**Curriculum Vitae**

**29 August 2024**

**Donato A. Rivas, B.Sc., Ph.D.**

**Center for Exercise Medicine Research**

**Fralin Biomedical Research Institute at VTC**

**Virginia Tech**

**4 Riverside Circle, Suite 2218**

**Roanoke, VA 24016**

**Phone Number: 540-526-2164**

**E-Mail Address:** **donato@vtc.vt.edu**

**Education and Training**

 **Undergraduate**

*Year Degree Institution, City, State or Country Discipline*

2005 B.Sc. California State University, Northridge, CA Kinesiology

 **Graduate**

*Year Degree Institution, City, State or Country Discipline*

2010 Ph.D. Royal Melbourne Institute of Technology, Australia Biomedical Science

**Postdoctoral**

*Years Institution, City, State or Country Discipline*

2010-2011 Tufts University, Boston, MA Clinical and Translational

Aging Research

**Academic Appointments**

Dates Title Department Institution

2024 - Research Fralin Biomedical Virginia Tech

Associate Professor Research Institute

2024 - Adjunct Department of Human Nutrition, Virginia Tech

Assoc. Professor Foods and Exercise

2022 - 2024 Research Military Performance Division U.S. Army Research Institute

Physiologist of Environmental Medicine

2022 - 2024 Adj. Asst Professor Friedman School of Nutrition Tufts University

2020 - 2022 Assistant Professor Friedman School of Nutrition Tufts University

2014 - 2022 Scientist II USDA Human Nutrition Tufts University

 Research Center on Aging

2014 - 2020 Instructor Friedman School of Nutrition Tufts University

2011 - 2014 Scientist III USDA Human Nutrition

 Research Center on Aging Tufts University

**Awards and Honors**

*Dates Award/Honor Organization*

2019 Sao Paulo Research Foundation (FAPESP) Visiting Researcher Program – University of Sao Paulo, School of Physical Education and Sport, Ribeirão Preto Campus, Brazil

2019 *Tufts Nutrition Magazine*, Winter 2019. Top Docs: Nine stars who are putting their Ph.D.s to work as educators, scientists, and nutrition leaders. “The Cell Decoder: Donato Rivas”.

2018 Video Abstract: “Potential Role of MicroRNA in the Anabolic Capacity of Skeletal Muscle with Aging” *Exercise Sports Science Reviews*, <http://links.lww.com/ESSR/A43>. Feb 23, 2018

2018 Dr. Tim Lightfoot (Host). Podcast Friday w/ Dr. Donato Rivas Discussing microRNA and Sarcopenia [Audio Podcast Episode 240]. Huffines Institute, Texas Tech University. <https://huffinesinstitute.blob.core.windows.net/mp3s/240_Huffines_Sports_Med_Rivas.mp3>

2013 RCDC Poster Award; Claude D. Pepper OAIC National Meeting 2013

2012-2013 RCDC Fellowship Award; Boston Claude D. Pepper Center Older Americans Independence Center

2012 Hamish N. Munro Award for Excellence in Postdoctoral Research, Jean Mayer USDA Human Nutrition Research Center on Aging, Tufts University

2011 Gerontological Society of America (GSA), Biological Science Section Travel Award

2006 RMIT School of Medical Sciences, Occupational Health & Safety Award: “For rendering assistance to a seriously injured student, potentially saving his life.”

2006 Endeavour International Postgraduate Research Scholarship (IPRS), Department of Education and Training, Australia

2005 California State University, Northridge Honors Convocation

2003 MARC U\*STAR Honors Undergraduate Fellowship, National Institute of General Medical Science (NIGMS), National Institutes of Health (NIH)

**Institutional Committee Service**

Dates Role/Committee Department/Program

2021 Member Tufts Friedman School Faculty Search Committee “Food &

Nutrition Equity”

2020 - 2022 Member Friedman School Standing Committee on Social Justice,

Inclusion, and Diversity

2019 Co-chair HNRCA Scientific Retreat Planning Committee

 “From Silos to Teams”

2019 – 2021 Member HNRCA- Scientist II Faculty Search Committee

2019 - 2021 Postdoctoral Officer HNRCA - Tufts University

2014 - 2018 Member Tufts University Diversity & Inclusion Working Group

2013 - 2022 Member HNRCA - Diversity Committee

2013 - 2019 Member HNRCA - Occupational Health & Safety Committee

2012 - Expert Faculty Member Tufts University, Friedman School of Nutrition Science and Policy:

 NUTR 240: Nutritional Science Journal Club: Biochemical &

Molecular Nutrition and Nutritional Epidemiology.

2010 - Lecturer Tufts University, Friedman School of Nutrition Science and Policy

NUTR 370: Nutritional Biochemistry and Physiology: Macronutrients

NUTR 272: Physical Activity, Nutrition and Health

NUTR 321: Dietary Antioxidants (Natural Bioactive Compounds) and Degenerative Diseases

**Professional Society Activity**

*Dates Role/Committee Assignment Organization*

2015 - Scientific Committee International Conference on Frailty & Sarcopenia

Research

2009 - 2011 Representative Gerontological Society of

America; Emerging Scholar and Professional Organization, Biological Sciences Section,

2009 - 2022 Member Gerontological Society of America (GSA)

2006 - 2009 Member Australian Diabetes Society (ADS)

2005 - Member American College of Sports Medicine (ACSM)

2004 - Member American Physiological Society (APS)

**Grant Review Activities**

*Dates Role Organization*

2022/11 Ad Hoc Reviewer NIH, NIGMS (SURE-FIRST) Award (R16) ZGM1 RCB-A(SU)

