

**Curriculum Vitae**  
**Jesse D. Moreira, PhD**  
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Current as of 25 January 2022

**Academic Training:**

4/2021 Ph.D. Boston University, Boston, MA; Human Physiology – Integrative Physiology  
5/2018 M.S. Boston University, Boston, MA; Human Physiology  
5/2017 B.A. Salem State University, Salem, MA; Magna Cum Laude, Biology

**Post-Doctoral Training:**

5/2021-Present Mitochondrial Genetics and Cardiovascular Pathophysiology, Dr. Jessica Fetterman. Dr. Deepa Gopal, Dr. Darrell Kotton, Boston University School of Medicine, Boston, MA

**Honors:**

**Institutional**

1/2015 Alpha Lambda Delta Honor Society Induction; Salem State University  
5/2017 Residence Life Stepping It Up Award; Salem State University  
5/2017 Phi Kappa Phi Honor Society Induction; Salem State University  
5/2017 Magna Cum Laude Bachelor of Arts; Salem State University  
4/2021 40 Alumni Under 40; Salem State University

**Regional**

5/2016 Sigma Xi Research Honor Society Induction, North Shore MA Chapter; Salem State University

**National**

4/2020 Caroline tum Suden/Frances Hellebrandt Professional Opportunity Award; American Physiology Society  
9/2020 Top Trainee Investigator Award; American Heart Association Council on Hypertension

**Academic Teaching Experience:**

***Boston University Sargent College***

2018 Lab Instructor, Gross Human Anatomy  
2019 Lecture Fellow, Cardiopulmonary Pathophysiology  
2020 Lab Instructor, Human Neuroanatomy and Neurophysiology  
2021 Instructor of Record, Cardiovascular Pathophysiology

Dates	Course	N, Learners	Description	Student Feedback
Boston University Sargent College				
9/2018-12/2018	SAR HS 369/581 Gross Human Anatomy  Lab Instructor	18 students/section,  2 sections,  8 contact hours/week	Topics I lectured: Whole body gross anatomy including musculoskeletal, vascular, and nervous systems; clinical palpations	
1/2019-5/2019	SAR HS 375/575 Cardiopulmonary Pathophysiology  Lecture Fellow	~90 students,  1 section,  5 contact hours/week	Topics I lectured: cardiovascular and pulmonary anatomy, cardiac electrophysiology and the pharmacologic management of arrhythmia, long-term blood pressure regulation, the pharmacologic management of asthma and COPD	
9/2019-12/2019	SAR HS 375/575 Cardiovascular Pathophysiology  Lecture Fellow	~60 students,  1 section  5 contact hours/week	*New course I developed splitting former Cardiopulmonary course into 2 separate courses* Topics I lectured: Cardiac anatomy, pressure-volume loops, adrenergic signaling and pharmacology of sympathomimetics, long-term blood pressure regulation, renal blood flow control, hypertension pathophysiology	

<p>1/2020-5/2020</p>	<p>SAR HS 370/582  Human Neuroanatomy and Neurophysiology  Lab Instructor</p>	<p>18 students/section,  2 sections,  8 contact hours/week</p>	<p>Topics I lectured: Neurulation and development, neurocytology and histologic identification of neural cells, gross anatomy of the central nervous system, vascular supply and organization of the ventricular system, neuropathology of spinal lesions</p>	
<p>9/2021-12/2021</p>	<p>SAR HS 375 Cardiovascular Pathophysiology  Instructor of Record</p>	<p>~100 students,  1 section,  5 contact hours/week</p>	<p>Topics lectured: Cardiovascular anatomy, cardiac development, cardiac muscle and endothelial cell biology, adrenergic signaling, cardiac pressure-volume loops and cardiac function, short-long term blood pressure regulation, hemodynamics, pharmacology, heart failure and hypertension pathobiology. Constructed examinations and quizzes, held office hours, used APS curricular guidelines to format course, mentored TA.</p>	<p>“He explains concepts clearly and is caring towards students. Truly amazing, grades in a timely manner, answers emails promptly”  “Dr. Moreira has been extremely accommodating, kind, and a leader of respectful discussion and learning this whole semester”  “Jesse Moreira is well within the top 5% most effective, caring, and overall beneficial instructors that I have experienced across both undergraduate and graduate courses. He is clearly knowledgeable in the field, yet makes information approachable and clear, shows a willingness to learn from his students as much as we learn from him, and makes every effort made for his course truly worth it.”</p>

