

Terence E. Ryan, Ph.D.

Curriculum Vitae

PERSONAL INFORMATION

Office Address:

Department of Applied Physiology & Kinesiology
Center for Exercise Science
College of Health and Human Performance
University of Florida
1864 Stadium Road
FLG Room 114
Gainesville, FL 32611
Tel: 352-294-1700
Email: ryant@ufl.edu

EDUCATION

Postdoctoral Training in Mitochondrial and Molecular Biology East Carolina University Mentors: Joseph McClung and P. Darrell Neuffer	2013-2017 Greenville, NC
Ph.D., Kinesiology University of Georgia Mentor: Kevin McCully	2010-2013 Athens, GA
M.S., Exercise Science Florida Atlantic University	2008-2010 Boca Raton, FL
B.S., Exercise Physiology Florida State University	2004-2008 Tallahassee, FL

PROFESSIONAL EXPERIENCE

Co-Director Center for Exercise Science University of Florida	2023 – present Gainesville, FL
Associate Professor with Tenure Department of Applied Physiology & Kinesiology University of Florida	2023 – present Gainesville, FL
Assistant Professor (Tenure Track) Department of Applied Physiology & Kinesiology University of Florida	2018 – 2023 Gainesville, FL
NIH Postdoctoral Fellow Department of Physiology East Carolina Diabetes and Obesity Institute East Carolina University	2015 – 2017 Greenville, NC

Postdoctoral Research Associate
Department of Physiology
East Carolina Diabetes and Obesity Institute
East Carolina University

2013 – 2015
Greenville, NC

Graduate Research Assistant
Department of Kinesiology
University of Georgia

2010 – 2013
Athens, GA

ADMINISTRATIVE EXPERIENCE

2023-Present	Co-Director, Center for Exercise Science, University of Florida
2015-17	President, Postdoctoral Association, East Carolina University
2013-14	Vice President, Postdoctoral Association, East Carolina University

PROFESSIONAL SOCIETIES

2014-	American Heart Association
2011-	American Physiological Society
2008-	American College of Sports Medicine
2010-	Southeast Chapter of the American College of Sports Medicine

HONORS AND AWARDS

2025-2028	University of Florida Research Foundation Professorship
2025	Established Investigator Award, American Heart Association
2021	Cardiovascular Section New Investigator Award, American Physiological Society
2020	Excellence Award for Assistant Professors, University of Florida
2018	NIA/NIH Loan Repayment Award for Clinical Research
2018	Pepper Center Junior Scholar Award, University of Florida Claude D. Pepper Older Americans Independence Center
2016	Outstanding Publication of the Year, Office of Postdoctoral Affairs, East Carolina University
2016	Ruth L. Kirschstein National Service Research Award (NIH/NHLBI)
2015	Best Research Presentation by Postdoctoral Scholar, East Carolina University Research and Creative Achievement
2014	Outstanding Publication of the Year, Office of Postdoctoral Affairs, East Carolina University
2013	Doctoral Student Research Award, Southeast Chapter of the American College of Sports Medicine
2013	Graduate Student Travel Award, The Graduate School, University of Georgia
2012	Outstanding Teaching Assistant Award, University of Georgia
2011	Doctoral Student Research Award, Southeast Chapter of the American College of Sports Medicine
2009	Academic Grant, Florida Atlantic University

BIBLIOGRAPHY

Refereed Journal Articles:

Citation statistics (Google Scholar): H-index = 41, total citations = 4858

*Corresponding Author

110. Muller DC, Boeno FP, Reis G, Azam A, Ashley M, Zhou Y, Yue F, **Ryan TE**, Efron PA, Laitano O. Interaction of sepsis, disuse and aging on skeletal muscle function and remodeling in mice. *Acta Physiologica*, 242(4): e70195, 2026. DOI: <https://doi.org/10.1111/apha.70195>
109. Mazirka P, Choi J, Jahuey P, O'Malley KA, Alvarez S, Robinson ST, Scali ST, **Ryan TE**, Berceli SA, Kim K. E-cigarette exposure impairs skeletal muscle mitochondrial function in male mice. *Physiological Reports*, 14, e70797, 2026. DOI: <https://doi.org/10.14814/phy2.70797>
108. Choi J, Kim K, Thome T, Stone L, Vugman NA, Pass C, Palzkill VR, Yang Q, Anderson EM, Fazzone B, Berceli SA, Scali ST, **Ryan TE***. Cilostazol Use and Calf Muscle Pathophysiology in People with Peripheral Artery Disease. *Vascular Medicine*, Accepted February 12, 2026.
107. Palzkill VR, Moparthy D, Yang Q, Choi J, Liu X, Kim K, Appu AB, Pass CG, Berceli SA, Sigmund CD, Scali ST, Kopinke D*, **Ryan TE***. Intramuscular Adipose Tissue Accumulation is a Key Determinant of Limb Function in Peripheral Artery Disease. *Circulation*, 2026. DOI: <https://doi.org/10.1161/circulationaha.125.078336>
106. Kim K, Thome T, Stone L, Vugman NA, Kunz EM, Alvarez S, Yang Q, O'Malley KA, Anderson EM, Fazzone B, Mazirka P, Antoine J, Berceli SA, **Ryan TE**, Scali ST. Hand and Arm Dysfunction is Prevalent Following Hemodialysis Access Placement and Associated with Higher Rate of Access Failure. *Kidney International Reports*, 11(3): 103765, 2026. DOI: <https://doi.org/10.1016/j.ekir.2025.103765>
105. Kawaida MY, Tice AL, Alvarez S, Lackey JA, Izaguirre B, Yang Q, Wei-LaPierre L, Hepple RT, **Ryan TE***. Elevating Circulating L-Kynurenine Promotes Frailty in Aging Mice. *Journal of Cachexia, Sarcopenia, and Muscle*, 17(1): e70214, 2026. DOI: <https://doi.org/10.1002/jcsm.70214>
104. Wimberly K, **Ryan TE***. The Aryl Hydrocarbon Receptor: A Modulator of Skeletal Muscle Health and Aging. *Biochimie*, 2025. DOI: <https://doi.org/10.1016/j.biochi.2025.12.012>
103. Aldrich J, Dong G, Panicker A, Russell J, Kumar S, Ovalle R Jr, Allen KD, **Ryan TE**, Sharma B. Evaluating intracellular location and ROS scavenging by manganese dioxide nanoparticles in chondrocytes. *ACS Applied Material Interfaces*, 18(1): 649-663, 2025. DOI: <https://doi.org/10.1021/acsami.5c20507>
102. Balestrieri N, Dong G, **Ryan TE***. Pirfenidone treatment improves ischemic muscle function in mice with chronic kidney disease. *Skeletal Muscle* 15(1): 31, 2025. DOI: <https://doi.org/10.1186/s13395-025-00402-5>
101. Dong G, Choi J, Li Y, Muller DC, Li Z, Luo YE, **Ryan TE***. Nicotinamide N-methyltransferase inhibition improves limb function in experimental peripheral artery

disease. *Physiological Reports* 13(20): e70615, 2025. DOI: <https://doi.org/10.14814/phy2.70615>

100. Wimberly KD, Kawaida MY, Tice AL, Luo X, Lackey JA, Alvarez S, Wei-LaPierre L, Hepple RT, **Ryan TE***. Mitochondrial diagnostics reveal diffuse impairments in skeletal muscle energetics in aging mice. *Journal of Applied Physiology* 139(3): 839-848, 2025. DOI: <https://doi.org/10.1152/jappphysiol.00601.2025>
99. Zhai M, Jamaifar A, Qian J, Wu W, Bektik E, Randhawa V, Vaz C, Pandey AK, Wara AK, Sachan M, Hu Y, Garcia JL, Alford C, **Ryan TE**, Peng W, Feinberg MW. A smooth muscle cell lncRNA controls angiogenesis in chronic limb-threatening ischemia through a miR-143-3p/HHIP signaling axis. *Journal of Clinical Investigation* 135(20): e188559, 2025. DOI: <https://doi.org/10.1172/JCI188559>
98. Belbis MD, Ro B, Schepers LE, Kim KH, Yap Z, Schultz TA, Tallman MD, Killam MF, Hobart SE, Fafowora OJ, Bray JN, Fister ME, da Silva VCC, Rehman HU, Sharma B, Lu X, Areas GPT, Markworth JF, Kim K, **Ryan TE**, Kuang S, Goergen CJ, Gavin TP, Roseguini BT, Hirai DM. Effects of heat therapy on exercise tolerance in a rat model of heart failure with preserved ejection fraction. *Journal of Applied Physiology* 139(1): 185-205, 2025. DOI: [10.1152/jappphysiol.00247.2025](https://doi.org/10.1152/jappphysiol.00247.2025)
97. Norris AM, Palzkill VR, Appu AB, Fierman KE, Noble CD, **Ryan TE**, Kopinke D. Intramuscular adipose tissue restricts functional muscle recovery. *Cell Reports* 44(8): 116021, 2025. DOI: [10.1016/j.celrep.2025.116021](https://doi.org/10.1016/j.celrep.2025.116021)
96. Kim K, Thome T, Pass C, Stone L, Vugman NA, Palzkill VR, Yang Q, O'Malley KA, Anderson EM, Fazzone B, Yue F, Berceli SA, Scali ST, **Ryan TE***. Multiomic analysis of calf muscle in peripheral artery disease and chronic kidney disease. *Circulation Research* 136(7): 688-703, 2025. DOI: <https://doi.org/10.1161/CIRCRESAHA.124.325642>
95. Dong G, **Ryan TE***, Esser KA*. Animal models of exercise and cardiometabolic disease. *Circulation Research* 137(2): 139-162, 2025. DOI: [10.1161/CIRCRESAHA.124.325704](https://doi.org/10.1161/CIRCRESAHA.124.325704)
94. McCully KK, Stoddard SN, Reynold MA, **Ryan TE**. Skeletal muscle oxidative metabolism during exercise measured with near infrared spectroscopy. *NDT*: 3170700, 2024. DOI: <https://doi.org/10.3390/ndt2040025>
93. Palzkill VR, Tan J, Moparthy D, Tice AL, Ferreira LF, **Ryan TE***. A 6-minute limb function assessment for therapeutic testing in experimental peripheral artery disease models. *JACC: Basic to Translational Science* 10(1): 88-103, 2025. DOI: <https://doi.org/10.1016/j.jacbts.2024.08.011>
92. Khattri RB, Batra A, White Z, Hammers D, **Ryan TE**, Barton ER, Bernatchez P, Walter GA. Comparative lipidomic and metabolomic profiling of mdx and severe mdx-apolipoprotein e-null mice. *Skeletal Muscle* 14(1): 36, 2024. DOI: [10.1186/s13395-024-00368-w](https://doi.org/10.1186/s13395-024-00368-w)
91. Hetherington-Rauth M, Johnson E, Migliavacca E, Langsetmo L, Hepple RT, **Ryan TE**, Ferrucci L, Breuille D, Cortes J, Lane NE, Feige J, Napoli N, Tramontana F, Orwoll ES, Cawthon PM. The mediating role of kynurenine pathway metabolites on the relationship between inflammation and muscle mass in oldest-old men. *J Gerontol A Biol Sci Med Sci* 79(7); 2024. DOI: <https://doi.org/10.1093/gerona/glae131>

90. Thome T, Vugman N, Stone L, Wimberly K, Scali ST, **Ryan TE***. A tryptophan-derived uremic metabolite-Ahr-Pdk4 axis governs skeletal muscle mitochondrial energetics in chronic kidney disease. *JCI Insight* 9(10): e178372, 2024. DOI: <https://doi.org/10.1172/jci.insight.178372>
89. Kim K, Fazzone B, Cort TA, Kunz EM, Alvarez S, Moerschel J, Palzkill VR, Dong G, Anderson EM, O'Malley KA, Berceli SA, **Ryan TE**, Scali ST. Mitochondrial Targeted Catalase Improves Muscle Strength Following Arteriovenous Fistula Creation in Mice with Chronic Kidney Disease. *Scientific Reports* 14: 8288, 2024. DOI: <https://doi.org/10.1038/s41598-024-58805-1>
88. Fitzgerald LF, Lackey J, Moussa A, Shah SV, Castellanos AM, Khan S, Schonk M, Thome T, Salyers ZR, Jakkidi N, Kim K, Yang Q, Hepple RT, **Ryan TE***. Chronic aryl hydrocarbon receptor activity impairs muscle mitochondrial function with tobacco smoking. *Journal of Cachexia, Sarcopenia, and Muscle* 15(2): 646-659, 2024. DOI: <https://doi.org/10.1002/jcsm.13439>
87. **Ryan TE**, Torres MJ, Lin CT, Clark A, Brophy P, Smith C, Smith CD, Morris EM, Thyfault JP, Neufer PD. High dose atorvastatin therapy progressively decreases skeletal muscle mitochondrial respiratory capacity in humans. *JCI Insight* 9(4): e174125, 2024. DOI: <https://doi.org/10.1172/jci.insight.174125>
86. Murray KO, Brant JO, Spadlin R, Thome T, Laitano O, **Ryan TE**, Kladde MP, Clanton TL. Exertional heat stroke causes long-term skeletal muscle epigenetic reprogramming, altered gene expression, and impaired satellite cell function in mice. *American Journal of Physiology – Regulatory, Integrative, and Comparative Physiology* 326(2): R160-R175, 2024. DOI: <https://doi.org/10.1152/ajpregu.00226.2023>
85. Palzkill VR, Tan J, Yang Q, Morcos, J, Laitano O, **Ryan TE***. Deletion of the aryl hydrocarbon receptor in endothelial cells improves ischemic angiogenesis in chronic kidney disease. *American Journal of Physiology – Heart and Circulatory Physiology* 326(1): H44-H60, 2023. DOI: <https://doi.org/10.1152/ajpheart.00530.2023>
84. Pass C, Palzkill VR, Tan J, Kim K, Thome T, Yang Q, Fazzone B, Robinson ST, O'Malley KA, Yue F, Scali ST, Berceli SA, **Ryan TE***. Single nuclei RNA sequencing of the gastrocnemius muscle in peripheral artery disease. *Circulation Research* 133(10): 791-809, 2023. DOI: <https://doi.org/10.1161/CIRCRESAHA.123.323161>
83. Hetherington-Rauth M, Johnson E, Parimi N, Langsetmo L, Feige J, Hepple RT, **Ryan TE**, Ferrucci L, Orwoll ES, Cawthon PM. Nutrient metabolites associated with low D₃Cr muscle mass, strength, and physical performance in older men. *The Journal of Gerontology: Series A* 79(2): glad217, 2024. DOI: <https://doi.org/10.1093/gerona/glad217>
82. Khattri RB, Louis LZ, Kim K, Anderson EM, Fazzone B, Harland KC, Hu Q, O'Malley KA, Berceli SA, Wymer J, **Ryan TE**, Scali ST. Temporal serum metabolomic and lipidomic analyses distinguish patients with access-related hand disability following arteriovenous fistula creation. *Scientific Reports* 13: 16811, 2023. DOI: <https://doi.org/10.1038/s41598-023-43664-z>
81. Kim K, Cort TA, Kunz EM, Moerschel J, Palzkill VR, Dong G, Moparthy CN, Anderson EM, Fazzone B, O'Malley KA, Robinson ST, Berceli SA, **Ryan TE**, Scali ST. N-acetylcysteine treatment attenuates hemodialysis access-related limb pathophysiology

in mice with chronic kidney disease. *American Journal of Physiology – Renal Physiology* 325(3): F271-F282, 2023. DOI: <https://doi.org/10.1152/ajprenal.00083.2023>

