

DR. JASON M. DEFREITAS

Curriculum Vitae

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Education

<i>May 2013</i>	Ph.D.	Exercise Physiology University of Oklahoma
<i>June 2009</i>	M.S.	Exercise Physiology University of Oklahoma
<i>May 2007</i>	B.S.	Exercise Science University of Connecticut Concentration: <i>Strength and Conditioning</i>

Professional Experience

Syracuse University (< 1 year) – Department of Exercise Science

- 2024 – *Present*: Professor and Department Chair
- 2024 – *Present*: Director, Neural Health Research Laboratory

Oklahoma State University (11 years) – School of Kinesiology, Applied Health & Rec

- 2019 – 2024: Associate Professor of Health & Human Performance (with tenure)
- 2017 – 2024: Program Area Coordinator for Health & Human Performance
 - *Role: Managing and Leading 3 degree programs, including 11 faculty and 30 graduate assistants. Create and design curricula, manage course offerings, assign teaching loads, space management, etc.*
- 2013 – 2024: Director, Applied Neuromuscular Physiology Lab
- 2013 – 2019: Assistant Professor of HHP (pre-tenure)

University of Oklahoma (6 years) – Department of Health and Exercise Science

- 2007 – 2013: Graduate Research/Teaching Assistant
Advisor: Dr. Travis W. Beck

Professional Memberships

- Society for Neuroscience (SfN)
- American Physiological Society (APS)
- American College of Sports Medicine (ACSM)
- International Society of Electrophysiology and Kinesiology (ISEK)
- National Strength and Conditioning Association (NSCA)

Awards and Honors

- **President's Fellows Faculty Research Award – 2021**
One of 4 recipients to have their research recognized and supported by the President's Fellows, a group of the University's most generous donors. This award was intended to support faculty by equipping them to conduct groundbreaking research.
- **Distinguished Early Career Faculty Award – 2019**
University-wide award which recognizes recently tenured faculty who have demonstrated a strong potential for continued contributions to the University and his/her profession
- **Regents Distinguished Research Award – 2018**
University-wide award which recognizes research excellence
- **OSU App Idea Competition Winner – 2018**
University-wide competition to design a mobile app that uses research to address a significant problem for the general public. Won 1st overall of 71 submissions. Our team included M.Magrini and R.Thiele
- **Distinguished Researcher – 2018**
College-level honor to recognize distinguished faculty researchers from each school
- **Phoenix Award Winner – 2015**
University-wide award for excellence in graduate student mentorship
- **Advising Excellence Award Winner – 2015**
University-wide award for excellence in student advising and mentorship
- **Susan Hassett Laudano Scholarship – 2007**
Department award for excellence in the field of sport pedagogy

TEACHING

Classes Taught

Oklahoma State University:

- HHP 2802: Medical Terminology for Health Professionals
- HHP 3663: Biomechanics
- HHP 4063/5063: Neuroanatomy
- HHP 4480: Internship in Health and Human Performance
- HHP 5523: Current Readings in Health
- HHP 5823: Applied Neuromuscular Physiology
- HHP 5843: Quantitative Biomechanics
- HHP 5853: Clinical Exercise Testing and Prescription

- HHP 5923: Readings in Neurophysiology
- HHP 6063: Grant Writing for Kinesiology
- HHP 6083: Biomedical Signal Acquisition (LabVIEW)

University of Oklahoma:

- HES 4833: Physiology of Exercise Laboratory
- HES 4883: Advanced Strength and Conditioning

New Courses Proposed and Developed

Oklahoma State University:

- HHP 4013: Motor Control
- HHP 4063/5063: Neuroanatomy
- HHP 5823: Applied Neuromuscular Physiology
- HHP 5923: Readings in Neurophysiology
- HHP 6083: Biomedical Signal Acquisition (LabVIEW)

University of Oklahoma:

- HES 4883: Advanced Strength and Conditioning

Student-Teacher Evaluations

Average across all courses and terms at Oklahoma State University
(averages since Fall '13; All records available upon request)

Instructor Evaluation:

• Prepared and Organized	4.58 / 5
• Teaching Effort	4.62 / 5
• Presentation of Material	4.55 / 5
• Knowledge of Subject	4.79 / 5
• Explanation of Subject	4.62 / 5
• Attitude	4.73 / 5
• Overall Instructor Score	4.65 / 5

SERVICE, ADMINISTRATION & OUTREACH

External Reviewer

- Editorial Board:
 - Experimental Brain Research
- Ad-Hoc Reviewer:
 - Journal of Physiology
 - Journal of Neurophysiology
 - Journal of Applied Physiology

- Medicine & Science in Sports & Exercise
- Restorative Neurology and Neuroscience
- Journal of Biomechanics
- Journal of Neural Engineering
- Applied Physiology, Nutrition, and Metabolism
- European Journal of Applied Physiology
- Journal of Strength and Conditioning Research
- Experimental Physiology
- American Journal of Physiology – Regulatory, Integrative, and Comparative Physiology
- Human Movement Science
- Journal of Applied Biomechanics
- European Journal of Neuroscience
- Medical Engineering and Physics
- Journal of NeuroEngineering and Rehabilitation
- Journal of Aging and Physical Activity
- Perceptual & Motor Skills
- Biology of Sex Differences
- Measurement Science and Technology
- Expert Review of Medical Devices
- Journal of Electromyography and Kinesiology
- Public Library of Science (PLoS One)
- Physiological Measurement
- Sensors
- Journal of Electrical and Electronics Engineering Research
- Computational and Mathematical Methods in Medicine
- Computer Methods and Programs in Biomedicine
- Current Psychology
- Journal of Sports Science and Medicine

Additional External Service

- Central States ACSM Annual Meeting
 - Abstract Reviewer (2018, 2021–2022)
 - Awards Committee (2019 – 2024)
- NSCA Foundation
 - Scholarship Review Committee (2014 – 2018)
 - Grant Reviewer (2014 – 2016)
- NSCA National Conferences
 - Abstract Reviewer (2008, 2014-2015, 2017)
 - Student Presentation Judge (2014 – 2017)

Community Outreach

- **Brain Awareness Workshops**
I partner with Dr. Dolores Vazquez Sanroman to run *Brain Health* educational booths for children. This originated as part of Brain Awareness Week, a yearly global-wide initiative by the Society for Neuroscience. The children (target age = 4-10 yrs old) learn what the brain does, why it's important, and even get the opportunity to touch and hold a real human brain.
 1. Aug. 2018 - WONDERtorium event, as part of the museum's "Healthy, Set, Go!" party.
 2. March 2018 - Discovery Lab workshop (Tulsa Children's Museum).
 3. Feb. 2018 - Will Roger's STEM Fair, at Will Roger's Elementary School in Stillwater, OK
- **Brain Blast!!** – October 2019
 - Our laboratory hosted 2 groups of 7th grade Engineering students from Stillwater Middle School to learn about the brain.
- **Oklahoma Mentor Day** – Jan 2019
 - Hosted hands-on activities and lab tours for at-risk youth
- **Spanish Cove Health Fair** – April 2017
 - Organized a group of ~20 student volunteers to provide free health screenings during a health fair at the Spanish Cove Retirement Village in Yukon, OK.

Internal Service and Administration

- University-level
 - Academic Integrity Facilitator (2016 – 2024)
 - OSU President's Strategy Committee (Spring 2022):
 - *Pursuing Research that Impacts Society* working group meant to provide recommendations to OSU's new President. The committee was led by Paul Tikalsky, Dean of the College of Engineering, Architecture, and Technology
 - Brain Initiative – Co-chair of Research Committee (2019-2020)
 - Responsibility: identifying and pursuing funding opportunities for a group consisting of 60+ brain/neuroscience researchers or clinicians
 - Marshall for Spring Commencement (May 9th, 2015)
 - Poster Judge for OSU Research Symposium (2015-Present)

- College-level
 - Student Technology Fee Committee (2014 – 2022)
 - Leadership Team – Faculty Rep. (2017 – 2020)
 - Personnel Committee (2021-2022)

- School/Department-level
 - Department Chair, Exercise Science (Syracuse; 2024 – Present)
 - Responsibility: manage 3 degree programs with 10 faculty and 10 graduate assistants
 - Program Area Coordinator for Health and Human Performance (OSU; 2017 – 2024)
 - Responsibility: manage 3 degree programs with 11 faculty and 30 graduate assistants

 - Degree Coordinator for B.S. in Applied Exercise Science (2018 – 2021)
 - Also created and designed the curricula for the newly approved degree with 2 options: Pre-professional, and Strength & Conditioning

 - Student Affairs Committee (Aug. 2016 – Sum. 2017)
 - HHP Scholarship Review Committee (2014 – Present)
 - 7 Faculty Search Committees (* = chair):
 - Recreation Management (2014)
 - Exercise Science (2014, 2015, 2017*, 2018, 2020*)
 - Physical Education (2015)

Advising, Mentoring, and Thesis/Dissertation Committees

Legend:

Bold = Chair of committee / Research Mentor

^E = External member of committee

* = Current student

- Master's Committee Service (N = 55):

<ul style="list-style-type: none"> ○ Aaron Dugger ○ Abbie Woods ○ Andrew Hall ○ Angie Pectol ○ Anthony Rossi ○ Bailey Adams ○ Beth Weichold ○ Blake Abbott ○ Brad Marsic ○ Brian Hamilton ○ Brooke Carlson ○ Cameron Mackey ○ Carlie Garcia 	<ul style="list-style-type: none"> ○ Johnie Michael ○ Jordyn Collyar ○ Kelsey Bahe ○ Kimberly Loy ○ Kristen Barger ○ Lane Cooper ○ Madi Whitworth^{E (NSCI)} ○ Madison Mercado ○ Maria Olivia Parodi * ○ Melissa Oishi^{E (NSCI)} ○ Mikayla Raleigh ○ Molly Jackson^{E (DHM)} ○ Nick Whitmer ○ Quincy Johnson
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- **Cecilia Lane**
 - Chris Jayne
 - Christina West
 - **Claire Smith**
 - Clayton Cloud
 - D.J. Allen
 - Eranda Ekanayake ^{E (MAE)}
 - Garrett Bayliff
 - Garrett Woods
 - **Hailee Settle**
 - Hannah Bryan
 - Hayden Harmon
 - Jake Minnis
 - James Jefferson
 - Jesús Hernandez-Sarabia
 - **John Bartlett**
- Russanne Wilcox
 - Samantha Wagner
 - **Scott Stockam**
 - Shanice Cheatham
 - Shannon Marek
 - Stephen Opskar
 - Taylor Monaghan
 - Todd Christensen
 - **Tyler Danielson**
 - Will Heim
 - William Carter
 - Zac Moore
- Doctoral Committee Service (N = 38):
 - **Alejandra Barrera Curiel**
 - Alex Olmos
 - Beverly Ruedy
 - Brandie Cheshier
 - **Cameron Mackey**
 - Carlos Estrada
 - Cindy Tsotsoros ^{E (Psych)}
 - **Claire Smith ***
 - Cody Stahl *
 - **Frank Benik**
 - **Garrett Hester**
 - Jake Kraft ^{E (Psych)}
 - Jessica Schnaiter
 - **Jesús Hernandez-Sarabia**
 - Jillian Bailey ^{E (HDFS)}
 - **JoCarol Shields**
 - John Sellers
 - Joshua Carr ^{E (Univ. of Oklahoma)}
 - Kaitlyn Nagel ^{E (Psych)}
- Larissa Boyd
 - Lyric Richardson *
 - Madison Stout ^{E (Psych)}
 - Masoud Moghaddam
 - Matthew Blair
 - **Michael Luera**
 - Michelle Miller-Bateman
 - **Mitch Magrini**
 - Nick Stokely
 - Nick Whitmer *
 - Olivia Anderson *
 - **Rob MacLennan**
 - Ryan Colquhoun
 - **Ryan Thiele**
 - **Shawn Reese**
 - Stephanie Sontag
 - Sunggun Jeon
 - **Tyler Danielson ***
 - Tyler Muddle

