

CURRICULUM VITAE

DATE

18 November 2020

FULL NAME

Donato Americo Rivas, B.Sc., Ph.D.

CURRENT POSITION

Scientist II and Assistant Professor of Nutrition

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Boston, MA 02111

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EDUCATION

Doctor of Philosophy

2010

Royal Melbourne Institute of Technology, Australia

School of Health and Biomedical Sciences

Biological and Biomedical Sciences (Physiology)

Thesis Title: Skeletal Muscle Metabolic Flexibility: Contribution of Genetics and Lifestyle

Thesis Advisor: John A. Hawley, Ph.D., FACSM

Bachelor of Science

2005

California State University, Northridge

Kinesiology (Exercise Science)

POSTDOCTORAL TRAINING

Postdoctoral Scholar

2010-2011

Nutrition, Exercise Physiology and Sarcopenia Laboratory

Jean Mayer USDA Human Nutrition Research Center on Aging

Tufts University

SUMMARY OF RESEARCH INTERESTS

Aging is associated with the progression of skeletal muscle atrophy and reduced muscle function (sarcopenia). Sarcopenia is a significant predictor of functional-limitation, leading to loss of independence, lowered quality of life, and ultimately death. The plasticity and adaptability of skeletal muscle to contraction (ie. resistance-exercise) is a fundamental physiological event leading to larger and more robust skeletal muscle. However, muscle growth in response to resistance exercise (RE), like other anabolic stimuli, is attenuated in older adults. The impaired ability of aged skeletal muscle to adapt to RE may be a factor that contributes to sarcopenia. I have developed an independent line of research focused on the role of attenuated exercise/contraction on anabolic resistance in aged humans with a particular focus on post-exercise adaptation in skeletal muscle. The overarching hypothesis is that exercise training may reverse “anabolic resistance” thus preventing the skeletal muscle atrophy that has been observed with advancing age.

My current research focus is on the role of miRNA on the epigenetic control of gene expression and alterations of skeletal muscle to exercise training in older adults. Results I have recently published and preliminary data in my current application have shown a blunting in the adaptational response of protein-coding genes and miRNA expression after a single bout of high-intensity resistance exercise in the skeletal muscle of older versus younger men. Subsequently, in follow up in vitro transfection experiments, I have mechanistically determined a fundamental role for miRNA in skeletal muscle by using targeted miRNA inhibition with antisense oligonucleotides and overexpression using miRNA mimetics. I hypothesize that miRNAs are a vital component (in line with signaling molecules and transcription factors) for the adaptational response of skeletal muscle to anabolic stimuli (contraction, growth factors, nutrients) leading to increased synthesis and decreased degradation of proteins for the maintenance of skeletal muscle mass and function during aging. I have also lead the development of liquid chromatography/mass spectrometry assays to measure lipidomics in various tissues, performed in vitro genetic manipulation to determine the roles of molecular pathways in cells and used histological methods to quantify multiple targets in skeletal muscle tissues, including CD31 (endothelial cell marker), TUNEL (apoptosis) and muscle fiber typing and cross sectional area analysis.

EMPLOYMENT HISTORY

2014 – Present	Scientist II; Human Nutrition Research Center, Tufts University
2020 – Present	Assistant Professor of Nutrition; Friedman School of Nutrition Science, Tufts University
2014 -2020	Adjunct Instructor; Friedman School of Nutrition Science, Tufts University
2011 - 2014	Scientist III; Human Nutrition Research Center, Tufts University
2009	Research Associate, Tufts University
1999 - 2003	Sports Medicine Specialist, Valley High School, SAUSD, Santa Ana, CA
1995 - 2003	91B1P Medical Specialist (Combat Medic), Regular Army and Reserves; United States

AWARDS AND HONORS

- 2019 Sao Paulo Research Foundation (FAPESP) Visiting Researcher Program – University of Sao Paulo, School of Physical Education and Sport, Ribeirão Preto Campus, B
- 2013 Poster Award - Claude D. Pepper Older Americans Independence Center National Annual Meeting
- 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, Biological Section Travel Award
- 2006 - 2010 Endeavour International Postgraduate Research Scholarship (IPRS), Department of Education and Training (DET), Australian Government
- 2006 School of Medical Sciences, Occupational Health & Safety Award
- “For Rendering Assistance to a Seriously Injured Student, Potentially Saving His Life”**
- 2003 - 2005 MARC Honors Undergraduate Fellowship, National Institute of General Medical Science (NIGMS), USA
- 2005 California State University, Northridge Honors Convocation
- 2003-2004 California State University, Northridge Academic Dean’s List