80. Balestrieri N, Palzkill VR, Pass C, Tan J, Salyers ZR, Moparthy C, Murillo A, Kim K, Thome T, Yang Q, O'Malley KA, Berceli SA, Yue F, Scali ST, Ferreira LF, **Ryan TE***. Chronic activation of the aryl hydrocarbon receptor in muscle exacerbates ischemic pathology in chronic kidney disease. *Circulation Research* 133(2): 158-176, 2023. DOI: <https://doi.org/10.1161/CIRCRESAHA.123.322875>
79. Cheng HS, Perez-Cremades D, Zhuang R, Jamaiyar A, Chen J, Tzani A, Stone L, Plutzky J, **Ryan TE**, Goodney P, Creager MA, Sabatine MS, Bonaca M, Feinberg MW. Impaired angiogenesis in diabetic critical limb ischemia is mediated by a miR-130b-INHBA signaling axis. *JCI Insight* 8(10): e163041, 2023. DOI: <https://doi.org/10.1172/jci.insight.163041>
78. Dong G, Moparthy C, Thome T, Kim K, Yue F, **Ryan TE***. IGF-1 therapy improves muscle size and function in experimental peripheral arterial disease. *JACC: Basic to Translational Science* 8(6): 702-719, 2023. DOI: <https://doi.org/10.1016/j.jacbts.2022.12.006>
77. Kumar RA, Hahn D, Kelley RC, Muscato DR, Shamoun A, Curbelo-Bermudez N, Butler WG, Yegorova S, **Ryan TE**, Ferreira LF. Skeletal muscle Nox4 knockout prevents and Nox2 knockout blunts loss of maximal diaphragm force in mice with heart failure with reduced ejection fraction. *Free Radical Biology and Medicine* 194: 23-32, 2023. DOI: <https://doi.org/10.1016/j.freeradbiomed.2022.11.025>
76. Khattri RB, Batra A, Matheny M, Hart C, Henley-Beasley SC, Hammers D, Zeng H, White Z, **Ryan TE**, Barton ER, Pascal B, Walter GA. Magnetic resonance quantification of skeletal muscle lipid infiltration in a humanized mouse model of Duchenne muscular dystrophy. *NMR in Biomedicine* 36(3): e4869, 2023. DOI: <https://doi.org/10.1002/nbm.4869>
75. Khattri RB, Puglise J, **Ryan TE**, Walter GA, Merritt ME, Barton EB. Isolated murine skeletal muscles oxidize pyruvate over glucose. *Metabolomics* 18(12): 105, 2022. DOI: <https://doi.org/10.1007/s11306-022-01948-x>
74. Thome T, Kim K, Dong G, **Ryan TE***. The role of mitochondrial and redox alterations in the skeletal myopathy associated with chronic kidney disease. *Antioxidants & Redox Signaling* 38(4-6): 318-337, 2023. DOI: <https://doi.org/10.1089/ars.2022.0143>
73. Anderson EM, Kim K, Fazzone BJ, Harland KC, Hu Q, Salyers ZR, Palzkill VR, Cort TA, Kunz EM, Martin AJ, Neal D, O'Malley KA, Berceli SA, **Ryan TE**, Scali ST. Influences of renal insufficiency and ischemia on mitochondrial bioenergetics and limb dysfunction in a novel murine iliac arteriovenous fistula model. *JVS – Vascular Science* 3: 345-362, 2022. DOI: <https://doi.org/10.1016/j.jvssci.2022.10.001>
72. Saini S, Perez-Cremades D, Cheng H, Kosmac K, Peterson CA, Li L, Tian L, Dong G, Wu KK, Bouverat B, Wohlgemuth SE, **Ryan TE**, Sufit R, Ferrucci L, McDermott MM, Leeuwenburgh C, Feinberg MW. Dysregulated Genes, MicroRNAs, Biological pathways, and Gastrocnemius Muscle Fiber Types Associated with Progression of Peripheral Artery Disease: A preliminary analysis. *Journal of the American Heart Association* 11: e023085, 2022. DOI: <https://doi.org/10.1161/JAHA.121.023085>

71. Khattri RB, Kim K, Anderson EM, Fazzzone BJ, Harland KC, Palzkill VR, Cort TA, O'Malley KA, Berceli SA, Scali ST*, **Ryan TE***. Metabolomic profiling reveals muscle metabolic changes following iliac arteriovenous fistula creation in mice. *American Journal of Physiology – Renal Physiology* 323(5): F577-F587, 2022. DOI: [10.1152/ajprenal.00156.2022](https://doi.org/10.1152/ajprenal.00156.2022)
70. Palzkill VR, Thome T, Murillo AL, Khattri RB, **Ryan TE***. Increasing plasma L-kynurenine impairs mitochondrial oxidative phosphorylation prior to the development of atrophy in murine skeletal muscle: a pilot study. *Frontiers in Physiology* 13:992413, 2022. DOI: [10.3389/fphys.2022.992413](https://doi.org/10.3389/fphys.2022.992413)
69. Kumar RA, Thome T, **Ryan TE**, Arnoutakis GJ, Jeng EI, Ferreira LF. Reversible thiol oxidation increases mitochondrial electron transport complex enzyme activity but not respiration in cardiomyocytes from patients with end-stage heart failure. *Cells*. 11(15): 2292, 2022. <https://doi.org/10.3390/cells11152292>
68. Salyers ZR, Coleman MD, Le D, **Ryan TE***. AAV-mediated expression of PFKFB3 in myofibers, but not endothelial cells, improves ischemic muscle function in mice with critical limb ischemia. In Press at the *American Journal of Physiology: Heart and Circulatory Physiology* 323: H424-H436, 2022. DOI: <https://doi.org/10.1152/ajpheart.00121.2022>
67. Kim K, Anderson EM, Fazzzone BJ, O'Malley KA, Berceli SA, **Ryan TE**, and Scali ST. 2022. A Murine Model of Hemodialysis Access-related Hand Dysfunction. *Journal of Visualized Experiments*. 2022. DOI: <https://doi.org/10.3791/63892>
66. Salyers ZR, Mariani V, Balestrieri N, Kumar RA, Vugman NA, Thome T, Villani KR, Berceli SA, Scali ST, Vasilakos G, **Ryan TE***. S100A8 and S100A9 are elevated in chronically threatened ischemic limb muscle and induce ischemic mitochondrial pathology in mice. *JVS-Vascular Science* 3: 232-245, 2022. DOI: <https://doi.org/10.1016/j.jvssci.2022.03.003>
65. Khattri RB, Thome T, Fitzgerald LF, Wohlgemuth SE, Hepple RT, **Ryan TE***. NMR spectroscopy identifies chemicals in cigarette smoke condensate that impair skeletal muscle mitochondrial function. *Toxics* 10(3): 140, 2022. <https://doi.org/10.3390/toxics10030140>
64. **Ryan TE***, Kim K, Scali ST, Berceli SA, Thome T, Salyers ZR, O'Malley KA, Green TD, Karnekar R, Fisher-Wellman KH, Yamaguchi DJ, McClung JM. Interventional- and amputation-stage muscle proteomics in the chronically threatened ischemic limb. *Clinical and Translational Medicine* 12: e658, 2022. <https://doi.org/10.1002/ctm2.658>
63. Kelley RC, Betancourt L, Noriega AM, Brinson SC, Curbelo-Bermudez N, Hahn D, Kumar RA, Balazic E, Muscato DR, **Ryan TE**, van der Pijl R, Ottenheijm C, Ferreira LF. Skeletal muscle abnormalities in a rat model of postmenopausal heart failure with preserved ejection fraction. *Journal of Applied Physiology* 132: 106-125, 2022.
62. Gross DA, Cheng HS, Zhuang R, McCoy MG, Perez-Cremades D, Salyers ZR, Haemmig S, **Ryan TE**, Feinberg MW. Deficiency of lncRNA SNHG12 impairs neovascularization in ischemic limbs by altering an endothelial cell cycle pathway. *JCI Insight* 7(1): e150761, 2022. <https://doi.org/10.1172/jci.insight.150761>.

61. Thome T, Coleman MD, **Ryan TE***. Mitochondrial bioenergetic and proteomic phenotyping reveals organ specific consequences of chronic kidney disease in mice. *Cells* 10(12): 3282, 2021. <https://doi.org/10.3390/cells10123282>
60. Kim K, Anderson EK, Martin AJ, Hu Q, Cort TA, Harland KC, O'Malley KA, Lu G, Berceli SA, **Ryan TE**, Scali ST. Development of a murine iliac arterio-venous fistula model for examination of hemodialysis access-related limb pathophysiology. *JVS-Vascular Science* 2: 247-259, 2021. DOI: <https://doi.org/10.1016/j.jvssci.2021.09.022>
59. Burke SK, Solania A, Wolan DW, Cohen MS, **Ryan TE**, Hepple RT. Mitochondrial permeability transition causes mitochondrial reactive oxygen species- and caspase 3-dependent atrophy of single adult mouse skeletal muscle fibers. *Cells* 10(10): 2586, 2021. <https://doi.org/10.3390/cells10102586>
58. Thome T, Miguez K, Willms A, de Souza AR, Chandran V, Burke SS, Goddard Y, Bagloli C, Anagnostou ME, Bourbeau J, Jagoe RT, Morais J, Taivassalo T, **Ryan TE***, Hepple RT*. Chronic aryl hydrocarbon receptor activity phenocopies smoking-induced skeletal muscle impairment. *Journal of Cachexia, Sarcopenia, and Muscle*, 2021. DOI: <https://doi.org/10.1002/jcsm.12826>
57. Hahn D, Kumar RA, Muscato DR, **Ryan TE**, Brandes RP, Schroder K, Ferreira LF. Nox4 knockout prevents diaphragm fiber atrophy, but not contractile dysfunction in the early phase post-myocardial infarction in mice. *Cellular Physiology and Biochemistry* 55: 489-504, 2021. DOI: <https://doi.org/10.33594/000000400>
56. Laitano O, Pindado J, Valera I, Spradlin RA, Murray KO, Villani KR, Alzahrani JM, **Ryan TE**, Efron PA, Ferreira LF, Barton ER, Clanton TL. The impact of hindlimb disuse on sepsis-induced myopathy in mice. *Physiological Reports* 9(14): e14979, 2021. DOI: <https://doi.org/10.14814/phy2.14979>
55. Kim K, Anderson EM, Thome T, Lu G, Salyers ZR, Cort TA, O'Malley KA, Scali ST, **Ryan TE***. Skeletal myopathy in CKD: a comparison of adenine-induced nephropathy and 5/6 nephrectomy models in mice. *American Journal of Physiology: Renal Physiology* 321(1): F106-119, 2021.
54. Terwilliger Z, **Ryan TE**, Goldberg E, Schmidt CA, Yamaguchi DJ, Karnekar R, Brophy P, Green TD, Zeczycki T, Gabhann FA, Annex BH, McClung JM. Racial differences in muscle transcriptional programs of patients with critical limb ischemia. *Vascular Medicine* 26(3): 247-258, 2021.
53. Khattri RB, Kim K, Thome T, Salyers ZR, O'Malley KA, Berceli SA, Scali ST, **Ryan TE***. Unique metabolomics profile of skeletal muscle in chronic limb threatening ischemia. *Journal of Clinical Medicine* 10(3): 548, 2021. DOI: <https://doi.org/10.3390/jcm10030548>
52. Khattri RB, Thome T, **Ryan TE***. Tissue-specific 1H-NMR metabolomics profiling in mice with adenine-induced chronic kidney disease. *Metabolites* 11(1), 45, 2021. DOI: <https://doi.org/10.3390/metabo11010045>
51. Thome T, Kumar RA, Burke SK, Khattri RB, Salyers ZR, Kelley RC, Coleman MD, Christou DD, Hepple RT, Scali ST, Ferreira LF, **Ryan TE***. Impaired muscle mitochondrial energetics is associated with uremic metabolite accumulation in chronic kidney disease. *JCI Insight* 6(1), e139826, 2021. DOI: [10.1172/jci.insight.139826](https://doi.org/10.1172/jci.insight.139826)
50. Salyers ZR, Coleman MD, Balestrieri NB, **Ryan TE***. Indoxyl sulfate impairs angiogenesis via chronic aryl hydrocarbon receptor activation. *American Journal of*

Physiology: Cell Physiology 320(2), C240-C249, 2021.
DOI: [10.1152/ajpcell.00262.2020](https://doi.org/10.1152/ajpcell.00262.2020)

