

Stephen Decker, Ph.D., ACSM-CEP

Postdoctoral Research Associate

Curriculum Vitae

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Academic & Research Training

March 2023-Present	Postdoctoral Research Associate University of Utah ➤ Primary Mentor: Katsu Funai, Ph.D. [PubMed]	Salt Lake City, Utah
Nov 2022-March 2023	Research Project Manager Institute for Applied Life Sciences - University of Massachusetts Amherst ➤ Primary Supervisor: Mike Busa, Ph.D. ➤ Oversaw industry-funded projects involving wearable biosensors and other collaborative projects for the Center for Human Health and Performance	Amherst, Massachusetts
Aug 2018-Nov 2022	Doctor of Philosophy, Kinesiology (Physiology) University of Massachusetts Amherst ➤ Primary Mentor: Gwenael Layec, Ph.D. [PubMed] ➤ Dissertation Project: Mechanisms of Cigarette Smoke-Induced Mitochondrial Dysfunction in Striated Muscle and Aorta	Amherst, Massachusetts
Jul 2017-Aug 2018	Doctor of Philosophy, Nutrition and Integrative Physiology University of Utah ➤ Primary Mentor: Gwenael Layec, Ph.D. ➤ Transferred to University of Massachusetts Amherst	Salt Lake City, Utah
May 2016-Jul 2017	Research Clinical Exercise Physiologist Baylor College of Medicine ➤ Primary Supervisor: Dennis T Villareal, MD [PubMed] ➤ Prepared and administered exercise testing and prescription for high-risk older adults involved in various clinical research trials	Houston, Texas
Aug 2016	Master of Science, Kinesiology Stephen F. Austin State University ➤ Primary Mentor: James Rowe, Ph.D. ➤ Thesis Project: Effects of High-Intensity Interval Training on Postprandial Lipemia and Glycemia	Nacogdoches, Texas
May 2014	Bachelor of Science, Kinesiology Stephen F. Austin State University ➤ Graduated with Honors, Cum Laude	Nacogdoches, Texas

Publications

In Press

As First Author

1. **Decker, ST**, Matias, AA, Cuadra, AE, Erol, ME, Serviente, C, Fenelon, K, Layec, G (2023), Tissue-specific mitochondrial toxicity of cigarette smoke concentrate: consequence to oxidative phosphorylation, *American Journal of Physiology - Heart and Circulatory Physiology*
2. **Decker, ST**, Alexandrou-Majaj, N, Layec, G (2023), Effects of Acute Cigarette Smoke Exposure on Mitochondrial Energy Transfer in Fast and Slow Twitch Skeletal Muscle, *Biochimica et Biophysica Acta - Bioenergetics* [PubMed]
3. **Decker, ST**, Matias, AA, Bannon, ST, Madden, JP, Alexandrou-Majaj, N, Layec, G (2023), Effects of Cigarette Smoke on *In Situ* Mitochondrial Substrate Oxidation of Slow- and Fast-Twitch Skeletal Muscles, *Life Sciences* [PubMed]
4. Kwon, OS, **Decker, ST**, Zhao, J, Hoidal, JR, Hueckstadt, T, Sanders KA, Richardson, RS, Layec, G (2022), The Receptor for Advanced Glycation End Products (RAGE) is involved in Mitochondrial Function and Cigarette Smoke-Induced Oxidative Stress, *Free Radical Biology & Medicine* [PubMed]

5. **Decker, ST**, Kwon, OS, Zhao, J, Hoidal, JR, Hueckstadt, T, Sanders, KA, Richardson, RS, Layec, G (2021), Skeletal muscle Mitochondrial Adaptations Induced by Long-term Cigarette Smoke Exposure, *American Journal of Physiology Endocrinology & Metabolism* [PubMed]

As Co-author

6. Serviente, C, **Decker, ST**, Layec, G (2022), From heart to muscle: pathophysiological mechanisms underlying long-term physical sequelae from SARS-CoV-2 infection, *Journal of Applied Physiology*, [PubMed]
7. Li, X, Conlin, CC, **Decker, ST**, Hu, N, Mueller, M, Khor, L, Hanrahan, C, Layec, G, Lee, VS, Zhang, JL (2019), Sampling Arterial Input Function (AIF) from Peripheral Arteries: Comparison of a Temporospatial-feature Based Method Against Conventional Manual Method, *Magnetic Resonance Imaging* [PubMed]

Under Review

1. **Decker, ST**, Vance, JE, Funai, K, Mitochondrial Lipids in the Regulation of Energy Flux through OXPHOS, Invited Review in *Nature Reviews Molecular Cell Biology*