- Undergraduate / High School Mentorship:
 - Freshman Research Scholars:
 - Taryn Blackstock (2016-2017)
 - Will Oliver (2018-2019)
 - Ava Smith (2021-2022)
 - Landry Ehmer (2021-2022)
 - Tayja Ghatahora (2023-2024)
 - Wentz Scholars
 - Taryn Blackstock (2017-2018)
 - High School Science Fair Competitors
 - Caleb Horne, Morrison High School (2018-2019)

RESEARCH / SCHOLARSHIP

External Funding

Summary of External Funding			
<i>Total Grants/Contracts Requested:</i>	25	<i>Pending / In Review:</i>	1
<i>Funded:</i>	9	<i>Grants In Preparation:</i>	2
<i>Not Funded:</i>	15		

- *In Preparation (planned grant proposal submissions for the next year)*
 2. Principal Investigators: **J.M. DeFreitas** and J.E. Shields
Project Title: *“The efficacy of an exercise intervention to improve peripheral nerve function in older adults”*
Funding Program: R01
Funding Agency: National Institutes of Health (NIH) – National Institute of Aging (NIA)
Amount: ~\$600,000 direct costs to be requested
Duration: 3 years
Status: Proposal is in preparation. Planned submission for February 2025
 1. Principal Investigator: **J.M. DeFreitas**
Project Title: *“Quantifying Sensorimotor Circuitry during Voluntary Movements”*
Funding Program: R01
Funding Agency: National Institutes of Health (NIH) – National Institute of Neurological Disorders and Stroke (NINDS)
Amount: ~\$800,000 direct costs to be requested
Duration: 4 years
Status: Proposal is in preparation. Planned submission for February 2025

- Pending Contracts (in negotiation)

1. Project Manager: **J.M. DeFreitas**
Services: *Test-Retest reliability of an abridged ERP protocol (6 min.) for assessing auditory sensation, basic attention, and cognitive processing.* Services may include digital signal processing consulting as well.
Funding Source: HealthTech Connex (parent company of the Neurocatch EEG platform)
Amount: Estimated \$30,000-40,000/year. ~Approximately \$200 per subject visit of data collection, plus additional funds for signal processing services and analysis (Indirect costs included)
Duration: Perpetual (for the foreseeable future)
Status: Services have been requested by the company. Currently in negotiations and finalizing contracts.

- Pending Grant Proposals (in review)

n/a

- Current Funding

2. Principal Investigator: **J.M. DeFreitas**
Project Title: *“Mechanisms of Degradation across the Lifespan: The Role of Descending Tract Function on Age-related Sensory-Motor Deficits”*
Funding Program: 2023 Hevolution Award in Aging Biology and Geroscience Research
Funding Agency: American Federation for Aging Research (AFAR)
Amount: \$374,991 requested, **\$374,991 awarded** (indirects included)
Duration: 3 years
Status: Awarded on Dec. 27, 2023. Contract start date of Dec. 31, 2023
1. Principal Investigators: **J.M. DeFreitas** and C.M. Smith
Project Title: *“Improving Sensorimotor Assessments to Predict Fall-Risk in Older Adults”*
Funding Program: n/a - unsolicited
Funding Agency: De Luca Foundation
Amount: \$44,634 direct costs requested, **\$45,000 awarded**
Duration: 1.5 years
Status: Submitted on Sept. 11, 2023. Awarded, Oct. 1, 2023 start date. Project start date of January 2023

- Completed, Funded Projects and Contracts

7. Principal Investigators: **J.M. DeFreitas** and J.E. Shields
Project Title: *“Quantifying the trainability of peripheral nerve function in young and older adults”*
Funding Program: Doctoral Student Research Grant (for J.E. Shields)
Funding Agency: American College of Sports Medicine – Central States Chapter (CS-ACSM)
Amount: \$1,500 direct costs requested, **\$1,500 awarded**
Duration: 1 year
Status: Submitted on April 28, 2022. Awarded, and project is completed. Data being used as preliminary data for upcoming NIH R01 submission.

6. Co-Principal Investigators: **J.M. DeFreitas**, and N.D. Jenkins
 Project Title: *“Histochemical and electrophysiological responses to high- and low-intensity exercise”*
 Funding Program: Contract for consulting and data collection services
 Funding Agency: Auburn University
 Amount: **\$3,000 awarded for services**
 Duration: ~ 1 year
 Status: Project complete. Data collection occurred in Oct. 2016 in Auburn, AL. Two manuscripts published.
5. Principal Investigator: **J.M. DeFreitas**
 Project Title: *“Can low-intensity exercise performed to fatigue recruit high-threshold motor units?”*
 Funding Program: Young Investigator Grant
 Funding Agency: National Strength and Conditioning Association Foundation (NSCAF)
 Amount: \$16,754 requested; **\$16,754 awarded**
 Duration: 1 year
 Status: Proposal was submitted Mar. 1, 2016. Data is collected and analyzed. Funding contract is complete.
4. Principal Investigator: **J.M. DeFreitas**
 Co-investigators: D.B. Smith and M.A. Magrini (Study Coordinator)
 Project Title: *“Examination of power, muscle excitation, and functional ability across the age span”*
 Funding Program: Heart of the Community Wellness Grant
 Funding Agency: Stillwater Medical Center
 Amount: \$1,000 requested; **\$1,000 awarded.**
 Duration: 2 years
 Status: Proposal was submitted Nov. 1, 2015. Project is now complete.
3. Principal Investigator: **J.M. DeFreitas**
 Project Title: *“Muscle Spindle and Motor Unit Function with Aging”*
 Funding Program: Oklahoma Health Research Program
 Funding Agency: Oklahoma Center for the Advancement of Science and Technology (OCAST)
 Amount: \$134,832 requested; **\$134,832 awarded.**
 Duration: 3 years
 Status: Project is now complete Three manuscripts were published
2. Co-Principal Investigators: J.T. Cramer, T.W. Beck, J.R. Stout
 Co-Investigators: E.R. Ryan, T.J. Herda, A.A. Walter, P.B. Costa, **J.M. DeFreitas**
 Project Title: *“Effects of two different whey protein supplements on thigh muscle cross-sectional area, muscular strength, endurance and body composition during 8 weeks of resistance training”*
 Funding Agency: General Nutrition Corporation (GNC), Pittsburg, PA
 Amount: \$198,422 requested; **\$198,422 awarded.**
 Duration: ~ 1 year
 Status: Proposal was submitted Spring 2008. Project is now complete.
1. PI/Faculty Supervisor: T.W. Beck
 Co-investigator: **J.M. DeFreitas** (Study coordinator)
 Project Title: *“A Reexamination of the Efficiency of Electrical Activity Technique for Identifying the Time Course of Neural versus Hypertrophic Contributions to Training-Induced Strength Gains”*
 Funding Program: Master’s Student Research Grant
 Funding Agency: National Strength and Conditioning Foundation (NSCAF)
 Amount: \$2,500 requested; **\$2,500 awarded.**
 Duration: 1 year

Status: Proposal was submitted Mar. 10, 2008. Project is complete and led to 7 manuscripts published.

- Proposals not funded

15. Co-Principal Investigators: E. Roberts, A. Bishop, **J.M. DeFreitas**, T. Passmore, B. Baker, S.Emerson, G.Hu, and W.Sheng
Project Title: *“ASPiRE for L.I.F.E.: Aging and STEM Pursuits through Interdisciplinary and Intergenerational Research Exposure for Longevity, Independence, Fitness and Engagement”*
Funding Agency: Spencer Foundation
Amount: \$400,000 total costs requested (~\$348k direct), *not funded*
Duration: 2 years
Status: Proposal submitted on Nov. 13, 2023
14. Principal Investigators: **J.M. DeFreitas** and J.E. Shields
Project Title: *“The efficacy of an exercise intervention to improve peripheral nerve function in older adults”*
Funding Program: Oklahoma Health Research Program
Funding Agency: Oklahoma Center for the Advancement of Science and Technology (OCAST)
Amount: \$150,000 direct costs requested, *not funded*
Duration: 2 years
Status: Submitted on September 26, 2022.
13. Principal Investigators: **J.M. DeFreitas** and S.M. Reese
Project Title: *“Effects of Age on Cortical Sensorimotor Processing”*
Funding Program: Doctoral Student Research Grant (for S.M. Reese)
Funding Agency: American College of Sports Medicine Foundation (ACSMF)
Amount: \$5,000 direct costs requested, *not funded*
Duration: 1 year
Status: Submitted on November 26, 2022.
12. Principal Investigators: **J.M. DeFreitas** and J.E. Shields
Project Title: *“Quantifying the trainability of peripheral nerve function in young and older adults”*
Funding Program: Diane Kalman Student Grant for Research in the Biology of Aging (for J.E. Shields)
Funding Agency: American Federation of Aging Research (AFAR)
Amount: \$5,000 direct costs requested, *not funded*
Duration: 1 year
Status: Submitted on April 8, 2022.
11. Principal Investigator: **J.M. DeFreitas**
Project Title: *“Quantifying Sensorimotor Circuitry During Voluntary Movements”*
Funding Program: R01 – Unsolicited
Funding Agency: National Institutes of Health (NIH) – National Institute of Neurological Disorders and Stroke (NINDS)
Amount: \$2,063,019 requested (total) (\$1,243,277 in direct costs); *not funded*.
Duration: 5 years
Status: Submitted on June 5, 2020.
10. Principal Investigator: **J.M. DeFreitas**
Project Title: *“Muscle Spindle and Motor Unit Function with Aging: Phase III”*
Funding Program: Oklahoma Health Research Program

- Funding Agency: Oklahoma Center for the Advancement of Science and Technology (OCAST)
Amount: \$105,544 direct costs requested; *not funded*.
Duration: 3 years
Status: Submitted on March 1, 2019.
9. Principal Investigator: **J.M. DeFreitas**
Project Title: “*Quantifying Sensorimotor Circuitry During Voluntary Movements*”
Funding Program: R01 – RFA-NS-18-030 – BRAIN Initiative: Targeted BRAIN Circuits Projects
Funding Agency: National Institutes of Health (NIH) – National Institute of Neurological Disorders and Stroke (NINDS)
Amount: \$2,282,216 requested (total) (\$1,391,357 in direct costs); *not funded*.
Duration: 5 years
Status: Submitted on November 5, 2019.
8. Principal Investigator: **J.M. DeFreitas**
Co-investigator: N.D. Jenkins
Consultant: M. Mwavita (CERE)
Project Title: “*Muscle Spindle and Motor Unit Function with Aging: Phase III*”
Funding Program: R15 – PA-18-504 – Academic Research Enhancement Award (AREA)
Funding Agency: National Institutes of Health (NIH)
Amount: \$299,797 direct costs requested (\$419,295 total with F&A); *not funded*.
Duration: 3 years
Status: Submitted on Oct. 24, 2018. 2nd attempt
7. Principal Investigator: D.McIlroy
Co-investigators: **J.M. DeFreitas**, M.Hagan, M.F. Borunda, Y. Vazquez
Project Title: “*Neuromorphic Materials*”
Funding Program: Research Program
Funding Agency: W.M. Keck Foundation
Amount: \$900,000 direct costs requested; *not funded*.
Duration: 4 years
Status: Submitted on Nov. 1st, 2018. Phase I proposal
6. Principal Investigator: **J.M. DeFreitas**
Co-investigators: C.S. Mackey (Study Coordinator)
Project Title: “*Efficacy and validity of the Air Force Reserve Officers’ Training Corps’ physical fitness assessment and training regimen*”
Funding Program: BAA-AFRL-RQKHC-2016-0009 - Aerospace Medicine, Clinical Research, Human Performance, and Expeditionary Medicine
Funding Agency: Department of Defense (DoD) – Air Force Research Laboratory, 711th Human Performance Wing
Amount: \$255,198 direct costs requested (\$377,287.80 total with F&A); *not funded*.
Duration: 2 years
Status: White Paper submitted September 4, 2018
5. Principal Investigator: **J.M. DeFreitas**
Co-investigator: N.D. Jenkins
Consultant: M. Mwavita (CERE)
Project Title: “*Muscle Spindle and Motor Unit Function with Aging: Phase III*”
Funding Program: R15 – PA-16-200 – Academic Research Enhancement Award (AREA)
Funding Agency: National Institutes of Health (NIH)
Amount: \$299,974 requested; *not funded*.
Duration: 3 years
Status: Submitted on Oct. 23, 2017