49. Kim K, Anderson EM, Scali ST, **Ryan TE***. Skeletal muscle mitochondrial dysfunction and oxidative stress in peripheral arterial disease: a unifying mechanism and therapeutic target. *Antioxidants* 9(12), E1304, 2020. DOI: <https://doi.org/10.3390/antiox9121304>
48. **Ryan TE**, Schmidt CA, Tarpey MD, Amorese AJ, Yamaguchi D, Goldberg E, Inigo MR, Karnekar R, O'Rourke AR, Ervasti J, Brophy P, Green TD, Neufer PD, Fisher-Wellman KH, Spangenburg EE, McClung JM. PFKFB3 mediated glycolysis rescues myopathic outcomes in the ischemic limb. *JCI Insight* 5(18), e139628, 2020. DOI: [10.1172/jci.insight.139628](https://doi.org/10.1172/jci.insight.139628).
47. Berru FN, Gray SE, Thome T, Kumar RA, Salyers ZR, Coleman M, Le D, O'Malley K, Ferreira LF, Berceli SA, Scali ST, **Ryan TE***. Chronic kidney disease exacerbates ischemic limb myopathy in mice via altered mitochondrial energetics. *Scientific Reports* 9(1), 1-15, 2019.
46. Verkerke ARP, Ferrara PJ, Lin CT, Johnson JM, **Ryan TE**, Maschek JA, Eshima H, Paran CW, Laing BT, Siripoksup P, Tippetts T, Wentzler EJ, Huang H, Spangenburg EE, Brault JJ, Villanueva C, Summers S, Holland W, Cox JE, Vance DE, Neufer PD, Funai K. Phospholipid methylation regulates muscle metabolic rate through Ca²⁺ transport efficiency. *Nature Metabolism* 1(9); 876-885, 2019.
45. Heden TD, Johnson JM, Ferrara PJ, Eshima H, Verkerke ARP, Wentzler EJ, Siripoksup P, Narowski TM, Coleman CB, Lin CT, **Ryan TE**, Reidy PT, de Castro Bras LE, Karner CM, Burant CF, Maschek JA, Cox JE, Mashek DG, Kardon G, Boudina S, Brault JJ, Zeczycki TN, Shaikh SR, Vance JE, Drummond MJ, Neufer PD, Funai K. Mitochondrial PE potentiates respiratory enzymes to amplify skeletal muscle aerobic capacity. *Science Advances* 5(9); eaax8352, 2019. DOI: [10.1126/sciadv.aax8352](https://doi.org/10.1126/sciadv.aax8352)
44. McGee JE, Barefoot SG, Gniewek NR, Brophy PM, Clark A, Dubis GS, **Ryan TE**, Houmard JA, Vos P, Raedeke TD, Swift DL. High-intensity exercise to promote accelerated improvements in cardiorespiratory fitness (HI-PACE): Study protocol for a randomized controlled trial. *Trials* 20(1); 484, 2019.
43. Hahn D, Kumar RA, **Ryan TE**, Ferreira LF. Mitochondrial respiration and H₂O₂ emission in saponin-permeabilized murine diaphragm fibers: optimization of fiber separation and comparison to limb muscle. *American Journal of Physiology: Cell Physiology* 317(4); C665-C673, 2019.
42. Thome T, Salyers ZR, Kumar RA, Hahn D, Berru FN, Ferreira LF, Scali ST, **Ryan TE***. Uremic metabolites impair skeletal muscle mitochondrial energetics through disruptions of the electron transport system and matrix dehydrogenase activity. *American Journal of Physiology: Cell Physiology* 317(4); C701-C713, 2019.
41. Powers SA, **Ryan TE**, Pak ES, Fraser MO, McClung JM, Hannan JL. Chronic high-fat diet decreased detrusor mitochondrial respiration and increased nerve-mediated contractions. *Neurourology and Urodynamics* 38; 1524-1532, 2019.
40. Tarpey MD, Valencia AP, Jackson KC, Amorese AJ, Balestrieri NP, Renegar RH, Pratt SJ, **Ryan TE**, McClung JM, Lovering RM, Spangenburg EE. Induced-in vivo

knockdown of the *Brca1* gene in skeletal muscle results in skeletal muscle weakness. *Journal of Physiology* 597(3); 869-887, 2019.

39. **Ryan TE**, Yamaguchi DJ, Schmidt CA, Zeczycki TN, Shaikh SR, Brophy P, Green TD, Tarpey MD, Karnekar R, Goldberg EJ, Sparagna GC, Torres MJ, Annex BH, Neufer PD, Spangenburg EE, McClung JM. Extensive skeletal muscle cell mitochondriopathy distinguishes critical limb ischemia patients from claudicants. *JCI Insight* 3(21): e123235, 2018. <https://doi.org/10.1172/jci.insight.123235>.
38. Torres MJ, **Ryan TE**, Lin CT, Zeczycki TN, Neufer PD. Impact of 17 β -estradiol on complex I kinetics and H₂O₂ production in liver and skeletal muscle mitochondria. *Journal of Biological Chemistry* 293(43); 16889-16898, 2018.
37. Tarpey MD, Amorese AJ, Balestrieri NP, **Ryan TE**, Schmidt CA, McClung JM, Spangenburg EE. Characterization and utilization of the flexor digitorum brevis for assessing skeletal muscle function. *Skeletal Muscle Journal* 8:14; 2018.
36. Chung S, Nelson MD, Hamaoka T, Jacobs RA, Pearson J, Subudhi AW, Jenkins NT, Bartlett MF, Fitzgerald LF, Miehm JD, Kent JA, Lucero AA, Rowlands DS, Stoner L, McCully KK, Call J, Rodriguez-Miguel P, Harris RA, Porcelli S, Rasica L, Marzorati M, Quaresima V, **Ryan TE**, Vernillo G, Millet GP, Malatesta D, Millet GY, Zuo L, Chuang CC. Commentaries on Viewpoint: Principles, insights, and potential pitfalls of the noninvasive determination of muscle oxidative capacity by near-infrared spectroscopy. *Journal of Applied Physiology* 124(1): 249-255; 2018.
35. Schmidt CA, Amorese AJ, **Ryan TE**, Goldberg EJ, Tarpey MD, Green TD, Karnekar RR, Yamaguchi DJ, Spangenburg EE, McClung JM. Strain-dependent variation in acute ischemic muscle injury. *American Journal of Pathology* 188(5): 1246-1262; 2018.
34. Chung S, Rosenberry R, **Ryan TE**, Munson M, Dombrowsky T, Park S, Nasirian A, Haykowsky MJ, Nelson MD. Near-infrared spectroscopy detects age-related differences in skeletal muscle oxidative function: Promising implications for geroscience. *Physiological Reports* 6(e13588), 2018.
33. Torres MJ, Kew KA, **Ryan TE**, Pennington ER, Lin CT, Buddo KA, Fix AM, Smith CA, Gilliam LA, Karvinen S, Lowe DA, Spangenburg EE, Zeczycki TN, Shaikh SR, Neufer PD. 17 β -estradiol directly lowers mitochondrial membrane microviscosity and improves bioenergetics function in skeletal muscle. *Cell Metabolism* 27(1):167-179, 2018.
32. Heden TD, **Ryan TE**, Ferrara PJ, Hickner RC, Brophy PM, Neufer PD, McClung JM, Funai K. Greater oxidative capacity in primary myotubes from endurance trained women. *Medicine and Science in Sports and Exercise* 49(11): 2151-2157, 2017.
31. McClung JM, McCord TJ, **Ryan TE**, Schmidt CA, Green TD, Southerland KW, Reinardy JL, Mueller SB, Venkatrama T, Lascola CD, Marchuk DA, Spangenburg EE, Dokun A, Annex BH, Kontos CD. A BAG3 coding variant in mice determines susceptibility to ischemic limb muscle myopathy by directing autophagy. *Circulation* 136(3): 281-296, 2017.
30. Erickson ML, **Ryan TE**, Backus D, McCully KK. Endurance neuromuscular electrical stimulation training improves skeletal muscle oxidative capacity in individuals with motor complete spinal cord injury. *Muscle and Nerve* 55(5): 669-675, 2017.
29. Schmidt CA, **Ryan TE**, Lin CT, Inigo MMR, Green TD, Brault JJ, Spangenburg EE, McClung JM. Diminished force production and mitochondrial respiration are strain-

dependent myopathies of subacute limb ischemia. *Journal of Vascular Surgery* 65(5): 1504-1514, 2017.

28. Fisher-Wellman KH, **Ryan TE**, Smith CD, Gilliam LAA, Lin CT, Reese LR, Torres MJ, Neufer PD. A direct comparison of metabolic responses to high fat diet in C57BL/6J and C57BL/6NJ mice. *Diabetes* 65(11): 3249-3261, 2016.
27. Gilliam LAA, Lark DS, Reese LR, Torres MJ, **Ryan TE**, Lin CT, Cathey BL, Neufer PD. Targeted overexpression of mitochondrial catalase protects against cancer chemotherapy-induced skeletal muscle dysfunction. *American Journal of Physiology: Endocrinology and Metabolism* 311: E293-E301, 2016.
26. Stone K, Fryer S, **Ryan TE**, Stoner L. The validity and reliability of continuous-wave near-infrared spectroscopy for the assessment of leg blood volume during an orthostatic challenge. *Atherosclerosis* 251: 234-239, 2016.
25. Lark DS, Torres MJ, Lin CT, **Ryan TE**, Anderson EJ, Neufer PD. Direct real-time quantification of mitochondrial oxidative phosphorylation efficiency in permeabilized skeletal muscle myofibers. *American Journal of Physiology: Cell Physiology*. 311(2):C239-245, 2016.

*Received Editorial Focus: Stary CM. A high-resolution method for assessing cellular oxidative phosphorylation efficiency: bringing mitochondrial bioenergetics into focus. *American Journal of Physiology: Cell Physiology* 311(2):C237-C238, 2016.
24. **Ryan TE**, Schmidt CA, Green TD, Spangenburg EE, Neufer PD, McClung JM. Targeted expression of catalase to mitochondria protects against ischemic myopathy in high fat fed mice. *Diabetes* 65(9): 2553-2568, 2016.
23. **Ryan TE**, Schmidt CA, Alleman RJ, Tsang AM, Green TD, Neufer PD, Brown DA, McClung JM. Mitochondrial therapy improves limb perfusion and myopathy in hindlimb ischemia. *Journal of Molecular and Cellular Cardiology* 97: 191-196, 2016.
22. Morad SA, **Ryan TE**, Neufer PD, Zeczycki TN, Davis TS, MacDougall MR, Fox TE, Tan SF, Feith DJ, Loughran Jr TP, Kester M, Claxton DF, Barth BM, Deering TG, Cabot MC. Ceramide-tamoxifen regimen targets bioenergetic elements in acute myelogenous leukemia. *Journal of Lipid Research* 57(7): 1231-1242, 2016.
21. Alleman RJ, Tsang A, **Ryan TE**, Patteson D, McClung JM, Spangenburg EE, Shaikh SR, Neufer PD, Brown DA. Exercise-induced protection against reperfusion arrhythmia involves stabilization of mitochondrial energetics. *American Journal of Physiology: Heart and Circulatory Physiology* 310(10): H1360-H1370, 2016.
20. McClung JM, Southerland K, McCord TJ, Schmidt CA, **Ryan TE**, Kontos CD. Subacute Limb Ischemia Induces Skeletal Muscle Injury in Genetically Susceptible Mice Independent of Vascular Density. *Journal of Vascular Surgery* 64(4): 1101-1111.e2, 2016.
19. **Ryan TE**, Schmidt CA, Green TD, Brown DA, Neufer PD, McClung JM. Mitochondrial regulation of the muscle microenvironment in critical limb ischemia. *Frontiers in Physiology* 6:336, 2015.
18. Lark DS, Reese LR, **Ryan TE**, Torres MJ, Smith CD, Lin CT, Neufer PD. Protein kinase A governs oxidative phosphorylation kinetics and oxidant emitting potential at complex I. *Frontiers in Physiology* 6:332, 2015.

17. Ferdaoussi M, Dai X, Jensen MV, Wang R, Peterson BS, Huang C, Ilkayeva O, Smith N, Miller N, Hajmrle C, Spigelman AF, Wright RC, Plummer G, Suzuki K, Mackay JP, van de Bunt M, Gloyn AL, **Ryan TE**, Norquay LD, Brosnan MJ, Trimmer JK, Rolph TP, Kibbey RG, Manning Fox JE, Colmers WF, Shirihai O, Neufer PD, Yeh ETH, Newgard CB, MacDonald PE. Isocitrate-to-SENP1 signaling amplifies insulin secretion and rescues dysfunctional b-cells. *Journal of Clinical Investigation* 125(10): 3847-3860, 2015.
16. Gist NH, Freese EC, **Ryan TE**, Cureton KJ. Effects of low-volume, high-intensity whole-body calisthenics on Army ROTC cadets. *Military Medicine* 180(5): 492-498, 2015.
15. McClung JM, Reinardy J, Mueller S, McCord TJ, Kontos CD, Brown DA, Hussain SNA, Schmidt CA, **Ryan TE**, Green TD. Muscle cell derived angiopoietin-1 contributes to both myogenesis and angiogenesis in the ischemic environment. *Frontiers in Physiology* 6:161, 2015.
14. Southern WM, **Ryan TE**, Kepple K, Murrow JR, Nilsson KR, McCully KK. Reduced skeletal muscle oxidative capacity and impaired training adaptations in heart failure. *Physiological Reports* 3(4); pii: e12353, 2015.
13. Fisher-Wellman KH, Lin CT, **Ryan TE**, Reese LR, Gilliam LAA, Cathey BL, Lark DS, Smith CD, Muoio DM, Neufer PD. Pyruvate dehydrogenase complex and nicotinamide nucleotide transhydrogenase constitute an energy consuming redox circuit. *Biochemical Journal* 467: 271-280, 2015.
12. **Ryan TE**, Brophy P, Lin CT, Hickner RC, Neufer PD. Assessment of in vivo skeletal muscle mitochondrial respiratory capacity in humans by near infrared spectroscopy: a comparison with in-situ measurements. *Journal of Physiology* 592.15: 3231-3241, 2014.
11. **Ryan TE**, Erickson ML, Verma A, Chavez J, Rivner MH, McCully KK. Skeletal muscle oxidative capacity in amyotrophic lateral sclerosis. *Muscle and Nerve* 50: 767-774, 2014.
10. Southern WM, **Ryan TE**, Reynolds MA, McCully KK. Reproducibility of near-infrared spectroscopy measurements of oxidative function and post-exercise recovery kinetics in the medial gastrocnemius muscle. *Applied Physiology, Nutrition, and Metabolism* 39(5): 521-529, 2014.
9. **Ryan TE***, Southern WM, Reynolds MA, McCully KK. A cross-validation of near infrared measurements of skeletal muscle oxidative capacity with phosphorus magnetic resonance spectroscopy. *Journal of Applied Physiology* 115: 1757-1766, 2013.
8. **Ryan TE**, Brizendine JT, Backus D, McCully KK. Electrically-induced resistance training in individuals with motor complete spinal injury. *Archives of Physical Medicine and Rehabilitation* 94: 2166-2173, 2013.
7. **Ryan TE**, Erickson ML, Young HJ, McCully KK. Case Report: Improved skeletal muscle metabolism after endurance electrical stimulation training in spinal cord injury. *Archives of Physical Medicine and Rehabilitation* 94: 2559-2561, 2013.
6. **Ryan TE***, Southern WM, Brizendine JT, McCully KK. Activity-induced changes in skeletal muscle metabolism measured with optical spectroscopy. *Medicine and Science in Sports and Exercise* 45(12): 2346-2352, 2013.