PROFESSIONAL DEVELOPMENT

- 2013 Computational Biology Initiative: Software Carpentry Bootcamp. Tufts University; Boston, MA June 3-4, 2013
- 2012 Glucose Clamping the Conscious Mouse: A Laboratory Course, Vanderbilt-NIDDK Mouse Metabolic Phenotyping Center, September 10 - 14, 2012 Nashville, TN
- 2010 Isotope Tracers in Metabolic Research: Principles and Practice of Kinetic Analysis. NIDDK/MMPC Peabody - Little Rock, April 12 - 18, 2010 Little Rock, AR
- 1996 Basic Airborne Course (Military Parachutist), The United States Army Airborne School (Jump School), 1st Battalion, 507th Parachute Infantry Regiment, Fort Benning, GA, USA
- 1995 US Army Advanced Combat Medical Specialist Course (Combat Medic), Army Medical Department Center & School Health Readiness Center of Excellence, Fort Sam Houston, San Antonio, TX, USA

PROFESSIONAL SERVICE

2015 – Present Scientific Committee - International Conference on Frailty & Sarcopenia Research

2009 - 2011 Gerontological Society of America; Emerging Scholar and Professional Organization
Biological Sciences Section, Emerging Scholar and Professional Organization Representative

2009 - Present Ad Hoc Reviewer

Journal of Physiology, Pflugers Archiv European Journal of Physiology, Nutrition & Metabolism, Journal of Nutrition and Metabolism, Alcohol & Alcoholism, Hormone & Metabolic Research, British Journal of Nutrition, The Physician and Sportsmedicine, Journals of Gerontology: Series A, Aging Cell, Applied Physiology Nutrition and Metabolism, Physiological Genomics, Journal of Cellular and Molecular Medicine, Acta Physiologica, PLoS ONE, FASEB Journal, Calcified Tissue International, Molecular Metabolism.

2009 - Present Gerontological Society of America (GSA)

2008 RMIT University F@B International Student Mentorship program
International Student Ambassador

2007 - 2009 RMIT, School of Medical Sciences Postgraduate Student Committee Vice Chairperson

2007 - 2009 RMIT University, Animal Ethics Committee
Student Representative

2006 - 2009 Australian Diabetes Society (ADS)

2005 - Present American College of Sports Medicine (ACSM)

2004 – Present American Physiological Society (APS)

Grant Review Panels

2017 Invited Peer Review - European Science Foundation / University of Turin

2017 Invited Peer Review - Medical Research Council / UK

2019 Invited Peer Review - Health Research Board / Ireland

FRIEDMAN SCHOOL OR UNIVERSITY SERVICE

2014 - Member - Tufts University Diversity & Inclusion Working Group

HNRC Committees Memberships:

2019 – Present Postdoctoral Officer

2013 – Present Diversity Committee - Member

2013 – 2019 Occupational Health & Safety Committee – Member

2019 HNRCA Scientific Retreat Planning Committee
 “From Silos to Teams” – Co-chair

2019 – Present Scientist II Search Committee - Member

2012 - Present Expert Faculty Member (Exercise Physiology)

Tufts University, Friedman School of Nutrition Science and Policy; NUTR 240: Nutritional Science
 Journal Club: Biochemical & Molecular Nutrition and Nutritional Epidemiology.