4. Principal Investigator: S.Wang
 Collaborators: J. Hausselle, G. Fan, **J.M. DeFreitas**
 Project Title: *“Mechanics of Skeletal Muscle Fatigue-Recovery and Human Posture Stability”*
 Funding Program: NSF 17-537, Faculty Early Career Development Program (CAREER)
 Funding Agency: National Science Foundation (NSF) – Directorate for Engineering
 Amount: \$500,000 requested; *not funded*.
 Duration: 5 years
 Status: Submitted on July 20, 2017
3. Principal Investigator: **J.M. DeFreitas**
 Project Title: *“Contributions of Muscle Spindle Afferents to Human Motor Function”*
 Funding Program: Neurobiology Research Grant
 Funding Agency: Whitehall Foundation
 Amount: \$225,000 requested; *not funded*.
 Duration: 3 years
 Status: White Paper was submitted Sept. 27, 2016 (2nd attempt)
2. Principal Investigator: **J.M. DeFreitas**
 Project Title: *“Contributions of Muscle Spindle Afferents to Human Motor Function”*
 Funding Program: Neurobiology Research Grant
 Funding Agency: Whitehall Foundation
 Amount: \$225,000 requested; *not funded*.
 Duration: 3 years
 Status: White Paper was submitted Apr. 13, 2015 (1st attempt)
1. Principal Investigator/Faculty Supervisor: T.W. Beck
 Co-investigator: **J.M. DeFreitas** (Study coordinator)
 Project Title: *“Examination of Agonist and Antagonist Motor Unit Firing Properties”*
 Funding Program: Doctoral Student Research Grant
 Funding Agency: National Strength and Conditioning Foundation (NSCAF)
 Amount: \$9,840 requested; *not funded*.
 Duration: 1 year
 Status: Proposal was submitted Mar. 10, 2012.

Internal Funding

Summary of Internal Funding			
<i>Total Grants Requested:</i>	<i>10</i>	<i>Pending / In Review:</i>	<i>0</i>
	<i>Funded: 8</i>	<i>Grants In Preparation:</i>	<i>0</i>
	<i>Not Funded: 2</i>		

10. Co-Principal Investigators: **J.M. DeFreitas**, M.A. Trevino and D.B. Smith
 Project Title: *“Acquiring paired-pulse TMS”*
 Funding Source: Laboratory and Research Program – Colleges of Education and Human Sciences (Oklahoma State University)
 Amount: \$41,480.00 requested, ***\$41,480.00 awarded***.
 Submitted Nov. 1, 2021. Awarded in March, 2022
9. Principal Investigator: **J.M. DeFreitas**
 Project Title: *“Improving Early Detection of Neuromuscular Diseases: A Feasibility Study”*

Funding Source: President's Fellows Faculty Research Award (Oklahoma State University)
Amount: \$20,000 requested, **\$20,000.00 awarded.**
Submitted Jan. 15, 2021

8. Co-Principal Investigators: **J.M. DeFreitas**, N.D. Jenkins, and M.A. Trevino
Project Title: *"Acquiring indwelling EMG capabilities"*
Funding Source: Laboratory and Research Program – Colleges of Human Sciences, and Education, Health and Aviation (Oklahoma State University)
Amount: \$12,990.18 requested, **\$13,000.00 awarded.**
Submitted Sept. 16, 2019

7. Faculty Leads: **J.M. DeFreitas**, J.Grindstaff, M.Hawkins, A.Morris
Internal Collaborators: J.Hays Grudo, R.Sharda, B.Benjamin, S.Kennison, C.Melancon, K.Shreffler, A.Mazur, K.Curtis, W.Sheng, D.McIlroy, S.Coffey, S.Das, M.Payton, T.Nelson, D.Delen, A.Ford, D.Vasquez
External Collaborators: W.Hetrick, C.Savage, Laureate Institute for Brain Research (LIBR)
Project Title: *"The OSU Brain Initiative & Interdisciplinary Center for Applied Neuroscience (I-CAN)"*
Funding Program: Highly Integrative Basic and Responsive Research (HIBAR)
Funding Source: Office of Vice President for Research (Oklahoma State University)
Amount: *Not funded*
Duration: TBD
Status: Submitted on Nov. 1, 2018. Prospectus phase

6. Faculty Leads: W.Sheng, A.Bishop, C.Reese-Melancon
Internal Collaborators: C.Crick, Y.Gong, G.PEEK, E.Roberts, T.Passmore, **J.M. DeFreitas**, Q.Wang
External Collaborators: J.Ware, P.Darlington, J.Verner, A.Lovelace, N.Hall, T.Wolfe, C.C.Crane, R.Sirbaugh, L.Jaco, N.McNickle
Project Title: *"Developing a Smart and Connected Senior Residence Community: Aging-in-Place with Companion Robots"*
Funding Program: Highly Integrative Basic and Responsive Research (HIBAR)
Funding Source: Office of Vice President for Research (Oklahoma State University)
Amount: *Not funded*
Duration: TBD
Status: Submitted on Nov. 1, 2018. Prospectus phase

5. Funding Applicant: **J.M. DeFreitas**
Project Title: *"Acquisition of Anatomage virtual dissection table"*
Funding Source: College of Education Technology Fee Committee
Amount: \$72,000.00 requested, **\$72,000.00 awarded**
Status: Submitted Jan. 2018

4. Co-Principal Investigators: **J.M. DeFreitas**, and D.B. Smith
Project Title: *"Examining Musculotendinous Stiffness through Ultrasound Elastography"*
Funding Source: Internal Research Support Program - School of Applied Health and Educational Psychology (Oklahoma State University)
Amount: \$4,500.00 requested, **\$4,500.00 awarded.**
Submitted Apr. 15, 2015

3. Principal Investigator: **J.M. DeFreitas**
Funding Source: Faculty Scholarship Support Program (Oklahoma State University)
Amount: 1 month summer salary requested, and **awarded**

Submitted Mar. 19, 2015

2. Co-Principal Investigators: **J.M. DeFreitas**, and D.B. Smith
Project Title: “*Examining Agonist-Antagonist Muscle Interactions*”
Funding Source: Internal Research Support Program - School of Applied Health and Educational Psychology (Oklahoma State University)
Amount: \$4,202.87 requested, **\$4,202.87 awarded**.
Submitted Apr. 15, 2014

1. Principal Investigator/
Faculty Supervisor: T.W. Beck
Co-investigator: **J.M. DeFreitas** (Study coordinator)
Project Title: “*Neural Adaptations of a Short-term Training Program*”
Funding Source: Graduate Student Senate (GSS) in the University of Oklahoma Student Association (UOSA)
Amount: \$750 requested, **\$750 awarded**
Submitted Fall 2010

Books and Book Chapters

1. Roberts M.D., and **DeFreitas J.M.** Chapter 5: *Measures of Neuromuscular Function*. In: Atherton, P.J., Wilkinson, D.J. (eds) *Neuromuscular Assessments of Form and Function*. Neuromethods, vol 204. 2023. Humana, New York, NY. DOI: [10.1007/978-1-0716-3315-1_5](https://doi.org/10.1007/978-1-0716-3315-1_5)
2. Baghurst T.M., and **DeFreitas J.M.** *Writing and publishing research in kinesiology, health, and sports science*. Routledge – 1st edition (Published May 9, 2017). [Link to Book](#)

Peer-Reviewed Journal Publications

Underline denotes student under my mentorship

* Denotes position as Senior, Last, and Corresponding Author

Summary of Publication Metrics

Total publications in press or in print: 91

Total times cited: 2498
(Source: [Google Scholar](#))

h-index: 25
(the largest number h such that h publications have at least h citations)

i10-index: 59
(number of publications with at least 10 citations)

In Review:

1. Shields JE, Hernandez-Sarabia JA, Lanza MB, Barrera-Curiel A, Luera MJ, and **JM DeFreitas***. A comparison of popular filters for surface electromyography. Submitted to *J Electromyogr Kinesiol* on Feb. 2024. [Preprint available](#)

2. Mackey CM, Barrera-Curiel A, Thiele RM, Keefe MS, Deldin AR, Shields JE, and **J.M. DeFreitas***. Agonist-Antagonist muscle interactions during dynamic and isometric contractions. Submitted to *J Sci Med Sport* on June 25, 2024

In Press or In Print:

1. Beausejour JP, Rusch J, Knowles KS, Pagan JI, Chaput M, Norte GE, **DeFreitas J.M.**, and M.S. Stock. A comparison of techniques to determine active motor threshold for transcranial magnetic stimulation research. *Brain Res* 2024 Nov.; DOI: [10.1016/j.brainres.2024.149111](https://doi.org/10.1016/j.brainres.2024.149111)
2. Danielson TL, Gould L, **DeFreitas JM**, MacLennan RJ, Ekstrand C, Borowsky R, Farthing JP, and J.W. Andrushko. Activity in the pontine reticular nuclei scales with handgrip force in humans. *J Neurophysiol* 2024 May: 131(5), 807-814. DOI: [10.1152/jn.00407.2023](https://doi.org/10.1152/jn.00407.2023), [BioRxiv preprint](#).
3. MacLennan RJ, Hernandez-Sarabia JA, Reese SM, Shields JE, Smith CM, Stute K, Collyar J, Olmos AA, Danielson TL, MacLennan DL, Pagan JI, Girts RM, Harmon KK, Coker NA, Carr JC, Ye X, Perry JW, Stock MS, and **J.M. DeFreitas***. fNIRS is capable of distinguishing laterality of lower body contractions. *Exp Brain Res* 2024 May: 242(5): 1115-1126 DOI: [10.1007/s00221-024-06798-8](https://doi.org/10.1007/s00221-024-06798-8)
4. Andrushko J.W., Carr J.C., Farthing J.P., Lepley L.K., **DeFreitas J.M.**, Goodall S., HENDY A.M., Howatson G., Grooms D.R., Zult T., Hortobágyi T., Harput G., Papandreu M.G., Nosaka K., Carson R.G., Manca A., Deriu F., Behm D.G., Kidgell D.J., Clark N.C., and L.A. Boyd. The potential role of cross-education in early-stage rehabilitation after anterior cruciate ligament reconstruction. *Brit J Sports Med* 2023 Dec; 57(23): 1474-1475 DOI: [10.1136/bjsports-2023-107456](https://doi.org/10.1136/bjsports-2023-107456)
5. Pagan JI, Harmon KK, Girts R.M., MacLennan RJ, Beausejour JP, Hernandez-Sarabia JA, Coker NA, Carr JC, Ye X, **DeFreitas J.M.**, Stock MS. Sex-Specific Reliability of Lower Limb Corticospinal Excitability and Silent Periods. *J Strength Cond Res*. 2023 Sept. 1;37(9): 1882-1887 DOI: [10.1519/JSC.0000000000004525](https://doi.org/10.1519/JSC.0000000000004525)
6. Magrini M.A., Colquhoun R.J., Ferrell M.C., Fleming S.R., Mota J.A., Siedlik J.A., Poidomani N.M., Jenkins N.D.M., and **J.M. DeFreitas**. The influence of motor unit number and muscle activation on early phase rate of torque development in younger and older men. *J Mot Behav*. 2022;54(4):422-428. DOI: [10.1080/00222895.2021.2001412](https://doi.org/10.1080/00222895.2021.2001412)
7. Mackey CM, Thiele RM, Sanders DJ, and **J.M. DeFreitas**. Effects of a Thostensson fatiguing protocol on isometric and isokinetic performance. *Isokinetics Exer Sci*. 2022; 30(4): 303-310 DOI: [10.3233/IES-220010](https://doi.org/10.3233/IES-220010)
8. Carr J.C., Bemben M.G., Stock M.S., and **J.M. DeFreitas**. Ipsilateral and contralateral responses following unimanual fatigue with and without illusionary mirror visual feedback. *J Neurophysiol* 2021 Jun 1:125(6) DOI: [10.1152/jn.00077.2021](https://doi.org/10.1152/jn.00077.2021)
9. Hernandez-Sarabia J.A., Luera M.J., Barrera-Curiel A., Estrada C.A., and **J.M. DeFreitas***. Does Strict Validation Criteria for Individual Motor Units Alter Population-Based Regression Models of the Motor Unit Pool? *Exp Brain Res* 2020 Nov:238(11) DOI: [10.1007/s00221-020-05906-8](https://doi.org/10.1007/s00221-020-05906-8)
10. Mackey C.S., Johnson Q.R., Dawes J.J., and **J.M. DeFreitas***. Physical performance among Air Force ROTC cadets following non-mandatory training. *Aerosp Med Hum Perform* 2020 Oct 1:91(10) DOI: [10.3357/AMHP.5622.2020](https://doi.org/10.3357/AMHP.5622.2020)
11. Carr J.C., Bemben M.G., Black C.D., Ye X., and **J.M. DeFreitas**. Bilateral deficit in strength but not rapid force during maximal handgrip contractions. *Eur J Sport Sci* 2020 Aug 17; 21(6), 2084-2093 DOI: [10.1080/17461391.2020.1800104](https://doi.org/10.1080/17461391.2020.1800104)

