Department of Pathology Graduate Program

Training individuals for careers as independent scientific investigators with a focus on the study of the molecular and cellular mechanisms of disease. Investigative programs in tissue injury and repair, inflammation, aging, tumor biology, apoptosis, regulation of gene expression in disease processes, and the biology and pathobiology of cytokines/chemokines, neurodegenerative diseases, renal development, DNA repair, adhesion molecules and extracellular matrix. The Department of Pathology also has an active program in molecular biology/genetics in conjunction with the University of Michigan Howard Hughes Medical Institute for Molecular Genetics. Two National Institutes of Health training grants in lung immunopathology and experimental immunopathology support 4 graduate students and approximately 40 postdoctoral fellows in the department. Because of this significant interest in Immunology, the Pathology Graduate Program has very close ties with the interdepartmental graduate training Program in Immunology.

Program Requirements: Basic areas of biochemistry, cell biology, immunology, and genetics prepare students for in-depth study of the cellular and molecular pathogenesis of disease. This focus is exemplified by the core course requirement, Pathology 581 "Tissue, Cellular and Molecular Basis of Disease". Required each term: Pathology 850, "Research Colloquium". Didactic course requirements: Pathology 581, "Cellular and Molecular Basis of Disease"; Pathology 582, "Cellular and Molecular Basis of Disease II"; and 2 of the following 3 core basic science courses: Anat & Cell Biol 530, "Cell Biology"; Human Genetics 541, "Gene Structure & Regulation"; Biol Chem 550, "Protein Structures & Functions".
Three individual lab rotations with at least two different mentors required: Pathology 599, "Non-dissertation research" (PIBS 600 rotations count toward fulfilling this requirement, although at least 1 of the 3 rotations must be with Pathology faculty)

No teaching requirement for Pathology Graduate Students.

The preliminary exam is taken at the end of the second year of study. The preliminary exam is comprised of a written mini research grant proposal, patterned after an NIH application. Students should choose a topic that is not directly related to the research covered during a laboratory rotation or research that will serve as the student's thesis. Students are assessed on the quality of the written application and via an oral examination on the submitted proposal and related topics.

Average time to degree is 5.5 years.

Alumnae pursue careers in academic and industrial positions (biotech and pharmaceutical commonly).

The research focus on disease mechanisms or pathological/abnormal processes distinguish our program somewhat from the other PIBS programs whose focus tend to be on basic/normal biology/processes.