2022/06 Ad Hoc Reviewer NIH Study Section: Skeletal Muscle and Exercise Physiology

2022/05 Ad Hoc Reviewer NIH, NIGMS Special Emphasis Panel ZGM1 RCB-A (SF)

2021/10 Early Career Reviewer NIH Study Section: Human Studies of Diabetes and Obesity

2019 Ad Hoc Reviewer Health Research Board / Ireland

2017 Ad Hoc Reviewer European Science Foundation / University of Turin

2017 Ad Hoc Reviewer Medical Research Council / UK

**Training/Mentoring Activities**

**Students/Mentees**

Dates Name Role in Training

2017-2020 Townsend Benard Tufts Friedman School Doctoral Student

2020 Daniel MacDonald UMass Boston Undergraduate Student

2017 Gonzalo Lopez California State University Undergraduate Student

2015 Liang Wang Tufts Friedman School Graduate Student

2014-2017 Lee Margolis Tufts Friedman School Doctoral Student

2014 Maria Berrone Tufts Friedman School Graduate Student

2014 John Griffin Tufts Friedman School Doctoral Student

2014 Elle Cooper Tufts Friedman School Graduate Student

2012-2013 Kawai So UMass Boston Undergraduate Student

2012-2014 Devin McDonald Tufts Friedman School Graduate Student

2011-2015 Rachele Pojednic Tufts Friedman School Doctoral Student

2011 Yanan Yu Boston University Graduate Student

2010-2011 Allistair Mallillin Tufts Undergraduate Student

**Theses/Dissertation Committees**

*Dates Name Role in Training*

2020 - 2023 Brian Park Committee Member, Tufts Friedman School

2019 Gustavo P. Morais Committee Member, University of Sao Paulo

2017-2020 Townsend Benard Committee Member, Tufts Friedman School

2014-2017 Lee M. Margolis Committee Member, Tufts Friedman School

**Visiting Professorships and Invited Academic Presentations**

**Visiting Professorships**

*Dates Department Institution City, State or Country*

2019 School of Physical Education and Sport University of Sao Paulo Brazil

**Invited Academic Presentations**

***Local/Regional***

*Dates Presentation Title Presentation Type Institution City, State or Country*

2017 January 09. Circulating MicroRNAs as Potential Biomarkers of Anabolic Response. Program in Men's health: Aging and Metabolism/Claude D. Pepper Center Seminar Series. Brigham and Women’s Hospital, Harvard Medical School. Boston, MA, USA

2015 April 23-25. MicroRNA in Skeletal Muscle: Potential Role in Sarcopenia. International Conference on Frailty & Sarcopenia Research. Boston, MA, USA

2013 January 09. Molecular adaptation of aging skeletal muscle to an acute bout of high-intensity resistance exercise: Role of microRNAs. Grand Rounds, Endocrinology Section. Tufts Medical Center, Boston, MA.

2012 May 14. Molecular adaptations of skeletal muscle to resistance exercise in aged males. HNRCA Awards Ceremony. Tufts University, Boston, MA

2011 November 08. Nutrition and physical activity as treatments for sarcopenia: Do we have the cure? Oral Presentation: American Baker’s Association/Food Technical Regulatory Affairs Committee Meeting. Tufts University HNRCA, Boston, MA, USA

2011 February 07. Increased intramuscular lipid storage with aging: cause or consequence of skeletal muscle loss? Oral Presentation: HNRCA Winter 2011 Mini-Seminar Series II. Tufts University HNRCA, Boston, MA, USA

2011 January 18. Intramyocelluar lipid effects on anabolic signaling in aging skeletal muscle. Oral Presentation: Boston OAIC External Advisory Board Annual Meeting. Boston, MA, USA.

2010 Nov 07. Decreased muscle protein content is associated with increased AMPKα1 and cleaved SREBP1 in aged skeletal muscle. Oral Presentation: Boston OAIC RCDC Seminar. Boston University Medical Center, Boston, MA, USA

***National***

*Dates Presentation Title Presentation Type Institution City, State or Country*

2021 February 25. Role of adipocyte-derived exosomal miRNA in circulation on age-associated anabolic resistance and sarcopenia. University of Missouri Medical Center 2021 NEP Spring Seminar Series. Columbia, MO, USA

2017 February 09. Loss of Muscle Mass and Function with Older Age: Causes, Consequences and Prevention. California State University, Northridge Biology / Maximizing Access to Research Careers (MARC) and Research Initiative for Scientific Enhancement (RISE) Colloquium. Los Angeles, CA, USA

2016 October 09-12. Physical Activity and the Prevention of Sarcopenic Obesity. Invited presentation for the symposium: The Emerging Global Phenomenon of Sarcopenic Obesity: Role of Functional Foods. International Society for Nutraceuticals and Functional Foods Annual Conference, Orlando, FL, USA

2014 December 16. Molecular mechanisms controlling age-associated muscle atrophy and loss of function. Kinesiology Symposium: University of Massachusetts, Amherst. Amherst, MA, USA

2014 January 27. Molecular mechanisms controlling age-associated muscle atrophy and loss of function. Health and Human Physiology Symposium: University of Iowa. Iowa City, IA, USA

2012 November 12-18. Rivas, D.A. Nutritional Interventions in Aging: Calorie Restriction Mimetics – Promises and Pitfalls. Co-Chair. Gerontological Society or America Annual Meeting, San Diego, CA, USA

2011 November 18-22. Rivas, D.A., P.H. Haran, E.P. Morris, M. Morais, R.A. Fielding. Skeletal muscle function and anabolic signaling are altered by aging and a high-fat. Invited presentation for the symposium: Nutrition in Brain Aging and Neurodegenerative Disease. Gerontological Society or America Annual Meeting, Boston, MA, USA

