PATHOLOGY, PH.D.

About the Program

The Graduate Program in Pathology seeks to further the missions of education/research and enhance the growth of biomedical sciences in Oklahoma by educating students in the basic and clinical aspects of Pathology and preparing scientists to be contributors in biomedical research. The discipline of Pathology encompasses and bridges basic and clinical research. Pathology uses cutting-edge molecular, immunologic, biochemical, and genetic tools to uncover the mechanisms of disease and how cells and tissues respond. Graduates of the program will be prepared for careers in biomedical research and for a future as an independent investigator. Areas of specialization are Molecular pathology, cancer biology, cancer therapeutics, immunopathology, vascular cell biology, neuropathology, autoimmunity, innate immunity, hematological malignancies, inflammation, Alzheimer's disease, aging, hematopoiesis, intracellular trafficking, signal transduction, and nanotechnology.

Areas of Specialization

- Molecular pathology
- cancer biology
- cancer therapeutics
- immunopathology
- vascular cell biology
- neuropathology
- autoimmunity
- innate immunity
- hematological malignancies
- inflammation
- Alzheimer's disease
- aging
- hematopoiesis
- intracellular trafficking
- signal transduction
- nanotechnology

Career Opportunities

Students receiving a PhD degree in Pathology will be prepared for biomedical research careers in academic institutions, hospitals, biotechnology companies, and pharmaceutical industries.

Cost

It is the student's responsibility to ensure they are enrolled in the prescribed courses and to pay tuition and fees at the time designated by the Bursar's Office. Details regarding tuition/fee charges and collection are available from the Bursar's Office.

Admission Requirements

Qualified students possessing baccalaureate degrees in a biological science, e.g. biology, biochemistry, cell biology, chemistry, microbiology, molecular biology, or zoology, may pursue a PhD degree in Pathology. Students desiring to enter the Pathology Graduate Program should apply to the Graduate Program in Biomedical Sciences (GPiBS). Applicants must follow the general admission procedures and requirements set forth by GPiBS (http://www.oumedicine.com/gpibs/). An application must be filed with the Office of Admissions and be accompanied by official transcripts and, for foreign applicants, TOEFL results. In addition, three letters of recommendation from individuals who can address the applicant's research potential and suitability for graduate study are required. In special cases, students may apply for admission directly into the Pathology Graduate Program. For further information regarding admission into Pathology, contact rose-herrera@ouhsc.edu.

Doctor of Philosophy Degree Requirements

Pathology is a participating department in GPiBS (http://www.oumedicine.com/gpibs/), along with Biochemistry and Molecular Biology, Cell Biology, Microbiology and Immunology, Neuroscience, Pharmaceutical Sciences, and Physiology. GPiBS (http://www.oumedicine.com/gpibs/) students participate in a common integrated first-year curriculum which includes three laboratory rotations from a list of mentoring faculty and attendance of seminars and journal club. After completing the GPiBS (http://www.oumedicine.com/gpibs/) curriculum, a student may choose a research mentor (major advisor) affiliated with Pathology and set up an advisory committee. In the fall semester of the second year, Pathology graduate students will enroll in advanced courses pertaining to the study of pathology. A student will be allowed to enroll in advanced electives as deemed appropriate by his/her major advisor. A student directly admitted into the Pathology Graduate Program will be placed in the research mentor's laboratory without participating in the GPiBS rotations; however, the student will be required to complete the GPiBS (http://www.oumedicine.com/gpibs/) curriculum unless equivalent course have been previously completed.

A Pathology graduate student must pass both written and oral qualifying examinations to be admitted to candidacy for the PhD degree. For the written examination, a student will submit an NIH-style research proposal. This proposal must also be defended at an oral examination where the student's ability to synthesize and apply information to investigative endeavors will be assessed. Successful completion of the written and oral examinations will result in formal admission to candidacy for the degree. The student's major advisor and advisory committee will be responsible for assisting with the research project and for preparing the student for a final defense of the dissertation. The student will be responsible for the cost and preparation of the dissertation.

Code	Title	Hours
Required Courses		
BMSC 5001	Integrity in Scientific Research	1
BMSC 5021	Methods in Biomedical Research	1
BMSC 5031	Laboratory Animal Use and Concepts	1
BMSC 5221	Interdisciplinary First Year Journal Club	1
BMSC 6012	Molecular Systems I	2
BMSC 6112	Molecular Systems II	2
BMSC 6152	Cellular Systems I	2
BMSC 6052	Cellular Systems II	2
PATH 6121	Molecular Basis of Human Disease	1
PATH 6301	From Cells to Tissue to Molecular Morphology	1
BMSC 5011	Experimental Design and Applied Statistics	1
PATH 6053	Mechanisms of Disease	3
PATH 6024	Principles of Pathobiology	4
PATH 6010	Pathology Journal Club	1

PATH 6990	Special Problems In Pathology (As needed)	1-12
PATH 6980	Research for Doctors Dissertation	2-16

Note: Student's advisory committee sets the remainder of any needed requirements to meet the 90 hours required for the degree.

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Program Objectives

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