

Physical Therapy

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Research

The mission of the Research Division is to understand how the movement system is affected by disease, injury, lifestyle, development and aging and to understand how movement can be used to promote health by enhancing physical function, activity and participation across the lifespan.

Our interdisciplinary scientific endeavors include mechanistic and translational investigations at all levels of organization, from the cell to society. Our research is supported by millions of dollars in federal, private foundation and university funding. We pursue knowledge in a collaborative work environment within the Movement Science Research Center.

Our doctoral and postdoctoral Research Training Programs prepare students for careers at the forefront of physical therapy and movement science research.

Research Areas

Research Area	Faculty Investigators
Foot & Ankle Injury & Recovery	Mary K. Hastings, PT, DPT, MSCI, ATC
Integrative Muscle Physiology	Gretchen A. Meyer, PhD
Movement & Neurodegenerative Disease	Gammon M. Earhart, PT, PhD
Movement & Neurodegenerative Disease	Ryan P. Duncan, PT, DPT
Neural Control of Movement Following Neurological Injury	Laura McPherson, PT, DPT, PhD
Neural Plasticity and Sensorimotor Integration	Jacob McPherson, PhD
Orthopaedic Biomechanics	Michael D. Harris, PhD
Prevention, Rehabilitation & Maintenance in Musculoskeletal Conditions	Linda Van Dillen, PT, PhD, FAPTA
Quantitative Methodology and Rehabilitation Informatics	Keith Lohse, PhD, PStat
Rehabilitation Research for Orthopaedic Conditions	Marcie Harris-Hayes, PT, DPT, MSCI
Shoulder Biomechanics and Rehabilitation	Rebekah Lawrence, PT, PhD
Stroke Recovery & Rehabilitation Accelerometry	Catherine Lang, PT, PhD
Stroke Recovery & Rehabilitation Accelerometry	Marghuretta D. Bland, PT, DPT, NCS
Stroke Recovery, Rehabilitation, and Accelerometry	Carey L. Holleran, PT, MPT, DHS, NCS

Tendon Rehabilitation	Jennifer Zellers, PT, DPT PhD
Whole Body & Joint-Level Orthopaedic Biomechanics	Michael D. Harris, PhD

Movement Science Research Center

The Movement Science Research Center is approximately 13,000 square feet of newly renovated space that provides a collaborative environment for faculty, PhD students and postdoctoral fellows to conduct rehabilitation research.

The facility includes numerous private rooms for clinical interventions and state-of-the-art equipment.

Equipment List	
Accelerometer activity monitors	Gene and protein quantification
Balance platform	Histology
Biological sample processing equipment	Motion capture
Biplane videoradiography	Muscle physiology testing equipment
Cell culture suite	Oscilloscopes
Dynamometers	Rotating treadmill
Electromyography	Simulated spaces for functional activities
Eye tracking	Split-belt treadmill
Force platforms	Treadmills
Function generators	Wheel mill system
GAITrite instrumented walkway	

Research Training Programs

We offer physical therapy research training programs designed to prepare students at the doctoral and postdoctoral levels for careers in groundbreaking physical therapy research.

PhD in Movement Science

Under the Movement Science Program, students work on the research topics that interest them while completing course work that prepares them for their research careers. The Movement Science Program encourages collaboration with other departments within the School of Medicine.

Visit the Program in Physical Therapy website for more information about the Movement Science Program.

Postdoctoral Fellowship in Movement Science

Our Postdoctoral Fellowship in Movement Science offers an opportunity to develop and complete research projects related to movement science and rehabilitation. Fellows are encouraged to collaborate with other faculty and programs in the School of Medicine.

Visit the Program in Physical Therapy website for more information about the Postdoctoral Fellowship.

Comprehensive Opportunities in Rehabilitation Research Training Program

The Comprehensive Opportunities in Rehabilitation Research Training (CORRT) Program is a multicenter career development program for physical and occupational therapists.

Visit the CORRT website for more information about the CORRT Program.

Institute of Clinical and Translational Sciences

The Institute of Clinical and Translational Sciences (ICTS) offers programs designed to support investigators at each phase of their clinical and translational research studies.

Visit the ICTS website for more information about the ICTS .

Clinical Research Training Center

The Clinical Research Training Center (CRTC) fosters clinical research training and career development for predoctoral students, house staff, postdoctoral fellows and faculty.

Visit the CRTC website for more information about the CRTC .