ALYSSA LAUREN LIGUORI

Postdoctoral Scientist

Josephine Bay Paul Center for Comparative Molecular Biology and Evolution
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EDUCATION

2020 **Doctor of Philosophy**, Ecology and Evolution
Stony Brook University, NY
Dissertation: "Population dynamics in the rocky intertidal zone: Acclimation and adaptation to extreme abiotic conditions in the copepod *Tigriopus californicus*"
Advisor: Robert Thacker

2014 **Bachelor of Science**, Biology & Environmental Sciences (*summa cum laude*)
Dowling College, Oakdale, NY

FELLOWSHIPS & AWARDS

2016-2019 National Science Foundation, Graduate Research Fellowship
2019 Conchologists of America, Academic Grants to Malacology
(*declined award due to a change in dissertation research plans)*
2018-19 Stony Brook Graduate Student Organization Professional Development Fund
2018 National Science Foundation, Graduate Research Internship Program
2018 American Museum of Natural History, Lerner-Gray Memorial Fund
2018 Friday Harbor Laboratories, Research Fellowship Endowment
2017 Women in Science and Engineering, Mentor Professional Development Fund
2017 Sigma Xi, The Scientific Research Society, Grant-In-Aid of Research
2017 American Microscopical Society Student Research Fellowship
2017 Friday Harbor Laboratories, Beatrice Crosby Booth Endowed Scholarship
2017-18 Friday Harbor Laboratories, Patricia L. Dudley Endowment Award
2017 Stony Brook Ecology & Evolution Graduate Student Excellence Award
2017-18, 2020 Stony Brook Graduate Student Organization Travel Grant
2017-18, 2020 Society for Integrative & Comparative Biology Charlotte Mangum Award
2016 The Crustacean Society, Physiology and Reproductive Biology Scholarship
2016 Friday Harbor Laboratories, Alan J. Kohn Endowed Fellowship
2016, 2020 Stony Brook University, GSEU Professional Development Award
2015 Friday Harbor Laboratories, Brooks and Suzanne Ragen Scholarship
2015, 2017 Friday Harbor Laboratories, Adopt-A-Student Program Award
2015-16 Friday Harbor Laboratories, Marine Science Fund
2015-19 Stony Brook University, Lawrence B. Slobodkin Graduate Research Award
2014 Stony Brook University Recruitment Fellowship
2012 Dowling College, Distinguished Professor Grant for Earth & Marine Studies

PEER-REVIEWED PUBLICATIONS

Padilla D. K., D. Charifson, **A. Liguori**, M. McCarty-Glenn, M. Rosa, and A. Rugila. 2018. Factors affecting gastropod larval development and performance: a systematic review. *Journal of Shellfish Research.* 37(4): 851-867.

Boyko C. B. and **A. Liguori**. 2015. Grapsoid and Gall Crabs (Crustacea: Brachyura: Grapsoidea and Cryptochiroidea) of Easter Island. *Pacific Science.* 69(4): 509-523.

Boyko C. B. and **A. Liguori**. 2014. Swimming Crabs (Crustacea: Brachyura: Portunoidea) of Easter Island. *Pacific Science.* 68(4): 563-575.

MANUSCRIPTS IN PROGRESS

Liguori A. Limited evidence for local adaptation to salinity and temperature variability in San Juan Island populations of the copepod *Tigriopus californicus* (Baker). *In revision. Journal of Experimental Marine Biology and Ecology.*

Liguori A. Multigenerational life history responses to pH in distinct populations of the copepod *Tigriopus californicus. In revision. Biological Bulletin.*

Padilla D. K., L. Milke, M. Akin-Fajiye, M. Rosa, D. Redman, **A. Liguori**, A. Rugila, D. Veilleux, M. Dixon, D. Charifson, and S. L. Meseck. Can population geography outweigh the effects of ocean acidification? *In review. Nature Climate Change.*

SELECTED PRESENTATIONS

Liguori A., S. Korm, A. Profetto, E. Richters, and K. E. Gribble. 2022. Intraspecific variability in maternal age effects on offspring lifespan and fecundity. The Society for Integrative & Comparative Biology Annual Meeting (SICB+). Virtual contributed talk.

Liguori A. 2020. "Exploring local adaptation to salinity and temperature variability in the copepod *Tigriopus californicus*." The Society for Integrative & Comparative Biology Annual Meeting, Austin, TX. Contributed talk. ***Received the Mary Rice Award: Runner-up for the Best Oral Presentation for the Division of Invertebrate Zoology***

Liguori A. 2019. "Exploring local adaptation in tidepools: Will copepods be resilient to rapid global change?" Graduate Women in Science and Engineering, Women's Research in STEM Showcase, Stony Brook University, NY. Poster presentation.

Liguori A. 2019. "Exploring local adaptation to salinity and temperature variability in the copepod *Tigriopus californicus.*" Stony Brook University, Department of Ecology and Evolution Retreat, Port Jefferson, NY. Contributed talk. ****Received Cedar Brook Award for best talk***

Liguori A. 2018. "Multigenerational responses to pH in different populations of the copepod *Tigriopus californicus.*" Hofstra University, Department of Biology Seminar Series, Hempstead, NY. **Invited talk**.