12. Mackey C.S., and **J.M. DeFreitas***. A longitudinal examination of Reserve Officers' Training Corps' physical fitness assessment. *Mil Med Res* 2019 Sep 23;6(1) DOI: [10.1186/s40779-019-0219-4](https://doi.org/10.1186/s40779-019-0219-4)
13. Johnson Q.R., Mackey C.S., Muddle T.D., Smith D.B., and **J.M. DeFreitas***. Body Composition Comparison of Upper- and Underclass Reserve Officers' Training Corps Cadets. *Aerosp Med Hum Perform* 2019 Sep 1;90(9) DOI: [10.3357/AMHP.5355.2019](https://doi.org/10.3357/AMHP.5355.2019)
14. **DeFreitas J.M.***. In regards to motor unit decomposition, are we caring about the right information? *J Electromyogr Kinesiol* 2019 Aug; 47 DOI: [10.1016/j.jelekin.2019.05.001](https://doi.org/10.1016/j.jelekin.2019.05.001)
15. Barrera-Curiel A., Colquhoun R.J., Hernandez-Sarabia J., and **J.M. DeFreitas***. The effects of vibration-induced altered stretch reflex sensitivity on maximal motor unit firing properties. *J Neurophys* 2019 Jun 1;121(6) DOI: [10.1152/jn.00326.2018](https://doi.org/10.1152/jn.00326.2018)
16. Carr J.C., Ye X., Stock M.S., Bemben M.G., and **J.M. DeFreitas***. The time course of cross-education during short-term isometric strength training. *Eur J Appl Physiol* 2019 Jun;119(6) DOI: [10.1007/s00421-019-04130-9](https://doi.org/10.1007/s00421-019-04130-9)
17. Hester G.M., Magrini M.A., Colquhoun R.J., Barrera-Curiel A., Estrada C.A., Olmos A., Baily A.R., Ha P.L., and **J.M. DeFreitas***. Cross-Education: Effects of age on rapid and maximal contractile characteristics. *Eur J Appl Physiol* 2019 Jun;119(6) DOI: [10.1007/s00421-019-04123-8](https://doi.org/10.1007/s00421-019-04123-8)
18. Mackey C.S., Thiele R.M., Conchola E.C., and **J.M. DeFreitas***. Comparison of fatigue responses and rapid force characteristics between explosive- and traditional-resistance trained males. *Eur J Appl Physiol* 2018 Aug;118(8) DOI: [10.1007/s00421-018-3883-2](https://doi.org/10.1007/s00421-018-3883-2)
19. Hester G.M., Pope Z.K., Magrini M.A., Colquhoun R.J., Barrera-Curiel A., Estrada C.A., Olmos A., and **J.M. DeFreitas***. Age does not attenuate maximal velocity adaptations in the ipsilateral and contralateral limbs during unilateral resistance training. *J Aging Phys Act* 2019 Feb 1; 27(1) DOI: [10.1123/japa.2017-0297](https://doi.org/10.1123/japa.2017-0297)
20. Magrini M.A., Thiele R.M., Colquhoun R.J., Barrera-Curiel A., Blackstock T.S., and **J.M. DeFreitas***. The reactive leg drop: a simple and novel sensory-motor assessment to predict fall risk in older individuals. *J Neurophysiol* 2018 Apr 1; 119(4) DOI: [10.1152/jn.00713.2017](https://doi.org/10.1152/jn.00713.2017)
21. Muddle T.W.D., Colquhoun R.J., Magrini M.A., Luera M.J., **DeFreitas J.M.**, and N.D.M. Jenkins. Effects of fatiguing submaximal high- versus low-torque isometric exercise on motor unit recruitment and firing behavior. *Physiol Rep* 2018 Apr; 6(8) DOI: [10.14814/phy2.13675](https://doi.org/10.14814/phy2.13675)
22. Colquhoun R.J., Magrini M.A., Haun C.T., Muddle T.W.D., Tomko, P., Luera M.J., Mackey, C.S., Vann C., Martin J.S., Young K.C., **DeFreitas J.M.**, Roberts M.D., and N.D.M. Jenkins. Muscle phenotype is related to motor unit behavior of the vastus lateralis during maximal isometric contractions. *Physiol Rep* 2018 Mar; 6(5) DOI: [10.14814/phy2.13636](https://doi.org/10.14814/phy2.13636)
23. Magrini M.A., Colquhoun R.J., Barrera-Curiel A., Thiele R.M., **DeFreitas J.M.**, Smith D.B. and N.D. Jenkins. Muscle size, strength, power, and echo intensity, but not specific tension, are affected by age in physically active adults. *Isokinet Exer Sci* 2018; 26(2) DOI: [10.3233/IES-172194](https://doi.org/10.3233/IES-172194)
24. Haun C.T., Mumford P.W., Roberson, P.A., Romero M.A., Mobley C.B., Kephart W.C., Anderson R.G., Colquhoun R.J., Muddle T.W.D., Luera M.J., Mackey C.S., Pascoe D.D., Young K.Y., Martin J.S., **DeFreitas J.M.**, Jenkins N.D.M., and M.D. Roberts. The molecular, neuromuscular, and recovery responses to light versus heavy resistance exercise in humans. *Physiol Rep* 2017 Sept; 5(18) DOI: [10.14814/phy2.13457](https://doi.org/10.14814/phy2.13457)
25. Martin J.S. Mumford P.W., Haun C.T., Luera M.J., Muddle T.W.D., Colquhoun R.J., Freeney M.P., Mackey C.S., Roberson, P.A., Young K.Y., Pascoe D.D., **DeFreitas J.M.**, Jenkins N.D.M.,

- and M.D. Roberts. Effects of a pre-workout supplement on hyperemia following leg extension resistance exercise to failure with different resistance loads. *J Int Soc Sports Nutr* 2017 Sept 26; 14(38) DOI: [10.1186/s12970-017-0195-6](https://doi.org/10.1186/s12970-017-0195-6)
26. Baghurst T., **DeFreitas J.M.**, and J. Hernandez-Sarabia. Factors that affect winning in international racquetball: Findings from the 2015 Pan American Games. *J Contemp Athl* 2017; 12(2) [Link](#)
 27. Stock M.S., Mota J.A., DeFranco R.N., Grue K.A., Jacobo A.U., Chung E., Moon J.R., **DeFreitas J.M.**, and T.W. Beck. The time course of short-term hypertrophy in the absence of eccentric muscle damage. *Eur J Appl Physiol*. 2017 May; 117(5) DOI: [10.1007/s00421-017-3587-z](https://doi.org/10.1007/s00421-017-3587-z)
 28. [Hester G.M.](#), [Pope Z.K.](#), Sellers J.H., Thiele R.M., and **J.M. DeFreitas***. Potentiation: Effect of ballistic and heavy exercise on vertical jump performance. *J Strength Cond Res* 2017 March; 31(3) DOI: [10.1519/JSC.0000000000001285](https://doi.org/10.1519/JSC.0000000000001285)
 29. [Pope Z.K.](#), [Hester G.M.](#), [Benik F.M.](#), and **J.M. DeFreitas***. Action potential amplitude as a non-invasive indicator of motor unit specific hypertrophy. *J Neurophysiol*. 2016 May; 115(5) DOI: [10.1152/jn.00039.2016](https://doi.org/10.1152/jn.00039.2016)
 30. **DeFreitas J.M.**, Beck T.W., and M.S. Stock. The findings of Damas et al. have not influenced the previously proposed time course of skeletal muscle hypertrophy. *Eur J Appl Physiol*. 2016 Feb; 116(2) DOI: [10.1007/s00421-015-3286-6](https://doi.org/10.1007/s00421-015-3286-6)
 31. [Pope Z.K.](#), and **J.M. DeFreitas***. The effects of acute and prolonged muscle vibration on the function of the muscle spindle's reflex arc. *Somatosens Mot Res*. 2015 Dec; 32(4) DOI: [10.3109/08990220.2015.1091770](https://doi.org/10.3109/08990220.2015.1091770)
 32. Beck T.W., Simmons J.L. and **J.M. DeFreitas**. EMG spectral differences among the quadriceps femoris during the stretch reflex. *Muscle Nerve* 2015 Nov; 52(5) DOI: [10.1002/mus.24625](https://doi.org/10.1002/mus.24625)
 33. [Pope Z.K.](#), and **J.M. DeFreitas***. The effects of body position and muscle activation on patellar tendon reflex properties. *Physiol Meas* 2015 Jul; 36(7) DOI: [10.1088/0967-3334/36/7/1429](https://doi.org/10.1088/0967-3334/36/7/1429)
 34. Ye X., Beck T.W., **DeFreitas J.M.**, and N.P. Wages. Acute effects of dynamic exercises on the relationship between motor unit firing rate and recruitment threshold. *Hum Mov Sci* 2015 Apr; 40 DOI: [10.1016/j.humov.2014.11.011](https://doi.org/10.1016/j.humov.2014.11.011)
 35. Thiele R.M., Conchola E.C., Palmer T.B., **DeFreitas J.M.**, and B.J. Thompson. The effects of a high-intensity free-weight back squat exercise protocol on postural stability in resistance trained males. *J Sports Sci* 2015; 33(2) DOI: [10.1080/02640414.2014.934709](https://doi.org/10.1080/02640414.2014.934709)
 36. [Hester G.M.](#), Conchola E.C., Thiele R.M., and **J.M. DeFreitas***. Power output during a high-volume power-oriented back squat protocol. *J Strength Cond Res*. 2014; 28(10) DOI: [10.1519/JSC.0000000000000484](https://doi.org/10.1519/JSC.0000000000000484)
 37. Beck T.W., Stock M.S., and **J.M. DeFreitas**. Shifts in EMG spectral power during fatiguing dynamic contractions. *Muscle Nerve* 2014; 50(1) DOI: [10.1002/mus.24098](https://doi.org/10.1002/mus.24098)
 38. **DeFreitas J.M.**, Beck T.W., Ye X. and M.S. Stock. Synchronization of low-and high-threshold motor units. *Muscle Nerve* 2014; 49(4) DOI: [10.1002/mus.23978](https://doi.org/10.1002/mus.23978)
 39. Beck T.W., Stock M.S., and **J.M. DeFreitas**. Torque-related changes in mechanomyographic intensity patterns for the superficial quadriceps femoris muscles. *Comput Methods Biomech Biomed Engin*. 2014; 17(7) DOI: [10.1080/10255842.2012.715155](https://doi.org/10.1080/10255842.2012.715155)