2010 November 19-24. Rivas, D.A., E.P. Morris, R.A. Fielding. Decreased Muscle Protein Content is Associated with Defective Lipid Metabolism in Aging Skeletal Muscle. Invited presentation for the symposium: Advancing Muscle Mechanistic Knowledge Underlying Clinical Phenotypes in Elderly with Chronic Disease. Gerontological Society or America Annual Meeting, New Orleans, LA, USA

2010 November 19-24. Rivas, D.A., E.P. Morris, R.A. Fielding. Decreased muscle protein content is associated with increased AMPKα1 and cleaved SREBP1 in aged skeletal muscle. Invited presentation for the symposium: Human Biogerontological Research: Results from ESPO Researchers. Gerontological Society or America Annual Meeting, New Orleans, LA, USA

2009 November 17-18. Rivas, D.A. Intramyocellular lipid effects on anabolic signaling in aging skeletal muscle. Oral Presentation: NIA Grants Technical Assistance Workshop. Atlanta, GA, USA.

***International***

*Dates Presentation Title Presentation Type Institution City, State or Country*

2019 November 01. Circulating microRNA as novel predictors of skeletal muscle anabolic response in aged humans. Invited Presentation: State University of Campinas (UNICAMP), Barão Geraldo, Brazil.

2019 October 25. How do you manage your academic career? Invited Presentation: School of Physical Education and Sport, University of Sao Paulo, Ribeirão Preto, Brazil.

2019 October 22. Physical activity and the prevention of sarcopenic obesity. Invited Presentation: School of Physical Education and Sport, University of Sao Paulo, Ribeirão Preto, Brazil.

2013 November 03-07. Potential role for miR-126 in the molecular response of skeletal muscle to high-intensity resistance exercise in aged males. Invited Presentation: Genomics in Metabolism - Copenhagen Bioscience Conferences. Snekkersten, Denmark.

**Research Support**

*Current*

Grant Title: MO230134: The effects of NSAIDs on musculoskeletal injury

Funding Agency: Defense Health Agency (DHA)

Amount (Direct Costs in $): 165,000

Period: 10/1/22 – 10/1/24

Role: Co-Investigator (PI: Roberts)

Grant Title: ARIEM reduction in musculoskeletal injury (ARMI) study

Funding Agency: US Army Medical Research and Development Command, Military Operational Medical Research Program

Amount (Direct Costs in $): 5,200,000

Period: 10/1/18 - 10/1/24 (NCE)

Role: Co-Investigator (PI: Hughes, Foulis)

Grant Title: Skeletal muscle recovery from exercise when consuming carbohydrate or carbohydrate plus protein under environmental extremes.

Funding Agency: US Army Medical Research and Development Command, Military Operational Medical Research Program

Amount (Direct Costs in $): 1,182,000

Period: 10/1/22 - 10/1/24

Role: Co-Investigator (PI: Margolis)

*Pending*

Grant Title: Therapeutic use of exosome-mediated miRNA delivery for skeletal muscle repair and regeneration

Funding Agency: US Department of Defense, Peer Reviewed Medical Research Program

Amount (Direct Costs in $): 200,000

Period: 10/01/2023-09/30/2025 (anticipated)

Role: Principal Investigator

Grant Title: Influence of sex on the prevention and recovery of muscle injury

Funding Agency: US Army Medical Research and Development Command, Military Operational Medical Research Program

Amount (Direct Costs in $): 1,000,000

Period: 10/1/24 - 09/30/26

Role: Principal Investigator

Grant Title: Therapeutic potential of exosomes in skeletal muscle repair and regeneration

Funding Agency: US Army Medical Research and Development Command, Military Operational Medical Research Program

Amount (Direct Costs in $): 250,000

Period: 10/1/24 - 09/30/26

Role: Principal Investigator

*Completed*

Grant Title: Role of adipocyte-specific exosomal miRNA in skeletal muscle metabolism

Funding Agency: NIH/NIDDK BNORC Pilot & Feasibility Award

Amount (Direct Costs in $): 57,999

Period: 01/01/2022-09/26/2022

Role: Principal Investigator of Tufts’ subcontract

Grant Title: 5K01AG047247: Role of microRNAs on Age and Contraction-Induced Skeletal Muscle Growth

# Funding Agency: NIH/NIA Mentored Research Scientist Development Award

# Amount (Direct Costs in $): 488,286

# Period: 02/01/2015-01/31/2020

# Role: Principal Investigator

# Grant Title: Assessment of Fractional Synthetic Rate after Single Dose of Polymeric vs Elemental PN-107 in Rodents.

Funding Agency: Axcella Health, Inc.

Amount (Direct Costs in $): 109,827

Period: 09/2015-09/2017 (NCE)

Role: Co-Principal Investigator

Grant Title: The effect of 25(OH)D supplementation on muscle function and bone quality in younger postmenopausal women with osteopenia: a double-blind placebo-controlled randomized trial

Funding Agency: Royal DSM N.V., Inc.

Amount (Direct Costs in $): 35,000

Period: 09/2015-09/2018 (NCE)

Role: Co- Investigator

Grant Title: 2P30AG031679-06A1: Circulating microRNA as novel predictors of skeletal muscle anabolic response in aged humans.

Funding Agency: NIH/NIA Boston Claude D. Pepper Older Americans Independence Center: A Translational Approach to Function Promoting Therapies. Pilot and Exploratory Project

Amount (Direct Costs in $): 83,049

Period: 09/2016-09/2018 (NCE)

Role: Principal Investigator of Tufts’ subcontract

Grant Title: The effect of L-Carnitine and Creatine on skeletal muscle protein synthesis in young and older humans.

