September 2019

JORDAN BALABAN

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School of Biomedical Sciences
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EDUCATION & TRAINING

2018 – Present Postdoctoral Research Fellow. University of Leeds.
Research Topic: Biomechanics and steering muscle function in insect flight

2018 Ph.D. Ecology and Evolutionary Biology. University of California, Irvine
Dissertation Title: "Strategies for overcoming thermal constraints on skeletal muscle function in ectotherms"

2013 M.S. Biological and Environmental Sciences. University of Rhode Island
Thesis Title: "The Morphology and biomechanics of jaw structures in chondrichthyes"

2006 B.S. Biological Sciences; Minor in Psychology. University of Rhode Island
Magna Cum Laude

PEER-REVIEWED PUBLICATIONS

5. **Balaban, J.P.**, Azizi, E. 2017. Lowering metabolic rate mitigates muscle atrophy in western fence lizards. *Journal or Experimental Biology*. 220, 2748-2756.

4. Bizzarro, J.J., Peterson, A.N., Blaine, J.M., **Balaban, J.P.**, Greene, H.G., & Summers, A.P. 2016. Burrowing behavior, habitat, and functional morphology of the Pacific sand lance (*Ammodytes personatus*). *Fishery Bulletin*. 114(4), 445–460.

3. **Balaban, J.P.**, Summers, A.P., & Wilga, C.A. 2015. Mechanical Properties of the Hyomandibula in Four Shark Species. *Journal of Experimental Zoology, Part A*. 323(1), 1–9.

2. Cressman, V.L., **Balaban, J.**, Steinfeld, S., Shemyakin, A., Graham, P., Parisot, N., & Moore, H. 2010. Prefrontal and thalamic inputs to the basal amygdala prune at distinct stages during adolescence in the rat. *Journal of Comparative Neurology*. 518(14), 2693-2709.

1. Kleinhaus, K., Steinfeld, S., **Balaban, J.**, Goodman, L., Craft, T. S., Malaspina, D., Myers, M.M., Moore, H. 2010. Effects of Excessive Glucocorticoid Receptor Early Stimulation during Gestation on Psychomotor and Social Behavior in the Rat. *Developmental Psychobiology*. 52(2), 121–132.

September 2019

TEACHING EXPERIENCE

Guest Lecturer

University of Leeds, Faculty of Biological Sciences:
"Mechanics of Sport and Exercise" (Developed and taught a 50-minute lecture on Centripetal force in locomotion, Spring 2019)

University of California, Irvine, School of Biological Sciences:
"Human Physiology Lab" (50-minute lecture on muscle physiology, Fall 2017)
"Physiology in Extreme Environments" (Developed and taught a 50-minute lecture on the effects of microgravity in space on human physiology, Fall 2017)
"Exercise Physiology Seminar" (Developed and taught 50-minute lecture on the neural control of muscle, Winter 2016)

University of Rhode Island, Department of Biological Sciences
"Vertebrate Biology" (Turtle Diversity and Ecology, Fall 2011)
"Comparative Vertebrate Anatomy" (Anamniote Cranial Skeleton, Spring 2012)

Teaching Assistant

University of California, Irvine, School of Biological Sciences
BIO E112L, "Human Physiology Lab" (Fall 2013, 2014; Winter 2014, 2016, 2017)
BIO D170, "Functional Human Anatomy" (Spring 2014, 2015)
- Provided feedback and assisted in development of this new lab course at UC Irvine

BIO E183, "Exercise Physiology" (Winter 2015)
BIO 9B, "Biology and Chemistry of Food and Cooking" (Winter 2015)
BIO N158, "Neurobiology of Learning and Memory" (Fall 2015)

University of Rhode Island, Department of Biological Sciences
BIO 101, "Introduction to Biology I" (Summer 2011, 2013)
BIO 366, "Vertebrate Biology" (Fall 2010, 2011, 2012)
- Taught the lab portion of this course, including in-lab taxonomical identification and field labs showcasing methods for catching and/or identifying vertebrates and their behavior. I co-developed 2 new field labs for this course and developed and taught 20 minute lectures at the beginning of each lab period.

BIO 304/404, "Comparative Vertebrate Anatomy" (Spring 2011, 2012, 2013)
- I helped redevelop the content for the lecture portion of this course and taught the dissection based lab portion, including developing and teaching 20 minutes lectures at the beginning of each lab period.

Instructor

2017 **TAPDP** (teaching assistant professional development program) **curriculum development and instructor**, UC Irvine, Departments of Ecology and Evolutionary Biology and Developmental & Cell Biology.

2012 **Teaching assistant workshop instructor,** University of Rhode Island, Department of Biological Sciences.