5. Erickson ML, **Ryan TE**, Young HJ, McCully KK. Near-infrared assessments of skeletal muscle oxidative capacity in persons with spinal cord injury. *European Journal of Applied Physiology* 113(9): 2275-2283, 2013.
4. Brizendine JT, **Ryan TE**, Larson RD, and McCully KK. Skeletal muscle metabolism in endurance athletes with near infrared spectroscopy. *Medicine and Science in Sports and Exercise* 45(5): 869-875, 2013.
3. **Ryan TE***, Brizendine JT, and McCully KK. A comparison of exercise type and intensity on the noninvasive assessment of skeletal muscle mitochondrial function using near infrared spectroscopy. *Journal of Applied Physiology* 114(2): 230-237, 2013.
2. **Ryan TE***, Erickson ML, Brizendine JT, Young HJ, and McCully KK. Noninvasive evaluation of skeletal muscle mitochondrial capacity with near-infrared spectroscopy: correcting for blood volume changes. *Journal of Applied Physiology* 113: 175-183, 2012.
1. McCully KK, Mulcahy TK, **Ryan TE**, and Zhao Q. Skeletal muscle metabolism in individuals with spinal cord injury. *Journal of Applied Physiology* 111: 143-148, 2011.

Manuscripts in Review:

1. Wang Y, Chu L, Zhou Y, Kim K, Heiden K, Gutierrez-Monreal MA, Ren J, Li Y, Cheng Z, Basso KB, Esser KA, **Ryan TE**, Yue F. Hepatocyte FAM210A deficiency disrupts mitochondrial function and triggers juvenile steatosis with compensatory repair in adulthood. (In Review)
2. Zhong R, Rastelli G, Ainbinder A, Thome T, Kim K, Cort T, Brandt Z, Harris EN, Rua MT, Kunz E, He Z, Boncompagni S, **Ryan TE**, Wei-LaPierre L. Causal role of aberrant skeletal muscle mitochondrial calcium uptake in amyotrophic lateral sclerosis. (In Review)
3. Semel M, Lukasiewicz C, Skinner S, Viggars MR, Picard M, Mannings AG, Cohen M, Wolan D, **Ryan TE**, Hepple RT. Mitochondrial permeability transition in skeletal muscle phenocopies muscle alterations seen in cancer cachexia and other wasting conditions. (In Review)
4. Dong G, Li Y, Choi J, Wang Y, Yang Q, Diaz I, Berceli SA, Scali ST, Yue F, **Ryan TE***. Skeletal Muscle FAM210A Regulates Mitochondrial Function and Limb Performance in Peripheral Artery Disease. (In Revision)
5. Rua MT, Kunz EM, Zhong R, Harris EN, Kim K, Kapur K, Lim J, **Ryan TE**, Seven YB, Wei-LaPierre L. Mitochondrial dysfunction precedes decline in muscle contractile function in respiratory muscle in ALS mice. (In Review)

Abstracts:

106. Anderson EM, Kim K, Palzkill VR, **Ryan TE**, Scali ST. Sex Influences Adaptive and Maladaptive Cardiac Remodeling after Arteriovenous Fistula Creation. *Vascular Discovery*. May 13-16, 2026, Bellevue, WA.
105. Pass CG, Kawaida MY, Fazzone B, Kim K, Yang Q, He Y, Cai G, O'Malley KA, Scali ST, Berceli SA, **Ryan TE***. Metabolic Dysfunction Drives Epigenetic Remodeling in Chronic Limb-Threatening Ischemia. *Vascular Discovery*. May 13-16, 2026, Bellevue, WA.

104. Kawaida MY, Pass CG, Choi J, Ryan TE*. Ovariectomy and Chemical Ovarian Failure Exacerbate Atherosclerotic Development without Impairing Ischemic Limb Recovery in Female Mice. *Vascular Discovery*. May 13-16, 2026, Bellevue, WA.
103. Wimberly K, Luo X, Yang Q, Wei-LaPierre L, Hepple RT, **Ryan TE***. Evaluation of L-Kynurenine–Aryl Hydrocarbon Signaling as a Modulator of Physical Function in Aging Mice. *American Physiology Summit*. April 23-26, 2026, Minneapolis, MN.
102. Choi J, Kim K, Thome T, Stone L, Vugman N, Pass CG, Palzkill VR, Yang Q, Anderson EM, Fazzone B, Berceli SA, Scali ST, **Ryan TE***. Calf muscle pathophysiology in patients with peripheral artery disease with and without cilostazol. *American Physiology Summit*. April 23-26, 2026, Minneapolis, MN.
101. Dong G, Li Y, Choi J, Diaz I, Yang Q, Luo X, Wang Y, Yue F, **Ryan TE***. FAM210A dictates Mitochondrial OXPHOS Efficiency to Promote Muscle Function in Peripheral Artery Disease. *American Physiology Summit*. April 23-26, 2026, Minneapolis, MN.
100. Hepple RT, Semel M, Lukasiewicz C, Skinner S, Picard M, Cohen M, Wolan D, **Ryan TE**, Mannings A. Mitochondrial permeability transition in skeletal muscle recapitulates muscle alterations common in muscle wasting conditions. *Keystone Symposium: Mitochondrial Signaling in Physiology and Disease*. February 9-12, 2026, Keystone, CO.
99. Kawaida MY, Tice A, Alvarez S, Lackey J, Wei-LaPierre L, Hepple RT, **Ryan TE***. Skeletal muscle PGC1a alleviates age-related declines in physical function modulated by L-kynurenine metabolism. *American Physiology Summit*. April 24-27, 2025, Baltimore, MD.
98. Wimberly K, Lackey J, Tice A, Yang Q, Luo X, Wei-LaPierre L, Hepple RT, **Ryan TE***. A preliminary assessment of physical function and transcriptome dynamics in aged mice with constitutive activation of the aryl hydrocarbon receptor in skeletal muscle. *American Physiology Summit*. April 24-27, 2025, Baltimore, MD.
97. Madhur S, **Ryan TE**, Goodney P, Creager M, Sabatine M, Bonaca M, Feinberg M, Rawal S, Wu W, Wara A, Vaz C, Bektik E, Cheng H, Perez-Cremades D. MicroRNA-1282 rescues diabetic limb ischemia via a SERF2-protein aggregation pathway. *Vascular Discovery*. April 22-24, 2025, Baltimore, MD.
96. Pass CG, Fazzone B, Kim K, Yang Q, He Y, Cai G, O'Malley KA, Scali ST, Berceli SA, **Ryan TE***. Single nuclei multiomics reveal changes in transcriptional and epigenetic regulation in skeletal muscle following open revascularization in CLTI: a pilot study. *Vascular Discovery*. April 22-24, 2025, Baltimore, MD.
95. Liu X, Choi J, Moussa A, **Ryan TE**, Kopinke D. Cilia-dependent hedgehog signaling act as a guardian against limb ischemia-induced fatty fibrosis. *Vascular Discovery*. April 22-24, 2025, Baltimore, MD.
94. Palzkill VR, Moparthy D, Kopinke D, **Ryan TE***. Suppression of intramuscular adipose tissue improves limb outcomes in mice with hindlimb ischemia. *Vascular Discovery*. April 22-24, 2025, Baltimore, MD.
93. Dong G, Choi J, Li Z, Luo YE, Muller D, Russell J, Yue F, **Ryan TE***. Inhibition of Nicotinamide N-Methyltransferase Enhances Limb Function in Experimental Peripheral Artery Disease. *Vascular Discovery*. April 22-24, 2025, Baltimore, MD.

92. Dong G, Li Y, Lackey J, Yang Q, Thome T, Yue F, **Ryan TE***. Loss of FAM210A in satellite cells drives mitochondrial dysfunction and muscle weakness in experimental peripheral artery disease. *American Physiology Summit*. April 4-7, 2024, Long Beach, CA.
91. Palzkill VR, Tan J, Ferreira LF, **Ryan TE***. Novel method to assess treatment efficiency in preclinical peripheral arterial disease studies. *American Physiology Summit*. April 4-7, 2024, Long Beach, CA.
90. Pass C, Palzkill VR, Tan J, Kim K, Thome T, Yang Q, Fazzone B, Robinson ST, O'Malley KA, Yue F, Berceli SA, Scali ST, **Ryan TE***. Single-nuclei RNA sequencing uncovers alterations in the transcriptional profile of skeletal muscle in peripheral artery disease. *American Physiology Summit*. April 4-7, 2024, Long Beach, CA.
89. Wimberly K, Lackey J, Tice A, Hepple RT, **Ryan TE***. A preliminary assessment of physical function in aged male mice with constitutive activation of the aryl hydrocarbon receptor in skeletal muscle. *American Physiology Summit*. April 4-7, 2024, Long Beach, CA.
88. Tice A, Kim K, Thome T, Yang Q, Stone L, Vugman N, O'Malley KA, Berceli SA, Scali ST, **Ryan TE***. Peripheral artery disease patients with chronic kidney disease have lower muscle strength and mitochondrial function compared to those with normal kidney function. *American Physiology Summit*. April 4-7, 2024, Long Beach, CA.
87. Palzkill VR, Tan J, Yang Q, Morcos J, **Ryan TE***. Deletion of the aryl hydrocarbon receptor in endothelial cells improves ischemic angiogenesis in chronic kidney disease. *American Physiology Summit*. April 4-7, 2024, Long Beach, CA.
86. Kim K, Alvarez S, Kunz EM, Yang Q, Mazirka P, O'Malley KA, Berceli SA, **Ryan TE**, Scali ST. Heat therapy preconditioning improves the skeletal muscle contractile and mitochondrial function in a mouse model of access-related hand dysfunction. *American Physiology Summit*. April 4-7, 2024, Long Beach, CA.
85. Kim K, Alvarez S, Kunz EM, Yang Q, Mazirka P, O'Malley KA, Berceli SA, **Ryan TE**, Scali ST. Exercise preconditioning improves the skeletal muscle contractile and mitochondrial function in a mouse model of access-related hand dysfunction. *American Physiology Summit*. April 4-7, 2024, Long Beach, CA.
84. Palzkill VR, Tan J, Morcos J, **Ryan TE***. Role of endothelial cell-specific knockout of the aryl hydrocarbon receptor in ischemic limb myopathy in mice subjected to hindlimb ischemia. *American Heart Association Vascular Discovery*. May 10-13, 2023, Boston, MA
83. Kim K, Thome T, Yang Q, Stone L, Vugman N, Salyers Z, Anderson EM, Fazzone B, Schmidt EA, O'Malley KA, Berceli SA, Scali ST, **Ryan TE***. Chronic kidney disease aggravates ischemic leg myopathy in patients with peripheral artery disease. *American Heart Association Vascular Discovery*. May 10-13, 2023, Boston, MA
82. Dong G, Moparthy C, Thome T, Kim K, **Ryan TE***. IGF-1 therapy in experimental peripheral arterial disease. *American Heart Association Scientific Sessions*. November 5-7, 2022, Chicago, IL
81. Balesterieri NP, Salyers ZR, Palzkill VR, Moparthy C, Tan J, Thome T, Yang Q, Pass C, Murillo A, **Ryan TE***. Aryl hydrocarbon receptor activation and ischemic myopathy in

experimental peripheral arterial disease with chronic kidney disease. *American Heart Association Scientific Sessions*. November 5-7, 2022, Chicago, IL

80. Palzkill VR, Tan J, Morcos J, **Ryan TE***. Role of endothelial cell-specific knockout of the aryl hydrocarbon receptor in ischemic limb myopathy in mice subjected to hindlimb ischemia. *Advances in Skeletal Muscle Biology and Disease*. March 15-17, 2023, University of Florida, Gainesville, FL
79. Pass C, Balestrieri N, Palzkill Z, Kim K, Yue F, **Ryan TE***. Single-nuclei RNA-sequencing reveals alterations in muscle composition and cellular communication in mice lacking the aryl hydrocarbon receptor following acute limb ischemia. *Advances in Skeletal Muscle Biology and Disease*. March 15-17, 2023, University of Florida, Gainesville, FL
78. Dong G, Moparthy C, Thome T, Kim K, Yue F, **Ryan TE***. scAAV-IGF1 therapy is more efficacious in female mice compared to male mice with chronic limb threatening ischemia. *Advances in Skeletal Muscle Biology and Disease*. March 15-17, 2023, University of Florida, Gainesville, FL
77. Stone L, Thome T, Vugman N, **Ryan TE***. Aryl hydrocarbon receptor activation via indoxyl sulfate has deleterious effects in cultured muscle cells. *Advances in Skeletal Muscle Biology and Disease*. March 15-17, 2023, University of Florida, Gainesville, FL
76. Vugman N, Thome T, Stone L, **Ryan TE***. Characterization of Fam136a, a mitochondrial gene with unknown function, in skeletal muscle cells. *Advances in Skeletal Muscle Biology and Disease*. March 15-17, 2023, University of Florida, Gainesville, FL
75. Kim K, Anderson EM, Fazzzone B, O'Malley KA, Tan J, Thome T, Yang Q, Berceli SA, **Ryan TE**, Scali ST. The impact of arteriovenous fistula creation on muscle mitochondrial energetics: a preliminary analysis in end-stage kidney disease patients. *Advances in Skeletal Muscle Biology and Disease*. March 15-17, 2023, University of Florida, Gainesville, FL
74. Lackey J, Fitzgerald LF, Moussa A, Shah SV, Castellanos AM, Thome T, Yang Q, Hepple RT, **Ryan TE***. Chronic Aryl Hydrocarbon Receptor Activation Impairs Muscle Mitochondrial Energetics with Tobacco Smoking. *Advances in Skeletal Muscle Biology and Disease*. March 15-17, 2023, University of Florida, Gainesville, FL
73. Moparthy C, Dong G, Thome T, Kim K, Yue F, **Ryan TE***. Optimizing the delivery of adeno-associated virus to the critically ischemic mouse limb. *Advances in Skeletal Muscle Biology and Disease*. March 15-17, 2023, University of Florida, Gainesville, FL
72. Kim K, Cort T, Kunz E, Moerschel J, Palzkill VR, Dong G, Moparthy C, Anderson EM, Fazzzone B, O'Malley KA, Berceli SA, **Ryan TE**, Scali ST. Impact of N-acetylcysteine supplementation on skeletal muscle myopathy in a mouse model of access-related hand dysfunction. *Advances in Skeletal Muscle Biology and Disease*. March 15-17, 2023, University of Florida, Gainesville, FL
71. Hetherington-Rauth M, Johnson E, Parimi N, Langsetmo L, Hoffman AR, Feige J, Deuquet J, Migliavacca E, Hepple RT, **Ryan TE**, Ferrucci L, Orwoll ES, Cawthon PM. Nutrient metabolites associated with low D3Cr muscle mass, strength, and physical performance in older men. *ACSM Annual Meeting & World Congresses*. May 30 – June 2, 2023, Denver, CO.