In Preparation

1. **Decker, ST**, Bannon, ST, Huang, T, Erol, ME, Layec, G, Effects of Acute Cigarette Smoke Exposure on Simultaneous Measurements of Mitochondrial Oxygen Consumption and ROS Production *In Situ*
2. **Decker, ST**, Matias, AA, Bannon, ST, Madden, JP, Erol, ME, Chipkin, S, Kent, JA, Miller, M, Layec, G, Effects of Sedentary Time on *In Situ* Mitochondrial Substrate Oxidation Across the Human Lifespan
3. Matias, AA, Serviente, C, **Decker, ST**, Erol, ME, Giuriato, G, Nagarajan, R, Le Fur, Y, Layec, G, ³¹P-MRS of Alkaline Inorganic Phosphate in Young, Sedentary Adults: A Reproducibility Study
4. Matias, AA, Thurston, T, **Decker, ST**, Hart, CH, Zhao, J, Le Fur, Y, Jeong, EK, Trinity, JD, Kwon, OS, Layec, G, Central and Peripheral Cardiovascular Responses to Submaximal Plantar Flexion Exercise in Patients with COPD

Selected Posters & Abstracts

1. **Decker, ST**, et al. (2022), Effects of Cigarette Smoke on *In Situ* Mitochondrial Substrate Oxidation on Slow- and Fast-Twitch Skeletal Muscles, *Institute of Applied Life Sciences Core Showcase* (Amherst, MA)
2. **Decker, ST**, et al. (2020), Oxidative Stress Induced By Long-Term Cigarette Smoke Exposure Does Not Alter Mitochondrial Respiration in Skeletal Muscle of C57BL6 Mice, *Keystone Symposium: New Insights into the Biology of Exercise* (Keystone, CO)
3. **Decker, ST**, et al. (2019), Knockout of the Receptor for Advanced Glycation End Products (RAGE) Increases Skeletal Muscle Mitochondria Content and Alters Mitochondrial Function, *Muscle Biology Conference* (Gainesville, FL)
4. Layec, G, Conlin, C, Dong, J, **Decker, ST**, et al. (2018), Assessment of Perfusion-metabolism matching in exercising muscle from dynamic contrast-enhanced MRI and T2 mapping, *International Society for Magnetic Resonance in Medicine* (Paris, FR)
5. Conlin, C, Dong, J, **Decker, ST**, et al. 2018, Reproducibility of calf-muscle perfusion measurements from dynamic contrast-enhanced MRI, *International Society for Magnetic Resonance in Medicine* (Paris, FR)
6. **Decker, ST**, et al. 2018, Effects of Tetrahydrobiopterin on Limb Blood Flow and Muscle Metabolism in Patients with COPD, *American College of Sports Medicine Annual Meeting* (Minneapolis, MN)
7. **Decker, ST**, Rowe, J, 2017 Effects of Acute Exercise on Postprandial Lipemia and Postprandial Glycemia, *Texas American College of Sports Medicine Regional Conference* (Waco, TX)

Oral Presentations

Nov 2021	Connecting the Dots of the Power Grid: Assessing mitochondrial membrane potential and ADP/ATP translocase activity in permeabilized skeletal muscle fiber bundles University of Massachusetts Amherst Department of Kinesiology
Nov 2019	The Physiological Role of Sirtuins: A Target for Aging or More Hype? University of Massachusetts Amherst Department of Kinesiology
May 2019	Effects of Tetrahydrobiopterin on Limb Blood Flow and Muscle Metabolism in Patients with COPD International Society for Magnetic Resonance in Medicine - Montreal, Quebec

Funding

Sept 2023	T32 Fellowship University of Utah Diabetes and Metabolism Research Center	Awarded (Fellowship)
July 2023	Research Grant National Kidney Foundation of Utah & Idaho	Awarded (\$15,000)
Mar 2020	Research Travel Award Recipient UMass Amherst Department of Kinesiology	Awarded \$500
May 2019	Trainee Stipend Award Recipient International Society for Magnetic Resonance in Medicine	Awarded \$200 & Conference Registration
Mar 2016	Student Research Development Award Recipient Texas American College of Sports Medicine	Awarded \$500

Honors & Awards

Feb 2017	Student Research Poster Finalist - Masters Category Texas American College of Sports Medicine
Feb 2014	SFASU Undergraduate Research Conference Top Scholar Stephen F. Austin State University School of Honors

Professional Development and Training

Current	American College of Sports Medicine Member <ul style="list-style-type: none"> ➤ Certified Clinical Exercise Physiologist ➤ Certified Exercise Physiologist ➤ Exercise is Medicine Credential Level 3 	Indianapolis, Indiana
Current	American Physiological Society Member	Rockville, Maryland
Current	International Society for Magnetic Resonance in Medicine Member	Concord, California
Jun 2019	Oroboros O2k-Workshop on High-Resolution Respirometry (HRR) Oroboros Instruments	Schröcken, Austria

