Amaelia H. Zyck, Ph.D.

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EDUCATION

2025	Ph.D. in Biological and Environmental Sciences, University of Rhode Island, Dissertation: Impacts of multiple coastal stressors across life-history stages in the eastern oyster Committee: Dr. Jonathan Puritz, Dr. Hollie Putnam, Dr. Marta Gomez-Chiarri
2018	B.S. in Marine Science, *Magna Cum Laude*, University of South Carolina

RESEARCH APPOINTMENTS

2025-	Postdoctoral Fellow, Department of Biological Sciences, University of Rhode Island, Supervisor: Dr. Jonathan Puritz
2018-2025	Graduate Research Assistant, Biological and Environmental Sciences Program, University of Rhode Island, Advisor: Dr. Jonathan Puritz, Dissertation: Impacts of multiple coastal stressors across life-history stages in the eastern oyster
2016-2018	Principal Investigator, Department of Biological Sciences, University of South Carolina, Mentor: Dr. Jerry Hilbish, Research Focus: Spatial and temporal variation in larval availability: success in the plankton and maintenance of connectivity among adult mussel populations
June-Aug '17	Hollings Scholarship Intern, James J. Howard Marine Sciences Laboratory, Sandy Hook, NJ, Mentor: Dr. Christopher Chambers, Research Focus: Coupled effects of pCO_2 and dissolved oxygen on early life stages of Atlantic silverside (*Menidia menidia)*
May-Aug '16	Field Technician, Department of Biological Sciences, University of South Carolina, Mentor: Dr. Jerry Hilbish, Research Focus: Density-dependent mortality in *Semibalanus balanoides:* Uncoupling settlement and recruitment at regional spatial scales
2015-2016	Independent Study, Department of Biological Sciences, University of South Carolina, Mentor: Dr. Jerry Hilbish, Research Focus: Mussel settlement and post settlement dynamics

RECENT EXPERIMENTAL, FIELD, AND MOLECULAR RESEARCH

2019-2025	Performed the expressed exome capture sequencing protocol on larval, juvenile, and adult oyster samples, including DNA and RNA extraction, DNA fragmentation by sonication, library preparation with adapter ligation and amplification, synthesis of sequence capture probes, and hybridization-based target enrichment of DNA libraries
2022	Compiled and analyzed environmental datasets from multiple organizations, integrated data from self-deployed loggers to characterize oyster sampling sites
2022	Designed and executed a 10-week experimental selection study with larval and juvenile oysters reared in multi-stressor (acidification and hypoxia), flow-through aquarium systems
2022	Managed a 3-month larval oyster experimental selection project in multi-stressor, flow-through systems
2021-2022	Engineered and constructed multiple flow-through aquarium systems, including downweller and upweller units, for larval, settlement, and juvenile oyster experiments; all equipped with CO_2/N_2 dosing and an integrated controls system for pH and dissolved oxygen manipulation
2021-2022	Conditioned 300+ wild broodstock oysters for spawning, ensuring optimal reproductive readiness
2020	Collected wild oysters across Narragansett Bay, RI, and dissected mantle and gill tissues for population genomics analysis

PUBLICATIONS

2025	Powers, C., Paz, A., **Zyck, A.**, Harri, K., Geraci, M., Bernhard, J. M., & Zhang, Y. (2025). Morphological responses of a temperate intertidal foraminifer, *Haynesina* sp., to coastal acidification. *Frontiers in Microbiology*, *16*, 1570629.
2024	Willis, A. B., Ermolaeva, E., **Zyck, A.**, Rognstad, R., Davis, S., & Hilbish, T. J. (2024). Integration of natural selection across the life cycle stabilizes a marine mussel hybrid zone. *Ecology and Evolution*, *14*(3), e11086.

MANUSCRIPTS IN PREPARATION

2025 **Zyck, A.**, Stevick, R.J., Gomez-Chiarri, M., &. Puritz, J.B. Investigating the effects of coastal stressors on the distribution of genomic variation of oyster populations in Narragansett Bay. In preparation for submission to *Molecular Ecology*.

2025 **Zyck, A.**, Guidry, M.E., & Puritz, J.B. Evolutionary responses of oyster larvae to prominent coastal stressors. *Proceedings of the Royal Society B*.

2025 **Zyck, A.**, Powers, C., & Puritz, J.B. The effects of diel-cycling acidification and hypoxia across multiple developmental stages of the eastern oyster (*Crassostrea virginica*). In preparation for submission to *Integrative and Comparative Biology*.