70. Zhong R, Rua M, Brandt Z, Kim N, Thome T, Kim K, Cort TA, Kunz EM, **Ryan TE**, Wei-LaPierre L. Attenuating Skeletal Muscle Mitochondrial Ca²⁺ Uptake preserves motor and muscle function in Amyotrophic Lateral Sclerosis hSOD1G93A mice. *Advances in Skeletal Muscle Biology and Disease*. March 15-17, 2023, University of Florida, Gainesville, FL
69. Kim K, Thome T, Salyers ZR, Yang Q, Stone L, Vugman N, Anderson EM, Fazzone B, Schmidt EA, O'Malley KA, Berceli SA, Scali ST, **Ryan TE***. Impact of Chronic Kidney Disease on Skeletal Muscle Strength and Mitochondrial Function in Peripheral Arterial Disease Patients. *Advances in Skeletal Muscle Biology and Disease*. March 15-17, 2023, University of Florida, Gainesville, FL
68. Thome T, Vugman N, Stone L, **Ryan TE***. Chronic Activation of the Aryl Hydrocarbon Receptor Promotes Skeletal Muscle Mitochondriopathy in Chronic Kidney Disease. *Advances in Skeletal Muscle Biology and Disease*. March 15-17, 2023, University of Florida, Gainesville, FL
67. Fitzgerald LF, Skinner SK, **Ryan TE**, Hepple RT. Mitochondrial permeability transition is required for chronic aryl hydrocarbon receptor activation-mediated skeletal muscle atrophy. *American Physiology Summit*, April 20-23, 2023, Long Beach, CA
66. Kim K, Thome T, Salyers ZR, Yang Q, Stone L, Vugman N, Anderson EM, Fazzone B, Schmidt EA, O'Malley KA, Berceli SA, Scali ST, **Ryan TE***. Chronic kidney disease exacerbates ischemic leg myopathy in patients with peripheral artery disease. *American Physiology Summit*, April 20-23, 2023, Long Beach, CA
65. Kim K, Cort TA, Kunz EM, Moerschel J, Palzkill VR, Dong G, Moparthy C, Anderson EM, Fazzone B, O'Malley KA, Berceli SA, Scali ST, **Ryan TE***. Impact of N-acetylcysteine supplementation on skeletal muscle myopathy in a mouse model of access-related hand dysfunction. *American Physiology Summit*, April 20-23, 2023, Long Beach, CA
64. Palzkill VR, Thome T, Murillo AL, Khattri RB, and **Ryan TE***. 2022. Increasing plasma L-kynurenine impairs mitochondrial oxidative phosphorylation prior to the development of atrophy in murine skeletal muscle. *ACSM Integrative Physiology of Exercise Conference*. September 21-24, 2022, Baltimore, MD
63. Thome T, Vugman N, Stone L, and **Ryan TE***. 2022. The role of the aryl hydrocarbon receptor in uremic toxicity of skeletal muscle. *ACSM Integrative Physiology of Exercise Conference*. September 21-24, 2022, Baltimore, MD
62. Thome T, Lackey J, Vugman N, Stone L, and **Ryan TE***. 2022. Chronic aryl hydrocarbon receptor activation as a novel regulator of skeletal muscle metabolism. *FASEB Science Research Conference. The Molecular Metabolism Conference: From Cell Biology to Systems Physiology*, August 7-12, 2022, Nova Scotia, Canada
61. Khattri RB, Batra A, Matheny M, Hart C, Henley-Beasley S, White Z, Hammers D, Zeng H, **Ryan TE**, Barton EB, Bernatchez P, Walter G. Magnetic resonance imaging and spectroscopy quantification of skeletal muscle lipid infiltration in a model of Duchenne Muscular Dystrophy with extensive fatty tissue replacement. *New Directions in Biology and Disease of Skeletal Muscle*, June 20-23, Fort Lauderdale, Florida.
60. Kim K, Anderson EM, Fazzone B, Harland KC, Hu Q, Khattri RB, Salyers ZR, Palzkill ZR, Cort TA, O'Malley KA, Berceli SA, Scali ST, **Ryan TE***. Assessment of hindlimb

myopathy and mitochondrial bioenergetics in a unique mouse model of access-related hand dysfunction. *Experimental Biology*, April 2-5, 2022, Philadelphia, PA.

59. Anderson EM, Kim K, Fazzone BJ, Harland KC, Hu Q, Neal D, O'Malley KA, Berceli SA, **Ryan TE**, Scali ST. Influence of renal insufficiency on mitochondrial bioenergetics and limb dysfunction in a novel murine iliac arteriovenous fistula model. *Southern Association for Vascular Surgery 45th Annual Meeting*, January 19-22, 2022, Manalapan, Florida.
58. Laitano OL, **Ryan TE**, Efron P, Clanton TL. Sepsis induces epigenetic modifications in skeletal muscle stem cell DNA. *44th Annual Conference on Shock*, October 12-15, 2021; Portland, Oregon.
57. Murray KO, Gambino B, Robinson GP, Thome T, Salyers ZR, Laitano O, **Ryan TE**, Clanton TL. Exertional heat stroke causes long-term satellite cell dysfunction and delayed muscle repair. *Experimental Biology*, April 27-30, 2021
56. Burke SK, **Ryan TE**, Hepple RT. Mitochondrial permeability transition induces skeletal muscle atrophy in single living myofibers. *Experimental Biology*, April 27-30, 2021
55. Kim K, Thome T, Salyers ZR, O'Malley K, Berceli SA, Scali ST, **Ryan TE**. Skeletal muscle proteome and mitochondrial health distinguishes the failing and salvageable ischemic limb. *Experimental Biology*, April 27-30, 2021
54. Thome T, Kumar RA, Coleman MD, Burke SS, Salyers ZR, Scali ST, Ferreira LF, **Ryan TE**. Chronic kidney disease causes skeletal muscle mitochondrial myopathy through disruption of the electron transport system. *Experimental Biology*, April 4-7, 2020; San Diego, California.
53. Fitzgerald LF, Thome T, Burke SK, Salyers ZR, **Ryan TE**, Hepple RT. Tobacco smoke extract causes mitochondrial dysfunction associated with myotube atrophy. *Experimental Biology*, April 4-7, 2020; San Diego, California.
52. Salyers ZR, Thome T, Coleman M, **Ryan TE**. The uremic toxin indoxyl sulfate impairs angiogenesis through aryl hydrocarbon receptor activation. *Experimental Biology*, April 4-7, 2020; San Diego, California.
51. Salyers ZR, Thome T, Le D, Coleman M, **Ryan TE**. Skeletal muscle-specific PFKFB3 expression rescues ischemic myopathy by enhancing glycolytic flux. *Experimental Biology*, April 4-7, 2020; San Diego, California.
50. Burke SS, Thome T, **Ryan TE**, Hepple RT. Mitochondrial permeability transition induces atrophy in C2C12 myotubes. *Experimental Biology*, April 4-7, 2020; San Diego, California.
49. Goldberg EJ, **Ryan TE**, Schmidt CA, Tarpey MD, Amorese AJ, Yamaguchi DJ, Inigo M, Karnekar R, Brophy P, Green TD, Spangenburg EE, McClung JM. PFKFB3 mediated metabolic flexibility rescues ischemic limb myopathy in mice. *2019 NHLBI Mitochondrial Biology Symposium*, September 26-27, 2019; Bethesda, Maryland.
48. Gray SE, Omalley KA, Berru FN, Thome T, Omalley KA, Berceli SA, **Ryan TE**, Scali ST. Gait Phenotype and Skeletal Muscle Perturbations in a Novel Renal Dysfunction Murine Hind Limb Ischemia Model. *Society for Vascular Surgery Annual Meeting*, June 12-15, 2019; National Harbor, Maryland.

47. Thome T, Berru F, **Ryan TE**. PGC-1/ERR-Induced Regulator in muscle (PERM1) increases mitochondrial respiratory capacity in culture muscle cells. *American College of Sports Medicine (ACSM) Annual Meeting, May 28 – June 1, 2019; Orlando, Florida.*
46. Thome T, Berru F, Hahn D, Kumar RA, Ferreira LF, **Ryan TE**. Uremic toxins decrease skeletal muscle mitochondrial energy transfer through disruption of the electron transport system. *Experimental Biology, April 6-9, 2019; Orlando, Florida.*
45. Berru F, Gray SE, Thome T, Le D, Omalley KA, Berceci SA, Scali ST, **Ryan TE**. Renal dysfunction exacerbates ischemic muscle injury in mice subjected to hindlimb ischemia. *Experimental Biology, April 6-9, 2019; Orlando, Florida.*
44. Hahn D, Kumar RA, **Ryan TE**, Ferreira LF. Mitochondrial Respiration and H₂O₂ Emission in Saponin-permeabilized Murine Diaphragm Fibers: Optimization of Fiber Separation and Comparison to Limb Muscle. *Experimental Biology, April 6-9, 2019; Orlando, Florida.*
43. Johnson JM, Heden TD, Ferrara PJ, Eshima H, Verkerke ARP, Siripoksup P, Lin CT, **Ryan TE**, Reidy PT, Maschek JA, Cox JE, Vance JE, Drummond MJ, Neufer PD, Funai K. Disuse vs Exercise: Phosphatidylethanolamine in skeletal muscle mitochondrial adaptations. *Keystone Symposium: Mitochondrial Biology in Heart and Skeletal Muscle, January 13-17, 2019; Keystone, Colorado.*
42. McGee JE, **Ryan TE**, Dubis GS, Barefoot SG, Brophy PM, Swift DL. Arterial stiffness and mitochondrial oxidative capacity in obese African Americans. *American College of Sports Medicine Annual Meeting, May 29 – June 2, 2018; Minneapolis, Minnesota.*
41. Powers SA, **Ryan TE**, Pak E, McClung JM, Hannan JL. Chronic high fat diet increases diuresis and is associated with detrusor oxidative stress and impaired mitochondrial respiration. *American Urological Association Annual Meeting, May 12-16, 2017; Boston, Massachusetts.*
40. Schmidt CA, **Ryan TE**, Green TD, Karnekar R, McCord TJ, Southerland KW, Venkatraman TN, Lascola CD, Keum S, Marchuk DA, Spangenburg EE, Dokun A, Annex BH, Kontos CD, McClung JM. A BAG3 coding variant in mice determines susceptibility to ischemic limb muscle myopathy. *Keystone Symposium: Angiogenesis, May 4-7, 2017; Santa Fe, New Mexico.*
39. **Ryan TE**, Yamaguchi DJ, Schmidt CA, Green TD, Torres MJ, Neufer PD, Spangenburg EE, McClung JM. Muscle cell mitochondrial respiratory dysfunction is a unique pathologic link between strain dependent hindlimb ischemia and human critical limb ischemia myopathies. *Keystone Symposium: Angiogenesis, May 4-7, 2017; Santa Fe, New Mexico.*
38. Powers SA, **Ryan TE**, Odom MR, McClung JM, Hannan JL. Mitochondrial mutations contribute to increased voiding frequency and impaired cholinergic contraction in a model of premature aging. *American Urological Association Annual Meeting, May 12-16, 2017; Boston, Massachusetts.*
37. Verkerke ARP, Ferrara PJ, Lin CT, Heden TD, **Ryan TE**, Wentzler EJ, Balotti AH, Neufer PD, Funai K. Muscle phospholipid methylation modulates SERCA energy efficiency and alters susceptibility for obesity. *Keystone Symposium: Diabetes/Obesity and Adipose Tissue Biology, January 22-26, 2017; Keystone, Colorado.*

36. Lin CT, Gilliam LA, **Ryan TE**, Torres MJ, Smith CD, Brophy PM, Clark AH, Hickner RC, Neufer PD. Changes in energy state acutely alter redox state and insulin sensitivity in healthy humans. *APS Intersociety Meeting: The Integrative Biology of Exercise VII*, November 2-4, 2016; Phoenix, Arizona.
35. Morad SAF, **Ryan TE**, Barth BM, Claxton DF, Kester M, Loughran TP, Cabot MC. Ceramide-antiestrogen regimen targets bioenergetic elements in acute myelogenous leukemia. *Molecular Cancer Therapeutics* 14(12 Supplement 2): B17-B17, November 2015.
34. Verkerke A, Ferrara P, Lin CT, Heden T, **Ryan TE**, Wentzler E, Balotti A, Neufer PD, Funai K. Absence of phosphatidylethanolamine methylation increases skeletal muscle energy expenditure and prevents obesity. *APS Intersociety Meeting: The Integrative Biology of Exercise VII*, November 2-4, 2016; Phoenix, Arizona.
33. Torres MJ, Reese LR, Smith C, Pennington E, **Ryan TE**, Shaikh SR, Neufer PD. Estrogen Treatment Restores Muscle Mitochondrial Function and Redox Homeostasis, reversing the Pro-Diabetogenic State induced by Ovariectomy. *The FASEB Journal* (30) 1, 1247.1-1247.1, 2016.
32. Schmidt CA, **Ryan TE**, Lin CT, Inigo MMR, Green TD, Brault JJ, Spangenburg EE, McClung JM. Diminished force production and mitochondrial respiration are strain-dependent myopathies of subacute limb ischemia. *NHLBI/NIDDK Mitochondrial Biology Symposium*, May 18-19, 2016; Bethesda, Maryland.
31. **Ryan TE**, Schmidt CA, Green TD, Spangenburg EE, Neufer PD, McClung JM. Targeted expression of catalase to mitochondria protects against ischemic myopathy in high fat fed mice. *NHLBI/NIDDK Mitochondrial Biology Symposium*, May 18-19, 2016; Bethesda, Maryland.
30. Reese LR, **Ryan TE**, Torres MJ, Neufer PD. Acute reversal of high fat diet induced insulin resistance is accompanied by a restoration of redox status in skeletal muscle. *Experimental Biology*, March 28-April 1, 2015; Boston, Massachusetts.
29. Morad SAF, Kester M, Loughran TP, **Ryan TE**, Zecycki TN, Davis T, Cabot MC. Adjuvant tamoxifen improves effectiveness of ceramide-centric therapy in acute myelogenous leukemia. *International Ceramide Conference/Sphingolipid Club*, May 8, 2015; Izmir, Turkey.
28. Lark DS, **Ryan TE**, Torres MJ, Lin CT, Anderson EJ, Neufer PD. Demand-driven enhancement of mitochondrial oxidative phosphorylation efficiency in permeabilized myofibers. *Diabetes Day at Vanderbilt University Medical Center*, December 10, 2014; Nashville, Tennessee.
27. **Ryan TE**, Reese LR, Torres MJ, Lin CT, Neufer PD. Atrovastatin decreases skeletal muscle mitochondrial respiration and calcium retention in overweight adult humans. *Keystone Symposium: Diabetes and Metabolic Dysfunction*, January 27-February 4, 2015; Santa Fe, New Mexico.
26. Brown DA, **Ryan TE**, Schmidt CA, Alleman RJ, Tsang AM, Green TD, Neufer PD, McClung JM. The Mitochondrial Targeted Peptide MTP-131 Restores Limb Perfusion and Reduces Pathology in Ischemic Limb Muscle of Genetically Susceptible Mice. *Keystone Symposium: Mitochondrial, Metabolism, and Heart Failure*, January 27-February 4, 2015; Santa Fe, New Mexico.

