**Jordan R. Glass**
Ph.D. Candidate School of Life Sciences
Arizona State University • Tempe, AZ 85281
e-mail: jrglass@asu.edu

**EDUCATION**

M.Sc., Biological Sciences, May 2018, University of the Pacific, Stockton, CA 95211 Advisor: Zachary Stahlschmidt. Thesis title: Should I stay or should I go? Complex environments drive the developmental plasticity of flight capacity and flight-related trade-offs

B.Sc., *magna* *cum laude*, Biological Sciences: Animal Physiology and Behavior, May 2016, Arizona State University, Tempe, AZ 85287

A.Sc., Biology, May 2014, Mesa Community College, Mesa, AZ 85202

**GRANTS & AWARDS**

*Innovative Teaching Assistant Award*, School of Life Sciences, Arizona State University, 2022

*The College Graduate Excellence Award*, The College of Liberal Arts & Sciences, Arizona State University, 2022

*Wilhoit Foundation Scholar*, Phoenix Chapter of ARCS® Foundation, Inc., 2021-2023

*Research Recognition Award*, The American Physiological Society - Comparative & Evolutionary

Physiology Section, 2021

*Best Student Presentation*, Annual Meeting of the Society for Integrative and Comparative

Biology – Division of Comparative Physiology & Biochemistry, *Virtual*, 2021

Arizona Physiological Society *Best Graduate/Postdoctoral Poster Presentation*, 2020

Arizona Physiological Society *Best Graduate/Postdoctoral Poster Presentation*, 2019

*Travel Grant* – Fall 2018, ($400) School of Life Sciences, Arizona State University

*Finalist* *for the Raymond B. Huey oral competition* for Best Student Presentation, Annual

Meeting of the Society for Integrative and Comparative Biology, San Francisco, 2018

*Honorable Mention for Hunter-Nahhas Fellowship*, University of the Pacific,*Student of the Year* – Neurobiology, Physiology and Behavior - 2015, School of Life Sciences,

Arizona State University

*Eagle Scout Award*, May 2002, Troop 157, Mesa, AZ 85201

**RESEARCH EXPERIENCE**

*Graduate Researcher*, 2018-Present, (Environmental physiology laboratory of Dr. Jon Harrison; lab website: [www.jharrison.faculty.asu.edu](http://www.jharrison.faculty.asu.edu)) Temperature and fungicide effects on the flight physiology of the honeybee, *Apis mellifera*.

*Graduate Researcher*, 2016-2018, (Behavioral and physiological ecology laboratory of Dr. Zachary Stahlschmidt; lab website: [www.stahlschmidtlab.weebly.com](http://www.stahlschmidtlab.weebly.com)) Thesis title: Should I stay or should I go? Complex environments influence the developmental plasticity of flight capacity and flight-related trade-offs.

*Undergraduate Researcher*, 2015-2016, (Ecophysiology and sustainability laboratory of Dr. Arianne Cease; project website: [www.livingwithlocusts.org](http://www.livingwithlocusts.org)) Worked as part of a large, interdisciplinary team using theoretical and empirical approaches to assess how livestock practices influence soil nitrogen dynamics that, in turn, affect the likelihood and severity of locust outbreaks.

Tropical Researcher at the Smithsonian Tropical Research Institute (STRI), 2015, Conducted a self-designed research project examining the aggressive behavior of a neotropical stingless bee species, *Tetragonisca angustula*.

**LETTERS AND COMMENTS**

Fisher, A.I., M. Berenbaum, J.D. Crall, N. Desjardines, J.R. Glass, J.F. Harrison, L.H. Liao, F. Muth, J.C. Nieh, R.C.F. Nocelli, N. Simon-Delso, H. Siviter, R. Tadei and K. Traynor. 2021. Protect pollinators - reform pesticide regulations. *Nature* (<https://doi.org/10.1038/d41586-021-01818-x>)

**REVIEWED PUBLICATIONS (5 total)**

Padda S.S., J.R. Glass, and Z.R. Stahlschmidt. 2021. When it’s hot and dry: Life-history strategy influences the costs and cost-limiting strategies due to heat wave and water limitation. *Journal of Experimental Biology*. (<https://doi.org/10.1242/jeb.236398>)

Glass J.R., A. Fisher II, J.H. Fewell, G. DeGrandi-Hoffman, C. Ozturk, and J.F. Harrison. 2021. Consumption of field-realistic doses of a widely used mito-toxic fungicide reduces thorax mass but does not negatively impact flight capacities of the honey bee (*Apis mellifera*). *Environmental Pollution*. (<https://doi.org/10.1016/j.envpol.2021.116533>)

Glass J.R., M.E. Duell, and J.F. Harrison. 2020. Defensive biting by *Tetragonisca angustula* is dangerous but not suicidal. *Insectes Sociaux*. (<https://doi.org/10.1007/s00040-020-00790-5>)

Stahlschmidt Z.R.and J.R. Glass. 2020. Life history and immune status influence metabolic plasticity to food availability and acclimation temperature. *Physiological and Biochemical Zoology*. (<https://doi.org/10.1086/709587>)

Glass J.R.and Z.R. Stahlschmidt. 2019. Should I stay or should I go? Complex environments influence the developmental plasticity of flight capacity and flight-related trade-offs. *Biological Journal of the Linnean Society*. (<https://doi.org/10.1093/biolinnean/blz073>)

**MANUSCRIPTS SUBMITTED**

Glass J.R., J.F. Harrison. The thermal performance curve for aerobic metabolism of a flying endotherm. Submitted to the Proceedings of the Royal Society B.