40. Ye X., Beck T.W., **DeFreitas J.M.**, and N.P. Wages. An examination of the strength and electromyographic responses following concentric versus eccentric exercise of the forearm flexors. *J Strength Cond Res.* 2014; 28(4) DOI: [10.1519/JSC.0000000000000251](https://doi.org/10.1519/JSC.0000000000000251)
41. Ye X., Beck T.W., Stock M.S., Fahs C.A., Kim D., Loenneke J.P., Thiebaud R.S., **DeFreitas J.M.**, Rossow L.M., Bemben D.A., and M.G. Bemben. Acute effects of wearing an elastic, supportive device on bench press performance in young, resistance-trained males. *Gazzetta Medica Italiana* 2014; 173(3) [Link](#)
42. Stock M.S., Beck T.W., and **J.M. DeFreitas**. Effects of diverting activities on electromyographic amplitude and mean frequency. *Kinesiol.* 2013; 45(2) DOI: [10.1519/JSC.0b013e318220d8dc](https://doi.org/10.1519/JSC.0b013e318220d8dc)
43. Stock M.S., Beck T.W., and **J.M. DeFreitas**. Peak torque and electromyographic responses during fatiguing isokinetic muscle actions with eyes-open versus eyes-closed. *Percept Mot Skills* 2013; 116(2) DOI: [10.2466/29.26.PMS.116.2.581-597](https://doi.org/10.2466/29.26.PMS.116.2.581-597)
44. Costa P.B., Ryan E.D., Herda T.J., Walter A.A., **DeFreitas J.M.**, Stout J.R., and J.T. Cramer. Acute effects of static stretching on peak torque and the hamstrings-to-quadriceps conventional and functional ratios. *Scan J Med Sci Sports* 2013; 23(1) DOI: [10.1111/j.1600-0838.2011.01348.x](https://doi.org/10.1111/j.1600-0838.2011.01348.x)
45. Stock M.S., Beck T.W., **DeFreitas J.M.**, and X.Ye. Mechanomyographic responses for the biceps brachii are unable to track the decline in peak torque during 25, 50, 75, and 100 fatiguing isokinetic muscle actions. *J Appl Biomech.* 2013; 29(6) DOI: [10.1123/jab.29.6.769](https://doi.org/10.1123/jab.29.6.769)
46. Stock M.S., Beck T.W., **DeFreitas J.M.**, and X.Ye. Sex comparisons for relative peak torque and electromyographic mean frequency during fatigue. *Res Q Exerc Sport* 2013; 84(3) DOI: [10.1080/02701367.2013.810538](https://doi.org/10.1080/02701367.2013.810538)
47. Beck T.W., Kasishke P.R., Stock M.S., and **J.M. DeFreitas**. Eccentric exercise does not affect common drive in the biceps brachii. *Muscle Nerve.* 2012; 46(5) DOI: [10.1002/mus.23386](https://doi.org/10.1002/mus.23386)
48. **DeFreitas J.M.**, Beck T.W., and M.S. Stock. Effects of strength training on mechanomyographic amplitude. *Physiol Meas* 2012; 33(8) DOI: [10.1088/0967-3334/33/8/1353](https://doi.org/10.1088/0967-3334/33/8/1353)
49. Beck T.W., Stock M.S., and **J.M. DeFreitas**. Effects of fatigue on intermuscular common drive to the quadriceps femoris. *Int J Neurosci.* 2012; 122(10) DOI: [10.3109/00207454.2012.693997](https://doi.org/10.3109/00207454.2012.693997)
50. Beck T.W., Kasishke P.R., Stock M.S., **DeFreitas J.M.**, and X. Ye. A comparison of the effects of concentric versus eccentric exercise on muscle activation patterns. *Clin Kinesiol* 2012; Fall [Link](#)
51. Beck T.W., Stock M.S., and **J.M. DeFreitas**. Classification of electromyographic intensity patterns after diverting activities. *Clin Kines* 2012; Summer [Link](#)
52. Beck T.W., Stock M.S., and **J.M. DeFreitas**. Time-frequency analysis of surface electromyographic signals during fatiguing isokinetic muscle actions. *J Strength Cond Res.* 2012; 26(7) DOI: [10.1519/JSC.0b013e318239c1e6](https://doi.org/10.1519/JSC.0b013e318239c1e6)
53. Beck T.W., Kasishke P.R., Stock M.S., and **J.M. DeFreitas**. Neural contributions to concentric versus eccentric exercise-induced strength loss. *J Strength Cond Res.* 2012; 26(3) DOI: [10.1519/JSC.0b013e3182474296](https://doi.org/10.1519/JSC.0b013e3182474296)
54. **DeFreitas J.M.**, Beck T.W., and M.S. Stock. A comparison of methods for removing electromagnetic noise in electromyographic signals. *Physiol Meas.* 2012; 33(2) DOI: [10.1088/0967-3334/33/2/147](https://doi.org/10.1088/0967-3334/33/2/147)
55. Di Naso, J.J., Pritschet B.L., Emmett J.D., Owen J.D., Willardson J.M., Beck T.W., **DeFreitas J.M.**, and F.E. Fontana. Comparing thigh muscle cross-sectional area and squat strength among

- national class Olympic weightlifters, power lifters, and bodybuilders. *Int SportMed J.* 2012; 13(2) [Link](#)
56. Beck T.W., Stock M.S., and **J.M. DeFreitas**. Differences in muscle activation patterns among the quadriceps femoris muscles during fatiguing isokinetic leg extensions. *Isokinet Exerc Sci.* 2012; 20(1) DOI: [10.3233/IES-2011-0433](#)
 57. Beck T.W., **DeFreitas J.M.**, and M.S. Stock. Accuracy of three different techniques for automatically estimating innervation zone location. *Comput Methods Programs Biomed.* 2012; 105 DOI: [10.1016/j.cmpb.2010.07.003](#)
 58. Stock M.S., Beck T.W., and **J.M. DeFreitas**. Effects of fatigue on motor unit firing rate versus recruitment threshold relationships. *Muscle Nerve.* 2012; 45(1) DOI: [10.1002/mus.22266](#)
 59. **DeFreitas J.M.**, Beck T.W., Stock M.S., Dillon M.A., and P.R. Kasishke. An examination of the time course of training-induced skeletal muscle hypertrophy. *Eur J Appl Physiol.* 2011; 111(11) DOI: [10.1007/s00421-011-1905-4](#)
 60. Beck T.W., Stock M.S., and **J.M. DeFreitas**. Paired pattern classification of electromyographic intensity patterns during concentric and eccentric muscle actions. *Clin Kinesiol.* 2011; Winter [Link](#)
 61. Dillon M.A., Beck T.W., **DeFreitas J.M.**, and M.S. Stock. Mechanomyographic amplitude and mean power frequency versus isometric force relationships detected in two axes. *Clin Kinesiol.* 2011; Fall [Link](#)
 62. Stock M.S, Beck T.W., and **J.M. DeFreitas**. The effects of diverting activities on recovery from fatiguing concentric isokinetic muscle actions. *J Strength Cond Res.* 2011; 25(7) DOI: [10.1519/JSC.0b013e318220d8dc](#)
 63. Beck T.W., **DeFreitas J.M.**, Stock M.S., and M.A. Dillon. Effects of resistance training on force steadiness and common drive. *Muscle Nerve.* 2011; 43(2) DOI: [10.1002/mus.21836](#)
 64. Beck T.W., **DeFreitas J.M.**, and M.S. Stock. An examination of the influence of the innervation zone on monopolar EMG signals. *Clin Kinesiol.* 2011; Summer [Link](#)
 65. Beck T.W., **DeFreitas J.M.**, and M.S. Stock. The effects of a resistance training program on average motor unit firing rates. *Clin Kinesiol.* 2011; Spring [Link](#)
 66. Stock M.S, Beck T.W., **DeFreitas J.M.**, and M.A. Dillon. Test-retest reliability of barbell velocity during the free-weight bench press exercise. *J Strength Cond Res.* 2011; 25(1) DOI: [10.1519/JSC.0b013e318201bd9](#)
 67. Stock M.S, Beck T.W., **DeFreitas J.M.**, and M.A. Dillon. Relationships among peak power output, peak bar velocity, and mechanomyographic amplitude during the free-weight bench press exercise. *J Sport Sci.* 2010; 28(12) DOI: [10.1080/02640414.2010.499440](#)
 68. **DeFreitas, J.M.**, Beck T.W., Stock M.S., Dillon M.A., Sherk V.D., Stout J.R., and J.T. Cramer. A comparison of techniques for estimating training-induced changes in muscle cross-sectional area. *J Strength Cond Res.* 2010; 24(9) DOI: [10.1519/JSC.0b013e3181ec86f3](#)
 69. Beck T.W., **DeFreitas J.M.**, Stock M.S., and M.A. Dillon. Comparison of the muscle activation pattern for the vastus lateralis before and after an 8-week resistance training program. *Biomed Signal Process Control.* 2010; 5(4) DOI: [10.1016/j.bspc.2010.07.002](#)
 70. Stock M.S, Beck T.W., **DeFreitas J.M.**, and M.A. Dillon. Linearity and reliability of the mechanomyographic amplitude versus dynamic constant external resistance relationships for the biceps brachii. *Physiol Meas.* 2010; 31(11) DOI: [10.1088/0967-3334/31/11/006](#)

