

# STEPHEN DECKER

MS, CEP



## ACADEMIC TRAINING

2022  
|  
2018

### Ph.D. in Kinesiology

University of Massachusetts Amherst

Amherst, Massachusetts

- Mentor: Gwenaél Layec, Ph.D. [PubMed](#)
- Dissertation: The Role of Sirtuins and BH<sub>4</sub> in Cigarette Smoke-Induced Skeletal Muscle Dysfunction
- Mastered High-Resolution Respirometry in mice and humans, and Doppler Ultrasound in humans by conducting dozens of independent experiments. Proficient in human <sup>31</sup>P-MRS and immunohistochemistry. I have also performed pilot experiments assing H<sub>2</sub>O<sub>2</sub> and mitochondrial membrane potential in permeabilized skeletal muscle.

2018  
|  
2017

### PhD. in Nutrition & Integrative Physiology

University of Utah

Salt Lake City, Utah

- Mentor: Gwenaél Layec, Ph.D.
- Transferred to the University of Massachusetts Amherst

2017  
|  
2016

### Clinical Exercise Physiologist

Baylor College of Medicine

Houston, Texas

- Supervisor: Dennis T Villareal, MD [PubMed](#)
- Responsible for all clinical research exercise testing, prescription, and supervision over exercise sessions with high-risk clinical populations. All work was part of several clinical trials where I also analyzed and prepared the data for reporting.
- I mastered V<sub>O<sub>2</sub>max</sub> tests with EKG, phlebotomy, muscle performance tests, and DXA scans by performing hundreds of successful tests on high-risk clinical populations, including elderly individuals with diagnosed heart diseases, PAD, hypertension, diabetes, arthritis, osteoporosis, and hypogonadism.

2016  
|  
2014

### M.S. in Kinesiology

Stephen F. Austin State University

Nacogdoches, Texas

- Mentor: Dr. James Rowe
- Thesis: Effects of High-Intensity Interval Training on Postprandial Lipemia and Glycemia

2014  
|  
2010

### B.S. in Kinesiology

Stephen F. Austin State University

Nacogdoches, Texas

- Graduated with honors, Cum Laude

## CONNECT WITH ME

[stdecker@umass.edu](mailto:stdecker@umass.edu)

(713) 452-9516

[@decker\\_st](#)

## LINKS & RESOURCES

[PubMed](#)  
 [LinkedIn](#)  
 [ResearchGate](#)  
 [Github](#)  
 [Medium](#)

## SKILLS

High-Resolution Respirometry

Doppler Ultrasound

Exercise Testing

Phlebotomy

Undergraduate Mentoring

In Vivo MR Spectroscopy

R

NIRS

Microdialysis

## ONGOING PROJECTS

*A Guide for the Analysis of High-Resolution Respirometry Data Using R: Version 2 Available on my [GitHub](#)*

*respirometR* a package for analyzing Oxygraph O2K data using R (under development)

*Last updated on 2021-04-19 using R version 4.0.5 and [pagedown](#).*



## PUBLICATIONS

2021



### **Skeletal muscle Mitochondrial Adaptations Induced by Long-term Cigarette Smoke Exposure**

**Decker, ST**, Kwon, OS, Zhao, J, Hoidal, JR, Hueckstadt, T, Richardosn, RS, Sanders, KA, Layec, G

*American Journal of Physiology-Endocrinology & Metabolism*

2019



### **Sampling Arterial Input Function (AIF) from Peripheral Arteries: Comparison of a Temporospatial-feature Based Method Against Conventional Manual Method [\[PubMed\]](#)**

Li, X, Conlin, CC, **Decker, ST**, Hu, N, Mueller, M, Khor, L, Hanrahan, C, Layec, G, Lee, VS, Zhang, JL

*Magnetic Resonance Imaging*

In  
Preparation



### **The Receptor for Advanced Glycation End Products (RAGE) Mediates Cigarette Smoke-Induced Skeletal Muscle Adaptations in C57BL/6 Mice**

**Decker, ST**, Kwon, OS, Zhao, J, Hoidal, JR, Hueckstadt, T, Sanders, KA, Layec, G

In  
Preparation



### **<sup>31</sup>P-MRS of Alkaline Inorganic Phosphate in Young, Sedentary Adults: A Reproducibility Study**

Matias, AA, **Decker, ST**, Nagarajan, R, Le Fur, Y, Layec, G

In  
Preparation



### **Central and Peripheral Cardiovascular Responses to Submaximal Plantar Flexion Exercise in Patients with COPD**

Matias, AA, Thurston, T, **Decker, ST**, Hart, CH, Zhao, J, Le Fur, Y, Jeong, EK, Trinity, JD, Kwon, OS, Layec, G



## ORAL PRESENTATIONS

2019



### **The Physiological Role of Sirtuins: A Target for Aging or More Hype?**

UMass Amherst Department of Kinesiology

📍 Amherst, Massachusetts

2019



### **Effects of Tetrahydrobiopterin on Limb Blood Flow and Muscle Metabolism in Patients with COPD**

ISMRM Annual Meeting

📍 Montreal, Quebec



## SELECTED POSTERS & ABSTRACTS

2020



### **Oxidative Stress Induced By Long-Term Cigarette Smoke Exposure Does Not Alter Mitochondrial Respiration in Skeletal Muscle of C57BL/6 Mice**

