
Arik Davidyan, Ph.D.

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EDUCATION

<i>Ph.D.</i>	2020	University of California, Davis Molecular, Cellular, and Integrative Physiology Program Emphasis in Exercise Physiology Major Professor: Dr. Sue Bodine
<i>BSc.</i>	2014	University of California, Davis Exercise Biology Neurobiology, Physiology and Behavior Department

PROFESSIONAL EXPERIENCE AND APPOINTMENTS

Oklahoma Medical Research Foundation, Aging & Metabolism Research Program, Miller Lab, Oklahoma City, OK, USA.

Post-Doctoral Fellow

2020-present

- Dr. Miller's lab studies the cellular and molecular mechanisms that lead to an increase in healthspan. Of particular interest is the role the mitochondria plays in maintaining healthspan in aging individuals, and whether the maintenance of the quality of mitochondrial proteins aids in maintaining overall health.
- I am developing a novel technique to visualize mitochondrial fission and fusion in skeletal muscle *in vivo* using multiphoton-photon imaging. Additionally, I am developing a new technique to assess mitochondrial morphological changes in response to metabolic stress.
- I am developing a new approach to measure mitochondrial function, dynamics, and mitochondrial protein turnover in specific cell-types in the brain *in vivo* and *ex vivo*.

University of Davis California, Department of Neurobiology, Physiology and Behavior, Bodine Lab, Davis, CA, USA.

PhD Candidate

2015-2019

- Dr. Bodine's lab works in conjunction with the department of Neurobiology, Physiology and Behavior at the University of California Davis and the United States Department of Veterans Affairs. The main interest of her laboratory is understanding the molecular and cellular mechanisms responsible for muscle's adaptation to exercise and inactivity, and in determining the potential role for exercise in disease prevention and increased quality of life with aging.
- I researched the cellular and molecular effects that are affected by testosterone supplementation and deprivation on skeletal muscle mass and function in mice. More specifically, the research focuses on the ways sex, age, and physical activity mediate these effects.
- Collaborated with Dr. Keith Baar's laboratory at the University of California, Davis on projects relating to skeletal muscle physiology.

University of California, Davis, School of Veterinary Medicine, Department of Pathology, Microbiology and Immunology, Borjesson Lab, Davis, CA, USA.

Laboratory Technician

2014

- Dr. Borjesson's lab focuses on comparative stem cell biology and translational regenerative medicine.
- I researched the induction of wound healing processes in horses following mesenchymal stem cell treatments. Specifically, I focused on how genes that mediate these processes were differentially transcribed.

Yolo County Coroner's Office, Yolo County, Woodland, CA, USA.

Paid-Intern

2014

- The coroner's office works in collaboration with other local and federal agencies to investigate the circumstances surrounding a death within its jurisdiction.
- I assisted in crime scene investigation, documentation, and evidence collection. Locate and review medical records of deceased. I assist in post-mortem autopsies.

PUBLICATIONS

- Textor JA, Clark KC, Walker NJ, Aristizobal FA, Kol A, Lejeune SM, Bledsoe A, **Davidyan A**, Gray SN, Bohannon-Worsley LK, Woolard KD, Borjesson DL. *Allogeneic Stem Cells Alter Gene Expression and Improve Healing of Distal Limb Wounds in Horses*. Stem Cells and Translational Medicine. October, 2017. (doi: 10.1002/sctm.17-0071)
- D. Hughes, G. Marcotte, L. Baehr, D. West, A. Marshall, **A. Davidyan**, S.M. Ebbert, C.M. Adams S. Bodine, K. Baar. *Alterations in the muscle force transfer apparatus in aged rats during unloading and reloading: Impact of MicroRNA -31*. Journal of Physiology. May, 2018. (doi: 10.1113/JP275833)
- **Davidyan**. *Housemates Analogy for Membrane Potential*. Advances in Physiology Education. March 2021. (doi: <https://doi.org/10.1152/advan.00174.2020>).
- **Davidyan**, S. Pathak, K. Baar, S. Bodine. *Maintenance of Muscle Mass in Adult Male Mice is Independent of Testosterone*. PLOS ONE. March 2021. (doi: 10.1371/journal.pone.0240278)
- M. E. Martin, **A. Davidyan**. *Implementing an Undergraduate Learning Assistant Program Tailored for Remote Instruction*. Journal of Microbiology & Biology Education. March 2021. (doi: [10.1128/jmbe.v22i1.2463](https://doi.org/10.1128/jmbe.v22i1.2463))
- **A. Davidyan**, S. Pathak, K. Baar. S. Bodine. Testosterone supplementation have no effect on skeletal muscle mass of adult male and female mice but results in sex divergence when administered in conjunction with increased loading. **In Prep**, will be submitted to *Journal of Applied Physiology*.
- **A. Davidyan**, V. Farrar, N. Caporale. *Science Communication Assignment Improves Students Self-Perception as Community Educators*. **In Prep**, will be submitted to Advances in Physiology Education.