Funding Agency: Lonza Inc., Global Nutrition

Amount (Direct Costs in $): 610,715

Period: 08/16-08/20

Role: Co-Principal Investigator

**Editorial Boards**

*Dates Role Publication Name*

2022 Associate Editor *Frontiers in Physiology: Exercise Physiology*

2021-2022 Review Editor *Frontiers in Aging*

2024- Editorial Board *Advanced Exercise and Health Science*

**Ad Hoc Journal Reviewer**

*The Journal of Physiology (London), Pflugers Archive European Journal of Physiology, Nutrition & Metabolism, Journal of Nutrition and Metabolism, Hormone & Metabolic Research, Aging Cell, Applied Physiology Nutrition and Metabolism, FASEB Journal, Life Sciences, Journals of Gerontology, Journal of Cachexia, Sarcopenia and Muscle, Exercise and Sports Sciences Reviews, Experimental Physiology, PLOS One, Endocrinology, Diabetes & Metabolism, Journal of Cellular and Molecular Medicine, Molecular Metabolism, Physiological Genomics, Experimental Gerontology, Frontiers in Aging, American Journal of Physiology*

**Bibliography**

**Peer-reviewed research papers**

1. Pinto, A.P., V.R. Muñoz, M.E.A. Tavares, I.V. de Sousa Neto, J.R. dos Santos, G.S. Rodrigues, R.O. Gomes Carolino, L.C. Alberici, R.A. Tostes, F.M. Simabuco, G.R. Teixeira, J.R. Pauli, L.P. de Moura, D.E. Cintra, E.R. Ropelle, E.C. Freitas, **D.A. Rivas**, A.S.R. da Silva. Combined training affects metabolic flexibility and mitochondrial respiratory complex protein levels in the liver of SAMP8 mice. *GeroScience*. In Review.
2. **Rivas, D.A.\***, F. Peng, T. Benard, A. S. Ramos da Silva, M. Wabitsch, L.M. Margolis, R.A. Fielding. Age-induced adipose tissue inflammation is associated with a dysregulation in adipose/muscle crosstalk via lncRNA MIR17HG and exosomal miR-17/92 cluster. *Am J Physiol Cell Physiol.* In 2nd Review.**\*Corresponding Author**
3. Marafon, B.B., A.P. Pinto, I.V. Sousa Neto, C.M. da Luz, J.R. Pauli, D.E. Cintra, E. Rochete Ropelle, F.M. Simabuco, L. Pereira de Moura, E.C. de Freitas, **D.A. Rivas**, A.S. Ramos da Silva. The role of interleukin-10 in mitigating endoplasmic reticulum stress in aged mice through exercise. *Am J Physiol Endocrinol Metab.* 2024 Jul 31. Online ahead of print.
4. Pinto, A.P., V.R. Muñoz, M.E.A. Tavares, J.R. Dos Santos, M.A. Rebelo, L.C. Alberici, F.M. Simabuco, G.R. Teixeira, J.R. Pauli, L.P. de Moura, D.E. Cintra, E.R. Ropelle, E.C. Freitas, **D.A. Rivas**, A.S.R..da Silva. Combined physical exercise reverses the reduced expression of Bmal1 in the liver of aged mice. *Life Sci.* 2023 Jan 1;312:121175.
5. da Rocha, A.L., A.P. Pinto, B.L.S. Bedo, G.P. Morais, L.C. Oliveira, R.O.G. Carolino, J.R.Pauli, F.M. Simabuco, L.P. de Moura, E.R. Ropelle, D.E. Cintra, **D.A. Rivas**, A.S.R. da Silva. Exercise alters the circadian rhythm of REV-ERB-α and downregulates autophagy-related genes in peripheral and central tissues. *Sci Rep.* 2022 Nov 21;12(1):20006. PMID: 36411310
6. Ceglia L., **D.A. Rivas**, M. Schloegl, G.B. Fielding, A. Egli, H. Bischoff-Ferrari, B. Dawson-Hughes. Effect of vitamin D3 vs. calcifediol on VDR concentration and fiber size in skeletal muscle. *J Bone Miner Metab.* 2022 Nov 16. PMID: 36385193
7. Pinto, A.P., V.R. Muñoz, A.L. Da Rocha, R.L. Rovina, G.D. Ferrari, L.C. Alberici, F.M. Simabuco, G. Teixeira, J.R. Pauli, L.P. Moura, D.E. Cintra, E.R. Ropelle, E. Freitas, **D.A. Rivas**, A.S.R. da Silva. IL-6 deletion decreased REV-ERB protein and influenced autophagy and mitochondrial markers in the skeletal muscle after acute exercise. *Frontiers in Immunology*. 2022 Oct 13;13:953272. PMCID: PMC9608639
8. Margolis, L.M., C.T. Carrigan, N.E. Murphy, M.N. Dibella, M.A. Wilson, C.C. Whitney, E.E. Howard, S.M. Pasiakos, **D.A. Rivas\***. Carbohydrate Intake in Recovery from Aerobic Exercise Differentiates Skeletal Muscle microRNA Expression. *Am J Physiol Endocrinol Metab.* 2022 Nov 1;323(5):E435-E447 **\*Senior Author**
9. Zhang, X., L. Habiballa, Z. Aversa, A.E. Sakamoto, D.A. Englund, V.M. Pearsall, T.A. White, M.M. Robinson, **D.A. Rivas**, S. Dasari, Y. Ng, A. Lagnado, S.K. Jachim, A. Granic, A.A. Sayer, D. Jurk, I.R. Lanza, S. Khosla, R.A. Fielding, K.S. Nair, M.J. Schafer, J.F. Passos, N.K. LeBrasseur. Characterization of cellular senescence in aging skeletal muscle. *Nature Aging*. 2022 Jul;2(7):601-615. PMCID: PMC9491365
10. **Rivas, D.A.\***, F. Peng, T. Benard, A.S.R. da Silva, R.A. Fielding, L.M. Margolis. miR-19b-3p is associated with a diametric response to resistance exercise in older adults and regulates skeletal muscle anabolism via PTEN inhibition. *Am J Physiol Cell Physiol.* 2021 Dec 1;321(6):C977-C991. PMCID: PMC8714992 **\*Corresponding Author**
11. da Rocha, A.L., A.P. Pinto., G.P. Morais, B.B. Marafon, R.L. Rovina, A.S.C. Veras, G.R. Teixeira, J.R. Pauli, L.P. de Moura, D.E. Cintra, E.R. Ropelle, **D.A. Rivas**, A.S.R. da Silva. Moderate, but Not Excessive, Training Attenuates Autophagy Machinery in Metabolic Tissues. *Int J Mol Sci*. 2020 Nov 10;21(22):8416. PMCID: PMC7697344
