

Career Development Grant

Performance of shoulder muscles after a physical therapy intervention for patients with rotator cuff tears

The foci of my research include: 1) understanding the biomechanical mechanisms and impairments associated with rotator cuff related shoulder injuries; and 2) identifying optimal physical therapy treatment strategies to enhance recovery and promote active-lifestyles. For this Career Development Grant, my plan includes protected time to conduct research, focused coursework, and mentorship from established investigators.

Research: I will continue to manage a clinical trial that aims to assess the feasibility of a standardized rehabilitation protocol for patients with full thickness rotator cuff tears. Further, I am planning to add a comparison group of matched individuals without shoulder pain. Participants will be evaluated using a comprehensive battery of patient-rated outcomes, clinical measures, and biomechanical assessment. This comparison will provide detailed information on the recovery of impairments and patient-rated disability in patients with full thickness tears after undergoing the standardized rehabilitation protocol.

Focused coursework: I am planning to attend specific courses related to the design, implementation and management of clinical trials. Further, I am planning to attend several workshops and seminars offered through the University of Southern California.

Mentorship: I will be mentored by a diverse team of senior investigators with expertise in shoulder assessment and physical therapy, clinical trials design and management, proposal and scientific writing, and statistical modeling.

In conclusion, during this career development grant, I expect to acquire four major skills related to: 1) the design and conduction of a clinical trial in rehabilitation medicine; 2) the assessment of functional loss and biomechanical impairments in patients with shoulder disorders; 3) the design of a rehabilitation intervention to address movement impairments in upper extremity disorders; 4) advanced biostatistical analysis methods. After completing this training, I will possess the necessary skills to become an independent clinician-scientist. Completing this research training will optimize my applications for competitive research funding from NIH and others.