

Eduardo E. Rijos

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Education

Ph.D Student., Biomedical Sciences/ Genetics

July 2021– Present

University of Florida, Gainesville, FL

Ph.D Student., Applied Physiology and Kinesiology/ Exercise Physiology

August 2020 – May 2021

University of Florida, Gainesville, FL

M.S., Applied Physiology and Kinesiology/ Concentration in Human Performance

May 2019

University of Florida, Gainesville, FL

B.S., Applied Physiology and Kinesiology/ Fitness and Wellness, *cum laude*

May 2016

University of Florida, Gainesville, FL

Professional Experience

Ph.D. Student under mentorship of Dr. Laura Ranum

July 2021– Present

Center for Neurogenetics

Department of Microbiology and Molecular Genetics

University of Florida, Gainesville, FL

- Seeded and transfected HEK293T cells with (G₄C₂)₁₂₀ and CAG repeat gene constructs to drive Repeat-associated non-AUG translation (RAN) protein expression
- Performed Immunofluorescence (IF) and Western blots for RAN protein detection
- Sectioned myotonic dystrophy type 1 (DM1) and fragile X-associated tremor/ataxia syndrome (FXTAS) human brain tissues for RAN protein IHC staining

Ph.D. Student under mentorship of Dr. Elisabeth Barton

August 2020 – May 2021

Molecular Physiology of Muscle laboratory

Department of Applied Physiology and Kinesiology

University of Florida, Gainesville, FL

- Genotyped various mouse strains including Gamma-Sarcoglycan (GSG), Biglycan (BGN), and Insulin Growth Factor-1 Myosin Light Chain (IGF-MLC)
- Sectioned tibialis anterior (TA), extensor digitorum longus (EDL), and soleus (SOL) muscles for histology
- Characterized BGN mouse line by performing a series of staining protocols with Hematoxylin and Eosin (H&E), PicroSirius Red, Immunoglobulin (IgG) with Dapi, and Oil Red O, as well tissue cryosectioning, genotyping/PCR, imaging *via* confocal microscope, and data analysis using PRISM
- Injected Cardiotoxin into the TAs of mice
- Dissected and extracted TA, EDL, SOL, and quadricep muscles, small and large intestines, kidneys, spleens, hearts, and brains from mice
- Performed Western Blots (WB)
- Extracted blood by facial and cardiac punctures from mice
- Assisted in completing a manuscript by applying similar data collection and analysis techniques

Graduate Teaching Assistant

August 2020 - June 2021

Department of Applied Physiology and Kinesiology
University of Florida, Gainesville, FL

- Taught in-person undergraduate Applied Human Physiology Laboratory course
- Instructed virtual undergraduate Applied Human Anatomy Laboratory course

Master's Research Assistant under Dr. Karyn Esser

May 2018 - March 2020

Institute of Myology
Department of Physiology and Functional Genomics
University of Florida, Gainesville, FL

- Harvested rat small intestines and colons for analysis of the effects of chronic/acute exercise on genomic, proteomic, and metabolomic profiles for the Molecular Transducing Physical Activity Consortium (MoTrPAC)
- Handled, controlled, and oversaw the exercise of these rats through manipulation of rate, direction, and frequency
- Conducted EchoMRI's for analysis of rats' and mice body compositions for transgenic Bmal1-KO and wild-type (WT) mice
- Subjected these mice to glucose (GTT) and insulin (ITT) tolerance tests
- Incubated, seeded, and harvested *in vitro* C2C12 mouse skeletal myoblasts and Bmal1 cell lines
- Harvested primary mononucleated cells from mice hindlimb muscles
- Prepped DNA from tail snips for genotyping
- Isolated DNA and RNA samples for PCR
- Ran Western blots for protein profiling from Bmal1 KO mice aging models
- Fabricated micromolded gelatin-MTG solutions with PDMS stamps on activated coverslips for cell culture use

Research Assistant under Dr. Peggy Borum

August 2017 - May 2018

Metabolic Assessment Lab
Department of Food Science and Human Nutrition
University of Florida, Gainesville, FL

- Worked on foodomic analysis by extracting food content data from the USDA databases
- Organized the macro and micro molecular profiles of different base products using Excel Spreadsheets

Publications

Georgios Vasilakos, **Eduardo Rijos**, Catherine Moorwood, Ray Spradlin, Elisabeth Barton. Ablation of Caspase-12 Minimally Rescues Muscle Pathology in Young MDX Mice. Manuscript under review.

Miguel A. Gutierrez-Monreal, **Eduardo E. Rijos**, Erin M. Volpe, Nina Sharifi, Nathan Jones, Vishwajeeth Pagala, Liam Hunt, Fabio Demontis, Christopher A. Wolff, Collin M. Douglas, and Karyn A. Esser. Muscle-specific Rescue of Bmal1 Improves Survival and Healthspan of Bmal1-KO-mice. Manuscript in preparation.

Academic Awards and Scholarships

CTSI TL1 Predoctoral Training Grant (Runner up)
University of Florida, Grinter Fellowship (\$2,100)

April 2021
August 2020

Relevant Skills

- Languages: English (fluent), Spanish (fluent)
- Mice and rat handling– anesthesia, intramuscular injections, cardiac and facial punctures, glucose/insulin

- tolerance testing, AAV administration, and tissue dissections
- Mouse skeletal muscle tissue mechanics
- Tissue sectioning– microtome and cryostat
- Immunohistochemistry– RAN Protein, IgG, Hematoxylin & Eosin, PicroSirius Red, and Oil Red O
- Western Blotting
- RNA and DNA– extraction and isolation
- Genotyping– PCR
- EchoMRI handling– rat and mice
- Treadmill exercising– rat and mice
- Cell culture– transfections and cell line maintenance
- Hind-limb primary cell isolation– from mice
- Micromolded stamp fabrication– Gelatin-MTG based

Certifications

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| ○ Bloodborne Pathogens and Biomedical Waste General Training | February 2021 |
| ○ Hazardous Waste Management | February 2021 |
| ○ HIPPA & Privacy-General Awareness | February 2021 |
| ○ IRB Mandatory Local Training | February 2021 |
| ○ IRB Training-Biomedical | February 2021 |
| ○ At-Risk for Faculty & Staff Kognito Training | January 2021 |
| ○ Non-Barrier Rodent Facilities | May 2018 |
| ○ Lab Safety Actions & Reactions | September 2017 |
| ○ Chemical Hygiene Plan | September 2017 |
| ○ New Researcher Overview of EHS | September 2017 |
| ○ American Heart Association CPR and AED | May 2017 |