

## **UM-OAIC Funded Pilot Projects – Year 01 (1994) to Year 26 (2020)**

### **Year 01 (1994-1995)**

#### **Effects of Exercise on Blood Pressure, Hyperinsulinemia and Renal Function in the Elderly**

Donald R. Dengel, Ph.D., Research Associate (Andrew Goldberg, M.D., Matthew Weir, M.D., Mentors)

#### **Exercise Rehabilitation Programs for the Treatment of Claudication Pain**

Andrew W. Gardner, Ph.D., Assistant Professor (Eric Poehlman, Ph.D., Mentor)

#### **Effect of Weight Loss and Exercise Training on Lipoprotein Lipid Metabolism in Elderly with Atherogenic LDL Phenotype**

Leslie I. Katzel, M.D., Ph.D., Assistant Professor (Andrew Goldberg, M.D., Mentor)

#### **Costs of Congestive Heart Failure among the Elderly**

Ernest Moy, M.D., MPH, Assistant Professor (James Hudson, M.D., Mentor)

#### **The Effects of Strength Training on Insulin Sensitivity and Glucose Tolerance in Post-Menopausal Women with Impaired Glucose Tolerance**

Alice Smith Ryan, Ph.D., Research Fellow (Dariush Elahi, Ph.D., Mentor)

### **Year 02 (1995-1996)**

#### **Cognitive Functioning of Hip Fracture Patients in the Hospital: Components, Predictors, Trajectories, Outcomes, and Implications for Intervention**

Ann L. Gruber-Baldini, Ph.D., Research Associate (Jay Magaziner, Ph.D., M.S. Hyg., Mentor)

#### **Aerobic Exercise in the Elderly Stroke Population**

Richard F. Macko, M.D., Assistant Professor (Andrew Goldberg, M.D., Mentor)

#### **Effects of Aerobic Exercise in Endogenous Fibrinolysis in Elderly Patients with Intermittent Claudication and Stroke**

Lois Killewich, M.D., Ph.D., Assistant Professor (William Flinn, M.D. and Andrew Goldberg, M.D., Mentors)

#### **Assessment of Leg Perfusion in Intermittent Claudication**

Andrew Gardner, Ph.D., Research Assistant Professor (William Flinn, M.D., Mentor)

### **Year 03 (1996-1997)**

#### **The Impact of Computer-Assisted Data Collection in a Geriatric Population**

Roopak Manchanda, M.S. and Mitchell Rosen, Ph.D. (Douglas Bradham, Dr.P.H., Mentor)

#### **Lower Extremity Strength in Vascularly Disabled Individuals: Peripheral Arterial Disease and Stroke**

Kenneth Silver, M.D., Associate Professor (Andrew Goldberg, M.D., James Hagberg, Ph.D., Mentors)

#### **Year 04 (1997-1998)**

##### **The Effect of Exercise on Recovery of Function Following Hip Fracture**

Perry Colvin, M.D., Assistant Professor (Jay Magaziner, Ph.D., Mentor)

##### **The Effect of Risk Factor Modification (Diet, Weight Loss, Smoking Cessation, Exercise) on Endothelium-Dependent Brachial Artery Vasoactivity in Older Men and Women**

Mary Corretti, M.D., Assistant Professor (Stephen Gottlieb, M.D., Leslie Katzel, M.D., Ph.D., Mentors)

##### **Electromagnetic Motor Evoked Potentials (MEPs) as a Prognostic Measure of Functional Outcomes in Stroke Patients**

Gerald Smith, Ph.D., P.T., Assistant Professor (Mary Rodgers, Ph.D., PT, Mentor)

#### **Year 05 (1998-1999)**

##### **Muscle Fiber Plasticity in Hemiparetic Patients after an Aerobic Exercise Program**

Patrick DeDeyne, Ph.D., MPT, Assistant Professor (Andrew Coggan, Ph.D., Mentor)

##### **Analysis of Cardiac Na/Ca Exchanger During Aging**

Abdul Ruknudin, Ph.D., Research Assistant Professor (John Lederer, M.D., Ph.D., Mentor)

##### **Upper Extremity Training in Stroke Patients: A Feasibility Study**

Sandra McCombe-Waller, M.S., Clinical Instructor (Jill Whittall, Ph.D., Mentor)

