https://pathology.medicine.uiowa.edu/>

The Department of Pathology offers education and training for a broad range of students, from undergraduates through postgraduate fellows and researchers. It provides basic pathology courses to health sciences students, a clinical training program for medical laboratory scientists, a Master of Science program in pathology, residency training programs leading to American Board of Pathology certification in anatomic pathology and clinical pathology, fellowship training in pathology subspecialties, and postdoctoral research training in cellular and molecular pathology.

## Undergraduate Education

Pathology courses are a major component of the university's program in Medical Laboratory Science, a Bachelor of Science program that trains medical laboratory scientists; see Medical Laboratory Science in the catalog.

## Postgraduate Training

The Department of Pathology offers postgraduate clinical fellowship programs in hematopathology, transfusion medicine, clinical microbiology, cytopathology, neuropathology, molecular genetic pathology, and surgical pathology for physicians who have completed residency training in pathology. These fellowships consist of one to two years of diagnostic work and research.

The department provides postdoctoral research training in immunology, neuropathology, apoptosis, cancer biology, and clinical microbiology as well as in other areas of cellular and molecular pathology. These positions are open to individuals who have earned a PhD or an MD degree.

## Programs

### Graduate Programs of Study

- Master of Science in Pathology
- Experimental pathology subprogram for the Doctor of Philosophy in Biomedical Science

Students interested in doctoral studies in experimental pathology should apply under the umbrella program in Biomedical Science (select experimental pathology subprogram).

## MD Training

The department provides five to seven 12-month fellowships for MD students (pathology externship), for students interested in careers as pathologists, and the Emory Warner Fellowship, a full-time research position in a facet

of experimental pathology. It also offers clerkships for MD students in all areas of anatomical and clinical pathology.

## Residency

The department offers 20 residency positions in pathology, which provide up to four years of training. Patients at University of Iowa Health Care and the VA Iowa City Health Care are integral to the residency programs.

Residents gain experience in systematic rotation through varied laboratory services, including surgical pathology, autopsy pathology, neuropathology, dermatopathology, cytology, clinical chemistry, clinical microbiology, hematology, immunopathology, molecular pathology, and transfusion medicine. They also have the opportunity to pursue one or two years of additional fellowship training in many pathology subspecialties. To learn more, see Education on the Department of Pathology website.

## Facilities

The Department of Pathology is well-equipped to carry out the sophisticated technology of modern cellular and molecular pathology. It administers more than 90,000 square feet of clinical laboratories at University of Iowa Health Care and has individual research and core facility laboratories, including histopathology and laser capture microscopy for cellular and molecular pathology research, in the Medical Research Center, Medical Laboratories, and at the VA Iowa City Health Care. Also available are Carver College of Medicine research facilities for nucleic acid chemistry, hybridoma production, flow cytometry, ultrastructural studies, protein structure, image analysis, electron spin resonance, mass spectroscopy, nuclear magnetic resonance, and laboratory animal care.

## Courses

### Pathology Courses

**PATH:4151 MLS Program Registration** **0 s.h.**  
Requirements: admission to Medical Laboratory Science Program.

**PATH:4201 Laboratory Management** **3 s.h.**  
Core principles of laboratory management in the current field of clinical laboratory science including basic principles and organizational structure, human resources, finance, and laboratory operations. Develop knowledge of the concepts and principles of lab management and apply these concepts to real-life situations. Requirements: minimum overall GPA of 2.00.

**PATH:5270 Pathogenesis of Major Human Diseases** **3 s.h.**  
Critical analysis of pathogenesis models in a series of major human diseases; clinical presentation, analysis of cellular and molecular events leading to the disease, discussion of key papers. Offered spring semesters. Same as IGPI:5270, MMED:5270.

**PATH:5461 Introduction to Morphology in Research** **1 s.h.**  
Introduction to the histologic examination of organs and tissues utilizing human and/or animal examples; organ identification, comparative morphology, use of histologic techniques (e.g., stains).

**PATH:6220 Seminar in Pathology 1 s.h.**

Current research and literature. Requirements: pathology graduate standing.

**PATH:7001 Molecular and Cellular Biology of Cancer 3 s.h.**

Fundamental aspects of oncology at cellular and molecular levels; mechanisms of cancer initiation and progression, oncogene action, DNA damage and repair, carcinogenesis by radiation, chemicals, viruses; tumor immunology, anticancer therapies. Offered spring semesters. Prerequisites: BMED:5207. Requirements: strong basic science background. Same as CBIO:7001, FRRB:7001.

**PATH:7211 Research in Pathology arr.**

Basic aspects of pathology or clinical patient material; emphasis on experimental design, methods, literature review, obtaining formal answers to specific questions. Requirements: MD enrollment or graduate standing.

**PATH:8007 Medical Student Fellowships in Pathology (Externships) 0 s.h.**

First-hand experience in autopsy, surgical and clinical pathology, teaching, and research to further understanding of disease mechanisms, normal and pathologic anatomy, laboratory use.

**PATH:8008 Warner Fellowship in Experimental Pathology 0 s.h.**

One-year, full-time membership in established research laboratory in the Department of Pathology or collaborating laboratory. Requirements: MD enrollment.

**PATH:8133 Introduction to Human Pathology for Graduate Students 2-4 s.h.**

Human disease; basic disease processes, organ-related and multisystem diseases; case analysis. Offered fall semesters.

**PATH:8302 Pathology 2 s.h.**

Introduction to pathology in the medical field. Requirements: MD enrollment.

**PATH:8401 Autopsy Pathology Clerkship arr.****PATH:8402 Hematopathology Clerkship arr.****PATH:8403 Surgical Pathology Clerkship arr.****PATH:8404 Transfusion Medicine arr.****PATH:8405 Clinical Microbiology 2,4 s.h.**

Students rotate through bacteriology, molecular microbiology, mycology, mycobacteriology, and virology while participating in clinical and technical activities.

**PATH:8497 Research in Pathology arr.**

Medical research, clinical or laboratory projects; individual study with department approval.

**PATH:8498 Pathology On Campus arr.****PATH:8499 Pathology Off Campus arr.**