

PHYSIOLOGY, PH.D.

Overview

The Physiology graduate program provides comprehensive training in integrative sciences incorporating the tools and techniques of physiology with other disciplines to conduct research at the molecular, cellular, organ, and whole animal levels. Areas of research include Angiogenesis and Inflammation in Diabetic Retinopathy; Retinal Degeneration/Inflammation/Vitamin A Metabolism; Insulin Receptor/Phosphoinositide Signaling in Retinal Diseases; Obesity-Associated Metabolic Disorders; Neurobiology of Aging and Diabetes; Cardiovascular Physiology and Neurophysiology; Gastrointestinal Disorders; Tumor Biology of Invasion, Progression, and Metastasis.

Areas of Specialization

- Angiogenesis and Inflammation in Diabetic Retinopathy
- Retinal Degeneration/Inflammation/Vitamin A Metabolism
- Insulin Receptor/Phosphoinositide Signaling in Retinal Diseases
- Obesity-Associated Metabolic Disorders
- Systems Neurobiology of Aging and Diabetes
- Cardiovascular Physiology and Neurophysiology
- Geroscience
- Gastrointestinal Disorders
- Tumor Progression and Metastasis

Career Opportunities

Individuals who graduate with a PhD in Physiology have a number of exciting and rewarding career opportunities in academic research, teaching, biotechnology, government laboratories, industry, and health-related organizations.

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

For the PhD program, the department of Physiology is a participant in the interdisciplinary Graduate Program in Biomedical Sciences (GPiBS) (<http://graduate.ouhsc.edu/Graduate-Programs/PhD-Programs/Graduate-Program-in-Biomedical-Sciences/>). Students wishing to enter the Physiology PhD program apply to GPiBS as described in the GPiBS section of the Bulletin. Applicants can also be admitted directly into the Physiology PhD program with the same requirements as the GPiBS admission process.

Doctor of Philosophy Degree Requirements

The minimum credit requirement for the PhD degree is 72 semester hours of classwork and research. Requirements for the degree can

usually be met in four years. During the first year, the student completes interdisciplinary course work emphasizing molecular aspects of cell and organismal biology, along with at least three and up to six research rotations. For the subsequent years, the student enters the Physiology PhD program, takes the advanced physiology class and performs dissertation research in close collaboration with the major professor and doctoral committee. Course credit can be given for previous Master's work.

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 6012	Molecular Systems I	2
BMSC 6112	Molecular Systems II	2
BMSC 6152	Cellular Systems I	2
BMSC 6052	Cellular Systems II	2
BMSC 5221	Interdisciplinary First Year Journal Club	1
BMSC 6100	Bioscience Interdisciplinary Laboratory Rotation	1-4
BMSC 5011	Experimental Design and Applied Statistics	1
PHYO 5971	Seminar	1
PHYO 5016	Human Physiology	6
GPiBS Selective Courses		9+
Additional graduate-level electives offered by OUHSC as approved by the Advisory Committee (credits count toward the 72 hours but not a requirement)		
PHYO 5990	Special Studies	1-6
PHYO 6980	Research for Doctors Dissertation	1-16
BMSC 6011	Integrity in Scientific Research II	1

Additional Requirements (47 hours)

Successful completion of Qualifying Examination
Interdisciplinary Seminar (1 hour)

Note: Student's advisory committee sets the remainder of any needed requirements to meet the 72 hours required for the degree.

Prerequisites

- Bachelor's degree in a related field from an accredited institution.
- Grade point average of 3.0 or above using the upper-division coursework of the bachelor's degree.
- Three letters of recommendation from prior college instructors addressing the qualifications to pursue graduate study.
- Proof of language proficiency (https://admissions.ouhsc.edu/Portals/1047/assets/documents/International/Eng%20Proficiency%20Req%20Chart.pdf?ver=QHTUtvuP3_E0eDzhv_Yb3A%3d%3d) for international applicants.