**MANUSCRIPTS IN PREPERATION**

Glass J.R., and J.F. Harrison.Evaporative cooling and reducing heat production allows honey bees to beat the heat when nectar foraging.

Johnson M.G., J.R. Glass, and J.F. Harrison.The abdominal radiator is the primary thermoregulatory mechanism for flying *Centris caesalpiniae* Cockerell males.

**INVITED PRESENTATIONS**

Glass J.R. 2022. Presentation: Bee-t the heat: How an important pollinator may deal with climate change. University of the Pacific. Stockton, CA, USA.

Glass J.R. 2018. Presentation: Two roads diverged in a wood…but I stopped to check out something crawling on the ground. Social Insect Research Group. Tempe, AZ, USA.

**PRESENTATIONS AT SCIENTIFIC MEETINGS**

Glass J.R., J.F. Harrison. 2022. Annual Conference for the Society of Integrative and Comparative Biology, Phoenix, AZ. Oral presentation: Evaporative cooling and reducing heat production allows honey bees to beat the heat when nectar foraging.

Glass J.R., J.F. Harrison. 2021. The American Physiological Society – Experimental Biology, *Virtual*. Oral presentation: Varied Air Temperature and Helium-Nitrogen Ratios Reveal the Thermal Performance Curve of a Free-Flying Endotherm.

Glass J.R., J.F. Harrison. 2021. Annual Conference for the Society of Integrative and Comparative Biology, *Virtual*. Oral presentation: Interactive effects of air temperature and density on flight physiology of honey bees.

Glass J.R., A. Fisher II, J.H. Fewell, G. DeGrandi-Hoffman, C. Ozturk, and J.F. Harrison. 2020. Annual Conference for the Entomological Society of America, *Virtual*. Oral presentation: Consumption of field-realistic doses of a widely used mito-toxic fungicide reduces thorax mass but does not negatively impact flight capacities of the honey bee (*Apis mellifera*).

Glass J.R., A. Fisher II, J.H. Fewell, G. DeGrandi-Hoffman, C. Ozturk, and J.F. Harrison. 2020. Annual Conference for the Arizona Physiological Society, *Virtual*. Poster presentation: Consumption of field-realistic doses of a widely used mito-toxic fungicide reduces thorax mass but does not negatively impact flight capacities of the honey bee (*Apis mellifera*).

Glass J.R., J.F. Harrison. 2020. Annual Conference for the Society of Integrative and Comparative Biology, Austin, Texas. Poster presentation: Testing the limits: Physiological responses of flying honey bees (*Apis mellifera*) to variable-density gases at different temperatures.

Glass J.R., J.F. Harrison. 2019. Annual Conference for the Arizona Physiological Society, Tempe, Arizona. Poster presentation: Testing the limits: Physiological responses of flying honey bees (*Apis mellifera*) to variable-density gases at different temperatures.

Glass J.R., S.S. Padda, and Z.R. Stahlschmidt. 2018. The American Physiological Society Intersociety Meeting, Comparative Physiology: Complexity and Integration. New Orleans, Louisiana. Poster presentation: Hot and Dry: Effects of heat wave and water limitation on metabolic and evaporative water loss rates.

Glass J.R. and Z.R. Stahlschmidt. 2018. Annual Conference for the Society of Integrative and Comparative Biology. San Francisco, California. Oral presentation: Do complex environments drive the developmental plasticity of traits and tradeoffs?

Glass J.R. and Z.R. Stahlschmidt. 2018. Annual Conference for the Society of Integrative and Comparative Biology. San Francisco, California. Poster presentation: Developmental plasticity of sexually selected traits in complex environments.

Glass J.R., M.E. Duell and J.F. Harrison. 2017. Annual Conference for the Society of Integrative and Comparative Biology. New Orleans, Louisiana. Poster presentation: Sensible, non-suicidal nest defense by guards of a stingless bee (*Tetragonisca angustula*).

**TEACHING**

*Course Development* – *BIO 361: Online Animal Physiology Laboratory*. Helped develop the course content, and develop and test the simulations for a completely online version of BIO 361: Animal Physiology Lab, where students engage in simulated labs and exercises to better understand the mechanisms animals possess to live in complex environments.