New Insights into the Biology of Exercise

📍 Keystone, Colorado

- 2019 ● **Knockout of the Receptor for Advanced Glycation End Products (RAGE) Increases Skeletal Muscle Mitochondria Content and Alters Mitochondrial Function**  
Muscle Biology Conference  Gainesville, Florida
- 2018 ● **Effects of Tetrahydrobiopterin on Limb Blood Flow and Muscle Metabolism in Patients with COPD**  
ACSM Annual Meeting  Minneapolis, Minnesota
- 2017 ● **Effects of Acute Exercise on Postprandial Lipemia and Postprandial Glycemia**  
Texas ACSM Regional Conference  Waco, Texas

## \$ FUNDING






- 2020 ● **Research Travel Award Recipient**  
UMass Amherst Department of Kinesiology  
Awarded \$500
- 2019 ● **Predoctoral Fellowship**  
American Heart Association  
Not Funded
- 2019 ● **Trainee Stipend Award**  
International Society for Magnetic Resonance in Medicine  
Awarded \$200 and Conference Registration
- 2016 ● **Student Research Development Award**  
Texas American College of Sports Medicine  
Awarded \$500

## HONORS AND AWARDS

- 2017 ● **Student Research Poster Finalist - Masters Category**  
Texas American College of Sports Medicine  Waco, Texas
- 2014 ● **Undergraduate Research Conference Top Scholar**  
Stephen F. Austin State University School of Honors  Nacogdoches, Texas



## TEACHING EXPERIENCE

- 2021 ● **KIN 272 - Anatatomy and Physiology II (Instructor of Record)**  
University of Massachusetts Amherst  Amherst, Massachusetts
- Instructed 1 section of A&P II to over 20 undergraduate students with the goal of understanding human anatomy and physiology and applying that understanding to career goals and real-life case studies.
- 2021 ● **Kin 470 - Exercise Physiology Lab (TA)**  
University of Massachusetts Amherst  Amherst, Massachusetts
- Led 2 sections of Exercise Physiology Lab to over 20 upper-level undergraduate students with the goal of advancing student understanding of physiology and applying that understanding to career goals and real-life case studies.
- 2020 ● **KIN 270 - Anatatomy and Physiology I Lab (TA)**  
University of Massachusetts Amherst  Amherst, Massachusetts
- Led 5 sections of A&P I Lab to over 30 undergraduate students with the goal of understanding human anatomy and physiology and applying that understanding to career goals and real-life case studies.
- 2019 ● **Kin 570 - Advanced Exercise Physiology (TA)**  
University of Massachusetts Amherst  Amherst, Massachusetts
- Aided in teaching 15 graduate students (M.S.- & Ph.D.-level) with the goal of advancing students' understanding of advanced topics in human physiology.
- 2019  
|  
2018 ● **Kin 110 - Human Performance and Nutrition (TA)**  
University of Massachusetts Amherst  Amherst, Massachusetts
- Led 7 discussion sections to over 200 undergraduate students over the course of 2 semesters with the goal of teaching students about healthy lifestyles.
- 2016  
|  
2015 ● **Kin 100 - Physical Fitness Concepts and Activities (Instructor of Record)**  
Stephen F. Austin State University  Nacogdoches, Texas
- Instructed 1 section of over 30 students with the goal of providing students insights to a healthy lifestyle.
- 2015 ● **KIN 120 - Foundations of Kinesiology (Instructor of Record)**  
Stephen F. Austin State University  Nacogdoches, Texas
- Instructed 1 section of over 30 students with the goal of introducing students to the field of kinesiology.
- 2014 ● **KIN 200 - Fitness Activites for Life (Instructor of Record)**  
Stephen F. Austin State University  Nacogdoches, Texas
- Instructed 1 section of over 30 students with the goal of developing student-centered fitness plans and goals which can be used throughout life.

2016  
|  
2012



## American Red Cross CPR and Lifeguarding Instructor

Various

📍 Texas

Led dozens of independent Lifeguard and CPR/AED + First Aid courses to hundreds of lifeguards.



## PROFESSIONAL DEVELOPMENT & TRAINING

Current



### Certified Clinical Exercise Physiologist

American College of Sports Medicine

📍 Indianapolis, Indiana

Current



### Certified Exercise Physiologist

American College of Sports Medicine

📍 Indianapolis, Indiana

2019



### Oroboros O2k-Workshop on High-Resolution Respirometry (HRR)

Oroboros Instruments

📍 Schröcken, Austria



## UNDERGRADUATE TRAINEES

Present

|  
2020



### Mia Calderone

Trained how to collect skeletal muscle mitochondrial respiration data using the Oxygraph O2K and the assessment of vascular function using Doppler Ultrasound

Present

|  
2020



### Jack Madden

Trained how to collect skeletal muscle mitochondrial respiration data using the Oxygraph O2K

2018

|  
2021



### Jyotika Vallurupalli

Trained the assessment of vascular function using Doppler Ultrasound and continuous non-invasive arterial pressure

2020

|  
2018



### Sebastien Rauch

**Honors Thesis:** Validity and Specificity of Tetramethylrhodamine, Methyl Ester (TMRM) Dye in Mice Gastrocnemius Muscle Fiber Bundles for Assessing Mitochondrial Membrane Potential