Meredith G. Johnson
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Education

Ph.D. Candidate, Biology, Arizona State University, 2018 - Present
Advisor: Jon Harrison, Ph.D.

B.S., Biochemistry and Molecular Biology & Neuroscience, Dickinson College, 2018
Honors Thesis: *Probing the Tetrameric Interface of Pteridine Reductase 1 (PTR1)*
Advisor: Jason Gavenonis, Ph.D.

- Created and expressed PTR1 mutants in *E. coli* to disprupt and measure protein multimerization. Resulted in a peer-reviwed publication and conference presentations. Mentored and taught biochemistry techniques to new laboratory members as a senior.

Teaching Experience

Teaching Assistant, Animal Physiology Laboratory, Arizona State University, Spring 2021, Fall 2021, Spring 2022.

- Taught high-level animal physiology techniques such as BIO-PAC set up and calibration to measure compound action potentials, oxygen consumption rates, and muscle contraction. Taught laboratory report writing skills and reviewed eight full reports. Facilitated group work, good communication, and project management. Gave oral final exams in place of written exams to help students practice communicating high-level scientific principals and ideas.
- Recieved excellent student reviews such as:
  - *"Meredith was an exceptional TA (probably the best one I've had since I started at ASU in 2019). She was very knowledgeable and when we faced obstacles, she was good at troubleshooting - we ended up getting all the necessary data for lab reports and understood the mechanisms even when something didn't work. 10/10, she's also really cool."*
  - *"Meredith has been one of the best lab TAs I've had! Not only was she super effective at guiding you to the correct answers, she was able to connect with a lot of the students in normal conversation."*

Teaching Assistant, Online Introductory Biology, Arizona State University, Summer 2020
Teaching Assistant, Virtual Animal Physiology, Arizona State University, Fall 2020

- Taught this in-person laboratory course for the first time in a completely virtual setting due to the pandemic. Conducted all eight laboratory modules on zoom for the students. Kept students engaged in remote data collection, group work, and full laboratory reports.

Teaching Assistant, Online Animal Physiology, Arizona State University, Summer 2020

- Provided detailed feedback, advice, and guidance on NSF-style proposals. Remotely assisted students with Arduino setup and troubleshooting.

Reviewed publications

Johnson, M.G.; Glass, J. R.; Harrison, J. F. The abdominal radiator is the primary mechanism of Centris caesalpiniae Cockerell males. Journal of Experimental Biology. Resubmitted. In review.

Barrett, M & **Johnson, M.G.** Don't get a big head: Centris pallida (Hymenoptera: Apidae) male head widths decrease across five decades. Ecological Entomology. In review.

Fisher, A. II; DeGrandi-Hoffman, G; Smith, B.H.; **Johnson, M.G.**; Kaftanoglu, O.; Cogley, T.; Fewell, J. H.; Harrison, J. F. Colony field test reveals dramatically higher toxicity of a widely-used mito-toxic fungicide on honey bees (Apis mellifera). 2021. *J. Env. Pol.* 269(15).

Wachsmuth, L.M.; **Johnson, M.G.**; Gavenonis, J. (2017) Essential multimeric enzymes in kinetoplastid parasites: A host of potentially druggable protein-protein interactions. *PLoS Negl Trop Dis,* 11(6).

Publications in Preparation

Johnson, M.G.; Alvarez, K; Harrison, J. F. Dessication, and not high temperature, limits the activity period of Centris caesalpiniae Cockerell males. Functional Ecology. In preparation.

Johnson, M.G.; Barrett, M.; Buchmann, S. The nesting biology of Centris caesalpiniae Cockerell females. Ecological Entomology. In preparation.

Published Abstracts

Johnson, M.G.; Glass, J. R.; Harrison, J. F. Thermoregulatory tactics and water balance of Centris caesalpiniae males. (2021) *The FASEB Journal*, 35(S1).

Johnson, M.G.; Glass, J. R.; Harrison, J. F. Thermoregulatory tactics and water balance of flying metander Centris caesalpiniae males (2021) *Integrative and Comparative Biology*, 61(S1), e426.

Fisher II, A.L.; DesJardins, N.; Degrandi-Hoffman, G.; Smith, B.; **Johnson, M.**; Kaftanoglu, O; Cogley, T; Fewell, J; Harrison, J. A widely-used fungicide produces symptoms of colony collapse disorder in honey bees (Apis mellifera) (2020) *Integrative and Comparative Biology*, 60(S1), e71.

Johnson, M.G.; Gavenonis, J. Is Leishmania major pteridine reductase (PTR1) a functional monomer? (2018) *The American Chemical Society,* 256.