25. Morad SAF, Bridges LC, Gilliam LAA, **Ryan TE**, Cabot MC. Tamoxifen improves efficacy of ceramide-centric therapeutics in human melanoma by downregulating survival signaling and countering invasion. *The Workshop on Molecular Medicine of Sphingolipids, October 12-17, 2014; Kloster Banz, Germany.*
24. Young HJ, Brizendine JT, Erickson ML, **Ryan TE**, Li X, Murrow JR, McCully KK. The effect of peripheral arterial disease on arterial flow kinetics. *Annual Meeting of the American College of Sports Medicine; May 27-31, 2014; Orlando, Florida.*
23. Southern WM, **Ryan TE**, Kepple K, Nilsson KR, McCully KK. Skeletal muscle adaptations from endurance exercise training are blunted in patients with chronic heart failure. *Annual Meeting of the American College of Sports Medicine; May 27-31, 2014; Orlando, Florida.*
22. **Ryan TE**, Lin CT, Brophy PM, Hickner RC, McCully KK, Neufer PD. In vivo measurements of mitochondrial respiratory capacity in skeletal muscle. *Advances in Skeletal Muscle Biology, University of Florida; March 5-7, 2014; Gainesville, Florida.*
21. Lin CT, Gilliam LA, Brophy PM, Clark AH, **Ryan TE**, Hickner RC, Neufer PD. Changes in energy state acutely alter insulin sensitivity in healthy humans. *Metabolic Origins of Disease, Sanford-Burnham Institute; March 3-5, 2014; Orlando, Florida.*
20. **Ryan TE**, Lin CT, Brophy PM, Hickner RC, McCully KK, Neufer PD. In vivo measurements of mitochondrial respiratory capacity in skeletal muscle. *Metabolic Origins of Disease, Sanford-Burnham Institute; March 3-5, 2014; Orlando, Florida.*
19. Gist NH, Freese EC, **Ryan TE**, Cureton KJ. Physiological and performance effects of low-volume, high-intensity whole-body calisthenics on Army ROTC cadets. *Annual Meeting of the American College of Sports Medicine; May 27-31, 2014; Orlando, Florida.*
18. Southern WM, **Ryan TE**, Kepple K, Hsu BC, Nilsson KR, McCully KK. Impaired skeletal muscle mitochondrial and vascular function in people with heart failure. *Southeast Regional Meeting of the American College of Sports Medicine; February 13-15, 2014; Greenville, South Carolina.*
17. Brizendine JT, **Ryan TE**, Larson RD, McCully KK. Oxidative capacity in trained cyclists with near infrared spectroscopy. *Annual Meeting of the American College of Sports Medicine; May 28 – June 1, 2013; Indianapolis, Indiana.*
16. Young HJ, Brizendine JT, Erickson ML, **Ryan TE**, Li X, Murrow JR, McCully KK. Dispersion of arterial blood flow and severity of peripheral arterial disease. *Annual Meeting of the American College of Sports Medicine; May 28 – June 1, 2013; Indianapolis, Indiana.*
15. Erickson ML, **Ryan TE**, Young HJ, McCully KK. Case Report: Mitochondrial responses after endurance electrical stimulation training in spinal cord injury. *Annual Meeting of the American College of Sports Medicine; May 28 – June 1, 2013; Indianapolis, Indiana.*
14. **Ryan TE**, Brizendine JT, McCully KK. A Comparison of exercise type and intensity on the noninvasive assessment of skeletal muscle mitochondrial function using near infrared spectroscopy. *Annual Meeting of the American College of Sports Medicine; May 28 – June 1, 2013; Indianapolis, Indiana.*

13. Talati KR, Dhillon PK, **Ryan TE**, McCully KK. Effects of electrical stimulation intensity on near-infrared spectroscopy measurements of oxygen consumption and mitochondrial capacity. *Southeast Regional Meeting of the American College of Sports Medicine; February 14-16, 2013; Greenville, South Carolina.*
12. **Ryan TE**, Erickson ML, Stoddard SN, Chavez J, Verma A, McCully KK. The reproducibility of ³¹P MRS and NIRS methods to evaluate skeletal muscle mitochondrial function. *Southeast Regional Meeting of the American College of Sports Medicine; February 14-16, 2012; Greenville, South Carolina.*
11. Erickson ML, **Ryan TE**, Young HJ, McCully KK. Case Report: Mitochondrial responses after endurance electrical stimulation training in spinal cord injury. *Southeast Regional Meeting of the American College of Sports Medicine; February 14-16, 2013; Greenville, South Carolina.*
10. Brizendine JT, **Ryan TE**, Erickson ML, Chavez J, Verma A, McCully KK. A non-invasive method to evaluate mitochondrial function in human skeletal muscle appropriate for clinical and research trials. *GABIO; October 3-4, 2012; Atlanta, Georgia.*
9. **Ryan TE**, Brizendine JT, Young HJ, Erickson ML, McCully KK. Skeletal muscle metabolism and glucose tolerance after spinal cord injury: influence of intramuscular fat and injury duration. *Annual Meeting of the American College of Sports Medicine; May 29 – June 2, 2012; San Francisco, California.*
8. Brizendine JT, **Ryan TE**, Erickson ML, McCully KK. Improvements in electrical stimulation resistance training in men and women with complete spinal cord injury. *Annual Meeting of the American College of Sports Medicine; May 29 – June 2, 2012; San Francisco, California.*
7. Erickson ML, **Ryan TE**, Brizendine JT, Young HJ, McCully KK. Measuring skeletal muscle metabolism with near-infrared spectroscopy. *Annual Meeting of the American College of Sports Medicine; May 29 – June 2, 2012; San Francisco, California.*
6. **Ryan TE**, Brizendine JT, Erickson ME, Young HJ, McCully KK. Skeletal muscle metabolism and glucose tolerance after spinal cord injury: Influence of intramuscular fat and injury duration. *Southeast Regional Meeting of the American College of Sports Medicine; February 10, 2012; Jacksonville, Florida.*
5. Young HJ, Brizendine JT, Erickson ML, **Ryan TE**, Murrow JR, McCully KK. The effect of peripheral arterial disease on variability of velocity and time course of reactive hyperemia. *Southeast Regional Meeting of the American College of Sports Medicine; February 10, 2012; Jacksonville, Florida.*
4. Young HJ, Brizendine JT, Erickson ML, **Ryan TE**, Murrow JR, McCully KK. Velocity profile of arterial blood flow and severity of peripheral arterial disease. *The 5th Asia-Pacific Conference on Exercise and Sports Science; Shanghai University of Sport; November 2-5, 2011; Shanghai, China.*
3. **Ryan TE**, McCully KK, Zhao Q. Effects of four months of electrical stimulation-induced resistance training on paralyzed muscle. *Southeast Regional Meeting of the American College of Sports Medicine; February 14, 2011; Greenville, South Carolina.*
2. **Ryan TE**, McCully KK, Zhao Q. The effects of electrical stimulation-induced resistance training on paralyzed muscle. *Annual Meeting of the American College of Sports Medicine; May 31 – June 4, 2011; Denver, Colorado.*

1. Brizendine JT, **Ryan TE**, Erickson ME, Young HJ, Backus D, Tansey K, et al. Home-based electrical stimulation training in persons with complete paraplegia. *Shepherd Center Research Day; November 10, 2011; Atlanta, Georgia.*

RESEARCH SUPPORT

Active Research Support:

- Co-Inv. Targeting myofiber NAD(P)H oxidases in sepsis-induced myopathy. R01 AR08512. PI: Orlando Laitano, Ph.D. \$1,829,773. Effort = 3%. 2025-2028.
- PI. Investigating the molecular mechanisms of limb pathology in peripheral artery disease: a bedside to bench approach. American Heart Association Established Investigator Award. 25EIA1369187. \$550,000. Effort: 15%. 2025-2030.
- PI. The role of fatty fibrosis in chronic limb threatening ischemia pathobiology. R01 HL171050. \$2,638,185. Effort: 20%. 2024-2027.
- Co-Inv. miR-130b, angiogenesis, and diabetic critical limb ischemia. R01 HL167905-01A1. PI: Mark Feinberg (Harvard University). UF Subcontract = \$132,675. Effort: 5%. 2025-2027.
- Mentor. Targeting muscle kynurenine aminotransferases and the AHR pathway to mitigate age-related physical decline. NIH F32-AG087637 PI: Keon Wimberly. Dr. Ryan is primary mentor. \$129,859. 2024-2026.
- Co-Inv. ROS scavenging nanoparticles for mitigating oxidative stress in osteoarthritis. R01 AR080687. PI: Blanka Sharma, Ph.D. \$2,067,312. Effort = 8%. 2023-2028.
- Co-Inv. Using mitochondrial Ca^{2+} uptake as a therapeutic target for ALS. R01 NS127858. PI: Lan Wei-Lapierre, Ph.D. \$1,848,815. Effort: 2%. 2023-2027.
- PI. Linking kynurenine accumulation and the AHR pathway to exacerbated aging. R01 AG076490. \$2,556,499. Effort: 15%. 2022-2027.
- Co-Inv. Establishing the impact of e-cigarette exposure on skeletal muscle function in peripheral arterial disease. James and Esther King Biomedical Research Program, Florida Dept. of Health Grant #23K04. PI: Scott A. Berceli, M.D., Ph.D. Effort: 10%. 2023-2026.

Completed Research Support:

- PI. Molecular mechanisms regulating peripheral arterial disease pathobiology in chronic kidney disease. R01 HL149704. \$3,017,785. Effort: 23%. 2019-2025.
- Mentor. Single nuclei multiomic analysis to assess the impact of surgical revascularization on chronic limb threatening ischemia. AHA 24PRE1196311 PI: Caroline Pass. Dr. Ryan was primary mentor. \$67,388. 2024-2026.

- Mentor. The role of mitochondrial biogenesis in chronic limb threatening ischemia pathobiology. AHA 24PRE1191760 PI: Gengfu Dong. Dr. Ryan was primary mentor. \$67,388. 2024-2026.
- Mentor. Molecular mechanisms of intramuscular adipose tissue in chronic limb threatening ischemia. NIH F31-HL174156 PI: Victoria Palzkill. Dr. Ryan was primary mentor. \$101,181. 2024-2027.
- Co-Inv. Impaired mitochondrial energetics is a driver of hemodialysis access related hand dysfunction. R01 HL148597. \$2,699,426. Ryan portion = \$155,000 direct costs per year. Effort = 15%. 2019-2024 (NCE).
- Mentor. Molecular mechanisms of intramuscular adipose tissue in chronic limb threatening ischemia. AHA 24PRE1193999 PI: Victoria Palzkill. Dr. Ryan was primary mentor. \$67,388. 2024. *This award was relinquished in Oct. 2024 following acceptance of NIH/NHLBI F31-HL174156.*
- Mentor. Chronic aryl hydrocarbon receptor activation and skeletal myopathy in chronic kidney disease. F31 DK128920. PI: Trace Thome. Dr. Ryan was primary mentor. \$127,201. 2021-2024.
- Mentor. The role of PDK4 in the ischemic mitochondrial myopathy of chronic limb threatening ischemia. AHA 24POST1197078. PI: Dr. Abigail Tice. Dr. Ryan was primary mentor. \$144,580. 2024.
- Mentor. Mechanisms linking uremic toxicity to hand dysfunction following arteriovenous fistula placement. AHA POST903198. PI: Dr. Kyoungrae Kim. Dr. Ryan was primary mentor. \$145,020. 2022-2023.
- PI. Role of the aryl hydrocarbon receptor in tobacco smoke-induced skeletal muscle atrophy. 20K05 – James and Esther King Biomedical Research Program, Florida Dept. of Health. \$626,710. Effort: 10%. 2020-2023.
- Co-Mentor. Relevance of mitochondrial permeability transition in tobacco-smoke toxicity in skeletal muscle. AHA POST836216. PI: Dr. Liam Fitzgerald. Dr. Ryan was co-primary mentor. \$136,756. 2021-2022.
- Co-Inv. Mitochondrial permeability transition in aging muscle. R56 AG066758. PI: Russ Hepple, Ph.D. \$312,625. Effort: 10%. 2021-2023.
- Co-Inv. Using mitochondrial Ca^{2+} uptake as a therapeutic target for ALS. R56 NS117429. PI: Lan Wei-Lapierre, Ph.D. \$511,505. Effort: 5%. 2021-2023.
- PI. Role of PFKFB3 in peripheral artery disease. AHA 18CDA34110044. \$231,000. Effort = 25%. 2018-2021.
- Co-Inv. A new understanding of muscle atrophy in neuromuscular disease. UF Office of Research. \$81,000. Effort: 5%. 2020-2022.

