SARAH JORDAN SHAINKER

sjs2@uab.edu
404-435-8949

EDUCATION

University of Alabama at Birmingham *2020-present*
PhD in Biology Birmingham, AL

Honors College at the College of Charleston *2016*
Bachelor of Science in Marine Biology, Minor in Environmental Studies Charleston, SC
Magna cum laude
Undergraduate Thesis: Evolution of temperature tolerance in the invasive seaweed *Gracilaria vermiculophylla*

HONORS/AWARDS/SCHOLARSHIPS

- NSF Graduate Research Fellow, 2020
  "Eco-evolutionary implications of life cycle variation in freshwater macroalgae"
- UAB Blazer Fellow, 2020
- Summer Research with Faculty (SURF) Grant, *Charleston, SC, Summer 2015* ($6500)
- Howard Hughes Medical Institute Summer Research Grant, *Charleston SC, Summer 2014* ($3500)
- Presidential Scholarship; College of Charleston; *Charleston SC; 2012-2016*
- Academic Scholarship; College of Charleston; *Charleston SC; 2012-2016*
- Ask Jackie Scholarship; College of Charleston; *Charleston SC; 2014-2016*
- Outstanding Student in Marine Biology; *Charleston SC; 2016*

GRANTS (IN REVIEW)

- Alabama Academy of Sciences Research Grant ($250)
  "Engaging communities in biodiversity monitoring and evolutionary ecology of Alabama's freshwater red macroalgae"

GRANTS (NOT FUNDED)

- Walter F. Coxe Research Grant, Alabama Audubon ($2500)
  "Engaging communities in biodiversity monitoring of Alabama's freshwater red macroalgae"
- Society of Freshwater Science General Endowment Fund ($1000)
  "Natural history of Alabama's freshwater red macroalgae"
- Sigma Xi Grants in Aid of Research ($1000)
  "Engaging communities in biodiversity monitoring and natural history of Alabama's freshwater red macroalgae"

PUBLICATIONS

Sotka, E.E., A. Baumgartner, P. Bippus, C. Destombe, E. Duermit, Endo, B. Flanagan, M. Kamiya, L. Lees, C.J. Murren, M. Nakaoka, **SJ Shainker**, A.E. Strand, R. Terada, M. Valero, F. Weinberger and S.A. Krueger-Hadfield (2018) Combining niche-shift analysis and population genetics predicts rapid phenotypic evolution during invasion. ***Evolutionary Applications*** 11:781–793

Krueger-Hadfield SA, NM Kollars, AE Strand, JE Byers, **SJ Shainker**, R Terada, TW Greig, M Hammann, DC Murray, F Weinberger, EE Sotka. (2017) The identification of source and likely vector of a widespread marine invader. ***Ecology and Evolution*** 7: 4432-4447.

PROFESSIONAL AND RESEARCH EXPERIENCE

Environmental Educator *2019*
Georgia 4H Dahlonega, GA

- Taught environmental science courses, including Stream Ecology, Entomology, Herpetology, and Night Wildlife, according to Georgia Performance Standards for 1st-8th grade students
- Provided care for reptiles, amphibians, and insects used in classes

Private Tutor *2018-2019*
Applerouth Tutoring Services Atlanta, GA and Washington, DC

- Tutored high school students in SAT/ACT prep, biology, and environmental science
- Provide personalized support to students and families through the college prep process

Coastal Resource Management Consultant *2016- 2018*
U.S. Peace Corps Northern Samar, Philippines

- Authored, awarded and implemented a $2000 USAID funded grant to develop and facilitate a 3-day Environmental Education Training of Trainers for 12 high school educators, resulting in 4 environmental project proposals, 3 sessions for an environmental youth camp, and a 39.1% increase of the average score on a pre- and post- test evaluating participants' knowledge of coastal ecosystems, climate change, and solid waste management
- With 10 participants from the Training of Trainers, co-facilitated an environmental youth camp for 53 high school students resulting in 5 student-produced project proposals and a 42.6% increase of the average score on a pre- and post- test evaluating students' knowledge of coastal ecosystems, climate change, and solid waste management
- Designed educational sessions on solid waste management, fisheries management, and coastal ecosystems for over 2,000 community members, youth, college students, and government employees
- Trained 5 coworkers from the local government to facilitate a Project Design and Management training for 45 leaders of local fisherfolk organizations and women's cooperatives, resulting in sample project proposals for each of the 8 attending organizations
- Co-authored the municipality's 5-year Solid Waste Management plan

Research Assistant, Sotka Lab *2014-2016*
Grice Marine Lab; Biology Department Charleston, SC

- Gained skills in field sampling, ecology, red algal culturing, lab experiments, and molecular biology and genetics techniques while studying the invasive red seaweed *Gracilaria vermiculophylla*
- Conducted a 10 day field sampling trip along the mid-Atlantic US coast

Sustainability Intern *2016*
Office of Sustainability; College of Charleston Charleston, SC

- Co-planned an oyster restoration volunteer event for 15 college students; gave a brief presentation and facilitated a discussion on the effects of microplastics on oysters
- Interviewed 12 students and faculty for a social sustainability initiative to use storytelling as a means for empowerment and understanding among different groups

PRESENTATIONS

S.J. Shainker, Krueger-Hadfield S.A., and Sotka E.E. *Evolution of heat stress tolerance in the invasive seaweed* Gracilaria vermiculophylla. Poster presented at the 2016 Benthic Ecology Conference, Portland, ME.

Shainker, S.J. and Sautter, L. *Bathymetric and Backscatter Analyses of Fish Habitats off the Southeast U.S. Coast.* Abstract accepted to the 2016 Canadian Hydrographic Conference.