12. da Rocha, A.L., R.L. Rovina, A.P. Pinto, B.B. Marafon, L.E.C.M. da Silva, F.M. Simabuco, F.G. Frantz, J.R. Pauli, L.P. de Moura, D.E. Cintra, E.R. Ropelle, H.T. Filho, E.C. de Freitas, **D.A. Rivas**, A.S.R. da Silva. Interleukin-6 ablation does not alter morphofunctional heart characteristics but modulates physiological and inflammatory markers after strenuous exercise. *Cytokine.* 2021 Jun;142:155494. PMID: 33765652
13. **Rivas, D.A.\***, N.P. Rice, Y. Ezzyat, D.J. McDonald, B.E. Cooper, R.A. Fielding. The S1P analog FTY720 reverses obesity but not age-induced anabolic resistance to muscle contraction. *Am J Physiol Cell Physiol*. Sep 1;317(3):C502-C512. 2019. PMCID: PMC6766615 **\*Corresponding Author**
14. Lessard, S.J., T.L. MacDonald, P. Prerana, M. Sook-Han, V.G. Coffey, J. Edge, **D.A. Rivas**, M.F. Hirshman, R.J. Davis, L.J. Goodyear. JNK regulates muscle remodeling via Myostatin/SMAD inhibition. *Nature Commun.* 2018 Aug 2; 9(1):3030. PMID: 30072727
15. Margolis, L.M., L. Ceglia, **D.A. Rivas**, B. Dawson-Hughes, R.A. Fielding. Pilot Study Examining the Influence of Potassium Bicarbonate Supplementation on Nitrogen Balance and Whole-Body Ammonia and Urea Turnover Following Short-Term Energy Restriction in Older Men. *Nutrients*. 2018 May 16; 10(5). pii: E624. PMID: 29772642
16. Margolis, L.M., B. Dawson-Hughes, **D.A. Rivas**, Y. Ezzyat, R.A. Fielding, L. Ceglia. Effects of Potassium Bicarbonate Supplements on Circulating microRNA Expression. *J Endocrine Society*. 1(8): 1015–1026. 2017. PMID: 29264553
17. Margolis, L.M., **D.A. Rivas**, S.M. Pasiakos, J.P. McClung, L. Ceglia, R.A. Fielding. Upregulation of circulating myomiR following short-term energy restriction is inversely associated with whole-body protein synthesis. *Am J Physiol Regul Integr Comp Physiol*. 2017 Sep 1; 313(3):R298-R304. PMID: 28659285
18. Margolis, L.M., S.J. Lessard, Y. Ezzyat, R.A. Fielding, **D.A. Rivas\***. Circulating microRNA predictive of aging and acute adaptive response to resistance exercise in men. *J Gerontol. Ser A-Biol Sci Med Sci*. 2017 Oct 1;72(10):1319-1326. PMID: 27927764 **\*Senior and Corresponding Author**
19. Margolis, L.M., **D.A. Rivas**, M. Berrone, Y. Ezzyat, A.J. Young, J.P. McClung, R.A. Fielding, S.M. Pasiakos. Prolonged calorie restriction downregulates skeletal muscle mTORC1 signaling independent of dietary protein intake and associated microRNA expression. *Front. Physiol.* 2016 7:445 PMID: 27761114
20. Margolis, L.M., **D.A. Rivas**, Y. Ezzyat, E. Gaffney-Stomberg, A.J. Young, J.P. McClung, R.A. Fielding, S.M. Pasiakos. Calorie Restricted High Protein Diets Downregulate Lipogenesis and Lower Intrahepatic Triglyceride Concentrations in Male Rats. *Nutrients*. 2016. Sep 15;8(9). pii: E571. PMID: 27649241
21. **Rivas, D.A.\***, D.J. McDonald, N.P. Rice, P.H. Haran, G.G. Dolnikowski, R.A. Fielding. Diminished anabolic signaling response to insulin induced by intramuscular lipid accumulation is associated with inflammation in aging but not obesity. *Am J Physiol Regul Integr Comp Physiol*. 310: R561-9. 2016. PMCID: PMC4867383 **\*Corresponding Author**
22. Lessard, S.J., **D.A. Rivas**, K. So, H.J. Koh, A.L. Queiroz, Hirshman MF, Fielding RA, Goodyear LJ. The AMPK-related kinase SNARK regulates muscle mass and myocyte survival. *J Clin Invest.* 126(2): 560-70. 2016. PMCID: PMC473117
23. **Rivas, D.A.\***, S.J. Lessard, N.P. Rice, M.S. Lustgarten, K. So, L.J. Goodyear, L.D. Parnell, R.A. Fielding. Diminished skeletal muscle microRNA expression with aging is associated with attenuated muscle plasticity and inhibition of IGF-1 signaling. *FASEB J.* 28:4133-4147, 2014. PMCID: PMC5058318 **\*Corresponding Author**
24. Ceglia, L., S. Niramitmahapanya, M. Morais, D.A. Rivas, S.S. Harris, H. Bischoff-Ferrari, R.A. Fielding, B. Dawson-Hughes. A randomized study on the effects of vitamin D3 supplementation on skeletal muscle morphology and vitamin D receptor concentration in older women. *J Clin Endocrinol Metab.* 98:E1927-35, 2013. PMID: 24108316
25. Stephenson, E.J., S.J. Lessard, **D.A. Rivas**, B.B. Yaspelkis III, L.G. Koch, S.L. Britton and J.A. Hawley. The oxidative profile of visceral white adipose tissue is not related to intrinsic exercise capacity or metabolic health status. *Am J Physiol Endocrinol Metabol*. 305: E429-38, 2013. PMCID: PMC3849671
26. Ceglia, L., **D.A. Rivas**, L.L. Price, S.S. Harris, D. Smith, D.M. Kent, R.A. Fielding, B. Dawson-Hughes. Effects of alkali supplementation and vitamin D insufficiency on skeletal muscle in older rats. *Endocrine*. 44: 454-464, 2013. PMID: 23666769
