Pathology and Anatomical Sciences Degree Programs

School of Medicine
M263 Medical Sciences Building
573-882-1201
www.pathology-anatomy.missouri.edu

About Pathology and Anatomical Sciences

The Department of Pathology and Anatomical Sciences in the School of Medicine, along with the department of Veterinary Pathobiology in the College of Veterinary Medicine, offers a PhD degree through the Pathobiology Area Program. Faculty also participate in other doctoral programs (Integrative Neuroscience Program, Genetics Area Program, Molecular Pharmacology and Physiology). The MS degree is designed to prepare students for teaching in medical technology, supervisory roles in clinical laboratories, and to offer greater in-depth study in pathology and anatomical sciences.

Degrees offered

Doctorate in Pathology and Anatomical Sciences
Master of Science in Pathology and Anatomical Sciences

Financial Aid from the Program

Some programs require an extra form or statement from those who wish to be considered for internal assistantships, fellowships or other funding packages. Check the program Web site or ask the program contact for details.

Faculty

Adelstein, Edward H.
Associate Professor, DVM, MD, University of Missouri.

Aldridge, Kristina J.
Assistant Professor, PhD, John Hopkins University

Anthony, Douglas C.
Chair, Professor, MD, PhD, Duke University

Arthur, Gerald
Research Assistant Professor, MD, University of Chicago

Bennett, Lynda B.
Research Assistant Professor, PhD, Imperial College of London

Caldwell, Charles W.
Professor, MD, PhD, University of Missouri.

Cui, Jiankun
Research Assistant Professor, MD, University of Tianjin Medical School, China

Davis, George E.
Professor, MD, PhD, University of California-San Diego

Diaz-Arias, Alberto A.
Associate Professor, MD, University of Missouri.

Esebua, Magda
Assistant Professor, MD, Tbilisi State Medical University, Tbilisi, Republic of Georgia

Frazier, Shellaine
Assistant Clinical Professor, DO, Kirksville College of Osteopathic Medicine

Glinskii, Vladislav
Assistant Professor, MD, Medical Institute, Chernovtsky, Ukraine

Gu, Zezong
Assistant Professor, MD, Tianjin Medical School, China, PhD, University of Texas

Havey, Ann D.
Associate Clinical Professor, MD, Southern Illinois University

Hogg, Russell T.
Lecturer, PhD, City University of New York

Holliday, Casey M.
Assistant Professor, PhD, Ohio University

Ingram, Ellis A.
Associate Professor, MD, University of Michigan, MHA, University of Missouri

Krause, William J.
Professor, PhD, University of Missouri.

Little, Randi
Research Associate Professor, PhD, Florida State University

Loy, Timothy S.
Associate Professor, MD, Southern Illinois University

McAfee, Robert K.
Assistant Teaching Professor, PhD, Northern Illinois University

Miller, Douglas C.
Clinical Professor, MD, PhD, University of Miami

Mitra, Ranadhir
Associate Professor, PhD, University of Missouri

Peburn, Tara A.
Lecturer, PhD, City University of New York

Petrides, Marian
Associate Clinical Professor, MD, Dartmouth University

Pittman, David L.
Vice Chair of Clinical Affairs, MD, University of Nebraska

Ravosa, Matthew J.
Director of Graduate Studies, Professor, PhD, Northwestern University

Shin, Dmitriy
Clinical Instructor, MS, Moscow State Academy of Computer Science and Engineering, Russia

Spollen, Linda E.
Associate Professor Emerita, MD, University of Kansas

Stack, M. Sharon
Vice-Chair for Research, Professor, PhD, University of Louisville

Stacy, Carl S.
Assistant Professor, MD, University of Oklahoma

Sun, Grace Y.
Professor, PhD, Oregon State University

Wang, Michael X.
Assistant Professor, MD, Lanzhou Medical College, China, PhD, University of Texas

Ward, Carol V.
Professor, PhD, John Hopkins University

Graduate Admission

Master of Science in Pathology and Anatomical sciences

The MS degree is designed primarily to prepare students for teaching in medical technology, supervisory roles in clinical and basic-science laboratories, and to offer greater in-depth study in pathology and anatomical (potentially concurrent with studies leading to an MD degree).

Admission to candidacy in the master's program is limited to those who hold at least a baccalaureate degree from an accredited college or university.

Preference will be given to students with a college GPA of 3.5 or higher, GRE scores (verbal + analytic) over 1250, and strong letters of recommendation.

Each candidate for the master's degree is required to complete a minimum of 30 semester hours, with 15 or more hours at the 400 level, maintenance of a B or better GPA in graduate course work with no more than 12 hours of research, problems or special investigations.

Candidates also must satisfactorily complete a thesis. A candidate is expected to demonstrate knowledge of clinical and research techniques and to defend the thesis.

Faculty members advise students in the preparation of a program of study.

Required courses and those of special interest should complement the student's academic background and career objectives.

Interdisciplinary Area PhD in Pathobiology Area Program

Interdisciplinary area of Pathobiology: The Department of Pathology and Anatomical Sciences in the School of Medicine, along with the department of Veterinary Pathobiology in the College of Veterinary Medicine, offers a PhD degree through the Pathobiology Area Program.

Prospective students must have a solid background in the life sciences, with advanced level experience in evolutionary biology, molecular biology, cell biology and/or biology.