- PI. Mechanisms of muscle dysfunction in chronic kidney disease. UF Office of Research. \$83,409. Effort = 5%. 2019-2021.
- PI. Impact of skeletal muscle and stem cell mitochondrial dysfunction on outcomes from surgical intervention in patients with critical limb ischemia. Claude D. Pepper Center Junior Scholar Grant. \$50,000. Effort = 5%. 2018-2020.
- Co-Inv. Effects of exercise training intensity on fitness and insulin sensitivity in African Americans. R03 DK105297. \$553,125. Effort = 5%. 2017-2019.
- Consultant. UCSD Sedentary Behavior Program Project - Sedentary Behavior Interrupted: Acute, medium, and long-term effects on biomarkers of healthy aging, physical function, and mortality. P01 AG052352. \$3,000 per year. 2017-2019.
- Co-Inv. Whole transcriptome sequencing to identify novel targets for critical limb ischemia therapy. Brody Brothers Endowment Seed Grant. \$40,000. Effort = 0%. 2016-2017.
- PI. The role of skeletal muscle mitochondria in peripheral arterial disease. F32 HL129632. \$99,056. Effort: 100%. 2015-2017.
- PI. Noninvasive measurement of skeletal muscle mitochondrial function using near infrared spectroscopy. University of Georgia Research Foundation. \$5,000. 2012-2013.

Submitted Grants Pending Review:

- PI. FAM210A as a novel regulator of mitochondrial pathology in chronic limb threatening ischemia. NIH R01. \$2,754,777. Effort: 20%. 2024-2028.
- Co-Inv. (contact PI: Salvatore Scali). Preoperative exercise for arteriovenous fistula surgery to improve hand function. NIH R01. \$3,684,532. PI: Salvatore T. Scali, MD. Effort: 15%. 2024-2029.
- Co-Inv. Targeting NAD(P)H oxidases in sepsis-induced myopathy. NIH R01. \$3,372,706. PI: Orlando Laitano. Effort: 5%. 2024-2029.
- Co-Inv. Role of Activin A in vessel formation. NIH R01. \$2,170,556. PI: Dmitry Traktuev. Effort: 5%. 2024-2028.
- PI. Impact of surgical revascularization on limb muscle function, genomics, and metabolism. R01 HL174627. \$3,807,180. Effort: 10%. 2024-2029.

Submitted Grants Not Funded:

- PI. Intramuscular fat as a novel therapeutic target in diabetic chronic limb threatening ischemia. Department of Defense CDMRP. \$1,454,149. Effort: 10%. 2024-2028.

- PI. Skeletal muscle mitochondrial pathology as a driver of adverse limb outcomes in peripheral artery disease. Department of Defense CDMRP. \$1,409,168. Effort: 10%. 2024-2028.
- Co-Inv. The therapeutic efficacy of 2,4-dinitrophenol as a treatment for ALS. Muscular Dystrophy Association. \$294,812. Effort: 5%. 2022-2024.
- Co-Inv. Role of Activin A in vasculogenesis and angiogenesis in inflammatory and ischemic conditions. NIH R01. \$2,227,345. Effort: 5%. 2022-2027.
- Co-Inv. Daily muscle stretching intervention to improve microvascular function and oxygen utilization in skeletal muscle of patients with peripheral artery disease. NIH R01. \$4,072,662. Effort = 7.5%. 2023-2028.
- PI. Targeting mitochondrial health to improve limb outcomes in diabetic chronic limb-threatening ischemia. Department of Defense CDMRP. \$2,108,906. Effort: 10%. 2022-2026.
- Co-Mentor. Cardioprotective effect of ASC secretome after warm ischemia in simulation of the donor after circulatory death. AHA Postdoctoral Fellowship. \$158,025. 2022-2023.
- Co-Inv. Evaluating the therapeutic efficacy of 2,4-dinitrophenol in the treatment of ALS. Department of Defense CDMRP. \$1,477,099. Effort: 10%. 2022-2025.
- Co-Inv. Role of activin A in vasculogenesis and angiogenesis in inflammatory and ischemic conditions. NIH R01. \$2,279,101. Effort: 5%. 2022-2026.
- Co-Inv. Phenotyping animal models of human disease using a high-resolution ultrasound imager. NIH S10. \$533,545. 2022-2023.
- Co-Mentor. Abrogation of impaired mitochondrial energetics using antioxidant therapy to ameliorate dialysis access related limb dysfunction. NIH F32. \$129,252. 2021-2023.
- PI. Pathophysiological roles of kynurenines and the aryl hydrocarbon receptor in CKD. NIH R01. \$2,907,673. Effort: 30%. 2021-2026.
- Co-Inv. Skeletal muscle mitochondrial permeability transition as a novel mechanism of accelerated aging with chemotherapy. NIH R01. \$3,784,850. Effort: 10%. 2021-2026.
- Co-Inv. Limb muscle metabolism and contractile dysfunction in postmenopausal HFpEF. NIH R01. \$2,382,933. Effort: 5%. 2021-2026.
- Co-Inv. Metabolic contributions of muscle IGF-1 in health and disease. NIH R01. \$2,976,620. Effort: 5%. 2021-2026.

- Co-Inv. Systemic antioxidant treatment for cardiomyopathy, muscle weakness, and exercise intolerance in postmenopausal HFpEF. NIH R21. \$419,375. Effort: 5%. 2021-2023.
- Co-Inv. Mitochondrial permeability transition in aging muscle. NIH R01. \$3,141,079. Effort: 10%. 2021-2026.
- Co-Inv. Mitochondrial mechanisms causing adverse muscle impact with chronic aryl hydrocarbon receptor activation. Department of Defense CDMRP. \$2,160,331. 2021-2025.
- PI. Florida Resource Center for Musculoskeletal Research. NIH P30. \$3,812,495. Dr. Ryan PI of the Mitochondrial Diagnostics Core. 2021-2026.
- Mentor. Chronic aryl hydrocarbon receptor activation and skeletal myopathy in CKD. NIH F31. \$121,054. 2020-2023.
- Co-Inv. Mitochondrial permeability transition in aging muscle. NIH R01. \$3,141,079. Effort: 10%. 2020-2025.
- Co-Inv. Stretch-induced ischemia improves blood flow and muscle function in peripheral artery disease. NIH R21/R33. \$880,366. 2020-2024.
- Co-Inv. Limb muscle metabolism and contractile dysfunction in postmenopausal HFpEF. NIH R01. \$2,382,933. Effort: 5%. 2020-2025.
- Co-Mentor. The use of short-term dietary restriction to attenuate peri-operative inflammation following aortic aneurysm repair. NIH F32. \$157,069. 2020-2023.
- Co-Inv. Systemic antioxidant treatment for cardiomyopathy, muscle weakness, and exercise intolerance in postmenopausal HFpEF. NIH R21. \$419,375. Effort: 5%. 2019-2021.
- Co-Inv. Mechanisms causing muscle atrophy with chronic aryl hydrocarbon receptor activation. NIH R01. \$2,047,734. Effort: 10%. 2019-2024.
- Co-Inv. Co-Inv. Mitochondrial permeability transition in aging muscle. NIH R01. \$3,141,079. Effort: 10%. 2019-2024.
- PI. Pharmacologic antagonism of the aryl hydrocarbon receptor to improve peripheral artery disease in CKD. NIH R03. \$142,685. Effort: 10%. 2019-2021.
- Co-Inv. Mechanisms of neuromuscular degeneration caused by tobacco smoking. Department of Defense CDMRP. \$1,696,155. Effort: 10%. 2019-2022.

REVIEWING ACTIVITIES

Grant Reviewer:

Terence E. Ryan, Ph.D.

- Ad hoc reviewer for NIH Study Section: Vascular Cell and Molecular Biology (VCMB), June 25, 2020
- Congressional Directed Medical Research Programs, Department of Defense, 2020 (13 grants)
- Collaborative Initiative Grant Program, University of Nebraska, RFA 2019-2020
- ZRD1 IMMA-G (01): VA Merit Grant Review Panel: Immunology & Dermatology A (IMMA), November 24, 2020
- American Heart Association, Fellowship Reviewer, Basic Cell-Regenerative Cell Biology 2020-2023
- American Heart Association, Career Development Award Reviewer, Molecular Signaling and Cell Transport 2021
- ZRD1 IMMA-G (01): VA Merit Grant Review Panel: Immunology & Dermatology A (IMMA), May 19, 2021
- Medical Research Council, United Kingdom Research and Innovation, May 17, 2021
- Congressional Directed Medical Research Programs, Department of Defense, 2021 (14 grants)
- American Heart Association, Career Development Award Reviewer, Molecular Signaling and Cell Transport 2022
- ZRD1 IMMA-G (01): VA Merit Grant Review Panel: Immunology & Dermatology A (IMMA), May 24, 2022
- Medical Research Council, United Kingdom Research and Innovation, March 2023.
- Congressional Directed Medical Research Programs, Department of Defense, 2023 (6 grants)
- American Heart Association, Secondary Century Early Faculty Independence Reviewer, 2024
- Ad hoc reviewer for NIH Study Section: Atherosclerosis and Vascular Inflammation (AVI), October 10-11, 2024
- American Heart Association, Pre- and Post-doctoral Fellowship Reviewer, 2024
- American Heart Association, Transformative Project Awards, 2025
- American Heart Association, Career Development Awards, 2026

Invited Peer Reviewer (2012-Present)

- Journal of Applied Physiology
- Clinical Science
- American Journal of Physiology: Regulatory, Integrative, and Comparative Physiology
- Topics in Spinal Cord Injury Rehabilitation
- Muscle and Nerve
- Journal of Visualized Experiments
- PLOS One
- Medicine and Science in Sports and Exercise
- International Journal of Sports Medicine
- Acta Physiologica
- Experimental Physiology
- Heart Failure Reviews
- Microvascular Research
- Frontiers in Physiology
- Journal of Physiology
- American Journal of Physiology: Heart and Circulatory Physiology
- American Journal of Cardiovascular Drugs
- American Journal of Physiology: Endocrinology and Metabolism
- Journal of Vascular Surgery
- American Journal of Physiology: Cell Physiology
- FASEB Journal
- Journal of Gerontology: Biological Sciences
- Applied Physiology, Nutrition, and Metabolism
- Kidney International
- Journal of the American Society of Nephrology
- Oxidative Medicine and Cellular Longevity
- Diabetologia
- Exercise and Sport Sciences Reviews
- Clinical and Translational Medicine
- JCI Insight
- Journal of the American Heart Association
- Metabolism
- Redox Biology
- Free Radical Biology and Medicine
- Nature Communications
- Circulation
- Journal of Cachexia, Sarcopenia, and Muscle
- BBA – Bioenergetics
- Communications Biology
- The American Journal of Pathology
- Genome Medicine
- Circulation Research
- Arteriosclerosis, Thrombosis, and Vascular Biology
- Science Translational Medicine

- Nature Cardiovascular Research
- JCSM Communications
- ACS Applied Biomaterials
- JACC - Basic to Translational Science

TEACHING EXPERIENCE

University of Georgia – Department of Kinesiology

- KINS 8990 Skeletal Muscle Bioenergetics (Oxidative Phosphorylation Section, Spring 2013)
- KINS 3700 Applied Exercise Physiology (Full Undergraduate Lecture course, Spring 2012)
- KINS 6690 Neuromuscular Physiology (Muscle Contraction and Energetics Sections, Fall 2012)
- PHYS 6510 Theory and Techniques in MRI (Skeletal Muscle Section, Fall 2011)
- KINS 4630 Exercise Physiology Laboratory (Fall 2010, Spring 2011)
- KINS 4630 Advanced Exercise Physiology (Fall 2011)
- KINS 4690 Ion Channels and Electrophysiology (Fall 2011)
- KINS 4630 Health and Wellness after Spinal Cord Injury (Guest Lecture; Graduate course; Fall 2011)

East Carolina University – Department of Physiology

- PHL7704** (Physiological Proteogenomics) Muscle function and contraction (Spring 2017)
- PHL7704** (Physiological Proteogenomics) Mitochondria (Spring 2017)

**Team taught course

University of Florida – Department of Applied Physiology and Kinesiology

- APK4112 - *Advanced Exercise Physiology*
 - Fall 2018 (51 undergraduate students)
 - Spring 2019 (41 undergraduate students)
 - Fall 2019 (48 undergraduate students)
 - Spring 2020 (50 undergraduate students)
 - Spring 2021 (54 undergraduate students)
 - Fall 2021 (48 undergraduate students)
 - Spring 2022 (41 undergraduate students)
 - Spring 2023 (33 undergraduate students)
 - Spring 2025 (40 undergraduate students)
 - Fall 2025 (42 undergraduate students)
- APK6170 – *Advanced Exercise Physiology*
 - Fall 2021 (7 graduate students)
 - Fall 2023 (3 graduate students)
 - Spring 2025 (2 graduate students)
- PET4905/GMS7593 - *Fundamentals of Skeletal Muscle*
 - Fall 2018 (2 lectures)
 - Fall 2019 (2 lectures)
 - Fall 2020 (2 lectures)
 - Fall 2021 (2 lectures)

- Fall 2022 (2 lectures)
- APK6195 – *Cell Physiology & Biophysics of Exercise*
 - Spring 2020 (10 graduate students)
 - Fall 2022 (6 graduate students)
 - Spring 2024 (4 graduate students)
 - Spring 2026 (2 graduate students)
- PET5936 – *Advanced Methodology in Exercise Biology*
 - Fall 2020 (6 graduate students)
 - Fall 2024 (6 graduate students)

MENTORING

Current Research Faculty

Kyoungrae Kim, PhD Purdue University

Kyoungrae (Raymond) joined the lab in January 2020 and investigated the molecular mechanisms regulating hand dysfunction following arteriovenous fistula placement. He has received a Postdoctoral fellowship from the American Heart Association (POST903198), PVD Travel Grant for Early Career Investigators (2023, American Heart Association), and Postdoctoral Translational Research Award (2023, American Physiological Society). He was promoted to Research Assistant Professor in January 2024.

Current Postdoctoral Scholars

Yu (Mia) Kawaida, PhD University of Connecticut

Mia joined the lab in January 2024 and is working on understanding mechanisms of muscle pathology in aging and peripheral artery disease.

Keon Wimberly, PhD University of Florida

Keon joined the lab in January 2022 and is working on the genetic regulation of frailty. He was funded by T32-AG062728 - Translational Research Training on Aging and Mobility (TRAM), but relinquished this award in 2024 following acceptance of his NRSA Postdoctoral fellowship F32-AG087637.

Current PhD Students

Jaewon Choi, B.A., M.S., PhD student in Applied Physiology and Kinesiology

Jaewon joined the lab in August 2024 with an interest in the molecular drivers of muscle and vascular pathologies.

Caroline Pass, B.S., M.S., PhD student in Applied Physiology and Kinesiology

Caroline joined the lab in August 2022 and interested in bioinformatics and the application of 'omics' technology to biomedical sciences. She is working on understanding the complex intercellular communication that drive peripheral artery disease pathobiology. She has received a Predoctoral fellowship from the American Heart Association (24PRE1196311).