*Scientific Teaching* – *BIO 530: Scientific Teaching*. A teacher-training course focused on guiding graduate students to better understand issues related to undergraduate learning in science courses and prepares participants to become more effective teachers. As a participant, I learned how to encourage student learning by delivering information in an intuitive and engaging manner, and how to accurately assess comprehension and provide constructive feedback that will help students reach the goals of the course.

*Graduate Teaching Assistant* – *BIO 361: Animal Physiology Laboratory*. Guided students as they investigated different physiological mechanisms through laboratory experiments, such as active transport of ions against concentration gradients and how a change in electrical potential modulates the sending of impulses along the membrane of nerve cells and muscles, which can facilitate muscular locomotion and function. My responsibilities involved writing and grading weekly quizzes, as well as writing a comprehensive final exam. I also provided pre- and post-lab comments on multipage student-written lab reports structured after scientific publications.

*Graduate Teaching Assistant* – *BIO 175: Ecology Laboratory*. Helped students gain an appreciation and understanding of the complex interactions of plants and animals with their environments through hands on lab activities emphasizing organismal identification, morphology, and biodiversity. Many labs included visualizing and analyzing data and writing up weekly lab reports. My responsibilities involved writing and grading weekly quizzes, a comprehensive final exam, and providing pre- and post-lab feedback on each student’s weekly lab report. I also took students out on birding transects to collect data on the seasonal change in abundance and diversity of local birds along the Calaveras River that bisected campus. I was also involved in the creation of several laboratory activities based on assessing plant and animal abundance and diversity using sampling methods, as well as collecting fresh plant and animal specimens for the lab before each week’s activity. I was responsible for providing pre- and post-lab feedback on each week’s lab report, as well as helping students analyze and write up the bird transect data in a large report structured after scientific publications.

**OUTREACH & SERVICE**

*Social Insect Research Group Seminar Organizer*– 2021-2022; Arizona State University

*Social**Insect Research Group Booth Organizer/Educator* – *Open Door*, 2018-2020; Arizona State University

*Assistant**Scout Leader* - *Boy Scouts of America*, 2012-2020 (Troop 0854, Mesa, AZ 2012-2016, 2018-2020; Troop 0175, Stockton, CA 2016-2018). My goal is to help the youth recognize their strengths and potential, but I also strive to help them appreciate our connection to, and effect on, the natural world by creating opportunities to get out into Nature. This involves not only monthly campouts in Arizona’s wonderful state parks and national forests, but also field trips to aquariums and zoos, natural history museums, as well as power- and water-treatment plants, metal and plastic recycling centers, and government facilities. We also organize regular community service projects where the youth can give back to their local communities through service projects.

*Volunteer* – *Just Serve* (non-profit), Mesa, AZ, 2014-2016, 2018-Present; Stockton, CA 2016-2018 – Assisting the community through service.

**STUDENTS MENTORED**

*Alina Helbling*, Arizona State University, undergraduate student. *Honor’s thesis project*: The negative impact of humidity on the performance and thermoregulation of flying honey bees.

*Arron Montelongo*, Arizona State University, undergraduate student. *Research project*: The effects of air temperature on ventilation rate in honey bees, *Apis mellifera*.

*Ethan Weisman*, Arizona State University, undergraduate student. *Honor’s thesis project*: Thermal performance of learning and discrimination in nectar-forager honey bees.

*Sugjit S. Padda*, University of the Pacific, M.Sc. student. *Thesis project*: Investigating the independent and interactive effects of heat wave, water, and food availability on the phenotypic plasticity of life-history traits and tradeoffs in the sand and variable field cricket (*Gryllus firmus* and *Gryllus lineaticeps*, respectively). *Presentations*: Several co-authored talks and posters at both local and national conferences. *Resulting publication*: (<https://doi.org/10.1242/jeb.236398>).

*Andy Byeon, Jackie Louie, and Garrett Masuda*, University of the Pacific, undergraduates. *Research project*: Plasticity of life-history traits and tradeoffs in colubrid snakes. *Presentations*: Several co-authored posters at local and national conferences. *Resulting publication*: (<https://doi.org/10.1002/jez.2358>).

*Iris Chu and Christina Koh*, University of the Pacific, undergraduate students. *Research interests*: The effects of mate quality on the number and viability of eggs laid by the sand field cricket *(Gryllus firmus*)*.* *Presentations*: Several co-authored posters at local conferences. *Resulting publication*: <https://doi.org/10.1007/s00265-019-2790-9>.

 *Narin Jeong and Nick Meckfessel*, University of the Pacific, undergraduate students. *Research project*: The effects of food quality on the developmental plasticity of reproductive investment in insects, and the effects of immune challenge and food limitation on life-history traits and tradeoffs. *Presentations*: Several co-authored posters at local and national conferences. *Resulting publication*: <https://doi.org/10.1007/s00360-019-01244-6>.

 *David Luc*, University of the Pacific, undergraduate student. *Research project*: Assisted Sugjit (see above) with many of his dissections and qualitative scored flight muscle.