27. Lessard, S.J., **D.A. Rivas**, A.B. Alves-Wagner, M.F. Hirshman, I. Gallagher, T. Gustafsson, R. Atkins, D. Constantin-Teodosiu, P.L. Greenhaff, R.A. Fielding, J.A. Timmons, S. L. Britton, L.G. Koch, L.J. Goodyear. Resistance to aerobic exercise training causes metabolic dysfunction and reveals novel exercise-regulated signaling networks. *Diabetes*. 62: 2717-27, 2013. PMID: 23610057
28. Ritchie, R.H., C.H. Leo, C. Qin, E.J. Stephenson, M.A. Bowden, K.D. Buxton, S.J. Lessard, **D.A. Rivas**, L.G. Koch, S.L. Britton, J.A. Hawley, O.L. Woodman. Low intrinsic exercise capacity in rats predisposes to age-dependent cardiac remodeling independent of macrovascular function. *Am J Physiol Heart Circ Physiol*. 304: H729-39, 2013. PMID: 23262135
29. **Rivas, D.A.**, E.P. Morris, P.H. Haran, M.daS. Morais, E.P. Pasha, E. Phillips, R.A. Fielding. Increased ceramide content and NFκB signaling contribute to attenuated anabolic signaling after resistance exercise in aged males. *J Appl Physiol*. 113: 1727-36, 2012. PMID: 23042913
30. **Rivas, D.A.**, E.P. Morris, R.A. Fielding. Lipogenic regulators are elevated with age and chronic overload in rat skeletal muscle. *Acta Physiol*. 202: 691-701, 2011. PMID: 21439027
31. **Rivas, D.A.**, S.J. Lessard, M. Saito, A.M. Friedhuber, L.G. Koch, S.L. Britton, B.B. Yaspelkis III, J.A. Hawley. High intrinsic running capacity is associated with elevated skeletal muscle substrate oxidation and higher mitochondrial content in white skeletal muscle. *Am J Physiol Regul Integr Comp Physiol.* 300: R835-43, 2011 PMID: 21270346
32. Lessard, S.J.\*, **D.A. Rivas\***, B.B. Yaspelkis III, L.G. Koch, S.L. Britton, J.A. Hawley. Exercise training reverses impaired skeletal muscle metabolism induced by artificial selection for low aerobic capacity. *Am J Physiol Regul Integr Comp Physiol*. 300: R175-82, 2011. PMID: 21048074 **\*Authors contributed equally**. **Highlight: Le Moine, C. BAD GENES? KEEP RUNNING! *J Exp Biol* 2011 214: v-b**
33. Yaspelkis III, B.B., I. Kvasha, S.J. Lessard, **D.A. Rivas**, J.A. Hawley. Aerobic training reverses high-fat diet-induced pro-inflammatory signalling in rat skeletal muscle. *Eur J Appl Physiol.* 110: 779-88, 2010. PMID: 20596724
34. **Rivas, D.A.**, B.B. Yaspelkis III, J.A. Hawley, S.J. Lessard. Lipid-induced mTOR activation in rat skeletal muscle reversed by exercise and 5’-Aminoimidazole-4-carboxamide-1-b-riboside. *J Endocrinol*. 202: 441-451, 2009. PMID: 19574345 **Highlight: Must Read, *Faculty of 1000*, Madar Z: 2009. F1000.com/1162631**
35. Lessard, S.J., **D.A. Rivas**, Z.P. Chen, B.J. van Denderen, M.J. Watt, L.G. Koch, S.L. Britton, B.E. Kemp, J.A. Hawley. Impaired skeletal muscle β-adrenergic activation and lipolysis are associated with whole-body insulin resistance in rats bred for low intrinsic exercise capacity. *Endocrinology*. 150: 4883-91, 2009 PMID: 19819977
36. Gomes, F.R., E.L. Rezende, J.L. Malisch, S.K. Lee, **D.A. Rivas**, B.B. Yaspelkis III and T. Garland Jr. Glycogen storage and muscle glucose transporters (GLUT-4) of mice selectively bred for high voluntary wheel running. *J Exper Biol*. 212: 238-48, 2009 PMID: 19112143
37. Yeo, W.K., S.J. Lessard, Z.P. Chen, A.P. Garnham, L.M. Burke, **D.A. Rivas**, B.E. Kemp and J.A. Hawley. Fat-adaptation followed by carbohydrate restoration increases AMPK activity in skeletal muscle from trained humans. *J Appl Physiol*. 105: 1519-26, 2008 PMID: 18801964
38. Saito, M., S.J. Lessard, **D.A. Rivas**, D.W. Reeder, I. Kvasha, J.A. Hawley, B.B. Yaspelkis III. Activation of PKC ζ toward TC10 is regulated by a high-fat diet and aerobic exercise in skeletal muscle. *Metabolism*. 57: 1173-80, 2008 PMID: 18702941
39. Yaspelkis III, B.B., S.J. Lessard, D.W. Reeder, J.J. Limon, M. Saito, **D.A. Rivas**, I. Kvasha, J.A. Hawley. Exercise reverses high-fat diet induced impairments on compartmentalization and activation of components of the insulin signaling cascade in skeletal muscle. *Am J Physiol Endocrinol Metabol*. 293: E941-E949, 2007 PMID: 17623749
40. Lessard, S.J., **D.A. Rivas**, Z.P. Chen, A. Bonen, M.A. Febbraio, B.E. Kemp, B.B. Yaspelkis III, J.A. Hawley. Tissue-specific effects of Rosiglitazone and exercise in the treatment of lipid-induced insulin resistance. *Diabetes*. 56: 1856-64, 2007 PMID: 17440174
41. Bernard, J.R., D.W. Reeder, H.J. Herr, **D.A. Rivas**, and B.B. Yaspelkis III. High fat feeding effects on components of the CAP/Cbl signaling cascade in rodent skeletal muscle. *Metabolism*. 55: 203-12, 2006 PMID: 16423627
42. Herr, H.J., J.R. Bernard, D.W. Reeder, **D.A. Rivas**, J.J. Limon, and B.B. Yaspelkis III. Insulin-stimulated plasma membrane association and activation of Akt 2, aPKC ζ and aPKC λ in high fat fed rodent skeletal muscle. *J Physiol*. 565: 627-36, 2005. PMID: 15802290
43. Bernard, J.R., A.M. Crain, **D.A. Rivas**, H.J. Herr, D.W. Reeder and B.B. Yaspelkis III. Chronic aerobic exercise enhances classical and novel insulin signaling in Sprague Dawley rat skeletal muscle. *Acta Physiol Scand*. 183: 357-366, 2005 PMID: 15799772