Teaching Professional Development

2019 **Monthly journal club,** Leeds Institute for Teaching Excellence (LITE)

Symposium for research in digital education, University of Leeds

Master class on Problem-based learning, LITE

2017 **University Studies 390A, B, C: Courses on pedagogical theory and practice**

2015 – 2018 **E246: Ecology and Evolutionary Biology Education** (taken in 5 quarters)

2015 **6-week workshop on effective mentoring of undergraduate researchers**

PUBLISHED ABSTRACTS AND PRESENTATIONS

24. **J Balaban**, S Walker. Fine scale EMG measurements and 3D kinematics reveal the neural control mechanism of rapid steering manoeuvres in flies. Poster. Annual conference for the Society for Experimental Biology. Seville, Spain. July 2019. A11.22.

23. **J Balaban**, E Azizi. Elastic energy storage broadens the thermal performance range of accelerating lizards. Oral. Annual conference for the Society for Integrative and Comparative Biology. San Fransisco, CA. January 2018. *Integrative and Comparative Biology*. 58(suppl 1), e10.

22. A Nguyen, **JP Balaban**, E Azizi, RJ Talmadge, AK Lappin. Fatigue Resistant Jaw Muscles Facilitate Long-lasting Courtship Behavior in the Southern Alligator Lizard (*Elgaria multicarinata*). Oral. Annual conference for the Society for Integrative and Comparative Biology. San Fransisco, CA. January 2018. *Integrative and Comparative Biology*. 58(suppl 1), e164.

21. **J Balaban**, E Azizi. Lizards amplify muscle power to maintain performance at low temperatures. Oral. Southwest Organismal Biology Meeting. Claremont, CA. October 2017.

20. N McMasters[*], **J Balaban.** Temperature effects on muscle biology and locomotion in fence lizards. Poster. Conference for the summer undergraduate research program (**SURF**). University of California, Irvine. Irvine, CA. August 2017.
[*]*Undergraduate mentee*

19. **J Balaban**[*], E Azizi. Do lizards use springy tendons to maintain running performance at low temperatures? Oral. Winter Ecology and Evolutionary Biology Graduate Student Symposium. University of California, Irvine. Irvine, CA. March 2017.
[*]*Awarded best presentation.*

18. **J Balaban**, E Azizi. Elastic energy storage and thermal performance in fence lizards. Oral. Annual conference for the Society for Integrative and Comparative Biology. New Orleans, LA. January 2017. *Integrative and Comparative Biology*. 57(suppl 1), e198.

17. **J Balaban**, E Azizi. Temperature effects on muscle-tendon interactions in fence lizards. Oral. Southwest Organismal Biology Meeting. Fullerton, CA. November 2016.

16. **J Balaban**, E Azizi. Can Series Elastic Elements Amplify Muscle Power in Cold Lizards? Poster. Annual conference for the Society for Experimental Biology. Brighton, UK. July 2016. A8.54.

15. E Azizi, **J Balaban**, N Holt. Contractile and connective tissue interactions in skeletal muscles. Oral. International Congress on Vertebrate Morphology. Washington, DC. July 2016.

14. G Hernandez[*], **J Balaban**, E Azizi. Effects of Metabolic Rate on Muscle Atrophy. Poster. UCI Undergraduate research symposium. 2016.
[*]*Undergraduate mentee*

13. **J Balaban**, E Azizi. Reduced Metabolic Rate Mitigates Muscle Atrophy in Western Fence Lizards. Oral. Annual conference for the Society for Integrative and Comparative Biology. Portland, OR. January 2016. *Integrative and Comparative Biology*. 56(suppl 1), e10.

12. **J Balaban**, E Azizi. The Effect of Metabolic Rate on Muscle Atrophy in Western Fence Lizards. Oral. Southwest Organismal Biology Meeting. Pomona, CA. September 2015.

11. **J Balaban**, E Azizi. Effects of metabolic rate on muscle atrophy in a hibernating lizard. Oral. Winter Ecology and Evolutionary Biology Graduate Student Symposium. University of California, Irvine. Irvine, CA. March 2015.

10. **J Balaban**, E Azizi. Muscle Atrophy and Contractile Properties in the Fence Lizard, ***Sceloporus occidentalis***. Poster. Annual conference for the Society for Integrative and Comparative Biology. West Palm Beach, FL. January 2015. *Integrative and Comparative Biology*. 55(suppl 1), e216.

9. **J Balaban***, E Azizi. Muscle Atrophy and Contractile Properties in the Fence Lizard, ***Sceloporus occidentalis***. Oral. Southwest Organismal Biology Meeting. Irvine, CA. September 2014.
[*]*Awarded best student presentation.*

8. **J Balaban**, CA Wilga. Morphology of the Feeding Apparatus in Four Shark Species. Oral. Annual conference for the Society for Integrative and Comparative Biology. Austin, TX. January 2014. *Integrative and Comparative Biology*. 54(suppl 1), e11.