#### **Year 06 (1999-2000)**

##### **Neuroplasticity and Upper Extremity Training in Stroke Patients**

Larry Forrester, Ph.D., PT, Associate Professor (Jill Whittall, Ph.D., Daniel Hanley, M.D., Gerald Smith, Ph.D., PT, Mentors)

#### **Year 07 (2001-2002)**

##### **The Construct of a Hip Fracture-Specific Functional Test and Feasibility of a New Training Program**

Gad Alon, Ph.D., PT, Associate Professor (Perry Colvin, M.D., Jay Magaziner, Ph.D., M.S. Hyg., Mentors)

##### **Short-term Neural Adaptations with Treadmill Training in Chronic Hemiparetic Stroke Patients**

Larry Forrester, Ph.D., Assistant Research Professor/Research Associate (Daniel Hanley, M.D., Richard Macko, M.D. Mentors)

##### **Development of a Rodent Model Using Aerobic Exercise as Rehabilitative Intervention after Focal Cerebral Ischemia**

Daniel Hanley, M.D., Professor (Johns Hopkins University)

## **Peripheral Arterial Occlusive Disease, Cognition, and Magnetic Resonance Abnormalities in Older Adults**

Shari Waldstein, Ph.D., Assistant Professor (Leslie Katzel, M.D., Ph.D., Eliot Siegel, M.D., David Lefkowitz, M.D., Abraham Obuchowski, M.D., Mentors)

### **Year 08 (2002-2003)**

#### **Muscle Protein Profile in Patients with Stroke**

Patrick G. DeDeyne, Ph.D., M.P.T., Associate Professor (Richard Macko, M.D., Mentor)

#### **Progressive Rate Training (PRT) Post Stroke**

Carwile LeRoy, M.D., Associate Investigator/Fellow (Richard Macko, M.D., Mentor)

#### **Assessing Treatment Fidelity in the Pepper Center: Enhancing Intervention Research**

Denise Orwig, Ph.D., Assistant Professor (Jay Magaziner, Ph.D., M.S. Hyg., Mentor)

#### **Medical Cost Implications of Changes in Functional Status**

Bruce Stuart, Ph.D., Professor

#### **Central Motor Control Mechanisms Associated with Hand Dominance and Their Adaptability to Unilateral and Bilateral Training**

Sandra McComb Waller, MS, PT, Assistant Professor (Jill Whittall, Ph.D., Mary Rodgers, Ph.D., Mentors)

### **Year 09 (2003-2004)**

#### **Impedance-Controlled Ankle Robotics: A Novel Technology for Gait Rehabilitation after Stroke**

Larry Forrester, Ph.D., Assistant Professor (Richard Macko, M.D., Igo Krebs Ph.D., Christopher Bever, M.D., Mentors)

#### **Age, Lifestyle, Muscle Mechanisms in Insulin Resistance (Training Only)**

Lyndon Joseph, Ph.D., Assistant Professor (Alice Ryan, Ph.D., Andrew Goldberg, M.D., Mentors)

#### **Morphometrical and Volumetrical Characteristics of the Lesioned Brain as Predictors of Therapeutic Benefits of BATRAC and AEX**

Andreas Luft, M.D., Assistant Professor, University of Tübingen, Germany (Daniel Hanley, M.D., Mentor)

#### **Skeletal Muscle Size and Performance in HIV and Individuals of Differing Functional Status**

David Russ, P.T., Ph.D., Assistant Professor (Les Katzel, M.D., Ph.D., Andrew Goldberg, M.D.)

### **Year 10 (2004-2005)**

#### **Adipose Tissue Production of Inflammatory Cytokines: Cellular Sources and Changes with Age**

Jacob Blumenthal, M.D., Assistant Professor (Susan K. Fried, Ph.D. Andrew P. Goldberg, M.D.)

#### **The Effects of Exercise on Renal Function as Measured by Cystatin C Versus Creatinine-based Estimates of Glomerular Filtration Rate**

Jeffrey Fink, M.D., Associate Professor of Medicine (Les Katzel, M.D., Ph.D., mentor)

## **Does side of Stroke Affect Central Motor Control Mechanisms in Response to Short-term Unilateral Versus Bilateral Training?**

Sandy McCombe Waller, Ph.D., PT, Assistant Professor (Jill Whittall, Ph.D., Daniel Hanley, M.D.)

## **The Effects of Resistive Training on Muscle Atrophy and Insulin Sensitivity in Hemiparetic Stroke Patients**

Alice S. Ryan, Ph.D., Associate Professor and Fred Ivey, Ph.D., Assistant Professor (Richard Macko, M.D., Andrew P. Goldberg, M.D.)

