I. General research interests
    A. Musculoskeletal pathophysiology
        1. Mechanisms responsible for loss of muscle function (e.g., strength) following injury or fatigue
        2. Functional interactions between muscle and bone (e.g., how does muscle disuse alter bone mechanical properties)
    B. Systematic review and meta-analysis methodologies

II. Current research projects
    A. Effect of estrogen on skeletal muscle function and recovery from injury (NIH funded))
    B. Repair and rehabilitation of musculoskeletal wounds where there is a large loss of muscle tissue (DOD/VA funded)
    C. The mental health well-being of grandparents raising grandchildren: a systematic review and meta-analysis
    D. Effect of exercise training on the mental and physical well-being of caregivers for persons living with chronic illnesses: a systematic review and meta-analysis
    E. Effect of Tai Chi dose on cognitive function in community-dwelling older adults: a systematic review and meta-analysis
    F. Effect of treatment dose on recovery from stroke: a systematic review and meta-analysis

III. Research skill sets
    A. Expertise in human and rodent models employing exercise and/or musculoskeletal injury
        1. Conscious *in vivo* rodent models
        2. Anesthetized *in vivo* rodent models
        3. *In vitro* rodent muscle models
        4. *In vitro* rodent muscle fiber models
        5. Human exercise-/work-induced muscle injury
        6. Human exercise in the heat
    B. Assessment of muscle functional capacity (e.g., strength) in human and rodent models
    C. Assessment of the determinants of muscle strength (i.e., muscle size and % activation)
        1. Electromyography (EMG) in human and animal models
        2. Assessment of % muscle activation in humans using the interpolated twitch technique
        3. Histological assessment of muscle fiber size and type

D.   Basic skills

1.   Histology (e.g., cryostat sectioning, immunohistochemistry, immunofluorescence, histochemistry)

2.   Microscopy (e.g., brightfield, contrast, confocal, intracellular calcium imaging)

3.   Molecular biology (e.g., qPCR, *in situ* hybridization)

4.   ELISA-based assays

5.   Basic biochemistry and biological measurements

6.   Rodent survival surgery (e.g., ovariectomy, chronic catheter implantation, chronic implantation of a stimulating nerve cuff, chronic implantation of EMG electrodes)

7.   Computer interfacing of scientific instrumentation

8.   Systematic review and meta-analysis (i.e., traditional pairwise meta-analysis and network meta-analysis)

9.   Quantitative research methodologies, including statistical analyses