**Mentoring Table, Boston University**

<b>Mentee, degree(s)</b>	<b>Dates</b>	<b>Training Position</b>	<b>Content/Product resulting from relationship</b>	<b>Current Position</b>
Eric A. Abkin, Master of Science in Human Physiology	1/2019- 5/2020	Master's degree student	Research methods of in-vivo cardiovascular physiology	Physician Assistant student at Saint Elizabeth University
Kayleigh Berthiaume, Master of Science in Human Physiology	09/2021- 12/2021	Teaching Fellow in Cardiovascular Pathophysiology	Proper lecture development and effective delivery methods	Pre-med applicant (MD/PhD programs)

**Other Professional Activities:**

**Professional Societies: Memberships, Offices, and Committee Assignments:**

**Memberships:**

- 5/2018-Present American Physiological Society
- 6/2018-Present American Heart Association
- 5/2019-Present American Association for Anatomy
- 5/2019-Present The Physiological Society (U.K.)

**Other Assignments:**

- 2018-2021 Ad-hoc Reviewer, American Journal of Physiology – Heart & Circulatory Physiology
- 2021-Present Junior Reviewing Member, American Journal of Physiology – Heart & Circulatory Physiology
- 2021-Present Ad-hoc Reviewer, American Journal of Physiology – Regulatory, Integrative, & Comparative Physiology
- 2021-Present Ad-hoc Reviewer, Frontiers in Physiology

**Grant support:**

**Current:**

- 5/2021-Present 5 T32 HL007224-45 PI: Naomi Hamburg and Richard Wainford; Mentors: Jessica Fetterman and Darrell Kotton; Multidisciplinary training in cardiovascular research, provides my salary support and training expenses for two years.
- 1/2022-Present Whitaker Cardiovascular Institute Pilot Grant. PI: Jesse D. Moreira; The Effect of Mitochondrial Haplogroup on Baseline Metabolism in iPSC-Cardiomyocytes; provides research funding for one year pilot study.

**Invited Lectures and Conference Presentations:**

**National Presentations**

***Keystone Scientific Symposia***

February 2022 Systematic Dissection, Preservation, and Multiomic Studies of Whole Human Hearts, Keystone Symposium on Heart Failure: Novel Mechanisms, Breckenridge, CO. *Cancelled due to COVID-19.*

***Experimental Biology Meeting***

April 9, 2019 Inhibition of Microgliosis with Minocycline Attenuates Central Inflammation Driving  $G\alpha_{i2}$  Protein Dependent Sympathetically Mediated Salt Sensitive Hypertension, American Physiological Society, Experimental Biology meeting, Orlando, FL.

April 2020 Microglial-Mediated PVN Inflammation Precedes Sympathoexcitation but not Hypertension in the Development of  $G\alpha_{i2}$  Protein-Dependent Salt Sensitive Hypertension, American Physiological Society, Experimental Biology meeting, *cancelled due to COVID-19.*

***American Heart Association Hypertension Scientific Sessions Meeting***

September 3, 2018 PVN Inflammation Contributes to Brain  $G\alpha_{i2}$  Protein Dependent Sympathetically Mediated Salt Sensitive Hypertension, American Heart Association Hypertension Scientific Sessions, Chicago, IL.

September 7, 2019 PVN-Specific Microgliosis Drives Inflammation in G-Alpha-i<sub>2</sub> Protein Dependent Salt Sensitive Hypertension and  $G\alpha_{i2}$  Snps Correlate With Essential Hypertension, American Heart Association Hypertension Scientific Sessions, New Orleans, LA.

September 9, 2020 PVN-specific Microgliosis and Inflammation Precede Sympathoexcitation In  $G\alpha_{i2}$  Protein-dependent, Salt-sensitive Hypertension, American Heart Association Hypertension Scientific Sessions, virtual event.

**Local Presentations**

***Salem State University***

June 17, 2020 Careers in Research: Academia vs. Industry and the Pursuit of Graduate Education in the Biomedical Sciences, Salem State Biology Department Senior Professional Development Seminar, Salem, MA.

February 26, 2021 Salty Microglia: Gaining Mechanistic Insight into Sodium-Dependent Hypertension. Charles Albert Read Trust Alumni Lecture, Salem State University Darwin Festival, Salem, MA.

