

From: [Faculty Description of Research Project](#)
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Subject: New submission from Faculty Description of Research Project
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Project title:

Neuromodulatory Examination of Pain and Mobility Across the Lifespan (NEPAL)

Faculty mentor name, email, department and phone number

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Research Project Description

BACKGROUND:

Musculoskeletal pain represents the leading cause of disability worldwide. It has been traditionally attributed to peripheral mechanisms, but peripheral damage, inflammation, and psychological factors have failed to significantly account for the presence, absence, or severity of chronic musculoskeletal pain (CMP). Recent studies show that individuals with CMP exhibit dysfunctional pain modulation supporting a significant central nervous system (CNS) contribution. However, the CNS mechanisms underlying these changes in pain modulation are not currently known, nor is their relation to clinical pain progression. The proposed pilot examines brain circuits recently described in predicting the transition from acute to chronic pain, in predicting clinical and experimental pain changes as well as physical performance and mobility changes in older persons with musculoskeletal pain over a one year period. The findings will provide novel and important information regarding the mechanisms underlying aberrant pain processing and its functional consequences in older adults with musculoskeletal pain. The information learned can be subsequently used to target treatment and prevention strategies in future studies of older adults.

HYPOTHESIS:

The central hypothesis is that increased functional and structural connectivity of cortico-striatal regions will be significantly associated with baseline clinical and experimental pain and decreased physical function in persons with CMP and will account for more rapid clinical pain and disability progression over time.

ROLE OF MEDICAL STUDENT:

The interested student would join an existing research team that includes a Clinical Research Coordinator and UF undergraduate Research Assistants. He/she would benefit from an immersive research experience involving data collection from human research subjects (neuroimaging, quantitative sensory, cognitive and physical function batteries), data analysis (using NCSS Statistical Software) and ultimately a poster presentation/manuscript.