



# Department of Physical Therapy and Rehabilitation Science

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## Rehabilitation Science PhD



### Overview

The UCSF Department of Physical Therapy and Rehabilitation Science, in collaboration with faculty from the Department of Physical Therapy at San Francisco State University (SFSU), is offering a unique opportunity to study rehabilitation science. The PhD in Rehabilitation Science program takes a non-traditional approach that addresses the broader perspective of both basic and clinical sciences in the areas of musculoskeletal and neurorehabilitation.

The specific aims and objectives of the PhD program include to:

1. Create a preeminent center of learning and discovery in rehabilitation science at the doctoral level.
2. Leverage the expertise of faculty within the academic program at both UCSF and SFSU to strengthen and expand the training in rehabilitation sciences available to students and develop academic areas of focus that draw on the strengths of our faculty and the campus.
3. Take advantage of the highly interdisciplinary nature of UCSF and the diversity at SFSU to expand the learning opportunities and enrich the collaborative science research experience for our graduate students.
4. Enhance interactions with the broader academic community in rehabilitation science centers of excellence at the national level.

Please note, the PhD in Rehabilitation Science program follows the Graduate Division Code of Conduct and Integrity of Research policies, which can be found here [1].

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## Growing Demand

As the population continues to age, the development of programs in the interdisciplinary field of rehabilitation is essential to ensure new research is produced to support the healthcare needs of society. The professions of physical and occupational therapy are expected to expand in upcoming decades with longer projected age spans of the general population and the increased prevalence of obesity. With this increased demand, rehabilitation specialists are needed to provide effective and efficient care. However, the current evidence behind the practice of physical and occupational therapy is lacking in nearly all areas of clinical practice. Rehabilitation scientists with advanced research training are in critical demand to begin to evaluate these issues, to evaluate the effectiveness of current injury prevention and rehabilitation science, and to develop new potential injury prevention and rehabilitation strategies.

The program has established two areas of specialization within the field of rehabilitation science, given the healthcare needs of society. The **Clinically Informed Neuroscience specialization** was developed based on the increased prevalence of neurodegenerative diseases (e.g. Multiple Sclerosis, Parkinson's Disease), stroke and traumatic brain injuries (TBI) in the US population. According to the CDC, stroke kills almost 130,000 Americans each year?1 in every 19 deaths<sup>1</sup>. Every year, more than 795,000 people in the United States have a stroke; about 610,000 of these are first or new strokes and one in four are recurrent strokes<sup>1</sup>. Currently, stroke costs the United States an estimated \$38.6 billion each year, which includes the cost of health care services, medications, and missed days of work<sup>1</sup>. Stroke is a leading cause of serious long-term disability<sup>1</sup>. Additionally, an estimated 1.7 million people sustain a traumatic brain injury (TBI) annually<sup>2</sup>. Of them, 52,000 die, 275,000 are hospitalized, and 1.365 million?nearly 80%?are treated and released from an emergency department<sup>2</sup>. Direct medical costs and indirect costs of TBI, such as lost productivity, totaled an estimated \$60 billion in the United States in 2000<sup>2</sup>.

The **Musculoskeletal Biomechanics specialization** was established to address the increasing prevalence of arthritis in the aging and obese population. According to the CDC, arthritis is the most common cause of disability in the United States, limiting the activities of nearly 21 million adults<sup>3</sup>. Scientific studies have shown that physical activity can reduce pain and improve function, mood, and quality of life for adults with arthritis<sup>3</sup>. Physical activity can also help manage other chronic conditions that are common among adults with arthritis, such as diabetes, heart disease, and obesity<sup>3</sup>. Currently, 50 million people are affected with arthritis and it is estimated that one in two people will get symptomatic knee osteoarthritis in their lifetime<sup>3</sup>. Additionally, more than 36% of adults in the US are currently obese, and medical costs associated with obesity were estimated at \$147 billion in 2008<sup>4</sup>.

## References

<sup>1</sup> National Center for Chronic Disease Prevention and Health Promotion: Division for Heart Disease and Stroke Prevention. Stroke facts. Centers for Disease Control and Prevention website. <http://www.cdc.gov/stroke/facts.htm> [2]. Updated March 24, 2015. Accessed

December 2, 2015.

<sup>2</sup> Centers for Disease Control and Prevention. Traumatic brain injury in the United States: fact sheet. Centers for Disease Control and Prevention website. <http://www.cdc.gov/TraumaticBrainInjury/statistics.html> <sup>[3]</sup>. Updated January 12, 2015. Accessed December 2, 2015.

<sup>3</sup> Centers for Disease Control and Prevention. Arthritis: data and statistics. Centers for Disease Control and Prevention website. [http://www.cdc.gov/arthritis/data\\_statistics/index.htm](http://www.cdc.gov/arthritis/data_statistics/index.htm) <sup>[4]</sup>. Updated March 11, 2015. Accessed December 2, 2015.

<sup>4</sup> National Center for Chronic Disease Prevention and Health Promotion: Division of Nutrition, Physical Activity, and Obesity. Adult obesity facts. Centers for Disease Control and Prevention website. <http://www.cdc.gov/obesity/data/adult.html> <sup>[5]</sup>. Updated September 21, 2015. Accessed December 2, 2015.

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#### Links

[1] <https://graduate.ucsf.edu/research-integrity>

[2] <http://www.cdc.gov/stroke/facts.htm>

[3] <http://www.cdc.gov/TraumaticBrainInjury/statistics.html>

[4] [http://www.cdc.gov/arthritis/data\\_statistics/index.htm](http://www.cdc.gov/arthritis/data_statistics/index.htm)

[5] <http://www.cdc.gov/obesity/data/adult.html>