## **Exercise Rehabilitation in Parkinson Disease**

Frank Skidmore, M.D., Assistant Professor (Richard F. Macko, M.D., Lisa M. Shulman, M.D., William J. Weiner, M.D.)

## **Year 11 (2005-2006)**

### **SAA Reduction as a Beneficial Mechanism of Weight Loss by Exercise**

Da-Wei Gong, M.D., Ph.D., Assistant Professor (Andrew P. Goldberg, M.D., Alice Ryan, Ph.D.)

### **Feasibility Study for the Measurement of Lower Extremity Muscle Strength, Muscle Composition and Cardiovascular Fitness Following Hip Fracture**

Ram Miller, MDCM, MSc, Assistant Professor (Jay Magaziner, Ph.D., Alice Ryan, Ph.D., Richard Macko, M.D., Charlene Hafer-Macko, M.D.)

### **Aging and HIV**

Kris Ann Oursler, M.D., Associate Professor (Les Katzel, M.D., Charlene Hafer-Macko, M.D.)

### **Effects of Ambulatory Exercise Training on Risk Factors for Sudden Cardiac Death in Stroke Patients**

Eric Rashba, M.D., Associate Professor (Richard Macko, M.D., Frederick Ivey, Ph.D.)

### **Cerebral Hypoperfusion and Cognitive Dysfunction in Chronic Kidney Disease (CKD)**

Stephen Seliger, M.D. MS, Assistant Professor (Shari Waldstein, Ph.D., Les Katzel, M.D., Ph.D., Jeffrey Fink, M.D., MS, Eliot Siegel, M.D.)

## **Year 12 (2006-2007)**

### **The Effect of Treadmill Training on Recovery of Lower Extremity Function and Inflammatory Cytokines in Hip Fracture Patients**

Ram Miller, MDCM, MSc, Assistant Professor (Jay Magaziner, Ph.D., Alice Ryan, Ph.D., Richard Macko, M.D., Charlene Hafer-Macko, M.D.)

### **Mechanisms of Cellular Regeneration and Repair in the Functional Recovery of Skeletal Muscles from Older Animals Following Eccentric Injury**

David Russ, P.T., Ph.D., Assistant Professor (Les Katzel, M.D., Ph.D., Andrew Goldberg, M.D.)

### **Short-Term Adaptations in Paretic and Lower Extremity Motor Control after Stroke: Bilateral Coupled Robots vs. Passive Manual Exercise.**

Larry Forrester, Ph.D., Assistant Professor (Richard Macko, M.D., Igo Krebs Ph.D., Christopher Bever, M.D., Mentors)

### **Year 13 (2007-2008)**

#### **Adaptive Physical Activity in Hemiparetic Stroke**

Kathleen Michael, Ph.D., Assistant Professor (Richard Macko, M.D., Andrew Goldberg, M.D., Mentors)

#### **Effects of Aerobic Exercise Training on VEGF, Angiogenesis and Glucose Metabolism in Older Adults**

Steven Prior, Ph.D. Assistant Professor (Alice Ryan, Ph.D., Andrew Goldberg, M.D., Heidi Ortmeier, Ph.D., Mentors)

#### **Immunologic Dysfunction in Elderly Subjects who undergo Aerobic Exercise Rehabilitation**

Wilbur Chen, M.D., Assistant Professor (Andrew Goldberg, M.D., Alice Ryan, Ph.D., Mentors)

#### **The Effect of Home-Based Exercise Training on Recovery of Lower Extremity Function and Inflammatory Cytokines in Hip Fracture Patients**

Ram Miller, M.D.C.M., Assistant Professor (Jay Magaziner, Ph.D., Les Katzel, M.D., Ph.D., Mentors)

#### **Resistive Training and Skeletal Muscle Insulin Action in Hemiparetic Stroke Patients**

Alice S. Ryan, Ph.D., Professor and Fred Ivey, Ph.D., Assistant Professor (Richard Macko, M.D., Mentor)

### **Year 14 (2008-2009)**

#### **Endothelial Function and Cognitive Dysfunction in Chronic Kidney Disease**

Afshin Parsa, M.D., Ph.D., Assistant Professor (Les Katzel, M.D., Ph.D., Mentor)

#### **Hip Muscle Composition: Relationships with Neuromechanical Performance, Lateral Stability, and Risk of Falls in Older Adults**