2010 - Present 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

Training /Mentorship

Name	Year	Role	Current Position
Evan Morris, DO	2009 - 2011	Research Technician	Medical Resident – MGH
Evan Pasha, PhD	2009 - 2012	Research Technician	Postdoctoral Fellow - UT-Southwest
Beiyun Caitlin Liu, PhD	2010 - 2011	Research Technician	Postdoc – St. Jude Children’s
Allistair Mallillin	2010 - 2011	Undergrad Student; Tufts University	Program Officer, Common Counsel
Yanan Yu, NP	2011	Graduate Student; Boston University	Nurse Practitioner - MGH
Rachele Pojednic, PhD	2011 - 2015	Doctoral Student; Tufts University	Assistant Professor, Simmons College
Prashanth Haran, MD	2011 - 2012	Research Technician	Medical Resident - Mass General Hospital
Devin McDonald, DO, USN	2012 - 2014	Graduate Student; Tufts University	Physician – U.S. Navy
Nick Rice	2012 - 2014	Research Technician	PhD Student - UMASS Medical School
Kawai So	2012 - 2013	Undergrad Student; UMASS, Boston	Research Tech – UMASS Medical
Lee Margolis, PhD	2014 - 2017	Doctoral Student; Tufts University	Nutrition Physiologist - USARIEM
Elle Cooper, DNP	2014	Graduate Student; Tufts University	Doctor of Nursing Practice – Oregon Health Science
John Griffin, PhD	2014	Doctoral Rotation	Postdoc – Pfizer
Yassine Ezzyat	2014 - 2018	Research Technician	Research Technician at Pfizer
Maria Berrone, RD	2014	Graduate Student; Tufts	Dietitian in Argentina
Rahul Sangar	2015 - 2018	Research Technician	Graduate Student at BU
Liang Wang	2015	Graduate Student; Tufts	Amcare Women's & Children's Hospital

Gonzalo Lopez	2017	Undergrad Student; Cal State University	Grad Student – Cal State University
Townsend Benard	2017 - 2020	Doctoral Student; Tufts University	Biotech Consultant

Dissertation Committees

Name	Year	Degree	School
Lee Margolis	2014 - 2017	PhD	Friedman School of Nutrition Science and Policy
Townsend Bernard	2017 - 2020	PhD	Friedman School of Nutrition Science and Policy
Gustavo P Morais	2019	MSc	School of Physical Education and Sport of Ribeirão Preto - University of São Paulo
Brian Park	2020 -	PhD	Friedman School of Nutrition Science and Policy

RESEARCH SUPPORT

Current

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

Funding Agency: Axcella Health, Inc., Rivas and Fielding (PIs)

Amount: \$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., Ceglia (PI)

Amount: \$35,000

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

Role: Co- Investigator

Grant Title: **2P30AG031679-06A1 Boston Claude D. Pepper Older Americans Independence Center: A Translational Approach to Function Promoting Therapies.**

Pilot and Exploratory Project: Circulating microRNA as novel predictors of skeletal muscle anabolic response in aged humans.

Funding Agency: NIH/NIA, Bhasin (PI)

Amount: \$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, Rivas and Fielding (PIs)

Amount: \$610,715

Period: 08/16-08/20

Role: Co-Principal Investigator

Grant Title: **Role of microRNAs on Age and Contraction-Induced Skeletal Muscle Growth (K01 KAG047247A)**

Funding Agency: NIH/NIA Mentored Research Scientist Development Award

Amount: \$475,000

Period: 02/15-01/20

Role: Principle Investigator

Submitted

Grant Title: **Contributions of circulating exosomal microRNA to adipose-muscle crosstalk (R01 AG065469-01)**

Funding Agency: NIH/NIA, Rivas (PI)

Amount Requested: \$2,250,000

Anticipated Period: 10/2019-09/2024

Role: Principal Investigator

Past or Completed

Grant Title: **The Effects of de novo Ceramide Inhibition on Age-Associated Skeletal Muscle Loss.**

Funding Agency: HNRCA Pilot Award

Amount: \$25,000

Period: 10/11- 09/14 (NCE)

Role: Principal Investigator

Grant Title: **P30AG031679 Boston Claude D. Pepper Older Americans Independence Center: A Translational Approach to Function Promoting Anabolic Therapies Research Career Development Core (RCDC) Support. Cellular Mechanisms of Lipotoxicity on Age and Diet-Induced Skeletal Muscle Atrophy and Loss of Function**

Funding Agency: NIH/NIA, Bhasin (PI)

Amount: \$25,000

Period: 06/12 - 05/14 (NCE)

Role: RCDC Fellow / Principal Investigator of Tufts' subcontract

Grant Title: **P30AG031679 Boston Claude D. Pepper Older Americans Independence Center: A Translational Approach to Function Promoting Anabolic Therapies. Diversity Supplement Postdoctoral Fellowship.**