Gengfu Dong, B.S., M.S., PhD candidate in Applied Physiology and Kinesiology

Gengfu (Tony) is investigating the role of mitochondria in pathobiology of chronic limb threatening ischemia. Tony has received the Cluff Aging Research Award (2023), Excellence Award for International Students (2022), and was selected for the Applied Physiology &

Kinesiology Doctoral Student Research Fellowship (2023-2024). He has received a Predoctoral fellowship from the American Heart Association (24PRE1191760).

Nicholas Balestrieri, B.S., M.S., PhD candidate in Applied Physiology and Kinesiology
Nick is working on the role of the AHR in ischemic muscle pathology in the context of kidney disease.

Current Masters Students

None.

Previous Postdoctoral Scholars

Ram Khattri, PhD University of Akron

Ram trained in the lab from June 2020 through December 2022 by applying his skills as an analytical chemist to investigate metabolomic changes in muscle and vascular pathologies using steady state and tissue-level metabolomics and metabolic flux analyses. He published 9 peer-reviewed papers. *Current Position*: Senior Research Scientist at Curia.

Liam Fitzgerald, PhD University of Massachusetts Amherst

Liam was co-mentored with Dr. Russ Hepple and worked to understand the role of mitochondrial permeability transition in muscle toxicity with tobacco smoking. He received a Postdoctoral fellowship from the American Heart Association (POST836216). *Current Position*: Senior Regulatory Affairs Associate, Parexel.

Kyoungrae Kim, PhD Purdue University

Raymond was a postdoctoral scholar in the lab from January 2020 through December 2023 supported for two of these years by a Postdoctoral fellowship from the American Heart Association (POST903198). He has received a Postdoctoral fellowship from the American Heart Association (POST903198), PVD Travel Grant for Early Career Investigators (2023, American Heart Association), and Postdoctoral Translational Research Award (2023, American Physiological Society). *Current Position*: Research Assistant Professor, Department of Applied Physiology & Kinesiology, University of Florida.

Abigail Tice, PhD Florida State University

Abby joined the lab in May 2023 and worked to understand the contribution of muscle mitochondrial to chronic diseases and conditions including aging and peripheral artery disease. She has received a Postdoctoral fellowship from the American Heart Association (24POST1197078). *Current Position*: Research Scientist, Advent Health Translational Research Institute.

Previous PhD Students

Trace Thome, Ph.D.

Trace completed his dissertation studies focused on muscle pathology in chronic kidney disease in May 2024. He received a NIH F31 NRSA predoctoral fellowship (F31 DK128920) and Research Recognition Awards from the Endocrinology & Metabolism Section of the American Physiological Society. *Current Position*: Postdoctoral Scholar, University of Pennsylvania, Laboratory of Zoltan Arany, M.D., Ph.D.

Victoria Palzkill, Ph.D.

Tori completed her dissertation studies focused on understanding key determinants of ischemic limb function including the mechanistic role of intramuscular adipose tissue in ischemic pathology. She received a Predoctoral fellowship from the American Heart Association (24PRE1193999) and the NIH/NHLBI (F31-HL174156). *Current Position:* Postdoctoral Scholar, University of Minnesota, Laboratory of Michael Kyba, Ph.D.

Previous Masters Students**Trace Thome, B.S., M.S.**

Trace joined the lab in 2018 and his thesis focused on the role of PERM1 in mitochondrial biogenesis. Trace is currently a PhD candidate in my lab.

Zachary Salyers, B.S., M.S.

Zach completed his thesis entitled “AAV-mediated expression of PFKFB3 in myofibers, but not endothelial cells, improves ischemic muscle function in mice with critical limb ischemia” in August 2022. Zach is currently a Project Coordinator at Medpace.

Jacob Lackey, B.S., M.S.

Jacob completed his thesis entitled “Chronic aryl hydrocarbon receptor activation impairs muscle mitochondrial energetics with tobacco smoking” in May 2023.

Ahmad Moussa, B.S., M.S.

Ahmad completed his thesis entitled “Hedgehog activation decreases intramuscular fat and improves recovery from hindlimb ischemia in mice” in December 2023. Ahmad is currently a PhD student in the Department of Food Science and Human Nutrition at the University of Florida.

Current Undergraduate Students

Divyansha Moparthy, Biology, UF

Nathan Law, Biology, UF

Jessica Holland, Biology, UF

Previous Undergraduate Students

Dennis Le, Applied Physiology and Kinesiology, UF

Dennis was a University Scholar Awardee. Completed Honors Thesis: “Construction and validation of DNA plasmids and viral vectors to manipulate glycolytic flux for potential therapeutic development”.

Tomas Cort, Applied Physiology and Kinesiology, UF

Tomas was a University Scholar Awardee.

Ania Murillo, Applied Physiology and Kinesiology, UF

Jordan Saag, Chemistry, UF.

Madeline Coleman, Applied Physiology and Kinesiology, UF

Jeremy Lalla, Applied Physiology and Kinesiology, UF

Ahmad Moussa, Applied Physiology and Kinesiology, UF

Shawn Khan, Biology, UF

Juliana Morcos, Applied Physiology and Kinesiology, UF

Nicholas Vugman, Biotechnology, UF

Nick completed an Honors Thesis entitled “Characterizing the function of the Fam136a mitochondrial protein in skeletal muscle”.

Nishka Jakkidi, Applied Physiology and Kinesiology, UF

Jianna Tan, Applied Physiology and Kinesiology, UF

Chatick Moparthy, Biology, UF

Jack Moerschel, Applied Physiology and Kinesiology, UF

Rachel Hernandez, Applied Physiology and Kinesiology, UF

Samuel Alvarez, Biology, UF

Eric Kunz, Applied Physiology and Kinesiology, UF

Eric was a University Scholar Awardee. Eric completed an Honors Thesis entitled “Pre-operative systemic heat therapy attenuates access-related limb dysfunction in a murine model of arteriovenous fistula”.

Lauren Stone, Biochemistry, UF

Jennifer Russell, Microbiology and Cell Science, UF

Ryan-Mostafa Ullayk, Applied Physiology and Kinesiology, UF

Benjamin Izaguirre, Applied Physiology and Kinesiology, UF

Current Biological Scientists

Qingping Yang, M.S.

Xiaoping (Linda) Luo, M.D., M.S.

Gabriel Ramirez, B.S.

Previous Biological Scientists

Fabian Berru, B.S.

Madeline Coleman, B.S.

Yongxin Gao, Ph.D.

Zachary Salyers, M.S.

Jacob Lackey, M.S.

Samuel Alvarez, B.S.

Current Dissertation Committee Member

Christian Maugee, PhD student in Genetics and Genomics, UF

Jin-Su Kim, PhD student in Applied Physiology and Kinesiology, UF

Chatchamarn Soonhuae, PhD student in Applied Physiology and Kinesiology, UF

Michael Rua, PhD student in Applied Physiology and Kinesiology, UF

Diana Muller, PhD student in Applied Physiology and Kinesiology, UF

Yufen Li, PhD student in Animal Sciences, UF

Cole Lukasiewicz, PhD student in Rehabilitation Sciences, UF

Jiin Ryu, PhD student in Applied Physiology and Kinesiology, UF

Fahim Tasin, PhD Student in Biomedical Sciences, UF

Xinyue Liu, PhD Student in Biomedical Sciences, UF

Jacob Barretto, PhD Student in Biomedical Sciences, UF

Previous Dissertation Committee Member

Dongwoo Hahn, PhD. Applied Physiology and Kinesiology, UF

Jared Rozowsky, PhD. Biomedical Engineering, UF.

Ravi Kumar, PhD. Applied Physiology and Kinesiology, UF

Chih-Hsuan Chou, PhD student in Applied Physiology and Kinesiology, UF
Katelyn Villani, PhD student in Applied Physiology and Kinesiology, UF
Shandra Trantham, PhD student in Genetics and Genomics, UF
Jessica Aldrich, PhD student in Biomedical Engineering, UF

External Committee Member

Susie Chung, M.S. University of Texas at Arlington
Adam Lucero, Ph.D., Massey University (New Zealand)

PATENTS

T.E. Ryan & K.K. McCully. Systems and Methods for Accurately Measuring Mitochondrial Capacity (US Patent No. 9,706,959), Issue Date: July 18, 2017.

T.E. Ryan & J.M. McClung. Modulation of Ischemic Cell Bioenergetics (US Patent No. 62/428,175), Provisional Filing Date: February 13, 2017.

INVITED PRESENTATIONS

29. *Investigating the pathobiology of peripheral artery disease: An opportunity for skeletal muscle biologists.* Myology Institute, University of Florida. December 3, 2025.
28. *Understanding and targeting myopathy in peripheral artery disease.* Muscle Biology & Cachexia Conference, University of Houston. May 18-20, 2025
27. *Understanding ischemic myopathy in peripheral artery disease.* Muscle Health Research Centre, York University, CA. April 4, 2025.
26. *The aryl hydrocarbon receptor as a novel regulator of muscle health and disease.* The Brown Foundation Institute of Molecular Medicine (IMM) at The University of Texas Health Science Center at Houston (UTHealth). February 28, 2025.
25. *Understanding the role of skeletal myopathy in peripheral artery disease pathobiology.* Department of Physiology, University of Kentucky, KY. October 7, 2024.
24. *Understanding the pathobiology of peripheral artery disease: discoveries from translational research approaches.* Department of Health and Kinesiology, Purdue University, IN. June 17, 2024
23. *Leveraging translational research to identify drivers and therapeutics for peripheral artery disease.* American Physiology Summit, Long Beach, CA. April 4, 2024.
22. *Novel drivers and mechanisms underlying peripheral artery disease pathobiology.* McCully Research Symposium, Department of Kinesiology, University of Georgia, Athens, GA. March 1, 2024.
21. *Understanding the mechanisms linking PAD pathobiology and CKD.* American Heart Association Scientific Sessions, Philadelphia, PA. November 13, 2023.
20. *Mitochondria as central regulators of chronic disease.* Children's Mercy Hospital Research Institute, Kansas City, MO. January 14, 2022.
19. *Skeletal muscle and vascular pathophysiology in chronic kidney disease.* Division of Nephrology, Hypertension, & Renal Transplantation, University of Florida, May 13, 2021.

18. *Novel mechanisms of uremic myopathy in chronic kidney disease*. Padua Muscle Days on Myology & Mobility Medicine, Padova, Italy. May 26-29, 2021.
17. *Mitochondria as Central Regulators of Chronic Disease*. Children's Mercy Research Hospital, Kansas City, KS. April 9, 2020 (Cancelled due to COVID-19).
16. *Proteome Predictors of Surgical Outcomes in Critical Limb Ischemia*. Institute of Aging and Division of Gerontology, University of Florida, Gainesville, FL. February 25, 2020.
15. *Mitochondrial Health in Ischemia Muscle*. Department of Biology, Georgia Tech University, Atlanta, GA. November 19, 2019.
14. *Flipping the Metabolic Switch: Identifying Mechanisms for the Prevention of Ischemic Muscle Injury*. Myology Institute Seminar Series. University of Florida, Gainesville, FL, April 18, 2019.
13. *Linking Kidney Function and Ischemic Myopathy*. Advances in Skeletal Muscle Biology in Health and Disease. University of Florida, Gainesville, FL, March 8, 2019.
12. *Role of Mitochondria in Surgical Outcomes in Critical Limb Ischemia*. Claude D. Pepper Center, University of Florida, Gainesville, FL. Jan
11. *Bioenergetic Mechanisms of Ischemic Pathology*. Mary and Dick Holland Regenerative Medicine Program. University of Nebraska Medical Center, Omaha, NE, April 11, 2017.
10. *Mitochondriopathy in Peripheral Arterial Disease*. Department of Clinical and Translational Science. Creighton University School of Medicine, Omaha, NE, April 10, 2017.
9. *Bioenergetics of PAD myopathy*. Department of Applied Physiology and Kinesiology. University of Florida, Gainesville, FL, February 13, 2017.
8. *Mitochondria and Ischemic Myopathy*. ECU Joint Metabolism Meeting. East Carolina University, Greenville, NC, January 22, 2015.
7. *Mitochondrial Bioenergetics and Redox Biology*. SYMPOSIUM: Mitochondria function 2010 and Beyond. 61st Annual Meeting of the American College of Sports Medicine. Orlando, FL, May 28, 2014.
6. *Assessing In Vivo Mitochondrial Respiratory Capacity Using Optical Spectroscopy*. SEMINAR: Department of Health and Exercise Science, University of Oklahoma, February 17, 2014.
5. *In Vivo Measurements of Skeletal Muscle Mitochondrial Function*. SEMINAR: Department of Physiology, East Carolina University, Greenville, NC, January 17, 2013.
4. *Peripheral Adaptations and Training Responses after Spinal Cord Injury*. SYMPOSIUM: Exercise and Spinal Cord Injury. Annual Meeting of the Mid-Atlantic Region of the American College of Sports Medicine. November 7, 2012.
3. *Electrically-Induced Resistance Exercise in Paralyzed Muscle of Individuals with Spinal Cord Injuries*. SEMINAR: Graduate Student and Post Docs Association Annual Conference, University of Georgia, Athens, GA, May 20, 2011.
2. *Skeletal Muscle Plasticity in People with Complete Spinal Cord Injuries*. SEMINAR: WIPSCI Meeting, Shepherd Center, Atlanta, GA, March 24, 2011.

1. *Assessing Oxygen Delivery and Mitochondrial Function*. SYMPOSIUM: Annual Meeting of the Southeast Chapter of the American College of Sports Medicine, Greenville, SC, February 16, 2011.

SERVICE

- Member, PVD Clinical & Translational Vascular Science Committee, Council for Peripheral Vascular Disease, American Heart Association, 2024-Present
- Member, HHP Tenure & Promotion Committee, 2024-2026
- HHP Graduation Marshall, Summer 2025
- Member, HHP Research Council, 2023-2024
- Co-Director, Center for Exercise Science, University of Florida, 2023-Present
- Chair, APK Search Committee for Assistant Professor, 2023-2024
- Chair, APK Search Committee for Assistant Professor, 2021-2022
- HHP Graduation Marshall, 2022
- APK Search Committee for Research Engineer, 2021
- Chair, APK Search Committee for Research Administrator I, 2021
- APK Search Committee for Assistant Professor, 2020-2021
- Translational Biomedical Science Review Committee, Office of Research Seed Funding, 2020-Present
- Stanley Lecture and Research Symposia Poster Judge, 2018-2019
- Graduate Curriculum Committee, 2019-Present
- PhD Evaluation/TA Selection Committee, 2019-Present