71. Stock M.S, Beck T.W., **DeFreitas J.M.**, and M.A. Dillon. An examination of the linearity and reliability of the electromyographic amplitude versus dynamic constant external resistance relationships using monopolar and bipolar recording methods. *J Neurosci Methods* 2010; 194 DOI: [10.1016/j.jneumeth.2010.09.014](https://doi.org/10.1016/j.jneumeth.2010.09.014)
72. Beck T.W., **DeFreitas J.M.**, and M.S. Stock. Cross-talk among monopolar surface electromyographic signals from the superficial quadriceps femoris muscles. *Electromyogr Clin Neurophysiol.* 2010; 50(5) PMID: [20718336](https://pubmed.ncbi.nlm.nih.gov/20718336/)
73. Beck T.W., **DeFreitas J.M.**, and M.S. Stock. An examination of cross-talk among surface mechanomyographic signals from the superficial quadriceps femoris muscles during isometric muscle actions. *Hum Mov Sci.* 2010; 29(2) DOI: [10.1016/j.humov.2009.11.005](https://doi.org/10.1016/j.humov.2009.11.005)
74. Beck T.W., **DeFreitas J.M.**, and M.S. Stock. An examination of mechanomyographic signal stationarity during concentric isokinetic, eccentric isokinetic, and isometric muscle actions. *Physiol Meas.* 2010; 31(3) DOI: [10.1088/0967-3334/31/3/005](https://doi.org/10.1088/0967-3334/31/3/005)
75. Stock M.S, Beck T.W., **DeFreitas J.M.**, and M.A. Dillon. Linearity and reliability of the mechanomyographic amplitude versus concentric dynamic constant external resistance relationships for the bench press. *J Strength Cond Res.* 2010; 24(3) DOI: [10.1519/JSC.0b013e3181cc22f1](https://doi.org/10.1519/JSC.0b013e3181cc22f1)
76. Stock M.S, Beck T.W., **DeFreitas J.M.**, and M.A. Dillon. Linearity and reliability of the mechanomyographic amplitude versus dynamic torque relationships for the superficial quadriceps femoris muscles. *Muscle Nerve.* 2010; 41(3) DOI: [10.1002/mus.21491](https://doi.org/10.1002/mus.21491)
77. **DeFreitas J.M.**, Costa P.B., Ryan E.D., Herda T.J., Cramer J.T., and T.W. Beck. Innervation zone location of the biceps brachii, a comparison between genders and correlation with anthropometric measurements. *J Electromyogr Kinesiol.* 2010; 20(1) DOI: [10.1016/j.jelekin.2008.09.009](https://doi.org/10.1016/j.jelekin.2008.09.009)
78. Beck T.W., **DeFreitas J.M.**, Stock M.S., and M.A. Dillon. Cross-correlation analysis of mechanomyographic signals detected in two axes. *Physiol Meas.* 2009; 30(12) DOI: [10.1088/0967-3334/30/12/012](https://doi.org/10.1088/0967-3334/30/12/012)
79. Costa P.B., Ryan E.D., Herda T.J., **DeFreitas J.M.**, Beck T.W., and J.T. Cramer. Effects of static stretching on the hamstrings-to-quadriceps ratio and electromyographic amplitude in men. *J Sports Medicine Phys Fitn.* 2009; 49(4) PMID: [20087300](https://pubmed.ncbi.nlm.nih.gov/20087300/)
80. Stock M.S, Beck T.W., **DeFreitas J.M.**, and M.A. Dillon. Linearity and reliability of the EMG amplitude versus dynamic torque relationships for the superficial quadriceps femoris muscles. *Electromyogr Clin Neurophysiol.* 2009; 50(2) PMID: [20405785](https://pubmed.ncbi.nlm.nih.gov/20405785/)
81. Beck T.W., Housh T.J., Cramer J.T., Stout J.R., Ryan E.D., Herda T.J., Costa P.B., and **J.M. DeFreitas.** Electrode placement over the innervation zone affects the low-, not the high-frequency portion of the EMG frequency spectrum. *J Electromyogr Kinesiol.* 2009; 19(4) DOI: [10.1016/j.jelekin.2008.04.001](https://doi.org/10.1016/j.jelekin.2008.04.001)
82. Beck T.W., **DeFreitas J.M.**, and M.S. Stock. Linearity and reliability of the mechanomyographic amplitude versus submaximal isometric force relationship. *Physiol Meas.* 2009; 30(10) DOI: [10.1088/0967-3334/30/10/002](https://doi.org/10.1088/0967-3334/30/10/002)
83. Beck T.W., **DeFreitas J.M.**, Cramer J.T., and J.R. Stout. A comparison of adaptive and notch filtering for removing electromagnetic noise from monopolar surface electromyographic signals. *Physiol Meas.* 2009; 30(4) DOI: [10.1088/0967-3334/30/4/001](https://doi.org/10.1088/0967-3334/30/4/001)
84. Herda T.J., Ryan E.D., **DeFreitas J.M.**, Costa P.B., Walter A.A., Hoge K.M., Weir J.P., and J.T. Cramer. Can recruiting rankings predict the success of NCAA Division I football teams? An examination of the relationships among Rivals and Scouts recruiting rankings and Jeff Sagarin

- End-of-Season ratings in collegiate football. *J Quant Anal Sport*. 2009; 5(4) DOI: [10.2202/1559-0410.1200](https://doi.org/10.2202/1559-0410.1200)
85. Ryan E.D., Herda T.J., Costa P.B., **DeFreitas J.M.**, Beck T.W., Stout J.R., and J.T. Cramer. Determining the minimal amount of passive stretching necessary to alter musculotendinous stiffness. *J Sport Sci*. 2009; 27(9) DOI: [10.1080/02640410902998254](https://doi.org/10.1080/02640410902998254)
 86. Herda T.J., Housh T.J., Weir J.P., Ryan E.D., Costa P.B., **DeFreitas J.M.**, Walter A.A., Stout J.R., Beck T.W., and J.T. Cramer. The consistency of ordinary least-squares and generalized least-squares polynomial regression on characterizing the mechanomyographic amplitude versus torque relationship. *Physiol Meas*. 2009; 30(2) DOI: [10.1088/0967-3334/30/2/001](https://doi.org/10.1088/0967-3334/30/2/001)
 87. Ryan E.D., Herda T.J., Costa P.B., **DeFreitas J.M.**, Beck T.W., Stout J.R., and J.T. Cramer. Passive properties of the muscle-tendon unit: The influence of muscle cross-sectional area. *Muscle Nerve*. 2009; 39(2) DOI: [10.1002/mus.21218](https://doi.org/10.1002/mus.21218)
 88. Costa P.B., Ryan E.D., Herda T.J., **DeFreitas J.M.**, Beck T.W., and J.T. Cramer. Effects of stretching on peak torque and the H:Q Ratio. *Int J Sports Med*. 2009; 30(1) DOI: [10.1055/s-2008-1038738](https://doi.org/10.1055/s-2008-1038738)
 89. **DeFreitas J.M.**, Costa P.B., Ryan E.D., Herda T.J., Cramer J.T., and T.W. Beck. An examination of innervation zone movement with increases in isometric torque production. *Clin Neurophysiol*. 2008; 119(12) DOI: [10.1016/j.clinph.2008.09.021](https://doi.org/10.1016/j.clinph.2008.09.021)
 90. Ryan E.D., Beck T.W., Herda T.J., Hull H.R., Hartman M.J., Costa P.B., **DeFreitas J.M.**, Stout J.R., and J.T. Cramer. The time course of musculotendinous stiffness responses following different durations of passive stretching. *J Orthop Sports Phys Ther*. 2008; 38(10). DOI: [10.2519/jospt.2008.2843](https://doi.org/10.2519/jospt.2008.2843)
 91. Herda T.J., Ryan E.D., Beck T.W., Costa P.B., **DeFreitas J.M.**, and J.T. Cramer. Reliability of mechanomyographic amplitude and mean power frequency during isometric step and ramp muscle actions. *J Neurosci Methods*. 2008; 171(1) DOI: [10.1016/j.jneumeth.2008.02.017](https://doi.org/10.1016/j.jneumeth.2008.02.017)

Refereed Conference Presentations

Total Presentations: 87

Past: 87

Upcoming: n/a

1. Shields JE, Dos Santos ML, Smith CM, Reese SM, **DeFreitas JM**. Four weeks of resistance training may improve peripheral nerve function in both young and older adults. Presented at Neuroscience 2023, Washington D.C.
2. Danielson TL, **DeFreitas JM**. Is Transcallosal Conduction Time Sensitive to Neural Disorders? A Meta-Analysis. Presented at Neuroscience 2023, Washington DC
3. Smith CM, Reese SM, Shields JE, Olmos AA, Voskuil CC, Ye X, Stock MS, Carr JC, **DeFreitas JM**. The prevalence of an ipsilateral silent periods as a measure of interhemispheric inhibition during mirror illusion. Presented at Neuroscience 2023, Washington DC
4. Reese SM, Smith CM, Shields JE, Olmos AA, Voskuil CC, Ye X, Stock MS, Carr JC, **DeFreitas JM**. The effects of mirror illusion and contraction type on interhemispheric inhibition. Presented at Neuroscience 2023, Washington DC

5. Smith CM, Shields JE, Reese SM, Dos Santos ML, and **DeFreitas JM**. Is Nerve Size Sensitive to Potential Changes in Neuron Size? A Preliminary Study. Presented at American College of Sports Medicine Annual Meeting, 2023, Denver, CO
6. Shields JE, Smith CM, Reese SM, Dos Santos ML and **DeFreitas JM**. Quantifying the Trainability of Peripheral Nerve Function in Young and Older Adults. Presented at American College of Sports Medicine Annual Meeting, 2023, Denver, CO
7. Smith CM, Shields JE, Reese SM, Dos Santos ML, and **DeFreitas JM**. Do Nerves Grow in Response to Resistance Training? A Preliminary Study. Presented at 2023 CSACSM, Tulsa, OK
8. Reese SM, Smith CM, Olmos AA, Shields JE, Voskuil C, Ye X, Stock MS, Carr JC, and **DeFreitas JM**. Does the Type of Contraction Performed During Mirror Illusion Alter Hemispheric Communication? A Preliminary Study. Presented at 2023 CSACSM, Tulsa, OK.
9. MacLennan RJ, Hernandez-Sarabia J, Reese SM, Shields JE, Smith CM, Stute K, Collyar J, Olmos AA, Danielson TJ, MacLennan DL, Pagan JI, Cirts RM, Harmon KK, Coker N, Carr JC, Ye X, Perry JW, Stock MS, **DeFreitas JM**. fNIRS brain imaging is capable of discerning hemispheric laterality during lower-body contractions. Presented at 2023 CSACSM, Tulsa, OK
10. MacLennan R.J., Hernandez-Sarabia J.A., Pagan J.I., Girts R.M., Harmon K.K., Stute K., Coker N.A., Carr J.C., Ye X., Stock M.S., and **J.M. DeFreitas**. Sensitivity of fNIRS brain imaging to determine hemispheric laterality during lower-body motor tasks. American College of Sports Medicine – 2022 Annual Meeting, San Diego, CA
11. Hernandez-Sarabia J.A., Barrera-Curiel A., Olmos A.A., MacLennan R.J., and **J.M. DeFreitas**. Inhibiting muscle spindles through prolonged muscle vibration reduces motor and somatosensory cortical activity. American College of Sports Medicine – 2022 Annual Meeting, San Diego, CA
12. Chavez L., Barrera-Curiel A., Shields J., Hernandez-Sarabia J.A., Danielson T., MacLennan R.J., and **J.M. DeFreitas**. Is there a relationship between antagonist coactivation and reaction time during dual-tasks? American College of Sports Medicine – 2022 Annual Meeting, San Diego, CA
13. Danielson TL, Reese SM, Smith CM, and **J.M. DeFreitas**. The reproducibility and variability of a novel TMS measure: Transcallosal conduction time. Central States ACSM – 2022 Annual Meeting, Fayetteville, AR
14. Shields JE, MacLennan RJ, Smith CM, Reese SM, Olmos AA, and **J.M. DeFreitas**. Examining the enigmatic relationship between muscle size and strength: A disuse study. Central States ACSM – 2022 Annual Meeting, Fayetteville, AR
15. Smith CM, Shields JE, MacLennan RJ, Reese SM, Olmos AA, and **J.M. DeFreitas**. The effects of disuse from lower limb immobilization on proprioception: a preliminary study. Central States ACSM – 2022 Annual Meeting, Fayetteville, AR
16. Castinuella E., Reira A., Richardson L., Hernandez-Sarabia J., Estrada C., **DeFreitas J.M.**, and M.J. Luera. Test-retest reliability of peak force during isometric knee extension and squat. Texas ACSM – 2022 Annual Meeting.
17. Mikel J., Reira A., Richardson L., Hernandez-Sarabia J., Estrada C., **DeFreitas J.M.**, and M.J. Luera. A sex comparison of muscle quality and isometric squat performance in lower-body resistance trained individuals. Texas ACSM – 2022 Annual Meeting.
18. Richardson L., Luera M.J., Shields J., MacLennan R., Trevino M.A., and **J.M. DeFreitas**. A comparison of techniques for decomposing surface EMG signals during high-intensity contractions: A preliminary analysis. Texas ACSM – 2021 Annual Meeting.