Funding Agency: NIH/NIA, Bhasin (PI)

Amount: \$40,000

Period: 09/09 - 05/11

Role: Postdoctoral Fellow / Principal Investigator of Tufts' subcontract

Grant Title: **Endeavour International Postgraduate Research Scholarship (IPRS)**

Funding Agency: Department of Education and Training (DET), Australian Government
Amount: \$300,000
Period: 01/2006 – 02/2010
Role: Predoctoral Fellow / Doctor of Philosophy Candidate

Grant Title: **MARC U*STAR Honors Undergraduate Fellowship**
Funding Agency: NIH/NIGMS, Zavala (PI)
Period: 09/03 - 06/05
Role: Undergraduate Research Fellow

PUBLICATIONS

Refereed Journals

1. da Rocha, A.L., A.P. Pinto, G.P. de Moraes, R.L. Rovina, A.S.C. Veras, G.R. Teixeira, **D.A. Rivas**, J.R. Pauli, L.P. de Moura, D.E. Cintra, E.R. Ropelle, A.S.R. da Silva. Moderate, but Not Excessive, Training Attenuates Autophagy Machinery in Metabolic Tissues. *Int J Mol Sci*. Nov 10;21(22):E8416. 2020. doi: 10.3390/ijms21228416. PMID: 33182536
2. **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. doi: 10.1152/ajpcell.00455.2018. PMID: 31241988 ***Corresponding Author**
3. 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*. Aug 2; 9(1):3030. 2018. PMID: 30072727
4. L.M. Margolis, 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*. May 16; 10(5). pii: E624. 2018. PMID: 29772642
5. 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
6. 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*. Sep 1; 313(3):R298-R304. 2017. PMID: 28659285
7. 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*. Oct 1;72(10):1319-1326. 2017. PMID: 27927764 ***Senior and Corresponding Author**

8. 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.* 7:445 2016. PMID: 27761114
9. 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*. Sep 15;8(9). pii: E571. 2016. PMID: 27649241
10. **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**
11. 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
12. **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. PMID: 24928197 ***Corresponding Author**
13. 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
14. 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. PMID: 23757406
15. 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
16. 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
17. 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

18. **Rivas, D.A.**, E.P. Morris, P.H. Haran, M.daS. Morais, E.P. Pasha, E. Phillips, R.A. Fielding. Increased ceramide content and NF κ B signaling contribute to attenuated anabolic signaling after resistance exercise in aged males. *J Appl Physiol*. 113: 1727-36, 2012. PMID: 23042913
19. **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
20. **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
21. 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**
22. 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
23. **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- β -ribose. *J Endocrinol*. 202: 441-451, 2009. PMID: 19574345 **Highlight: Must Read, Faculty of 1000, Madar Z: 2009. F1000.com/1162631**
24. 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
25. 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
26. 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
27. 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
28. 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

29. 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
30. 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
31. 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
32. 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

Reviews, Chapters, and Editorials

33. 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 ***Senior and Corresponding Author**
34. 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
35. 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 ***Senior and Corresponding Author**
36. **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**
37. 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
38. **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.
39. **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

Articles in Review or in Preparation

40. **Rivas, D.A.***, F. Ping, T. Benard, A.S.R. da Silva, R.A. Fielding, L.M. Margolis. miRNA expression in circulation reveals the paradoxical response to resistance training in functionally-limited older adults independent of nutrient status. *FASEB J.* ***Corresponding Author**
41. Benard, T., F. Ping, N.P. Rice, S.J. Lessard, S. Lamon-Fava, L. Parnell, R.A. Fielding, **D.A. Rivas***. Skeletal muscle miRNA families demonstrate conserved, age-associated changes in abundance across the murine lifespan. *Physiological Genomics* ***Corresponding Author**
42. Benard, T., F. Ping, N.P. Rice, S.J. Lessard, S. Lamon-Fava, L. Parnell, R.A. Fielding, **D.A. Rivas***. Changes in Tnrc6a expression do not explain stimuli specific, miR-30-5p-mediated potentiation of anabolic signaling in skeletal muscle. *Am J. Physiol Cell Physiol.* ***Corresponding Author**
43. Benard T., F. Ping, N.P. Rice, A.S.R. da Silva, **D.A. Rivas***. Divergent age-related miRNA expression profiles in adipose tissue impact skeletal muscle via changes to adipose-derived exosomal miRNA expression. *Cell Reports Med.* ***Corresponding Author**
44. da Rocha, A.L., A.P. Pinto, E.B. Kohama, L.E.C.M. da Silva 2 , F.M. Simabuco, F.G. Frantz, J.R. Pauli, **D.A. Rivas**, L.P. de Moura, D.E. Cintra, E.R. Ropelle, H.T. Filho, E.C. de Freitas, A.S.R. da Silva. IL-6 knockout mice enhance cardiac Akt/mTOR activation in response to acute stress. *Molecular and Cellular Endocrinology*. In Review.