Mark Rogers, Ph.D., P.T. Professor (Andrew Goldberg, M.D. and Alice Ryan, Ph.D. Mentors)

#### **UM-OAIC & MERCE Joint Pilot Collaboration**

#### **Assessment of Motor System Connectivity in Stroke Rehabilitation**

Alan McMillan, Ph.D., Research Associate (Jill Whittall, Ph.D., Mentor)

### **Year 15 (2009-2010)**

#### **Impact of Inflammatory Bowel Disease and Aging on Body Composition and Functional Performance**

Raymond Cross, M.D., MS, Associate Professor (Les Katzel, M.D., Ph.D., and Alice Ryan, Ph.D., Mentors)

#### **The Effects of Aging on Airway Smooth Muscle Contraction and Relaxation**

Deepak Deshpande DVM, Ph.D., Assistant Professor (Andrew Goldberg, M.D., Mentor)

#### **Task-Oriented Exercise and Behavioral Intervention to Promote Activity in Stroke**

Kathleen Michael Ph.D., RN, CRRN, Assistant Professor (Richard Macko, M.D. and Andrew Goldberg, M.D., Mentors)

#### **UM-OAIC & MERCE Joint Pilot Collaboration**

#### **Cortical and Biomechanical Dynamics of Lower Extremity Robot Assisted Training at Different Levels of Motivational Incentive Implications for Stroke Survivors**

Ronald Goodman, Ph.D., Research Fellow (Richard Macko, M.D. and George Wittenberg, M.D., Ph.D., Mentors)

**Myasthenia Gravis Exercise Program to Increase Physical Activity and Fitness and Reduce Cardiovascular Risk**

Charlene Hafer-Macko, M.D., Associate Professor (John Sorkin, M.D., Ph.D. Mentor)

**Plasticity, Kinetics and Kinematics of Bilateral Reaching Therapy in Chronic Stroke**

Lauren Jones-Lush, Ph.D., Assistant Professor (George Wittenberg, M.D., Ph.D., Mentor)

**Year 16 (2010-2011)**

**Role and Mechanism of Exercise Induced Facilitation of Recovery after Experimental Traumatic Brain Injury**

Alan Faden M.D., Professor (Richard Macko, M.D., Mentor)

**Pilot Study of Prehabilitation Prior to Elective Surgery in Older Adults**

Ram Miller M.D., CM, Assistant Professor (Jay Magaziner, Ph.D., M.S.Hyg, Mentor)

**Effect of a Progressive, Adaptive Physical Activity Regimen on Functional Outcomes and Musculoskeletal Composition in Elderly Survivors of Critical Illness**

Giora Netzer, M.D., MSCE, Assistant Professor (Michael Terrin, M.D., CM, MPH, Mentor)

**Functional and Metabolic Benefits of Rehabilitation in HIV**

Kris Ann Oursler, M.D., Assistant Professor and Heidi Ortmeyer, PhD, Assistant Professor (Charlene Hafer-Macko M.D., Alice Ryan Ph.D., Andrew Goldberg, M.D., Mentors)

**UM-OAIC & MERCE Joint Pilot Collaboration**

**Does Strength Training Improve Balance Training in Older Adults?**

Brock Beamer, M.D., Assistant Professor (Andrew Goldberg, M.D., Mark Rogers Ph.D., PT, Mentors)

**Year 17 (2011-2012)**

**Improving Walking Symmetry and Functional Mobility in Stroke Survivors with Split-Belt Treadmill Training**

Amy Bastian, Ph.D., Assistant Professor, Johns Hopkins University, Inter-Pepper collaboration (Daniel Hanley, M.D., Mentor)

**Aerobic Exercise (AEX) to Improve Regulation of Endothelial Progenitor Cells (EPCs) and Vascular Function in T2DM**

Steven Prior, Ph.D. Assistant Professor (Alice Ryan, Ph.D., Andrew Goldberg, M.D., Heidi Ortmeyer, Ph.D., Mentors)

**Effects of Vitamin D Repletion (D) with and without Multi-Component Lifestyle Exercise Training (MLife) on Muscle Function, Inflammation and Glucose Metabolism in D Deficient Older Adults**

Elizabeth Streeten, M.D., Associate Professor and Heidi Ortmeyer, Ph.D., Assistant Professor (Andrew Goldberg, M.D., Mentor)