Liguori A. 2018. "Multigenerational responses to pH in different populations of the copepod *Tigriopus californicus.*" Stony Brook University, Department of Ecology and Evolution Retreat, Port Jefferson, NY. Contributed talk. ****Received Cedar Brook Award for best talk***

Liguori A. 2018. "Population level differences in life history responses to long-term pH stress in *Tigriopus californicus*." The Society for Integrative & Comparative Biology Annual Meeting, San Francisco, CA. Contributed talk.

Liguori A. 2017. "Multigenerational responses to lowered pH in the copepod *Tigriopus californicus*." The Society for Integrative & Comparative Biology Annual Meeting, New Orleans, LA. ****Awarded Best Poster Presentation by the Crustacean Society***

Liguori A., V. Shah, T. Green. 2013. "Radiation resistant bacteria from the soil of the Gamma Forest." Brookhaven National Laboratory, U.S. Department of Energy SULI Program, Upton, NY. Poster presentation.

RESEARCH & PROFESSIONAL APPOINTMENTS

Postdoctoral Scientist 2/2021 - Present
Josephine Bay Paul Center for Comparative Molecular Biology and Evolution
Marine Biological Laboratory, Woods Hole, MA, Mentor: Kristin Gribble

- I am using experimental, genetic, and bioinformatic approaches to determine the mechanisms of epigenetic inheritance in a rotifer model system.

National Science Foundation Graduate Research Fellow 9/2016 - 9/2019
Department of Ecology and Evolution, Stony Brook University
Friday Harbor Laboratories, University of Washington

- Designed and executed long-term field and experimental studies to assess the resilience of copepod populations to rapidly changing seawater pH, salinity, and temperature.
- Employed next-generation sequencing to characterize genomic differentiation among copepod populations and identify the mechanisms underlying physiological plasticity.

Graduate Research Assistant 9/2016 - 4/2019
Department of Ecology and Evolution, Stony Brook University
Milford Laboratory, NOAA Northeast Fisheries Science Center
Principal Investigators: Lisa Milke, Shannon Meseck, Dianna Padilla

- New York Sea Grant funded, collaborative research investigating the capacity of blue mussel populations to acclimate and/or adapt to coastal acidification. Assessed the resilience of populations from across a water quality gradient in the Long Island Sound.

National Science Foundation Graduate Research Intern 4/2018 - 7/2018
NOAA Northwest Fisheries Science Center, Mentor: Krista Nichols

- Learned laboratory and bioinformatics skills to study the population genomics of non-model organisms. Examined the population genomic structure of the copepod *Tigriopus californicus* in the San Juan Islands using RAD-seq and Pool-seq approaches.
- Participated in lab meetings with the Conservation Biology Division and the Ocean Acidification Lab Group at the Mukilteo Research Station.

Graduate Research Assistant 5/2015 - 7/2015
Department of Ecology and Evolution, Stony Brook University

- Mentored students from Brentwood High School as they conducted research on ribbed mussels and salt marshes in the Connetquot River Estuary.
- Identified field sites for the study, introduced students to the habitat, and worked with them to survey mussels and saltmarsh cordgrass, deploy larval collectors, and classify larvae.
- Students achieved semifinalist status in the national Siemens Science Competition for their project entitled, "*Mussel Power.*"

Research Assistant 1/2013 - 5/2014
Dowling College, Biodiversity and Ecology Laboratory

- Reviewed and described crustacean diversity on Easter Island using historical records and specimens collected by the Science Museum of Long Island Easter Island Expedition.

Department of Energy Science Undergraduate Laboratory Intern 6/2013 - 8/2013
Brookhaven National Laboratory

- Conducted experiments to isolate and characterize radiation resistant bacteria from the soil of the Gamma Forest; a plot within the Long Island Pine Barrens that was exposed to gamma radiation from 1961-1978. Determined optimal growth media for several bacterial strains.
- Designed and conducted pilot studies to assess the effects of different soil concentrations of nitrate, nitrite, and ammonia on the germination of pitch pine seeds, to connect soil microbial communities, nutrient input, and larger scale ecosystem processes.

Research Assistant 1/2011 - 12/2011
Center for Estuarine, Environmental and Coastal Oceans Monitoring, Dowling College
Now known as CERCOM Field Station at Molloy College

- Conducted experiments on American horseshoe crab larvae to characterize optimal laboratory rearing conditions, as part of the Center's development of a horseshoe crab aquaculture and conservation program.
- Worked with students, local environmental groups, and volunteers to conduct surveys of horseshoe crab eggs and adults across Long Island shores during the breeding season.