Thesis

45. **Rivas D.A.** Skeletal Muscle Metabolic Flexibility: Contribution of Genetics and Lifestyle. Melbourne (Australia): RMIT University; 2010.

Published Abstracts

46. **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
47. 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
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51. 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.
52. **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.
53. 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.
54. **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.
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56. 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.
57. **Rivas, D.A.**, E.P. Morris, R.A. Fielding. *Med Sci Sports Exer*. 42(10):83-84, Oct 2010.
58. 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.
59. **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

Invited Lectures

60. 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. 25 February 2021. Columbia, MO, USA
61. 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. 09 February 2017. Los Angeles, CA, USA
62. 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. 09 January 2017. Boston, MA, USA

63. 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, 09-12 October 2016 Orlando, FL, USA
64. MicroRNA in Skeletal Muscle: Potential Role in Sarcopenia. International Conference on Frailty & Sarcopenia Research. 23-25 April 2015 Boston, MA, USA
65. Molecular mechanisms controlling age-associated muscle atrophy and loss of function. Kinesiology Symposium: University of Massachusetts, Amherst. 16 December 2014 Amherst, MA, USA
66. Molecular mechanisms controlling age-associated muscle atrophy and loss of function. Health and Human Physiology Symposium: University of Iowa. 27 January 2014 Iowa City, IA, USA
67. Molecular adaptation of aging skeletal muscle to an acute bout of high-intensity resistance exercise: Role of microRNAs. Grand Rounds, Endocrinology Section. 9 January 2013. Tufts Medical Center.
68. Molecular adaptations of skeletal muscle to resistance exercise in aged males. HNRCA Awards Ceremony. 14 May 2012. Tufts University, Boston, MA
69. Rivas, D.A. Nutritional Interventions in Aging: Calorie Restriction Mimetics – Promises and Pitfalls. Co-Chair. Gerontological Society of America Annual Meeting, 12-18 November 2012 San Diego, CA, USA
70. 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 of America Annual Meeting, 18-22 November 2011 Boston, MA, USA
71. 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. 8 November 2011. Tufts University HNRCA, Boston, MA, USA
72. Increased intramuscular lipid storage with aging: cause or consequence of skeletal muscle loss? Oral Presentation: HNRCA Winter 2011 Mini-Seminar Series II. 7 February 2011. Tufts University HNRCA, Boston, MA, USA
73. Intramyocellular lipid effects on anabolic signaling in aging skeletal muscle. Oral Presentation: Boston OAIC External Advisory Board Annual Meeting. 18 January 2011 Boston, MA, USA.
74. Decreased muscle protein content is associated with increased AMPK α 1 and cleaved SREBP1 in aged skeletal muscle. Oral Presentation: Boston OAIC RCDC Seminar. 7 Nov 2010. Boston University Medical Center, Boston, MA, USA
75. 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 of America Annual Meeting, 19-24 November 2010 New Orleans, LA, USA

76. Rivas, D.A., E.P. Morris, R.A. Fielding. Decreased muscle protein content is associated with increased AMPK α 1 and cleaved SREBP1 in aged skeletal muscle. Invited presentation for the symposium: Human Biogerontological Research: Results from ESPO Researchers. Gerontological Society of America Annual Meeting, 19-24 November 2010 New Orleans, LA, USA
77. Rivas, D.A. Intramyocellular lipid effects on anabolic signaling in aging skeletal muscle. Oral Presentation: NIA Grants Technical Assistance Workshop. 17-18 November 2009 Atlanta, GA, USA.

