Doctoral Specialization in Rehabilitation Sciences

The PhD program is designed to prepare students for research and academic careers in the study of Rehabilitation Sciences. Graduates are trained for entry into positions for universities, colleges, research institutes, research-oriented governmental settings, and research-oriented clinical settings. The faculty of the Division of Rehabilitation Sciences includes individuals with a wide variety of research expertise, teaching experience, and clinical backgrounds in rehabilitation and motor behavior.

Athletic Trainers and Physical Therapists interested in a research or academic career have a unique opportunity to complete a research-based PhD in Exercise Science with a specialization in Rehabilitation Sciences, Health Aspects of Physical Activity, or Applied Physiology. Students entering with a Master’s degree in Athletic Training or Master’s degree or Doctorate in Physical Therapy are required to complete a minimum of 30 credit hours (this includes 12 hours of dissertation). Students entering with Bachelor’s degree will be required to complete 60 credit hours.

The research programs in the division address many areas of scientific inquiry including:

- Evidence-based practice and outcomes in physical therapy, athletic training, and rehabilitation
- Optimization of rehabilitation after stroke and brain injury
- Neural and behavioral basis of motor control and motor learning
- Posture-balance-gait-mobility in older adults and special populations
- Epidemiology, assessment, and treatment of musculoskeletal pain syndromes
- Movement impairment associated with musculoskeletal injury and persistent pain
- Assessment of sensory, motor, and cognitive deficits resulting from stroke and brain injury
- Physical activity in individuals with movement dysfunction
- Sports nutrition, eating disorders, and body image in athletes and the military
- Screening for and prevention of mental health disorders and athletes and military personnel
- Exertional heat illness, thermoregulation, and hydration behaviors
- Upper extremity impairments in overhead athletes and breast cancer survivors
- Patient-reported outcome measures in clinical populations

Division Faculty

- Shana Harrington, PT, PhD
- Troy Herter, PhD
- Stacy Fritz, PT, PhD
Sample Rehabilitation Sciences Course Options

Exercise Science (PHYT considered as EXSC hours)
EXSC 700 (3) – Physical Activity and Health: Epidemiology, Research and Practice
EXSC 710 (3) – Behavioral Aspects of Physical Activity
EXSC 723 (3) – Genetics in Health Sciences
EXSC 731 (3) – Mechanisms of Motor Skill Performance
EXSC 732 (3) – Measurement of Body Composition and Associated Health Behaviors
EXSC 735 (3) – Applied Human Biomechanics
EXSC 742 (1) – Clinical Exercise Testing
EXSC 755 (1-3) – Special Topics in Exercise Science
EXSC 775 (3) – Neural Basis of Skilled Motor Behavior
EXSC 777 (3) – Endocrinology in Exercise and Health
EXSC 780 (3) – Physiology of Exercise
EXSC 781 (3) – Physiology, Exercise and Disease
EXSC 787 (3) – Research Methods and Design for Exercise Science
EXSC 790 (1-6) – Independent Study (maximum of 9 total hours)
EXSC 801 (1) – Ethical Conduct in Public Health Research
EXSC 802 (1) – Predoctoral Fellowship Writing Course with Special Emphasis on NIH F31
PHYT 788 (2) – Evidence Based Practice in Physical Therapy

Biostatistics
BIOS 701 (3) – Concepts and Methods in Biostatistics
BIOS 754 (3) – Discrete Data Analysis
BIOS 755 (3) – Introduction to Longitudinal Data Analysis
BIOS 757 (3) – Intermediate Biometrics
BIOS 758 (3) – Advanced Biometrics
BIOS 759 (3) – Theory and Methods of Discrete Data Analysis
BIOS 760 (3) – Biostatistical Methods in Clinical Trials
BIOS 765 (3) – Research Design in the Biomedical Sciences
BIOS 770 (3) – Applied Longitudinal Data Analysis
BIOS 820 (3) – Bayesian Biostatistics and Computation
**Epidemiology**
EPID 700 (3) – Introduction to Epidemiology
EPID 701 (3) – Concepts and Methods of Epidemiology
EPID 741 (3) – Intermediate Epidemiological Methods
EPID 800 (3) – Advanced Methodological Theory in Epidemiology
EPID 802 (3) – Advanced Analytical Methods in Epidemiology

**Health Promotion, Education, & Behavior**
HPEB 715 (3) – Qualitative Research Methods in Public Health

**Psychology**
PSYC 700 (3) – Psychological Approaches to Gerontology
PSYC 702A (3) – Basics of Neuroscience
PSYC 702C (3) – Basics of Developmental Psychology
PSYC 703A (3) – Integration across Cognitive Psychology and Neuroscience
PSYC 709 (3) – Basic Quantitative Methods in the Analysis of Behavioral Data I
PSYC 710 (3) – Basic Quantitative Methods in the Analysis of Behavioral Data II
PSYC 714 (3) – Psychoeducational Assessment of Children I
PSYC 715 (3) – Psychoeducational Assessment of Children II
PSYC 732 (3) – Clinical Neuropsychology
PSYC 801 (3) – Cognitive Neuroscience I
PSYC 823 (3) – Multivariate Analysis of Behavioral Data
PSYC 824 (3) – Special Topics in Quantitative Psychology
PSYC 825 (3) – Introduction to Statistical Mediation Analysis
PSYC 826 (3) – Longitudinal Data Analysis for the Behavioral Sciences
PSYC 888 (1-6) – Special Topics (vary each semester but are often highly relevant)

**Physiology, Pharmacology, Neuroscience**
PHPH 750 (4)† – Fundamental Neuroscience I
PHPH 751 (4)† - Fundamentals of Neuroscience II