S.J. Shainker, Krueger-Hadfield S.A., and Sotka E.E. *Adaptation of Temperature Tolerance in the* Gracilaria vermiculophylla *Invasion: Pre- or Post-Adaptation?* Poster presented at the 2016 College of Charleston School of Science and Math Poster Day. Nominated for Best in Biology Department.

S.J. Shainker and Sautter L. *Bathymetric and Backscatter Analyses of Fish Habitats off the Southeast U.S. Coast.* Poster presented at the 2016 College of Charleston School of Science and Math Poster Day.

S.J. Shainker, Krueger-Hadfield S.A, and Sotka E.E. *Investigating the Invasive History of* Gracilaria vermiculophylla *using molecular markers*. Poster presented at the 2014 HHMI summer grant recipient poster session.

SCIENCE COMMUNICATION

Blogging

- envirobites.org:
    - Hidden fish populations protect us from ourselves
    - Islands and Alleles: How Genetics Can Help Protect Endangered Species
    - Chocolate beans and Brazilian birds
    - Genetic clues to bee conservation
    - Duck broods are more resilient than expected in the face of oil and natural gas extraction
    - Taking care of carrion
    - Microhabitat temperature makes a mega impact on urban coastal biodiversity
    - Editing life to save it? The potential for gene drive technology in conservation
    - How identifying the proper questions to ask can help save a non-charismatic animal
    - Population genetics to uncover life history and inform conservation of a federally threatened tiny plant
    - Expanding the conservation "cool clique" to include freshwater megafauna
    - The Endangered Species Act doesn't protect all habitat equally
    - Freshwater ecosystems are singing, and scientists are listening
    - Can we tweet our way to biodiversity conservation?
    - *Edited the following student guest posts*:
        - T.G.I…M? Why Wildlife Wants Your Vacation to End Sooner
        - Bugmeal: The Future of Aquaculture?, Turtle Hatch Rates Skyrocket after Incubation
- The Molecular Ecologist
    - Genes rolling down the river
- American Genetic Association Blog
    - What happens when hunting history, whale culture, genetics, and an international collaboration work towards a common goal?

Podcast

- The Molecular Ecologist Podcast: Rivers and rabbit resistance

TEACHING EXPERIENCE

- Spring 2020: TA for Biology 102L, introductory lab course for non-majors
- Summer 2020: TA for Biology 124L, introductory lab course for majors

PROFESSIONAL DEVELOPMENT

Environmental Education Facilitator Certification, Grades K-8 *2019*
Project Learning Tree Dahlonega, GA

Mangrove and Beach Forest Restoration Training *2017*
Zoological Society of London Iloilo, Philippines

Project Design, Management, and Grant Writing Training *2017*
US Peace Corps and USAID Cavite, Philippines

Participative Habitat and Socioeconomic Assessment Training *2016*
US Peace Corps Cavite, Philippines

OUTREACH, LEADERSHIP, & SERVICE ACTIVITIES

Panelist, Undergraduate Research Workshop *February 2020*
Office of Undergraduate Research; University of Alabama at Birmingham Birmingham, AL

Coastal Resource Management Program Review *2017*
Peace Corps Philippines Manila, Philippines

- Worked with 2 other volunteers and Peace Corps staff from Manila, Philippines and Washington, D.C. for one week to conduct the Project Review for PC Philippines CRM
- Drafted program objectives and created a monitoring and evaluation framework for the next 5 year program cycle

Citizen Science Seminar and Mangrove Nursery Establishment *2018*
Philippines Department of Environment and Natural Resources Northern Samar, Philippines

- Facilitated a session on coastal ecosystems for 50 community members and students
- Demonstrated mangrove nursery establishment procedures for fisherfolk members
- Helped draft a grant proposal for a mangrove rehabilitation project

Work Partner's Conference Resource Facilitator *2017*
Peace Corps Philippines Manila, Philippines

- Presented my personal and professional experience working in Coastal Resource Management in the Philippines for an incoming batch of volunteers
- Facilitated sessions on cross-cultural work and communication during a 2 day pre-service training for new volunteers and their local work partners

ECOllective Student Grant Review Committee *2015-2016*
Office of Sustainability, College of Charleston Charleston, SC

- Recruit student applicants to lead sustainability projects on campus.
- Collaborate with a group of students to review grant applications and select recipients for funding.

Teacher Assistant *2013*
Green Heart Project Charleston, SC

- Assisted with 3rd grade science and math lessons
- Helped maintain the school's urban farm

MEMBERSHIPS

Phi Sigma Biological Sciences Honor Society *since 2020*
Society for Freshwater Science *since 2020*
Alabama Academy of Science *since 2020*
American Genetic Association *since 2020*

RELEVANT COURSEWORK

Intro to Biology 1 & 2 with labs, Genetics, Intro to Coastal and Marine Geology, Intro to Chemistry 1 & 2 with labs, Organic Chemistry 1 & 2 with labs, Intro to Physics 1 & 2 with labs, General Ecology with lab, Biology of Invertebrates with lab, Biology of Fishes with lab, Conservation Biology, Intro to Seafloor Mapping, Seafloor Research, Oceanography with lab, Environmental Policy, Public Speaking, Conservation Genetics, Advanced Invertebrate Zoology, Biological Techniques

SKILLS

- Experience using a dichotomous key for species identification
- Fish sampling by trawling and seining
- Seafloor mapping using CARIS software
- PADI Advanced Open Water Dive Certification
- Molecular methods: DNA extraction, PCR, restriction enzyme assays, gel electrophoresis