TEACHING EXPERIENCE

Instructor and Teaching Assistant 8/2014 - 1/2021
Stony Brook University, Undergraduate Biology Department

- Developed curriculum as the head instructor of record for Ecology Laboratory (*BIO 352*), including online content and laboratory activities, in response to the COVID-19 pandemic.
- Teaching assistant & laboratory instructor for 7 courses, including: Chordate & Invertebrate Zoology (*BIO 344, BIO 343*), General & Marine Ecology (*BIO 351, BIO 353*), and lab and lecture sections of Introductory Biology (*BIO 201, BIO 204*).
- Communicated concepts to small laboratory sections and large lecture halls of over 400 students via lectures, demonstrations, and group discussions.
- Presenter at the New York State Department of Education: Scientists and Teachers Engaging in Professional Development with University Personnel (STEPD-UP) Workshop for the training of middle school teachers on new science standards for NY, held at Stony Brook University (Fall 2018).

General Science Tutor 1/2011 - 5/2014
Dowling College Learning Center

- Tutored undergraduate students for all science courses offered at Dowling College, including courses geared for both science and non-science majors.
- Volunteered for the Center's "Peer-to-Peer" tutoring program to assist students with introductory writing and math courses.

SKILLS

- Data management, visualization, and analysis (R, bash)
- Interest and ability to learn new skills & coding languages quickly
- Aquatic ecology & zoology
- Design of experiments and field surveys
- Systematic review and synthesis of scientific literature
- Collaborating with diverse research teams, including students, academics, and government scientists
- Scientific writing & public speaking
- Grant writing & budget management
- Maintenance of marine zooplankton, microalgae, and diverse invertebrate species in a laboratory setting
- Manipulation and characterization of seawater carbonate chemistry in accordance with established best practices for ocean acidification research
- Light & scanning electron microscopy
- Respirometry
- High school & undergraduate student mentorship
- Next-generation sequencing and population genomics: including wet lab and bioinformatics skills

PROFESSIONAL AFFILIATIONS

2017-Present Sigma Xi, The Scientific Research Society, *Associate Membership*
2016-Present American Microscopical Society
Executive Committee Member, Graduate Student/Postdoc Representative
2016-Present The Crustacean Society
2014-Present Society for Integrative and Comparative Biology
Divisional affiliations: Ecology and Evolution, Invertebrate Zoology

SERVICE

2018-19 Co-reviewer for: *Marine Ecology Progress Series, Helgoland Marine Research*

2018-Present American Microscopical Society, Graduate Student/Postdoc Representative
- Served on the Executive Committee & led social media outreach efforts

Fall 2018 Participant in the Flax Pond Marine Laboratory Strategic Planning Workshop
- Met with academics, government employees, educators, and local environmental groups to discuss how to maximize the utility of the Flax Pond Marine Lab and Shellfish Hatchery to meet the needs of multiple stakeholders

2017-2020 Graduate Women in Science and Engineering, Stony Brook University
Secretary (2017-18), Vice President (2018-19)
- Led a team to plan & execute events to advance the professional development of women in STEM, both within Stony Brook and across institutions, including Cold Spring Harbor Lab and Brookhaven National Lab
- Received the Outstanding Organization Award at the Jerrold L. Stein Student Life Awards (2019)

2017-2020 Women in Science & Engineering Mentorship Program, Stony Brook University

2017-2020 Department of Ecology & Evolution Mentoring Program, Stony Brook University

2016-17 Natural History Club, Stony Brook University, Vice President and founding member
- Organized lectures, off-campus excursions, and environmental outreach efforts

2015-2018 Darwin Day Event, Stony Brook University, Department of Ecology and Evolution
- Participated in outreach on campus to promote evolution education

Fall 2016 Stony Brook University, NSF GRFP Workshop Panelist

2015-17 Ecology and Evolution Club, Stony Brook University, Treasurer
- Secured funds and maintained budgets for Student-Invited Speaker Events

ADDITIONAL EXPERIENCE AND TRAINING

Fall 2020	Open Standards for the Practice of Conservation Course Center for Wildlife Studies, Professional Certification Program
Summer 2019	Methods in Ecological Genomic Analysis Workshops MOTE's Elizabeth Moore International Center for Coral Reef Research & Restoration Topics: Population genomics using low coverage/RAD data & Functional genomics and gene network analysis with TagSeq
Fall 2018	Communicating Science: Using Digital Media Alan Alda Center for Communicating Science, Stony Brook University
Spring 2018	Women in Science and Engineering Graduate Leadership Workshop Series Stony Brook University Career Center, Alan Alda Center for Communicating Science
2018-19	Software Carpentry Workshops Institute for Advanced Computational Science, Stony Brook University Topics: Unix shell, Python programming, and version control with Git
Summer 2017	Summer Institute in Statistical Genetics University of Washington, Department of Biostatistics Quantitative Genetics & Integrative Genomics Modules
Spring 2017	Functional Ecological Genomics Workshop, Lacawac Biological Field Station
Summer 2015	Ocean Acidification Graduate Summer Course University of Washington, Friday Harbor Laboratories Learned best practices for conducting ocean acidification research Research Project: "The embryonic development of an autotroph-associated gastropod under varying pH"
Summer 2015	The New York Master Naturalist Program, Cornell University Learned conservation management and education strategies
Fall 2014	Alan Alda Center for Communicating Science, Improvisational Workshops Developed skills for effective scientific communication with diverse audiences