My NCBI bibliography: <https://www.ncbi.nlm.nih.gov/myncbi/1d95oqrzym-QY/bibliography/public/>

TEACHING EXPERIENCE

Instructor of Record / Associate instructor – Responsible for lesson planning, in-class instruction, office hours, designing assessments, and evaluating student work.

University of California Davis – NPB Department

- *Neurobiology, Physiology, and Behavior– NPB 101D* Fall 2019
- *Neurobiology, Physiology, and Behavior– NPB 101* Summer 2019
- *Neurobiology, Physiology, and Behavior– NPB 101D* Spring 2017

California State University, Sacramento – Department of Biological Sciences

- *Anatomy and Physiology - BIO26* Fall 2017

Lead Teaching Assistant - Responsible for lesson planning, teaching review sections, office hours, evaluating student work, maintaining course site, and mentoring and training other TAs.

University of California Davis

- *Exercise Laboratory Lab – EXB 104L* Spring 2015
- *Neurobiology, Physiology, and Behavior– NPB 101* Spring 2017
- *Genes and Gene Expression – BIS 101* Summer 2018
- *Neurobiology, Physiology, and Behavior– NPB 101D* Fall 2018, Winter 2019

Teaching Assistant - Responsible for lesson planning, teaching review sections, office hours, evaluating student work.

University of California Davis

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- *Human Gross Anatomy - EXB 106/CHA 101* Winter 2014
 - *Exercise Laboratory Lab – EXB 104L* Fall 2014
 - *Environmental Effects on Performance - EXB 111* Winter 2015
 - *Genes and Gene Expression – BIS 101* Summer 2015
 - *Exercise Physiology – EXB 101* Fall 2015, Spring 2016
 - *Neurobiology, Physiology, and Behavior– NPB 101D* Fall 2016, Fall & Winter 2017, Spring 2018
 - *Neurobiology, Physiology, and Behavior– NPB 101* Winter 2017

EDUCATIONAL DEVELOPMENT EXPERIENCE

Center for Educational Effectiveness, UC Davis

Graduate Student Assistant

Summer 2018, Summer 2019

- I supported graduate student and faculty development at the Center for Educational Effectiveness. I designed and co-facilitated workshops for graduate students and faculty and facilitate discipline-specific professional development for instructors. I conducted research on the effectiveness of teaching consultations and their role in promoting student learning.

Graduate Teaching Fellow - Teaching Assistant Consultant Fellows Program

- I participated in weekly professional development activities on evidence-based teaching practices with a cohort of teaching fellows. I conducted experiential workshops and teaching consultations for graduate students and postdoctoral scholars, in total 23 one-on-one consultations and 20 workshops. I developed materials and tools for the UC Davis teaching community.

Workshop Facilitation

List of workshops and workshop series facilitated from 2016-Present through the UC Davis Center for Educational Effectiveness

Series title: *Summer Workshop Series*

2019

1. Introduction to Hybrid and Online Teaching
2. Developing a Statement of Teaching Philosophy for Academic Job Applications
3. The Diversity Statement: Communicating Experiences of Social Justice and Diversity in Higher Education
4. Universal Design for Learning

Series title: *University of California Davis - Teaching Assistant Orientation*

2019

1. Lesson Planning for Student Success
2. Assessing and Grading Effectively and Efficiently
3. Establishing Positive Learning Environment

Series title: *“Creating Inclusive Learning Spaces: From Positive Instructor Presence to Equitable Teaching Practices”*

2019

1. Working through biases and misconceptions to humanize both instructors and students
2. Navigating unexpected classroom situations

Program title: *“Learning Assistants Development Program”*

2018-2019

- Weekly meeting covering pedagogical topics including diversity, student engagement, student motivation, cooperative learning, questioning strategies and question types, constructivism, experiential learning, qualities of an effective teacher, implicit biases, growth and fixed mindset, cultural competence, argumentation and metacognition, multiple intelligences, universal design for learning, and student wellbeing.