**Resistance Training (RT) and Protein (Pro) Supplementation to Improve Muscle Physiology and Reduce Fatigue in Breast Cancer Survivors**

Monica Serra, Ph.D., Research Fellow (Andrew Goldberg, M.D., Alice Ryan, Ph.D., Mentors)

**A High-Density Electroencephalography (EEG) Neural Decoding Study of Dynamical Cortical Mapping**

### **of Gait in Humans after Stroke**

Jose Contreras-Vidal, Ph.D., Professor, University of Houston (Richard Macko, M.D., Larry Forrester, Ph.D., Mentors)

### **Year 18 (2012-2013)**

#### **Comparison of Reactive Step Training and Voluntary Task-Oriented Training to Induce Neuromotor Changes for Improving Balance and Preventing Falls**

Douglas Savin, Ph.D., P.T. Assistant Professor (Mark Rogers, Ph.D., P.T., Mentor)

#### **Development of a Rehabilitation Strengthening and Mobility Program for Ventilator Dependent Older Patients**

Avelino Verceles, M.D., Assistant Professor (Andrew Goldberg, M.D. and Michael Terrin, M.D., C.M., M.P.H., Mentors)

#### **Probing the Neural Basis and Influence of Cognitive Changes on Impaired Balance in Older Adults**

Kelly Westlake, Ph.D., MSc., P.T., Assistant Professor (Mark Rogers, Ph.D., P.T., Shari Waldstein, Ph.D., Tula Adele, Ph.D., Rao Gullapalli, Ph.D., and George Wittenberg, M.D., Ph.D., Mentors)

#### **Using Self-Triggered, Sensory-Enhanced Gaze Shift to Improve Axial Turning Deficits in Persons with Parkinson's Disease**

Robert Creath, Ph.D., Assistant Professor (Mark Rogers, Ph.D., P.T., Mentor)

### **Year 19 (2013-2014)**

#### **Early Mobilization of Older Adults after Emergency Surgery**

Laura Buchanan, M.D., Assistant Professor (Jay Magaziner, Ph.D., M.S.Hyg, Mentor)

#### **The Effect of Voluntary Exercise on Microglial Activation Phenotypes in the Aged Injured Brain**

David Loane, Ph.D., Assistant Professor (Richard Macko, M.D. and Daniel Hanley, M.D., Mentors)

### **Year 20 (2014-2015)**

#### **Ambulatory Activity in Elderly Patients in a Shock Trauma Center**

Ivonne-Marie Berges, Ph.D., Assistant Professor (Jay Magaziner, Ph.D., M.S.Hyg, Mentor)

#### **Targeting Corticostriatal Plasticity for Parkinson's Disease Treatment**

Brian Mathur, Ph.D., Assistant Professor (Mark Rogers, Ph.D., P.T., George Wittenberg, M.D., Ph.D., Mentors)

#### **Circulating MicroRNAs in Older Adults**

Jeffrey Deuliis, Ph.D., Assistant Professor (Alice Ryan, Ph.D., Mentor)

#### **Modulation of Interhemispheric Interactions and Arm Activity after Stroke**

Michael Dimyan, M.D., Assistant Professor (George Wittenberg, M.D., Ph.D., Mentor)

#### **Multimodal Rehabilitation and High Protein Supplementation to Minimize ICU- Associated Sarcopenia in the Elderly**

Avelino Verceles, MD, Assistant Professor (Andrew Goldberg, M.D. and Michael Terrin, M.D., Mentors)

### **Year 21 (2015-2016)**

#### **Muscle and Functional Assessment in Leakage Study**

Tatiana Sanses, M.D., Assistant Professor (Alice Ryan, Ph.D., Mentor)

**The Development of a New Biomarker for the Diagnosis of Concussion**

Neeraj Badjatia, M.D., M.Sc., FCCM, Associate Professor (Alan Faden, M.D., Mentor)

**Towards Next-Generation Phenotyping in Parkinson Disease: Quantitative Analysis of Gait and Balance Using a Portable Biosensor Device**

Rainer von Coelln, M.D., Assistant Professor (Lisa Shulman, M.D., Mentor)

**Can Lateral Step Training Improve Initial Postural Adjustments in Stroke?**

Vicki Gray, P.T., Ph.D., Post-Doctoral Fellow (Mark Rogers, Ph.D., P.T., Mentor)

**Functional Benefit of Exercise Therapy after Endovascular Intervention in Older Patients with PAD**

Rishi Kundi, M.D., Assistant Professor (Brajesh Lal, M.D., Mentor)