19. Thiele R.M., and **J.M. DeFreitas**. The effects of repeated shortening or lengthening muscle actions on knee extensor position sense. American College of Sports Medicine –Annual Meeting, Minneapolis, MN, May 28 – June 1, 2018
20. Mackey C.S., Muddle T.W.D., and **J.M. DeFreitas**. Can the Air Force physical fitness assessment predict aerobic and anaerobic capacity? Central States ACSM – Annual Meeting, Kansas City, MO. Oct. 19, 2018
21. Johnson Q, Mackey C.S., Muddle T.W.D., Smith D.B., and **J.M. DeFreitas**. Comparison of body composition across class ranks in Reserve Officers’ Training Corps (ROTC) cadets. Central States ACSM – Annual Meeting, Kansas City, MO. Oct. 19, 2018
22. Carr J.C., Ye X., Stock M.S., Wages N.P., and **J.M. DeFreitas**. Is the magnitude of cross education dependent on initial strength levels? National Strength and Conditioning Association – National Conference, Indianapolis, IN. July 11 – July 14, 2018
23. Magrini M.A., Barrera-Curiel A., Colquhoun R.J., Ferrell M.C., Hernandez-Sarabia J.A., Tomko P.M., Jenkins N.D.M., Thiele R.M., and **J.M. DeFreitas**. Age-related differences in isometric, dynamic, and stretch-shortening cycle electromechanical delay assessment. National Strength and Conditioning Association –National Conference, Indianapolis, IN. July 11 – July 14, 2018
24. Magrini M.A., Barrera-Curiel A., Colquhoun R.J., Ferrell M.C., Hernandez-Sarabia J.A., Tomko P.M., Jenkins N.D.M., Thiele R.M., and **J.M. DeFreitas**. Contractile components do not account for any variance in the reactive leg drop performance. National Strength and Conditioning Association –National Conference, Indianapolis, IN. July 11 – July 14, 2018
25. Carr J.C., Ye X., Stock M.S., Wages N.P., Bemben M.G. and **J.M. DeFreitas**. Contralateral adaptations in rate of force development and rate of muscle activation following unilateral isometric training. International Society of Electrophysiology and Kinesiology –2018 Congress, Dublin, Ireland. June 29 – July 2, 2018
26. Thiele R.M., and **J.M. DeFreitas**. The effects of repeated shortening or lengthening muscle actions on knee extensor position sense. American College of Sports Medicine –Annual Meeting, Minneapolis, MN, May 28 – June 1, 2018
27. Colquhoun R.J., Magrini M.A., Haun C.T., Muddle T.W.D., Tomko P.M., Luera M.J., Mackey C.S., Vann C.G., Martin J.S., Young K.C., **DeFreitas J.M.**, Roberts M.D., and N.D.M. Jenkins. Relationships between motor unit behavior during maximal effort contractions and skeletal muscle phenotype. American College of Sports Medicine –Annual Meeting, Minneapolis, MN, May 28 – June 1, 2018
28. Olmos A.A., Hester G.M., Pope Z.K., Magrini M.A., Colquhoun R.J., Barrera-Curiel A., Estrada C.A., and **J.M. DeFreitas**. Ipsilateral and contralateral rapid torque adaptations to unilateral resistance training in young and older males. American College of Sports Medicine –Annual Meeting, Minneapolis, MN, May 28 – June 1, 2018
29. Ha P.L., Hester G.M., Colquhoun R.J., Magrini M.A., Pope Z.K., Barrera-Curiel A., Estrada C.A., and **J.M. DeFreitas**. Effects of resistance training on maximal motor unit firing rates in young and older males. American College of Sports Medicine –Annual Meeting, Minneapolis, MN, May 28 – June 1, 2018
30. Luera M.J., Estrada C.A., Hernandez-Sarabia J.A., Troung J., Muddle T.W.D., and **J.M. DeFreitas**. A preliminary comparison of muscle pennation angle measures to explain variance in maximal force production. American College of Sports Medicine –Annual Meeting, Minneapolis, MN, May 28 – June 1, 2018
31. Hernandez-Sarabia J.A., Luera M.J., Estrada C.A., and **J.M. DeFreitas**. Contribution of mono- and bi-articular muscle sizes of single- and multi-joint maximal strength. American College of Sports Medicine –Annual Meeting, Minneapolis, MN, May 28 – June 1, 2018

32. Mackey C.S., Thiele R.M., Conchola E.C., and **J.M. DeFreitas**. The magnitude of hamstring co-activation during a knee extension is dependent on knee flexor strength. American College of Sports Medicine –Annual Meeting, Minneapolis, MN, May 28 – June 1, 2018
33. Barrera-Curiel A., Magrini M.A., Thiele R.M., Hernandez-Sarabia J.A., Colquhoun R.J., Tomko P.M., Jenkins N.D.M., and **J.M. DeFreitas**. Antagonist coactivation during a reactive leg drop in young and older adults. American College of Sports Medicine –Annual Meeting, Minneapolis, MN, May 28 – June 1, 2018
34. Magrini M.A., Barrera-Curiel A., Thiele R.M., Hernandez-Sarabia J.A., Colquhoun R.J., Tomko P.M., Jenkins N.D.M., and **J.M. DeFreitas**. Both slower sensory response time and electromechanical delay explain age-related differences in the reactive leg drop. American College of Sports Medicine –Annual Meeting, Minneapolis, MN, May 28 – June 1, 2018
35. Barrera-Curiel A., Pope Z.K., Colquhoun R.J., Hernandez Sarabia J.A., and **J.M. DeFreitas**. The effects of altered stretch reflex sensitivity on motor unit recruitment. Presented at Neuroscience 2017 - Annual Meeting for the Society for Neuroscience (SfN), Washington D.C., Nov. 14, 2017
36. Hernandez Sarabia J.A., Barrera-Curiel A., Pope Z.K., Colquhoun R.J., Magrini M.A., and **J.M. DeFreitas**. Estimating the proprioceptive contribution to balance: validation with measures of stretch reflex function. Presented at Neuroscience 2017 - Annual Meeting for the Society for Neuroscience (SfN), Washington D.C., Nov. 12, 2017
37. Magrini M.A., Thiele R.M., Colquhoun R.J., Barrera-Curiel A., Blackstock T.S., and **J.M. DeFreitas**. The reactive leg drop: a simple and novel sensorimotor assessment to predict fall risk in older individuals. National Strength and Conditioning Association (NSCA) - Annual Meeting, Las Vegas, NV July 12-15, 2017
38. Muddle T.W.D., Magrini M.A., Colquhoun R.J., Luera M.J., **DeFreitas J.M.**, and N.D.M. Jenkins. Effects of fatiguing high- vs. low-force isometric contractions on motor unit recruitment and firing behavior. National Strength and Conditioning Association (NSCA) - Annual Meeting, Las Vegas, NV July 12-15, 2017
39. Colquhoun R.J., Magrini M.A., Estrada C.A., Hernandez Sarabia J.A., Muddle T.W.D., Jenkins N.D.M., and **J.M. DeFreitas**. Changes in motor unit action potential morphology from high- and low-load resistance exercise to failure. National Strength and Conditioning Association (NSCA) - Annual Meeting, Las Vegas, NV July 12-15, 2017
40. Thiele R.M., Warren A.J., and **J.M. DeFreitas**. The effects of muscle damage on muscle spindle function. American College of Sports Medicine –Annual Meeting, Denver, CO, May 30 – June 3, 2017
41. Colquhoun R.J., Haun C.T., Mumford P.W., Roberson P.A., Pascoe D.D., Feeny M.P., Young K.C., Martin J.S., Roberts M.D., Muddle T.W.D., Riffe J.J., Luera M.J., Magrini M.A., Mackey C.S., Stock M.S., Jenkins N.D.M. and **J.M. DeFreitas**. The effects of a muscle biopsy on motor unit firing properties. American College of Sports Medicine –Annual Meeting, Denver, CO, May 30 – June 3, 2017
42. Barrera-Curiel A, Colquhoun R.J., Pope Z.K., and **J.M. DeFreitas**. An examination of patellar tendon reflex pre-motor conduction velocity across the adult lifespan. American College of Sports Medicine –Annual Meeting, Denver, CO, May 30 – June 3, 2017
43. Magrini M.A., Colquhoun R.J., Barrera-Curiel A, Thiele R.M., Muddle T.W.D., **DeFreitas J.M.**, Smith D.B. and N.D.M. Jenkins. Relationships among and differences between muscle quality and functional performance in younger and older women. American College of Sports Medicine – Annual Meeting, Denver, CO, May 30 – June 3, 2017

44. Mackey C.S., Thiele R.M., Magrini M.A., and **J.M. DeFreitas**. Relationship between estimated muscle fiber-type and peak velocity for the upper and lower extremities. American College of Sports Medicine –Annual Meeting, Denver, CO, May 30 – June 3, 2017
45. Olmos A.A., Hester G.M., Pope Z.K., Colquhoun R.J., Magrini M.A., Barrera-Curiel A., Estrada C.A. and **J.M. DeFreitas**. Maximal velocity adaptations during unilateral resistance training in older adults. American College of Sports Medicine –Annual Meeting, Denver, CO, May 30 – June 3, 2017
46. Estrada C.A., Colquhoun R.J., Speer A.G., Jacobson B.H., and **J.M. DeFreitas**. Intra- and inter-set velocity characteristics during high- and low-load resistance training to failure. American College of Sports Medicine –Annual Meeting, Denver, CO, May 30 – June 3, 2017
47. Martin J.S., Mumford P.W., Haun C.T., Roberson P.A., Colquhoun R.J., Freeney M.P., Luera M.J., Mackey C.S., Muddle T.W.D., Riffe J.J., Young K.C., Pascoe D.D., **DeFreitas J.M.**, Jenkins N.D.M., and M.D. Roberts. Effects of a pre-workout supplement on hyperemia following leg extension resistance exercise at different intensities. American College of Sports Medicine – Annual Meeting, Denver, CO, May 30 – June 3, 2017
48. Magrini M.A., Hester G.H., Pope Z.K., Colquhoun R.J., Estrada C., and **J.M. DeFreitas**. Rapid velocity and rate of activation characteristics of the knee extensors in young and old males. National Strength and Conditioning Association (NSCA) - Annual Meeting, New Orleans, LA July 6-9, 2016
49. Colquhoun, R.J., Hester G.H., Pope Z.K., Magrini M.A., Benik F.M., and **J.M. DeFreitas**. Short-term adaptations of early- and late-phase strength characteristics during 4 weeks of strength training. National Strength and Conditioning Association (NSCA) - Annual Meeting, New Orleans, LA July 6-9, 2016
50. Mackey C.S., Magrini M.A., Thiele R.M., and **J.M. DeFreitas**. An examination of wrist flexor fatigue following a neutral-grip elbow flexor/extensor exercise protocol. National Strength and Conditioning Association (NSCA) - Annual Meeting, New Orleans, LA July 6-9, 2016
51. Mackey C.S., Hester G.M., Pope Z.K., Benik F.M., Colquhoun R.J., and **J.M. DeFreitas**. Effects of short-term strength training on maximal velocity parameters and rate of muscle activation. American College of Sports Medicine –Annual Meeting, Boston, MA June 2, 2016
52. Hester G.M., Pope Z.K., Benik F.M., and **J.M. DeFreitas**. Effects of short-term strength training on maximal motor unit firing rates and antagonist co-activation. American College of Sports Medicine –Annual Meeting, Boston, MA June 2, 2016
53. Boyd L., Jacobson B., **DeFreitas J.M.**, and M. Mwavita. Effects of high-velocity resistance or dual-task balance training on self-perception and executive function. American College of Sports Medicine –Annual Meeting, Boston, MA June 2, 2016
54. Pope Z.K., Hester G.M., Benik F.M., and **J.M. DeFreitas**. Action potential amplitude as a non-invasive indicator of motor unit specific hypertrophy. American College of Sports Medicine – Annual Meeting, Boston, MA June 1, 2016
55. Pope Z.K., Hester G.M., Benik F.M., Sellers J.H., and **J.M. DeFreitas**. The effect of strength training on maximal motor unit discharge properties. Neuroscience 2015 - Annual Meeting for the Society for Neuroscience (SfN), Chicago, IL October 18, 2015
56. Mackey C.S., Hester G.M., Pope Z.K., Benik F.M., and **J.M. DeFreitas**. Effects of unilateral low-velocity resistance training with ballistic-intent on maximal and rapid torque development of the trained and untrained knee extensors. Presented at Central States American College of Sports Medicine – Regional Chapter Annual Meeting, Warrensburg, MO. October 2015