Johnson, M.; Loubriel Grajales, D.; Niedzialek, O.; Perez Torres, M.; Melendez, A.; Aleman Rios, J.; Mosier, A.; Abramson, C.; Giray, T.; Barthell, J.; Gonzalez, V.H.; Agosto Rivera, J. A comparative analysis of the circadian rhythms of specialist and generalist bees visiting Convolvulaceae flowers (2017) *Integrative and Comparative Biology*, 57(S1), e81.

Loubriel Grajales, D.; **Johnson, M.**; Niedzialek, O.; Perez Torres, M.; Melendez, A.; Aleman Rios, J.; Mosier, A.; Abramson, C.; Giray, T.; Barthell, J.; Gonzalez, V.H.; Agosto Rivera, J. Analysis of Convolvulaceae Circadian Rhythm and Systropha Visitation Rates (2017) *Integrative and Comparative Biology*, 57(S1), e101.

Presentations

Johnson, M.G. & Glass, J. R. (2022) The Unfamiliar Pollinators. Invited talk at the **Desert Botanical Garden**

Johnson, M.G. (2022) Flight thermoregulation of desert bees. Invited talk at the **SOLS Graduate Honors Symposium**

Johnson, M.G.; Glass, J.R.; Harrison, J.F. (2021) Thermoregulatory tactics and water balance of Centris caesalpiniae males. Virtual talk at the **Entomological Society of America.**

Johnson, M.G.; Glass, J.R.; Harrison, J.F. (2021) Mechanisms for Flight Thermoreguation for a Sonoran Desert Bee. Virtual poster presentation at **Experimental Biology.**

Johnson, M.G.; Glass, J.R.; Harrison, J.F. (2021) Thermoregulatory tactics and water balance of Centris caesalpiniae males. Virtual talk at the **Society for Integrative and Comparative Biology.**

Johnson, M.G.; Glass, J.R.; Harrison, J.F. (2020) Thermoregulatory tactics and water balance of Centris caesalpiniae males. Virtual talk at the **Entomological Society of America.**

Johnson, M.G.; Gavenonis, J. (2018) Is Leishmania major pteridine reductase (PTR1) a functional monomer? Poster presentation at **The American Chemical Society.**

Johnson, M.; Loubriel Grajales, D.; Niedzialek, O.; Perez Torres, M.; Melendez, A.; Aleman Rios, J.; Mosier, A.; Abramson, C.; Giray, T.; Barthell, J.; Gonzalez, V.H.; Agosto Rivera, J. (2017) A comparative analysis of the circadian rhythms of specialist and generalist bees visiting Convolvulaceae flowers. Poster presentation at the **Society for Integrative and Comparative Biology.**

Anderson , S.; Cruz, P.; Folks, N.; Johnson, M.; Loubriel, D.; Niedzialek, O.; Perez, M.; Travis, D.; Gonzalez, V.; Hranitz, J.; Barthell, J. (2017) Mark-Recapture Studies of Pollinator Species on the Greek Island of Lesvos . Poster presentation at the **Society for Integrative and Comparative Biology.**

Research Experience

Research Assistant, Arizona State University, Summer 2022
Will study and compare the metabolic scaling of body and brain tissue in ants.
Funding: National Science Foundation
Advisor: Jon F. Harrison, Ph.D.

Research Assistant, Arizona State University, 2018 - 2019
Studied the effect of a commonly-use fungicide on honey bee colony health. Managed 40 honey bee colonies through the year; measured reproductive success; worked with and mentored two undergraduate assistants.
Funding: United States Department of Agriculture
Advisor: Jon F. Harrison, Ph.D.

Honors and Fellowships

The International Union for the Study of Social Insects travel grant, 2022 ($1,800.00)

Friends of the Sonoran Desert Student Grant Program, 2022 ($500.00)

SIRG Summer Fellowship, Arizona State University, 2021 and 2022 ($8,000 total)

Fulbright Research Fellowship, Panama, The Smithsonian Tropical Research Institute, 2019 - 2020. Mentor: William Wcislo, Ph.D. and David Roubik, Ph.D. ($9,500)

Fulbright research / open study semi-finalist, Panama, The Smithsonian Tropical Research Institute, 2018.

Fulbright alumni representative, virtual pre-departure orientation, 2021
Personally invited to represent Panama at the orientation for new Fulbright grantees.

The Graduate College Fellowship, Arizona State University, 2020 - 2021. ($5,000)

Amy Snow '93 Prize, Dickinson College, 2017. ($1,000)

Forney P. George Scholarship, Dickinson College, 2017. ($1,000)

Service and Outreach

EcoFlora pollinator week consultant, The Desert Botanical Garden, 2022.

Graduate Programs Committee student representative, Arizona State University, 2021 - 2022.

Social Insect Research Group seminar co-coordinator, Arizona State University, 2020 - 2021.

Professional Memberships

The International Union for the Study of Social Insects
The American Physiological Society
The Entomological Society of America
The Society for Integrative and Comparative Biology