**Year 22 (2016-2017)**

**Feasibility of Extended Post-Acute Intervention for Hip Fracture Patients with Cognitive Impairment (HipERS)**

Ann Gruber-Baldini, PhD, Professor (mentor: Elizabeth Galik, PhD, CRNP)

**NMES as an Adjunct to Improve Hip Abductor Muscle Quality and Reduce Fall Risk** Odessa

Addison, DPT, PhD, Research Associate, (mentors: Alice Ryan, PhD and Les Katzel, MD, PhD)

**Blood Functional Genetics as Prognostic Biomarkers and Potential Pharmacotherapy Targets for Upper Arm Motor Recovery in Chronic Stroke Patients**

Huichun Xu, MD, PhD, Instructor (mentor: George Wittenberg, MD, PhD)

**Towards Next Generation Phenotyping in Parkinson Disease: Quantitative Analysis of Gait and Balance Using a Portable Biosensor Device**

Rainer von Coelln, MD, Assistant Professor (mentor: Lisa Shulman, MD)

**Inflammatory Biomarkers and Neuropsychiatric Changes after Hip Fracture**

Boris Sabirzhanov, PhD, Research Associate and Bogdan Stoica, MD, Assistant Professor (mentors: Jay Magaziner, PhD, MS Hyg and Alan Faden, MD)

**Year 23 (2017-2018)**

**Trajectories of Physical and Psychological Performance Following Mild Traumatic Brain Injury in Older Adults**

Jennifer Albrecht, PhD, Assistant Professor (mentor: Jack Guralnik, MD, PhD, MPH)

**Bioenergetics and Inflammation as Mechanisms for Post-Stroke Fatigue: A Novel Pathway to Improve Function**

N. Jennifer Klinedinst, PhD, MPH, MSN, RN, FAHA, Assistant Professor (mentor: Alice Ryan, PhD)

**Characterizing the Heterogeneity and Role of Depressive Symptoms in Hip Fracture Recovery**

Alan Rathbun, PhD, MPH, Research Associate (mentor: Jay Magaziner, PhD, MS Hyg)

**Serum Metabolomic Profiles in Association with Physical Function and Bone-Related Outcomes at two months and six months after Hip Fracture**

Shabnam Salimi, MD, MSc, Research Associate (mentor: Jay Magaziner, PhD, MS Hyg)



**The Microtubule Network as a Novel Target in Sarcopenia**

Chris Ward, PhD, Associate Professor (mentor: Alice Ryan, PhD)

**Year 24 (2018-2019)**

**Evaluating the Progression of Rotator Cuff Intramuscular Fatty Infiltration in Older Adults Receiving Physical Therapy for Initial Management of Painful Supraspinatus Full-Thickness Tendon Tear: A Longitudinal Prospective Cohort Study**

Derik Davis, MD (mentor: Michael Terrin, MDCM, MPH)

**Mobility Function as a Predictor of Community Function Among Older Adults with Psychotic Disorders**

Anjana Muralidharan, PhD (mentor: Richard Goldberg, PhD)

**Year 25 (2019-2020)**

**Home Exercise Program (HEX) for Homebound Older Adults**

Alyssa Stookey, PhD (mentor: Odessa Addison, DPT, PhD)

**Immune Mechanisms Responsible for the Impaired B Cell Responses to New Antigens in the Elderly**

Franklin Toapanta, MD, PhD (mentor: Wilbur Chen, MD)

**Relations of Glucose Variability with Cognitive Function and Functional Status among Older Adults at Risk for Diabetes**

Tasneem Khambaty, PhD (mentor: Shari Waldstein, PhD)

**Year 26 (2020-2021)**

**Age-Dependent Changes in Nuclear Mechanotransduction as a Driver of Sarcopenia**

Richard Lovering, PhD, PT (mentor: Alice Ryan, PhD)

**Mobile Sensor Investigation of Gait Variability and Hip Abductors**

Odessa Addison, DPT, PhD (mentor: Charlene Quinn, PhD)

**Neural Mechanisms of Motor Recovery with Technology Assisted Training for Post-stroke Hemiparesis**

Robynne Braun, MD (mentors: George Wittenberg, MD, Larry Zhang, PhD)

**Ryanodine Receptors as Novel Targets in Chronotropic Incompetence in the Aging Heart**

Maura Greiser, PhD (mentor: Chris Ward, PhD)