57. Hester G.M., Pope Z.K., Benik F.M., Schnaiter J.A., Sellers J.H., and **J.M. DeFreitas**. Comparison of morphological, strength, and rapid-torque measures between moderately- and highly-resistance trained males. Presented at American College of Sports Medicine –Annual Meeting, Orlando, FL. June 2015
58. Pope Z.K., and **J.M. DeFreitas**. Does muscle spindle sensitivity affect common drive? Presented at American College of Sports Medicine –Annual Meeting, Orlando, FL. June 2015
59. Pope Z.K., and **J.M. DeFreitas**. Muscle vibration dosage and the patellar tendon reflex response. Presented at Central States American College of Sports Medicine – Regional Chapter Annual Meeting, Overland Park, KS. Oct 23, 2014
60. Benik F.M., Pope Z.K., and **J.M. DeFreitas**. A preliminary examination of muscle quality, size, and spindle integrity across the adult lifespan. Presented at Central States American College of Sports Medicine – Regional Chapter Annual Meeting, Overland Park, KS. Oct 23, 2014
61. Hester G.M., Pope Z.K., Sellers J.H., Thiele R.M., and **J.M. DeFreitas**. Potentiation: Effect of ballistic and heavy exercise on vertical jump performance. Presented at Central States American College of Sports Medicine – Regional Chapter Annual Meeting, Overland Park, KS. Oct 23, 2014
62. **DeFreitas, J.M.**, and T.W. Beck. An examination of antagonist muscle motor unit synchronization during co-activation. Presented at National Strength and Conditioning Association (NSCA) - Annual Meeting, Las Vegas, NV. July 11, 2014
63. **DeFreitas, J.M.**, and T.W. Beck. Antagonist muscle fatigue decreases agonist motor unit synchronization. Presented at American College of Sports Medicine - Annual Meeting, Orlando, FL. May 30, 2014
64. Pope, Z.K., **DeFreitas, J.M.**, and T.W. Beck. An examination of antagonist motor unit firing properties during isometric contractions. Presented at American College of Sports Medicine - Annual Meeting, Orlando, FL. May 30, 2014
65. Hester G.M., Conchola E.C., Thiele R.M., and **J.M. DeFreitas**. An examination of the relationship between electromechanical delay and muscle quality. Presented at American College of Sports Medicine - Annual Meeting, Orlando, FL. May 29, 2014
66. Hester G.M., Conchola E.C., Thiele R.M., Palmer T.B., Smith D.B., and **J.M. DeFreitas**. Examination of power output during a high-volume power-oriented back squat protocol. Central States American College of Sports Medicine – Regional Chapter Annual Meeting, Warrensburg, MO. Oct 17, 2013
67. Ye X., Beck T.W., and **J.M. DeFreitas**. Comparisons of concentric and eccentric exercise-induced strength loss and force steadiness decrement in dominant forearm flexors. National Strength and Conditioning Association – National Conference. Las Vegas, NV. July, 2013
68. **DeFreitas, J.M.**, Beck T.W., and M.S. Stock. The effects of strength training on the synchronization and net post-synaptic potentials of both low- and high-threshold motor units. National Strength and Conditioning Association – National Conference. Providence, RI. July 12, 2012
69. Stock, M.S., Beck T.W., **DeFreitas J.M.**, and X. Ye. Gender comparisons of relative peak torque and electromyographic mean frequency during repeated maximal concentric isokinetic muscle actions. National Strength and Conditioning Association – National Conference. Providence, RI. July 12, 2012
70. **DeFreitas, J.M.**, Beck T.W., and M.S. Stock. An examination of motor unit firing rate and recruitment properties as a mechanism for the cross-education of strength. Neuroscience 2011 - Annual Meeting for the Society for Neuroscience (SfN). November 16, 2011

71. Stock, M.S., Beck T.W., and **J.M. DeFreitas**. Motor unit recruitment threshold versus de-recruitment threshold relationships for the vastus lateralis and vastus medialis. National Strength and Conditioning Association – National Conference. Las Vegas, NV. July 15, 2011
72. **DeFreitas, J.M.**, Beck T.W., Stock M.S., and P.R. Kasishke. A reexamination of the efficiency of electrical activity (EEA) technique for identifying the neural versus hypertrophic contributions in the time course of strength gains. American College of Sports Medicine - Annual Meeting, Denver, CO. June 1, 2011
73. Stock, M.S., Beck T.W., **DeFreitas J.M.**, and M.A. Dillon. The minimal difference needed to be considered real and the standard error of measurement for examining barbell velocity during the bench press. National Strength and Conditioning Association – National Conference. Orlando, FL. July 15, 2010
74. Stock, M.S., Beck T.W., **DeFreitas J.M.**, and M.A. Dillon. Linearity and reliability of the EMG amplitude versus dynamic torque relationship for the vastus lateralis. National Strength and Conditioning Association – National Conference. Las Vegas, NV. July 9, 2009
75. Herda, T.J., Ryan E.D., Costa P.B., Walter A.A., Hoge K.M., **DeFreitas J.M.**, Stock M.S., Beck T.W., Stout J.R. and J.T. Cramer. Reliability of absolute versus log-transformed regression for quantifying the torque-related patterns for response for mechanomyographic amplitude. American College of Sports Medicine - Annual Meeting, Seattle, WA. 2009
76. Costa, P.B., Ryan E.D., Herda T.J., **DeFreitas J.M.**, Beck T.W., and J.T. Cramer. Acute effects of static stretching on peak torque and rate of velocity development. American College of Sports Medicine - Annual Meeting, Seattle, WA. 2009
77. **DeFreitas, J.M.**, Costa P.B., Ryan E.D., Herda T.J., Cramer J.T., and T.W. Beck. An examination of innervation zone movement during isometric muscle actions. National Strength and Conditioning Association – National Conference. Las Vegas, NV. July 10, 2008
78. Costa, P.B., Ryan E.D., Herda T.J., **DeFreitas J.M.**, Beck T.W. and J.T. Cramer. Acute effects of static stretching on leg extension and flexion isokinetic peak torque and the hamstring-to-quadriceps ration in men. National Strength and Conditioning Association – National Conference. Las Vegas, NV. July 11, 2008
79. Herda, T.J., Ryan E.D., Costa P.B., **DeFreitas J.M.**, Beck T.W., and J.T. Cramer. The relationship between musculotendinous stiffness and muscle cross-sectional area of the plantar flexors. National Strength and Conditioning Association – National Conference. Las Vegas, NV. July 10, 2008
80. Ryan, E.D., Beck T.W., Herda T.J., Costa P.B., **DeFreitas J.M.**, Stout J.R., and J.T. Cramer. The effect of passive stretching duration on musculotendinous stiffness. National Strength and Conditioning Association – National Conference. Las Vegas, NV. July 11, 2008
81. Cramer, J.T., **DeFreitas J.M.**, Beck T.W., Costa P.B., Ryan E.D., and T.J. Herda. Innervation zones of the biceps brachii may shift with increasing torque during isometric forearm flexion. XVII Congress of the International Society of Electrophysiology and Kinesiology. Niagara Falls, Ontario, Canada. June 19, 2008
82. Herda, T.J., Ryan E.D., Costa P.B., **DeFreitas J.M.**, Beck T.W., and J.T. Cramer. Reliability of the mechanomyogram during incremental isometric muscle actions. XVII Congress of the International Society of Electrophysiology and Kinesiology. Niagara Falls, Ontario, Canada. June 19, 2008
83. Ryan, E.D., Beck T.W., Herda T.J., Costa P.B., **DeFreitas J.M.**, and J.T. Cramer. Repeatability of the mechanomyographic amplitude versus isometric torque patterns of responses. XVII

Congress of the International Society of Electrophysiology and Kinesiology. Niagara Falls, Ontario, Canada. June 19, 2008

84. **DeFreitas, J.M.**, Beck T.W., Ryan E.D., Herda T.J., Costa P.B., and J.T. Cramer. A comparison of techniques for estimating innervation zone location for the leg extensors. American College of Sports Medicine - Annual Meeting, Indianapolis, IN. May 30, 2008
85. Costa, P.B., **DeFreitas J.M.**, Ryan E.D., Herda T.J., Beck T.W., Stout J.R., and J.T. Cramer. Acute effects of static stretching on leg extension and flexion isokinetic peak torque and the hamstring-to-quadriceps ratio. American College of Sports Medicine - Annual Meeting, Indianapolis, IN, May 30, 2008.
86. Herda, T.J., Ryan E.D., Costa P.B., **DeFreitas J.M.**, Beck T.W., Stout J.R., and J.T. Cramer. Reliability of mechanomyographic amplitude recorded during isometric step versus ramp muscle actions. American College of Sports Medicine - Annual Meeting, Indianapolis, IN, May 30, 2008.
87. Vingren, J.L., Silvestre R., Hatfield D.L., Spiering B.A., Fragala M.S., Ho J.Y., Maresh C.M., Volek J.S., **DeFreitas J.M.**, Puglisi M.J., Forsythe C.E., Quann E.E., and W.J. Kraemer. Effect of adding exercise to a diet containing glucomannan. Experimental Biology - Annual Meeting, Washington D.C., April 29, 2007

Invited Speaking Engagements

Below are presentations for which I was invited to speak.

** denotes that at least partial compensation (honorarium, travel, etc.) was provided as part of the solicitation for my presentation.*

1. **DeFreitas, J.M.** *Neural adaptations to strength training: How much do we actually know?* Presented virtually for Tarleton State University. Sept 7, 2023
2. **DeFreitas, J.M.** *Neural adaptations to strength training: How much do we actually know?* Presented virtually for the University of Mississippi – HESS Friday Seminar. Nov. 20, 2020
3. **DeFreitas, J.M.** *Neural adaptations to strength training: How much do we actually know?* Presented virtually for Loyola University - Chicago. Oct 20, 2020
4. **DeFreitas, J.M.** *Neural adaptations to strength training: How much do we actually know?* Presented at the American College of Sports Medicine – Central States Chapter. Tulsa, OK. Oct 24, 2019
5. * **DeFreitas, J.M.** and M.S. Stock. *Gary Dudley Memorial Lecture: The time course of neural and hypertrophic adaptations to short-term training: what's new?* Presented at the National Strength and Conditioning Association – National Conference. Las Vegas, NV. July 13, 2017
6. * **DeFreitas, J.M.** *Is sensory function deterioration a direct cause of aging-related motor deficits?* Presented at the University of Texas Rio Grande Valley as part of their Translational Research Seminar Series. Brownsville, TX. October 15, 2016
7. **DeFreitas, J.M.** *Human comfort in space: physiology, performance, and exercise.* Presented as a seminar for the Departments of Aerospace Engineering and Architecture, Oklahoma State University. Stillwater, OK. September 21, 2016

8. * **DeFreitas, J.M.** *Motor unit action potential analysis techniques.* Presented at the 2016 ISEK DelSys Workshop, held at the 2016 Congress of the International Society of Electrophysiology and Kinesiology. Chicago, IL. July 5, 2016
9. * **DeFreitas, J.M.** *Using dEMG to assess motor unit adaptations with training.* Presented at the 3rd ISB Symposium on Motor Control in Biomechanics, held at the American College of Sports Medicine Annual Meeting. Boston, MA. May 31, 2016
10. * **DeFreitas, J.M.** *Are aging-related losses in sensory function the cause of motor function deficits?* Presented at Oklahoma State University Center for Health Science as part of their First Friday Seminar series. Tulsa, OK. May 5, 2016
11. * **DeFreitas, J.M.** *Understanding the Nervous System's Role in Strength Training.* Presented at the National Strength and Conditioning Association – Oklahoma State Clinic. Norman, OK. February 20, 2015