7. I Nowinowski*, **J Balaban**, CA Wilga. Shape Changes in Hyoid Arch Elements in Four Shark Species. Oral. Annual conference for the Society for Integrative and Comparative Biology. Austin, TX. January 2014. *Integrative and Comparative Biology*. 53(suppl 1), e154.
**Undergraduate mentee*

6. **J Balaban**, AP Summers, CA Wilga. Mechanical Properties of a Shark Jaw Support Structure. Oral. Annual conference for the Society for Integrative and Comparative Biology. San Fransisco, CA. January 2013. *Integrative and Comparative Biology*. 53(suppl 1), e9.

5. **J Balaban**. A Biomechanical Analysis of Jaw Suspension. Oral. Society for Integrative and Comparative Biology, Northeast Divisions of Vertebrate Morphology and Comparative Biomechanics meeting. Kingston, RI. November 2011.

4. AP Summers, **J Balaban,** N Gidmark, JJ Bizzarro. Integrating Behavior and Functional Constraints in Sand Lance: Why Do They Burrow Where They Burrow. Oral. American Fisheries Society Conference. Seattle, WA. September 2011.

3. **J Balaban**, JJ Bizzarro, AP Summers. Burrowing Preference and Capability in the Pacific Sand Lance. Poster. Society for Integrative and Comparative Biology. Salt Lake City, UT. January 2011. *Integrative and Comparative Biology*. 51(suppl 1), e161.

2. **J Balaban**, JJ Bizzarro, AP Summers. Burrowing Preference and Capability in the Pacific Sand Lance. Oral. Society for Integrative and Comparative Biology, Northeast Divisions of Vertebrate Morphology and Comparative Biomechanics meeting. Cambridge, MA. September 2010.

1. VL Cressman, **J Balaban**, N Parisot, A Chemiakine, S Steinfeld, H Moore. 2007. Region-specific remodeling of prefrontal and thalamic inputs to the amygdala during preadolescence in the rat. Poster. Society for Neuroscience conference. San Diego, CA. 2007

FUNDING

2017	UC Irvine Pedagogical Fellowship ($2000)
2016	American Association of Anatomists (AAA) Education outreach grant ($3000)
2016	UC Irvine Associated Graduate Students Travel Grant ($600)
2016	Society for Experimental Biology (SEB) Travel Grant (£180)
2016 – 2018	Graduate assistance in areas of national need (GAANN) Fellowship (Awarded three times totaling $56880 plus $6000 research/travel expenses and tuition and fees for Spring 2016 – Summer 2018)
2013	Francisco J. Ayala Graduate Fellowship ($15000)
2012	Sigma Xi Grant-in-Aid of Research ($400)

2012	Richard & Megumi Strathmann Fellowship ($1205)
2010	Stephen and Ruth Wainwright Endowed Fellowship ($700)
2005	Undergraduate Coastal Research Fellowship ($3000)

AWARDS

2017	Best Presentation, UC Irvine Winter Ecology and Evolutionary Biology Graduate Student Symposium
2014	Best Student Presentation, Southwest Organismal Biology Meeting
2012	University of Rhode Island Graduate Teaching Excellence Award (Biological Sciences)

SERVICE

2019-Present	**Fire Warden for the Department of Biomedical Sciences**, University of Leeds
2018-Present	**Sport and Exercise Science seminar coordinator**, University of Leeds
2017-Present	**Peer reviewer** *Cellular Physiology and Biochemistry* *Journal of Morphology* *Comparative Biochemistry and Physiology*
2011 – 2013	**Biological Sciences Graduate Student Representative**, University of Rhode Island, Department of Biological Sciences.

OUTREACH

2019	**Biomechanics Outreach Instructor**, "Discovery Zone", University of Leeds
2019	**Art-Science Collaboration**, "Leeds Creative Labs", University of Leeds Cultural Institute
2017	**Anatomy Outreach Instructor**, "Amazing Anatomy with Anteaters", UC Irvine
2016 - 2017	**Anatomy Outreach Instructor**, "Future Health Champions" event, UC Irvine
2015	**Science Fair Judge**, Irvine Unified School District

2014-2016	**Outreach Scientist**, Ask-A-Scientist night, Irvine Unified School District
2013	**Outreach Educator**, Office of Marine Programs, University of Rhode Island
2012	**Biomechanics Outreach Instructor**, GRRL Tech, University of Rhode Island
2010 – 2012	**Fish Outreach Instructor**, Paul Cuffee Charter School, Providence, RI
2008 – 2009	**Neuroscience Outreach Instructor**, Columbia University, Neuroscience Outreach Program

PROFESSIONAL AFFILIATIONS

2010 – Present	Society for Integrative and Comparative Biology (SICB)
2016 – Present	Society for Experimental Biology (SEB)