

Samuel V. Arsenault Curriculum Vitae

Education

Ph.D. Entomology, Certificate in Bioinformatics
University of Georgia 2015-2020

B.S. Biology, B.S. Mathematics
University of Georgia 2011-2015

Contact

358 Northwest Laboratories
Harvard University, Cambridge, MA, 02138
Email: samarsenault93@gmail.com
Phone: 404-889-5574
Website: ArsenaultResearch@github.io

Publications

12. Waugh, A.H., Catto, M.A., **Arsenault, S.V.**, Kay, S., Ross, K.G., Hunt, B.G. 2024. *Molecular underpinnings of plasticity and supergene-mediated polymorphism in fire ant queens*. Journal of Evolutionary Biology. *In Review*.
11. Tribble, W., Chandra, V., Lacy, K.D., Limón, G., McKenzie, S.K., Olivios-Cisneros, L., **Arsenault, S.V.**, Kronauer, D.J.C. 2023. *A caste differentiation mutant elucidates the evolution of socially parasitic ants*. Current Biology. 33(6):1047-1058.e4. doi: 10.1016/j.cub.2023.01.067.
10. **Arsenault, S.V.**, Riba-Grognuz, O., Shoemaker, D.W., Hunt, B.G., Keller, L. 2022. *Direct and indirect genetic effects of a social supergene*. Molecular Ecology. 32(5):1087-1097. doi: 10.1111/mec.16830.
9. **Arsenault, S.V.**, King, J.T., Kay, S., Lacy, K.D., Ross, K.G., Hunt, B.G. 2020. *Simple inheritance, complex regulation: supergene-mediated fire ant social polymorphism*. Molecular Ecology. 29(19):3622-3636. doi: 10.1111/mec.15581.
8. Zheng, Y., Martin, S. H., Gotzek, D., **Arsenault, S.V.**, Duchon, P., Helleu, Q., Riba-Grognuz, O., Hunt, B.G., Salamin, N., Shoemaker, D., Ross, K.G., Keller, L. *Evolution of a Supergene That Regulates a Trans-Species Social Polymorphism*. Nature Ecology and Evolution. 4(2), 240–249. doi: 10.1038/s41559-019-1081-1.
7. Deng, Z., Cheong, J.H., Caranica, C., Wu, L., Qiu, X., Judge, M.T., Hull, B., Rodriguez, C., Griffith, J., Al-Omari, A., **Arsenault, S.V.**, Schuttler, H.B., Mao, L., Arnold, J. 2019. *Single Cells of Neurospora crassa Show Circadian Oscillations, Light Entrainment, Temperature Compensation, and Phase Synchronization*. IEEE Access. 7, 49403–49417. doi: 10.1109/ACCESS.2019.2910731
6. **Arsenault, S.V.**, Glastad, K.M., Hunt, B.G. 2019. *Leveraging technological innovations to investigate evolutionary transitions to eusociality*. Current Opinions in Insect Science 34:27-32. doi: 10.1016/j.cois.2019.03.003.
5. **Arsenault, S.V.**, Hunt, B.G. & Rehan, S.M. 2018. *The effect of maternal care on gene expression and DNA methylation in a subsocial bee*. Nature Communications. 9(1):3468. doi: 10.1038/s41467-018-05903-0.
4. Glastad, K.M., **Arsenault, S.V.**, Vertacnik, K.L., Geib, S.M., Kay, S., Danforth, B.N., Rehan, S.M., Linnen, C.R., Kocher, S.D., Hunt, B.G. 2017. *Variation in DNA Methylation Is Not Consistently Reflected by Sociality in Hymenoptera*. Genome Biology and Evolution. 9(6):1687-1698. doi: 10.1093/gbe/evx128.
3. Deng, Z., **Arsenault, S.V.**, Mao, L., Arnold, J. 2016. *Measuring synchronization of stochastic oscillators in biology*. Journal of Physics Conference Series 750. doi:10.1088/1742-6596/750/1/012001
2. Deng, Z., **Arsenault, S.V.**, Caranica, C., Griffith, J., Zhu, T., Al-Omari, A., Schüttler, H.B., Arnold, J., Mao, L. 2016. *Synchronizing stochastic circadian oscillators in single cells of Neurospora crassa*. Scientific Reports. 6, 35828. doi: 10.1038/srep35828
1. Deng, Z., **Arsenault, S.V.**, Zhu, T., Cheng, R., Griffith, J., Arnold, J., Mao, L. 2014. *Single cell measurements on the biological clock by microfluidics*. Proc. 18th Int. Conf. Miniaturized Syst. Chem. Life Sci. 881–883.

Awards and Funding

H.O. Lund Entomology Scholarship (2019)

Outstanding Teaching Assistant Award (2018)

UGA Graduate School Student Travel Grant (2017)

H.O. Lund Outstanding Achievement Award for Scholarship and Research – PhD (2017)

Honorable Mention, National Science Foundation Graduate Research Fellowship Program (2016)

Innovative and Interdisciplinary Research Grant (2016)

Conferences and Presentations

Oral Presentation at Biology and Genomics of Social Insects Conference (2024)

Oral Presentation at the Invertebrate Supergroup Meeting (2023)

Invited Seminar at University of Rochester (2022)

Chalk Talk at Boston Evolutionary Genomics Supergroup Annual Retreat (2022)

Oral Presentation at 2022 Social Insects in the Northeast Regions Conference (2022)

Oral Presentation at 2021 ESA Annual Meeting (2021)

Poster Presentation at the Evolution of Complex Life Conference (2019)

Oral Presentation at ESA, ESC, and ESBC Joint Annual Meeting (2018)

Oral Presentation at Biology and Genomics of Social Insects Conference (2018)

Oral Presentation for the Enthusiasts of Diversity, Genetics, and Evolution at UGA (2018)

Oral Presentation at the 2017 Entomological Society of America Meeting (2017)

Poster Presentation at Southeastern Population Ecology and Evolutionary Genetics Conference (2016)

Award for Best Graduate Student Poster Presentation

Poster Presentation at the Southeast BME Regional Conference (2015)

Presentation at the College of Engineering REU Research Symposium (2015)

Event organizer

Teaching

Teaching Assistant, “Integrated Science” - LS50 (Harvard University, 2022)

Teaching Assistant, “Insects and the Environment” - ENTO 2010 (University of Georgia, 2018)

Instructor of Record, “Principles of Biology II Lab” - BIOL 1108L (University of Georgia, 2017, 2018)

Teaching Assistant, “Principles of Biology II” - BIOL 1108 (University of Georgia, 2016)

Tutor, Mathnasium of Marietta (20 hours/week, 2010-2011)

Mentorship

Mentored Luke Bowles, Undergraduate Researcher (2024)

Mentored Abigail Zuber, Post-Baccalaureate Fellow (2023-2024)

Mentored Ben Chamis, Undergraduate Co-op Intern (2023)

Mentored Jared Gracia-David, System Biology REU Student (2022)

Mentored Makayla Howe, System Biology REU Student (2021)

Mentored Alex Waugh, current PhD student in the Hunt Lab (2018-2020)