July 1, 2021 The Do's and Do Not's of Applying to Graduate School: Transitioning from Undergraduate to a Doctoral Program in the Life Sciences, Salem State Biology Department Senior Professional Development Seminar, Salem, MA.

***Boston University***

- February 18, 2020 Sex-Dependent, Microglial-mediated Neuroinflammatory Mechanisms in  $G\alpha_{i2}$  Protein-dependent, Salt-sensitive Hypertension, Whitaker Cardiovascular Institute Seminar Series, Boston University School of Medicine, Boston, MA.
- February 4, 2021 Choosing a Career in Academic Research, First Year Seminar in Diversity in Health Careers, Boston University College of Arts and Sciences, Boston, MA.
- December 14, 2021 A Cellular Approach to Identify the Pathobiology of Mitochondrial Cardiomyopathy, Whitaker Cardiovascular Institute Seminar Series, Boston University School of Medicine, Boston, MA.
- February 3, 2022 Career Opportunities in Academic Laboratories, First Year Seminar in Diversity in Health Careers, Boston University College of Arts and Sciences, Boston, MA.

## Bibliography

**ORCID: 0000-0002-5644-2540 ; Pubmed link:**

### Original, Peer Reviewed Research Articles:

1. Kandarian, S.C., Nosacka, R.L., Delitto, A.E., Judge, A.R., Judge, S.M., Ganey, J.D., **Moreira, J.D.**, and Jackman, R.W. (2018) Tumour-derived leukaemia inhibitory factor is a major driver of cancer cachexia and morbidity in C26 tumour-bearing mice. *Journal of Cachexia, Sarcopenia and Muscle*, DOI: 10.1002/jcsm.12346; PMID: 30270531.
2. **Moreira, J.D.**, Chaudhary, P., Frame, A.A., Puleo, F., Nist, K.M., Abkin, E.A., Moore, T.L., George, J.C., Wainford, R.D. (2019) Inhibition of Microglial Activation in Rats Attenuates Central Inflammation in  $G\alpha_{i2}$  Protein Dependent Salt Sensitive Hypertension. *Exp Physiol. Dec*; 104(12):1892-1910. DOI: 10.1113/EP087924; PMID: 31631436.  
\* **Received editorial press release through Physiological Society for public health relevance.**  
\* **In top 5% of all research outputs scored by Altmetric as of 7/7/2021.**
3. Carmichael, C.Y., Kuwabara, J.T., Pascale, C.L., **Moreira, J.D.**, Mahne, S.E., Kapusta, D.R., Rosene, D.L., Williams, J.S., Cunningham, T.J., Wainford, R.D. (2020) Hypothalamic PVN  $G\alpha_{i2}$ -Protein Mediated Neural Control of the Kidney and the Salt Sensitivity of Blood Pressure. *Hypertension. Apr*; 75(4):1002-1011. DOI: 10.1161/HYPERTENSIONAHA.119.13777; PMID: 32148128.  
\***Trending Topic in Hypertension in March 2020.**
4. Puleo, F., Kim, K., Frame, A.A., Walsh, K.R., Ferdaus, M.Z., **Moreira, J.D.**, Comsti, E., Faudoa, E., Nist, K.M., Abkin, E.A., Wainford, R.D. (2020) Sympathetic Regulation of the NCC (Sodium Chloride Cotransporter) in Dahl Salt-Sensitive Hypertension. *Hypertension. Nov*; 76(5):1461-1469. DOI: 10.1161/HYPERTENSIONAHA.120.15928; PMID: 32981364.
5. **Moreira, J.D.**, Nist, K.M., Carmichael, C.Y., Kuwabara, J.T., Wainford, R.D. (2021) Sensory afferent renal nerve activated  $G\alpha_{i2}$  subunit proteins mediate the natriuretic, sympathoinhibitory and

normotensive responses to peripheral sodium challenges. *Front. Physiol.* 12:771167. doi: 10.3389/fphys.2021.771167 ; PMID: 34916958

**Invited Review Articles:**

1. **Moreira, J.D.,** Gopal, D.M., Kotton, D.N., Fetterman, J.L. (2021) Gaining Insight into Mitochondrial Genetic Variation and Downstream Pathophysiology: What Can iPSCs Do? *Genes* Oct;12, 1668. [https:// doi.org/10.3390/genes12111668](https://doi.org/10.3390/genes12111668).