Series title: *Foundations in Teaching*

2018

1. Building Supportive Learning Environments for Critical Conversations

Series title: *Summer Workshop Series* 2018

1. Introduction to Hybrid and Online Teaching
2. Developing a Statement of Teaching Philosophy for Academic Job Applications
3. The Diversity Statement: Communicating Experiences of Social Justice and Diversity in Higher Education

Series title: *University of California Davis - Teaching Assistant Orientation* 2018

1. Starting Out: Teaching Strategies for New Instructors
2. Establishing Positive Learning Environment
3. Promoting Participation and Engagement

Program title: *"TA Well-Being Program"* 2018

1. Well-Being, inside and outside the classroom
2. Well-Being as a Promoter for Equity, Equality, and Inclusion

EDUCATIONAL DEVELOPMENT AWARDS AND CERTIFICATES

- SEPAL Scientific Teaching Summer Institute 2019
- Designing Courses for Inclusivity and Student Success (certificate) 2016
- Teaching in the Modern Classroom: Humanizing the Learning Experience (certificate) 2016
- Objectives, Assessment, Instruction: Strategies for Effective Course Design (certificate) 2015

INITIATIVES AND DEVELOPMENT WORK

- Developed and facilitated an *LA training program* to train undergraduate serving as learning assistants in both microbiology and physiology upper division courses at UC Davis. 2019
- Established and ran the *TA Well-Being Program* in collaboration with the UC Davis Center for Educational Effectiveness and with UC Davis Student Health and Counseling Services. The program promotes wellbeing practices for graduate students and empowers them to do the same in their classroom. The program is a certificate bearing program and to-date has included over 150 graduate students. 2018 - 2020

GUEST LECTURER

UC Davis, Exercise Physiology, EXB 101, Davis, CA 2016

UC Davis, Neurobiology, Physiology, and Behavior, NPB 101, Davis, CA 2017

INVITED PRESENTATIONS

Sacramento State University, Cell and Molecular Biology Seminar Series, Sacramento, CA 2016

- *Prostate Cancer, Castration, and the T They Share. The role testosterone plays in skeletal muscle atrophy during androgen deprivation treatment.*

Sacramento State University, Cell and Molecular Biology Seminar Series, Sacramento, CA 2018

- *Testosterone Supplementation Requires Additional Stimulus to Increase Muscle Mass in Females and Have No Effect in Male Mice.*

University of California Davis, Exercise and Aging Course (EXB 117), Davis, CA 2018

- *Aging and Skeletal muscle*

PROFESSIONAL DEVELOPMENT

- *Springer-Nature Master class in Scientific Writing and Publishing* 2020
- *SEPAL Scientific Teaching Summer Institute – San Francisco State University* 2019
- *Mental Health Gatekeeping workshop – UC Davis* 2019

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- *Undocually Training: Supporting Undocumented Students* – UC Davis 2018

LEADERSHIP AND AWARDS

- American Aging Association Mentoring Program – Mentor 2021
- OMRF Postdoctoral Association – Co-chair 2021
- OMRF Postdoc Virtual Meeting Award 2020
- Geroscience T-32 Training Grant Fellow – Oklahoma University Health Sciences Center 2020
- Schwall Dissertation Year Fellowship 2019 - 2020
- College of Biological Sciences Dean's Mentorship Award 2019
- NAIST Graduate Student International Workshop – Fellow 2018
- American Physiological Society – Graduate Student Ambassador Fellow 2018 - 2020
- Outstanding Graduate Student Teaching Award 2018
- Molecular, Cellular and Integrated Physiology Colloquium – Best Oral Presentation 2018
- Schwall Dissertation Year Fellowship 2018 - 2019
- Chancellor Leadership Development Seminar 2017
- Barbara Horwitz & John Horowitz Molecular, Cellular and Integrative Physiology Award 2017
- UC Davis Internal Mentorship Fellowship 2016 - 2017
- Golden Key International Honor Society – Member 2015
- Phi Sigma Biological Sciences Honor Society – Member 2014
- Dean's List College of Biological Sciences – University of California Davis 2013
- Herbert and Gladys Smith Scholarship 2012 - 2013
- Honorary Award for Gifted Youth – Project Michael 2000
- Student Excellence Award – Eshel Hanasi High School 2000