Mentoring

Graduate

2023-Present	Precious Chinonyerem Opurum Currently pursuing a PhD at the University of Utah <ul style="list-style-type: none"> ➤ Trained on mitochondrial respiration, mouse handling and model generation, statistical analyses in R, and renal physiology
2020-2023	M Enes Erol Currently pursuing a PhD at the University of Massachusetts Amherst <ul style="list-style-type: none"> ➤ Trained on mitochondrial respiration, Doppler ultrasound, phlebotomy, spectrophotometry, MR spectroscopy, and other lab techniques ➤ Mentored in statistical and data analysis, principles of human physiology, and scientific writing
2019-2022	Alexs Matias Currently pursuing a PhD at the University of Delaware <ul style="list-style-type: none"> ➤ Trained on mitochondrial respiration, Doppler ultrasound, phlebotomy, and MR spectroscopy ➤ Mentored in statistical and data analysis and principles of human physiology

Undergraduate

* Denotes students who worked on undergraduate honors thesis projects

2023-Present	Venisia Paula Pacific Islander Research Internship Program Fellow <ul style="list-style-type: none"> ➤ Currently training on mouse handling, Oxygraph O2K, renal physiology
2022-2023	Tiana Huang <ul style="list-style-type: none"> ➤ Trained how to collect skeletal muscle mitochondrial respiration data using the Oxygraph O2K
2021-2023	*Sean Bannon Undergraduate Honors Thesis: Role of MitoTEMPO in Attenuating Mitochondrial Dysfunction in Skeletal Muscle Tissue Induced by Cigarette Smoke <ul style="list-style-type: none"> ➤ Currently serving on honors thesis committee ➤ Trained how to collect skeletal muscle mitochondrial respiration data using the Oxygraph O2K
2021-2023	William Callahan <ul style="list-style-type: none"> ➤ Trained how to collect skeletal muscle mitochondrial respiration data using the Oxygraph O2K
2020-2022	*Mia Calderone Undergraduate Honors Thesis: Effects of Heat Therapy on Cardiovascular and Muscular Health in Long-Haul COVID-19 Patients <ul style="list-style-type: none"> ➤ Trained how to collect skeletal muscle mitochondrial respiration data using the Oxygraph O2K
2019-2022	John Madden <ul style="list-style-type: none"> ➤ Trained how to collect skeletal muscle mitochondrial respiration data using the Oxygraph O2K
2018-2020	*Jyotika Vallurupalli Undergraduate Honors Thesis: Investigating the Roles of COVID-19 on Vascular Function <ul style="list-style-type: none"> ➤ Trained the assessment of vascular function using Doppler Ultrasound and continuous non-invasive arterial pressure
2018-2020	*Sebastien Rauch Undergraduate Honors Thesis: Validity and Specificity of Tetramethylrhodamine, Methyl Ester (TMRM) Dye in Mice Gastrocnemius Muscle Fiber Bundles for Assessing Mitochondrial Membrane Potential <ul style="list-style-type: none"> ➤ Trained how to collect skeletal muscle mitochondrial respiration data using the Oxygraph O2K & assessment of vascular function using Doppler Ultrasound
2018-2020	Todd Maniscalchi <ul style="list-style-type: none"> ➤ Trained how to collect skeletal muscle mitochondrial respiration data using the Oxygraph O2K & assessment of vascular function using Doppler Ultrasound
2018-2020	Joseph Howard <ul style="list-style-type: none"> ➤ Trained how to collect skeletal muscle mitochondrial respiration data using the Oxygraph O2K

Teaching Experience

* Denotes Graduate-level Class

Instructor of Record

Summer 2021	KIN 272 - Anatomy & Physiology II University of Massachusetts Amherst
Fall 2015 & Spring 2016	KIN 100 - Physical Fitness Concepts and Activities Stephen F. Austin State University
Spring 2015	KIN 120 - Foundations of Kinesiology Stephen F. Austin State University
Fall 2014	KIN 200 - Fitness Activities for Life Stephen F. Austin State University

Teaching Assistant

Spring 2021 & 2022	KIN 470 - Exercise Physiology University of Massachusetts Amherst
Fall 2020	KIN 270 - Anatomy & Physiology I University of Massachusetts Amherst
Fall 2019	*KIN 570 - Advanced Exercise Physiology University of Massachusetts Amherst
Fall 2018 & Spring 2019	KIN 110 - Human Performance and Nutrition University of Massachusetts Amherst
Fall 2015 & Spring 2016	KIN 417 - Analysis of Movement Lab Stephen F. Austin State University