BREANNA N. SIPLEY

PhD Student

Bioinformatics & Computational Biology
440 Life Sciences South
University of Idaho
Moscow, ID 83843

Breanna.Sipley@gmail.com
https://sipley.github.io/
https://twitter.com/Breanna_Sipley
https://github.com/Sipley

RESEARCH INTERESTS

Coevolutionary theory, comparative phylogenetic methods, species diversification, genomic bases of symbioses (including parasitism)

EDUCATION

Auburn University, MS in Biological Sciences *Aug 2016 - Aug 2019*

- Evolution of gene families related to blood parasitism in flatworms
- Co-advisors: Dr. Jamie R. Oaks and Dr. Sarah Zohdy

University of Florida, BS in Zoology, Summa Cum Laude *Jun 2009 - May 2013*

- Species delimitation in the sea cucumber genus *Opheodesoma*
- Honors thesis advisor: Dr. Gustav Paulay

PROFESSIONAL EXPERIENCE

University of Florida, Lab Manager *Aug 2015 - Jul 2016*

- Evolutionary genetics of virulence in *Drosophila melanogaster*, rapid induction of pro-apoptotic genes following viral infection, compliance, purchasing, lab maintenance, and mentoring
- PIs: Dr. Marta Wayne and Dr. Lei Zhou

Florida Museum of Natural History, Molecular Lab Technician *May 2012 - Dec 2013*

- Curatorial assistance, lab maintenance, DNA extractions, PCR, and sequencing preparation
- Supervisors: Dr. Francois Michonneau, John Slapcinsky, and Dr. Gustav Paulay

SELECTED FELLOWSHIPS

NSF Graduate Research Fellowship *Sep 2018 - Aug 2023*
Auburn University (AU) Cellular and Molecular Biosciences (CMB) GRF *May 2018 - Aug 2018*
AU CMB Peak of Excellence GRFP *Aug 2016 - Aug 2017*
Smithsonian Institution Internship at the Smithsonian Marine Station *May 2014 - Oct 2014*
University of Florida (UF)-HHMI Science for Life REU *Sep 2010 - Jan 2011*
NSF REU at Mount Desert Island Biological Laboratory *May 2010 - Jul 2010*

PEER-REVIEWED PUBLICATIONS

Whelan NV, Galaska MP, Sipley BN, Weber J, Johnson PD, Halanych KM, & Helms BH. Population genomics of the federally threatened Round Rocksnail (*Leptoxis ampla) reveal migration patterns, landscape genetic structure, and genetic influence on shell shape variation. Molecular Ecology 28(7). DOI: 10.1111/mec.15032*.

MANUSCRIPTS IN PREPARATION

Sipley BN, Bullard SA, Oaks JR, & Halanych KM. Venom allergen-like protein diversity in flatworms: Implications for understanding the evolution of parasitism. In revision. Available upon request.

Sipley BN, Michonneau F, & Paulay G. Surprisingly low genetic diversity despite considerable morphological variation in the sea cucumber genus *Opheodesoma*. In preparation. Target journal: Molecular Phylogenetics & Evolution. Available upon request.

OTHER PUBLICATIONS

Sipley BN, Michonneau F, & Paulay G. (2013). Developing genetic markers to infer phylogenetic relationships in *Opheodesoma* (Echinodermata: Holothuroidea: Apodida: Synaptidae). UF Undergraduate Honors Theses. http://ufdc.ufl.edu/AA00057336/00001 **Awarded Summa Cum Laude**.

SELECTED PRESENTATIONS

+ denotes students I've mentored

Watson A+, Sipley BN, & Halanych KM. (2018). Glutamate Decarboxylase Gene Family Evolution in Flatworms. REU Poster Symposium, Comp Biol, AU. Poster. **Awarded 2nd Place Poster**.

Sipley BN, Bullard SA, Oaks JR, & Halanych KM. (2018). What's VAP got to do with it? The evolution of blood parasitism in flatworms. Society of Systematic Biologists Standalone Meeting, Columbus, Ohio. Lightning Talk. http://phyletica.org/ssb-recap/

Sipley BN, Bullard SA, Halanych KM. (2018). The evolution of blood parasitism in trematodes: What's VAP (venom allergen-like protein) got to do with it? Society of Integrative & Comparative Biology 58(1): E213, San Francisco, California. Oral presentation. https://doi.org/10.1093/icb/icy001.

Whelan NV, Sipley BN, Galaska MP, Helms BH, Johnson PD, & Halanych KM. (2018). Populations of Round Rocksnail (/textitLeptoxis ampla), a Federally Threatened Freshwater Snail, Are Surprisingly Distinct. Integrative & comparative biqology 58(1): E250, San Francisco, California. Oral presentation. https://doi.org/10.1093/icb/icy001

Sipley BN, Bullard A, & Halanych KM. (2017). How does endoparasitism evolve? Insights from Venom allergen-like proteins in blood flukes (Platyhelminthes: Trematoda: digenea). Evolution, Portland, Oregon. Poster. https://doi.org/10.6084/m9.figshare.5131981.v1.

Sipley BN, Bullard A, & Halanych KM. (2017). Evolution of Venom Allergen-Like Proteins in Fish Blood Flukes (Platyhelminthes: Trematoda: Digenea). Society of Systematic Biologists Standalone Meeting, Baton Rouge, Louisiana. Lighting talk.

Larsen M+, Cortes-Hinojosa G, Lo R+, Sipley BN, Eckert L+, Tsang T+, & Wayne M. (2016). Potential Effects of *Wolbachia* on Male Transmission of Sigma in *D. melanogaster*. Southeastern Ecology & Evolutionary Genetics, Madison, FL. Poster.

Sipley BN, Michonneau F, & Paulay G. (2015). Genetic markers reveal surprisingly low genetic variation in the sea cucumber genus *Opheodesoma*. Southeastern Ecology & Evolutionary Genetics, Eatonton, GA. Oral presentation. **Awarded Best Talk**.

SEMINARS

Sipley BN, Bullard SA, & Halanych KM. (2017). Genomics of parasites: Investigating the evolution of blood parasitism in flatworms. Sciences and Mathematics Interdisciplinary Colloquium, Auburn, AL.

Sipley BN & McKeon CS. (2014). Ecological drivers of benthic community assemblages in the St. Lucie Estuary Southern Indian River Lagoon: Freshwater discharge from Lake Okeechobee results in major, predictable disturbance events. Smithsonian Seminar, Fort Pierce, FL.

SERVICE AWARD

Outstanding Senator Award, Graduate Student Council, AU *Apr 2019*