**Book Chapters/Invited Reviews/Proceedings**

1. Margolis, L.M., **D.A. Rivas\*** Potential Role of MicroRNA in the Anabolic Capacity of Skeletal Muscle with Aging. *Exerc Sport Sci. Rev.* Invited Review. Apr; 46(2):86-91. 2018. PMID: 29346160 **\*Corresponding Author**
2. Shao, A., W.W. Campbell, C-Y.O. Chen, B. Mittendorfer, **D. A. Rivas**, J. C. Griffiths. The emerging global phenomenon of sarcopenic obesity: Role of functional foods; a conference report. *J Funct Foods*. 33: p244-250, 2017. doi.org/10.1016/j.jff.2017.03.048
3. Margolis, L.M., **D.A. Rivas\***. Implications of exercise training and distribution of protein intake on molecular processes regulating skeletal muscle plasticity. *Calcif Tissue Int.* Invited Review. 96(3):211-2. 2015. PMID: 25348078 **\*Corresponding Author**
4. **Rivas, D.A.\*** and R.A. Fielding. Skeletal Muscle. In: Encyclopedia of Human Nutrition, 3rd Edition. (eds., L. Allen, A. Prentice). Elsevier, Oxford, UK. ISBN 978-0123750839. March 2013. **\*Corresponding Author**
5. Haran. P.H., **D.A. Rivas**, R.A. Fielding. Role and potential mechanisms of anabolic resistance in sarcopenia*. J. Cachexia Sarcopenia Muscle*. 3: 157-62, 2012 PMID: 22589021
6. **Rivas, D.A.** and R.A. Fielding. Exercise as a countermeasure for sarcopenia. In: Sarcopenia – Age-Related Muscle Wasting and Weakness: Mechanisms and Treatments. (ed., G.S. Lynch). Springer Dordrecht Heidelberg; London, UK; New York, NY. ISBN 978-90-481-9712-5. Dec 2010.
7. **Rivas, D.A.**, S.J. Lessard, V.G. Coffey. mTOR regulator of skeletal muscle insulin action: Contributions of diet and exercise. *Appl Physiol Nutr Metab.* 34: 807-816, 2009. PMID: 19935842