ACADEMIC AND PROFESSIONAL COMMITTEES

- Molecular, Cellular and Integrative Physiology Graduate Group – Student Steering Committee – Chair 2018 - 2019
- APS Local Undergraduate Research Award in Physiology – *Chair of judging panel* 2018
- University of California Davis, Academic Senate, Educational Policy subcommittee - *Graduate student representative* 2017 - 2018
- University of California Davis, Healthy Campus Network, Physical Activity subcommittee – *Graduate student representative* 2017-2018
- Molecular, Cellular and Integrative Physiology Graduate Group – *Student Representative - Educational Policy Committee* 2016 - 2017
- Molecular, Cellular and Integrative Physiology Graduate Group – *Student Representative - Seminar Committee* 2016 - 2017
- UC Davis Orchard Park Redevelopment Project – *Planning Advising Committee - Graduate student representative* 2016 - 2018
- Graduate Academic Achievement and Advocacy Program, M.E.N.T.O.R Program – Mentor 2016 - 2017
- UC Davis Chancellor's Graduate and Professional Student Advisory Board – *Student Housing Committee, Chair. Finance Committee, member.* 2015 - 2017

MEMBERSHIP IN PROFESSIONAL SOCIETIES

- American Aging Association (AGE) 2020 - Present
- Society for the Advancement of Biology Education Research (SABER) 2018 - Present
- Council on Undergraduate Research (CURE) 2018 - Present
- American Physiological Society (APS) 2016 - Present

MENTORSHIP

- Jordan Keast 2021
High School Student, OSSM Oklahoma City
- Cecilia Solis 2019-Present
Undergraduate student, Biological Sciences
- Bhavana Pabbiseti 2019-Present
Undergraduate student, Neurobiology, Physiology and Behavior
- Suraj Pathak 2018 - Present
Masters Student, Molecular Cellular and Integrated Physiology Graduate Group
- Jed Obra 2018-Present
Undergraduate student, Biological Sciences
- Tayler Brierre Smith, Nicole S. Baker, Katy Memel, Erik Roman 2018 - 2019
Undergraduate students, Neurobiology, Physiology and Behavior
- Daisy Ochoa 2016
Undergraduate student, Human Development
- Nisha Patal, Donna Baldetti 2015-2016
Undergraduate students, Neurobiology, Physiology and Behavior
- Linda Gu, Marisol Valencia 2014 - 2015
Undergraduate students, Exercise Biology

RESEARCH TALKS AND ABSTRACTS

- Experimental Biology, Virtual - *Abstract* 2021
 - *Assessing the Dynamic Mitochondrial Fission and Fusion Events in Skeletal Muscle in vivo*
- Aging and Metabolism Program & Oklahoma Center for Geroscience and Healthy Brain Aging Seminar - *Talk* 2020
 - *Seeing Mitochondrial Dynamics in Skeletal Muscle*
- Experimental Biology, San Diego, CA - *Abstract* 2020
 - *Science Communication Assignment Improves Students Self-Perception as Community Educators*
- Experimental Biology, San Diego, CA- *Abstract* 2020
 - *Testosterone Supplementation Leads to Increased Immunoproteasome activity in Female but Not Male Mice*
- UC Davis SoTL Conference, Davis, CA - *Abstract* 2019
 - *Science Communication Assignment Improves Students Self-Perception as Community Educators*
- Molecular Cellular and Integrated Physiology Colloquium - *Talk* 2019
 - *Being a Scientist While Thinking as an Educator – Lessons from The Classroom*
- Experimental Biology, Orlando, FL - *Abstract* 2019
 - *Testosterone Is Not Required for The Maintenance of Muscle Mass in Fully Matured and Elderly Male Mice*
- NAIST Graduate Student Workshop, Nara, Japan – *Talk & Abstract* 2018
 - *Sex Differences in Testosterone Supplementation in Skeletal Muscle*
- Molecular Cellular and Integrated Physiology Colloquium - *Talk* 2018
 - *Sex Differences in Testosterone Supplementation in Skeletal Muscle*
- Experimental Biology, San Diego, CA - *Abstract* 2018
 - *Testosterone Supplementation Does Not Affect Skeletal Muscle Growth When Administered Alone in Either Sex and Requires an Additional Anabolic Stimulus to Exert Its Effects in Female Mice*

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- Advances in Skeletal Muscle Biology in Health and Disease, Gainesville, FL - *Abstract* 2016
 - *Alterations in the muscle force transfer apparatus in aged rats during unloading and reloading.*
 - North American Veterinary Regenerative Medicine Association Conference, Monterey, CA – *Abstract* 2015
 - *Evaluation of Equine Mesenchymal Stem Cells for Cutaneous Wound Repair*