

REHABILITATION SCIENCE (PHD)

Visit program website. (<https://ptrehab.ucsf.edu/rehabilitation-science-phd/>)

Degree Offered: PhD

Program Leadership:

Richard Souza, PT, PhD, Program Director, Musculoskeletal Biomechanics Lead

Myriam Chaumeil, PhD, Diversity, Equity, & Inclusion Chair, Neuroscience Lead

Admissions Inquiries:

Mike Tressel, Admissions and Recruitment Specialist

Program Description

The Rehabilitation Science PhD program is designed to train aspiring scientists to propel the field of rehabilitation science forward. We pride ourselves on using innovative and transformational approaches to tackle important clinical problems, from utilizing novel animal models to study the impacts of aging on functional mobility, to developing new tools for monitoring and enhancing physical activity in various patient populations. Our program, offered in collaboration with faculty from San Francisco State University, takes a non-traditional approach with a broad perspective of basic and clinical sciences in the areas of musculoskeletal and neurological rehabilitation. Backed by outstanding faculty, state-of-the-art research facilities, and world-class clinical expertise, the program is a preeminent center of learning and discovery in rehabilitation science.

Specialization Areas

A central goal of the program is to capitalize on the interdisciplinary nature of UCSF and offer an academic experience that integrates multiple disciplines. PhD students select one of the following specialized training areas:

Musculoskeletal Biomechanics

Musculoskeletal biomechanics is one of the foundations of rehabilitation science. Within this specialization, new investigators are trained on the latest advancements in the field and are prepared for research careers in academia and industry.

Neuroscience

The neuroscience track offers two pathways: a clinically focused pathway addressing neural injury and neurodegenerative disease, as well as a lab-based translational research pathway. New investigators in the lab utilize clinically relevant models of neurodegeneration to address mechanisms underlying activity-based restoration of function.

Admission Requirements

A bachelor's, master's or doctoral degree in physical therapy, neuroscience, exercise physiology, biomedical engineering, or a related rehabilitation science or professional field is required. Additionally, applicants must have a grade point average of 3.0 or greater (or its equivalent).

Because of the broad and varied interests of Rehabilitation Science PhD applicants, prerequisite courses vary depending on each applicant's area of study. The majority of applicants are expected to have previous

research experience through their undergraduate training or in post-graduate work. Recommended coursework includes the following areas:

- Biology
- Chemistry
- Physics
- Mathematics (through calculus)
- Statistics
- Anatomy
- Physiology

Note that applicants are not required to be a physical therapist or possess an academic degree in physical therapy.

CV and Statement of Purpose

Applicants must submit their CV and a Statement of Purpose (3 to 5 pages) discussing their background, interests, research goals, purpose in applying for graduate study, and plans for the future. Applicants must indicate what they hope to gain from being a doctoral student in rehabilitation science, how their interests fit with those of the program's faculty, and any other pertinent information supporting their application and qualifications.

Letters of Recommendation

Applicants must submit three letters of recommendation from individuals who know them well and can speak to their ability to succeed in graduate school.

Learning Outcomes

The objective of this program is to develop independent investigators in rehabilitation science with innovative, multidisciplinary approaches to the field. The methods and strategies used for dissertation work will vary depending on the student's focus and needs. The core curriculum is designed to provide broad training in rehabilitation science. Elective and lab activities will be tailored to create an individualized plan for each trainee.

Additional Information

The Rehabilitation Science PhD program is offered by the UCSF Graduate Division, administered by the UCSF School of Medicine, and delivered by faculty members in the UCSF School of Medicine and at San Francisco State University. The program office is located at the UCSF Mission Bay campus. Visit the program website (<https://ptrehab.ucsf.edu/rehabilitation-science-phd/>) for more information.

Program Faculty

- *Find a program faculty list (<https://ptrehab.ucsf.edu/phd-faculty/>) on the program website.*

Career Outcomes

- *Find career outcomes and other data on PhD programs (<https://graduate.ucsf.edu/program-statistics/>) on the Graduate Division website.*

Degree Requirements

- Minimum GPA of 3.0
- Pass all core courses and required activities
- Complete six quarters in residence, including a minimum of three registered quarters after advancement to candidacy

- Pass the qualifying examination
- Complete and submit a dissertation
- For additional details, please see: graduate.ucsf.edu/phd-degree
(<https://graduate.ucsf.edu/phd-degree/>)

Core Courses

Neuro Track

Code	Title	Units
Core Courses		
REHAB SCI 200A	Laboratory Rotation I	3
REHAB SCI 200B	Laboratory Rotation II	3
REHAB SCI 200C	Laboratory Rotation III	3
REHAB SCI 201	Introduction to Rehabilitation Science	2
REHAB SCI 202	Gross and Regional Anatomy	1
REHAB SCI 203	Doctoral Colloquium	1
REHAB SCI 204	Application of Principles of Learning	3
GRAD 214	Responsible Conduct of Research and Rigor & Reproducibility	1.5
GRAD 202	Racism in Science	3
BIOSTAT 200	Biostatistical Methods in Clinical Research I	3
BIOSTAT 208	Biostatistical Methods II	3
Foundational Courses		
NEUROSCI 201A	Basic Concepts in Cellular and Molecular Neuroscience	5
NEUROSCI 201B	Basic Concepts for Cellular and Developmental Neuroscience	4
ANATOMY 207	Neuroscience (Audit)	3
Total Units		38.5

Biomechanics Track

Code	Title	Units
Core Courses		
REHAB SCI 200A	Laboratory Rotation I	3
REHAB SCI 200B	Laboratory Rotation II	3
REHAB SCI 200C	Laboratory Rotation III	3
REHAB SCI 201	Introduction to Rehabilitation Science	2
REHAB SCI 203	Doctoral Colloquium	1
REHAB SCI 202	Gross and Regional Anatomy	1
REHAB SCI 204	Application of Principles of Learning	3
GRAD 214	Responsible Conduct of Research and Rigor & Reproducibility	1.5
GRAD 202	Racism in Science	3
BIOSTAT 200	Biostatistical Methods in Clinical Research I	3
BIOSTAT 208	Biostatistical Methods II	3
Foundational Courses		
REHAB SCI 205	Biomechanics of Human Motion	2
BIOENGR 221	Tissue Mechanobiology	2.5-3
Total Units		31-31.5