MEDIA REPORTING ON ORIGINAL RESEARCH

F1000 Prime Article Recommendations “Must Read: Lipid-induced mTOR activation in rat skeletal muscle reversed by exercise and 5'-aminoimidazole-4-carboxamide-1-beta-D-ribofuranoside”

Faculty of 1000 Prime, Jul 17, 2009

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“Outside JEB: Bad genes? Keep running!” by Christophe LeMoine, *Journal of Experimental Biology*, 2011
Exercise training reverses impaired skeletal muscle metabolism induced by artificial selection for low aerobic capacity. *Am J Physiol Regul Integr Comp Physiol*

“Fat molecule ceramide may factor in muscle loss in older adults” *EurekaAlert! AAAS*, Oct 31, 2012

www.eurekaalert.org/pub_releases/2012-10/tuhs-fmc103112.php

“Researchers look at muscle loss' relationship with ceramide” *ResidentialHomeHealth.com*, Nov 2, 2012

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“Losing Muscle Power as We Age: A fat molecule may be a factor in the decline of strength in older adults”
Tufts Now, Aug 9, 2013

now.tufts.edu/articles/losing-muscle-power-we-age

“Fat molecule may be responsible for spike in muscle loss with age” *SeniorCare Interim HealthCare*, Nov 2, 2012

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“Power Loss: Fat Molecule may factor in muscle decline as we age” *Tufts Nutrition Magazine*, Summer 2013

“Researchers identify mechanism that could help old muscle grow” *EurekaAlert! AAAS*, June 17, 2014

“Researchers identify muscle-building mechanism that could be important in addressing sarcopenia”
News Medical, June 18, 2014

“Why older men can't build muscles fast” *Business Standard*, June 18, 2014

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“Why older men can't build muscles fast” *Yahoo News Singapore*, June 18, 2014

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“Why older men can't build muscles fast” *Yahoo News UK*, June 18, 2014

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“New findings offer insight into muscular degeneration in ageing” *NineMSN.com*, June 18, 2014

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“Why older men can't build muscles fast” *Yahoo News India*, June 18, 2014

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“Mechanism could help old muscle grow” *Science Daily*, June 17, 2014

www.sciencedaily.com/releases/2014/06/140617091734.htm

“Why older men find it harder to build muscles” *TheHealthSite.com*, June 19, 2014

www.thehealthsite.com/news/why-older-men-find-it-harder-to-build-muscles/

“PUMPING IRONY: Lift to Live” *Experience Life Magazine*, June 29, 2014

experiencelife.com/article/lift-to-live/

“Thwarted Strength: Tiny molecule appears to impede older people's ability to build new muscle tissue” *Tufts Nutrition Magazine*, Winter 2015

“Fighting Shape: Cutting-edge nutrition science keeps the U.S. military at peak fitness and prepared to serve. And the discoveries Tufts researchers are making in the lab and in the field could help weekend warriors, too” *Tufts Nutrition Magazine*, Summer 2017

“Video Abstract: Potential Role of MicroRNA in the Anabolic Capacity of Skeletal Muscle With Aging” *Exercise Sports Science Reviews*, Feb 23, 2018

journals.lww.com/acsm-essr/Pages/videogallery.aspx?videoid=9&autoplay=true

MEDIA REPORTING ON EXPERT COMMENTARY

“A Look Behind the Bar: Can Barre Classes “Sculpt” Your Body?” Katherine Pett, *The Friedman Sprout*, Feb 1, 2015

friedmansprout.com/2015/02/01/a-look-behind-the-bar-can-barre-classes-sculpt-your-body/

“No, Barre Classes Won't Give You a Dancer's Body” Beth Skwarecki, *Vitals: LifeHacker.com*, Jan 22, 2016

vitals.lifehacker.com/no-barre-classes-won-t-give-you-a-dancer-s-body-175455121

“Muscle Health Pays Off in Better Quality of Life: Resistance training combined with adequate protein is the key” *Tufts University Health & Nutrition Letter*, 02/01/2018

“Top Docs – Nine Nutrition Experts Who are Doing Big Things with Their Ph.D.s : The Cell Decoder – Donato Rivas”, Julie Flaherty, *Tufts Nutrition Magazine*, Winter 2019 Vol. 20. No. 1

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