Prior courses in anatomy, evolutionary biology, genetics, cell biology, developmental biology, neurobiology, chemistry and/or physics are highly recommended.

Preference will be given to students with a college GPA of 3.5 or higher, GRE scores (verbal + analytic) over 1250, and strong letters of recommendation.

Research experience at the undergraduate or masters level is also desirable.

Students are required to complete the minimum doctoral requirements of the Graduate School. These include 72 semester hours beyond the baccalaureate degree, including research and

readings credits, to be approved by the doctoral advisor. Up to 30 hours of post-baccalaureate credit from an accredited institution may be transferred toward the doctoral degree.

Resources for research in integrative anatomy, cancer biology, evolution, pathobiology, genetics and neurobiology include standard and special-use equipment in the departmental labs.

Faculty and staff members provide guidance and practical supervision in clinical, translational, experimental and basic-science research.

Courses: Pathology and Anatomical Sciences graduate courses also in myZou online system

Contact Information

Dr. Matthew J. Ravosa, Professor and Director of Graduate Studies
M303 Medical Sciences Building, MU School of Medicine
573-884-7303 (phone), 573-884-4612 (fax), ravosam@missouri.edu

Graduate Courses

7020 – Forensic Pathology/Death Investigation – Adelstein, Stacy
Summary of Forensic Death Investigation from beginning to end. Will include some of the current laboratory techniques seen on "CSI". Team taught by experts in the fields including medical examiners, death investigators, forensic anthropologists, police CSI team, lawyers, and others. Please contact Dr. Chris Stacy two weeks prior to the start of the block by email, stacyc@missouri.edu, to receive instructions. Prerequisite: Instructor's consent.

7220 – Human Histology & Organology – Krause, 3 credits
Detailed study of cytology, histology and microscopic anatomy. Prerequisites: 10 hours of Biological Sciences and instructor's consent.

7222 – Gross Human Anatomy (The Health Professions) – Ward, 7 credits
Gross structure and neuroanatomy of the human body through dissection. Prerequisites: Acceptance into Physical Therapy Program, Consent of instructor. Graded on A/F basis only.

7300 – Advanced Pathology – Anthony, 5 credits
Demonstration and simulation study of gross, microscopic and clinical laboratory pathology of major human organ systems. Prerequisites: PTH&AS 4200 and 4205 or equivalent and instructor's consent.

7400 – Seminars in Translational Medicine – Anthony, 0–5 credits
This course is intended for medical students who are enrolled in the MD-PhD program. Students participate in regular seminars and discussion groups with other students interested in clinical and translational sciences. Students working together with faculty in biomedical science and those working in clinical and translational fields, identify seminar topics. Learning objectives and written assignments are arranged on an individual basis. The course is open to

all graduate level students and students enrolled in professional schools. Graded on S/U basis only, with instructor approval.

8010 – Current Issues in Anatomical Sciences – Ward, 1 credit
Literature survey in integrative anatomy, including functional, evolutionary, developmental and translational anatomy, conducted through readings and discussion. Grade determined by participation and presentation of weekly readings. Prerequisites: graduate standing; instructor's consent. May be repeated for a maximum of 10 hours. Graded on S/U basis only.

8090 – Research in Pathology & Anatomical Sciences – Ravosa, 3 credits
Open only to properly qualified graduate students, with counsel of faculty. Focus of MS-related research in evolutionary morphology, genomics, neuroscience, pathobiology or laboratory sciences. Graded on S/U basis only.

8100 – Fundamentals of Evolutionary Biology – Ravosa, 3 credits
Principles of modern evolutionary biology. Topics include: phylogeny, genetic and phenotypic variation, developmental processes, paleobiology, speciation, macroevolution, form and function, and molecular mechanisms. Prerequisites: graduate standing and instructor's consent.

8200 – Human Development & Gross Anatomy – Anthony, 10 credits
General principles of systemic and developmental anatomy. Gross anatomy and dissection of back, upper and lower extremities, head and neck, thorax, abdomen and pelvis. Prerequisites: graduate standing and instructor's consent

8285 – Problems in Anatomy – Anthony, 1-99 credits
Regions or systems which may include developmental, microscopic, and gross anatomy. Prerequisite: instructor's consent.

8290 – Research in Pathology & Anatomical Sciences – Anthony, 3 credits
Open only with instructor's consent. Research unrelated to thesis work in evolutinary morphology, genomics, neuroscience, pathobiology or laboratory sciences.

8310 – Anatomy of the Human Nervous System – Anthony, 3 credits
A comprehensive consideration of the morphology of the nervous system, emphasizing correlation of structure and function. Prerequisites: PTH&AS 2201, Comparative Anatomy or equivalent, and instructor's consent.

9090 – Research in Pathology & Anatomical Sciences – Ravosa, 3 credits
Open only to properly qualified graduate students, with counsel of faculty. Focus of PhD-related research in evolutionary morphology, genomics, neuroscience or pathobiology. Graded on S/U basis only.

9290 – Advanced Seminar in Pathology & Anatomical Sciences – Anthony, 3 credits
Open only with instructor's consent. Courses with specialized lectures in various topics such as evolutionary morphology, genomics, neuroscience and pathobiology, depending on faculty expertise and student demand.