**Published Abstracts**

1. **Rivas, D.A.**, R.A. Fielding, L.M. Margolis. Higher expression of miR-19b-3p associated with increased fat-free mass following 6 months of resistance exercise in older men and women. *J Frailty Aging.* 7(S1):61-91, 2018
2. Lessard, S.J., T.L. MacDonald, P. Prerana, M. Sook-Han, V.G. Coffey, J. Edge, **D.A. Rivas**, M.F. Hirshman, R.J. Davis, L.J. Goodyear. JNK regulates muscle hypertrophy via Myostatin/SMAD inhibition. *J Frailty Aging.* 7(S1):61-91, 2018
3. Margolis, L.M., **D.A. Rivas**, M. Berrone, Y. Ezzyat, A.J. Young, J.P. McClung, R.A. Fielding, S.M. Pasiakos. Chronic Calorie Restriction Downregulates Skeletal Muscle mTORC1 Signaling Independent of Dietary Protein Level and Associated microRNA Expression in Male Rats. *FASEB J.* 30(1): Suppl 01, 2016.
4. Margolis, L.M., Y. Ezzyat, R.A. Fielding, **D.A. Rivas**. Skeletal muscle specific microRNA 206 and 486 observed in circulation are biomarkers of aging. *FASEB J.* 30(1): Suppl 01, 2016.
5. Margolis, L.M., **D.A. Rivas**, Y. Ezzyat, R.A. Fielding. Aging alters skeletal muscle associated microRNA expression in circulation at rest and post resistance exercise. *J Cachexia Sarcopenia Muscle*. 6(4): 398–509, 2015.
6. Lessard, S., **D. Rivas**, K. So, H-J. Koh, M. Hirshman, R. Fielding, L. Goodyear. SNARK is a Novel Regulator of Muscle Mass and Myocyte Apoptosis. *FASEB J.* 29(1): Suppl 01, 2015.
7. **Rivas, D.**, D. McDonald, N. Rice, R. Fielding. Lipid-Induced Anabolic Resistance in Skeletal Muscle is Associated with Inflammation in Aging, but Not Obesity. *FASEB J.* 29(1): Suppl 01, 2015.
8. Rice, N., P. Haran, R. Fielding, **D. Rivas**. Differential response of microRNA to contraction in aged and obese mice (1168.4). *FASEB J.* 28(1): Suppl 01, 2014.
9. **Rivas, D.A.**, N.P. Rice, R.A. Fielding. Molecular adaptation of skeletal muscle to high-intensity resistance exercise in aged males. *FASEB J.* 27(1): Suppl 01, 2013.
10. McDonald, D.J., E.P. Morris, P.H. Haran, R.A. Fielding, **D.A. Rivas**. Differential response of anabolic signaling with high-fat feeding and aging in skeletal muscle after insulin stimulation. *FASEB J.* 27(1): Suppl 01, 2013.
11. Chen, C-Y.O. **D. Rivas**, J. Minichiello, Y-C. Lee, C-Q. Lai. The effect of isoflavones on expression of genes related metabolic capacity in skeletal muscle of rats. *FASEB J*. 25(1): Suppl 01, 2011.
12. **Rivas, D.A.**, E.P. Morris, R.A. Fielding. *Med Sci Sports Exer*. 42(10):83-84, Oct 2010.
13. Morris, E.P., **D.A. Rivas**, R.A. Fielding. Increased intramuscular triglycerides are associated with increased AMPK alpha1 and cleaved SREBP1 in aged skeletal muscle. *FASEB J.* 24(1): Suppl 01, 2010.
14. **Rivas, D.**, S. Lessard, B.B. Yaspelkis, J.A. Hawley. Regulation of mTORC 1/2 Formation in Response to a High- fat Diet and Exercise Training.: 525May 28 10:30 AM - 10:45 AM. *Med Sci Sports Exer.* 40(5): pS3-S4, May 2008. doi: 10.1249/01.mss.0000321459.29650.32

**Personal Statement**

My journey into the field of human physiology, bioenergetics, and exercise performance in the context of health and chronic disease prevention was ignited by my training in allied health and my active-duty service as a combat medic and airborne paratrooper in United States Army. My research journey commenced with a Maximizing Access to Research Careers (MARC) Pre-doctoral Research Fellowship from the National Institute of General Medical Sciences (NIGMS). Now, as an independent investigator, I bring eighteen years of extensive research experience in skeletal muscle metabolism, epigenetics of aging, obesity, and exercise medicine. This robust background has thoroughly equipped me to lead a cutting-edge research program focused on advancing skeletal muscle health.

During my postdoctoral training, I investigated the role of intramyocellular lipids in age-related skeletal muscle loss and anabolic resistance, focusing on post-exercise adaptation. This work was supported by a Diversity Supplement and a Research Career Development Fellowship from the Boston Older Americans Independence Center (OAIC) both funded by the National Institute on Aging (NIA). As I transitioned to independence, I developed a research program on small non-coding genes called, microRNA (miRNA), in age- and contraction-induced skeletal muscle growth, securing a prestigious K01 Mentored Research Scientist Career Development Award from the National Institutes of Health (NIH). My collaborative research uncovered a blunted adaptive response of both non-coding and protein-coding genes following high-intensity resistance exercise in older compared to younger men. Further *in vitro* cell experiments confirmed the critical role of miRNAs in regulating skeletal muscle adaptation. I hypothesized that miRNAs are essential for the muscle’s adaptive response to anabolic stimuli, contributing to the maintenance of muscle mass and metabolic function. More recently, I have led projects exploring miRNAs circulating in blood as potential biomarkers for aging skeletal muscle and as a mechanism for anabolic resistance.

My passion for uncovering mechanisms that contribute to the development of novel disease treatments and prevention strategies has led me to focus my current research on the role of circulating exosomal microRNA in muscle repair and regeneration following injury and damage. This research, rooted in data from my recently accepted senior author publication in the *American Journal of Physiology*, as well as promising unpublished preliminary findings, exploring how these miRNAs may serve as critical regulators in the muscle healing process.

I am particularly excited about this research direction as it leverages the extensive skills and knowledge I have accumulated over the years, applying them to an emerging and potentially transformative area in muscle biology. By understanding the specific roles of exosomal microRNAs in muscle recovery, my work aims to identify new therapeutic targets that could lead to innovative treatments for muscle-related injuries and degenerative diseases. This research not only reflects my deep commitment to advancing the field but also holds the promise of making significant contributions to improving human health and recovery outcomes.