PRESENTATIONS (*undergraduate mentee)

2020-2024 Investigating the effects of coastal stressors on the distribution of genomic variation of oyster populations in Narragansett Bay. Zyck, A., Stevick, R., Gallagher*, A., Padro*, N., Gomez-Chiarri, M., Puritz J. B.
- Talk: Evolution Meeting, Montreal, QC, Canada, 2024
- Talk: National Shellfisheries Association, Baltimore, MD, 2023
- Talk: National Shellfisheries Association, Virtual Conference, 2021
- Poster: National Shellfisheries Association, Virtual Conference, 2021
- Talk: Western Society of Naturalists, Virtual Conference, 2020

2024 Poster: What are the impacts of coastal stressors on *Crassostrea virginica* growth during early life stages? Westbrook*, C., Zyck, A., Puritz, J.B. National Shellfishery Association Meeting. Charlotte, NC.

2023 Poster: The effects of diel-cycling acidification and hypoxia across multiple developmental stages of the Eastern oyster (*Crassostrea virginica*). Zyck, A., Puritz J. B. National Shellfisheries Association, Baltimore, MD

2023 Poster: Diel-cycling hypoxia and acidification increases susceptibility to Roseovarious Oyster Disease in *Crassostrea virginica.* Kulesh, K., Zyck, A., Puritz J. B., Gomez-Chiarri, M. National Shellfishery Association Meeting. Baltimore, MD

2021 Poster: The effect of environmental parameters on *Crassostrea virginica* shell sizes. Satkowski*, S., Zyck, A., Puritz, J.B. National Shellfishery Association Meeting. Virtual Conference

2020 Poster: Understanding the effects of multiple stressors on oyster larvae. Tarrant*, M., Zyck, A., Schedl, M., Puritz J.B. National Shellfishery Association Meeting. Baltimore, MD. Cancelled due to Covid-19

2019 Poster: Understanding the impacts of sewage effluent on the genomic diversity and population connectivity of the Fiddler Crab (*Uca rapax*). Zyck, A., Dimens, P., Willis, S., Portnoy, D., Puritz J. B. Evolution Meeting, Providence, RI

GRANTS AND FELLOWSHIPS

2021-2022 Enhancement of Graduate Research Awards (EGRA): Investigating the effects of diel-cycling hypoxia and coastal acidification across oyster life-history stages. AH Zyck, P.I., $1000. Awarded by The University of Rhode Island Graduate School

2020-2021 Ruth D. Turner Scholarship in Marine Biology: Investigating the effects of diurnal hypoxia and coastal acidification across oyster life-history stages. AH Zyck, P.I., $7150. Awarded by The Ruth D. Turner Foundation

2020-2021 Blount Shellfish Restoration Foundation Award: Investigating the effects of sewage effluent and coastal acidification on the genomic diversity and structure of oyster populations in Narragansett Bay. AH Zyck, P.I., $2000. Awarded by the Blount Shellfish Restoration Foundation

2016-2018 Ernest F. Hollings Scholarship. Awarded by NOAA

TEACHING ASSISTANTSHIPS

Fall 2019 Invertebrate Zoology (BIO 354), University of Rhode Island

Summer 2019 Marine Invertebrates of Southern New England (BIO 355), University of Rhode Island

Spring 2019 Introductory Biology (BIO 104), University of Rhode Island

Fall 2018 Invertebrate Zoology (BIO 354), University of Rhode Island

MENTORING

2023-2024 Cierra Westbrook, Science & Engineering Fellow, Undergraduate Research Assistant

2023-2024 Lauren Albanese, Undergraduate Research Assistant

2022 Ben Poepsel, Coastal Fellow, Undergraduate Research Assistant

2021	Madeline Kistler, Coastal Fellow, Undergraduate Research Assistant
2021	Joseph Maiorano, Coastal Fellow, Undergraduate Research Assistant
2020-2021	Seraphina Satkowski, Coastal Fellow, Undergraduate Research Assistant
2020	Nadia Moss, Coastal Fellow
2019-2020	Nina Padro, Undergraduate Research Assistant
2020	Richie Caudra, Undergraduate Research Assistant
2019	Melati Tarrant, Coastal Fellow
2019	Allison Gallagher, Undergraduate Research Assistant

PROFESSIONAL MEMBERSHIPS

American Association for the Advancement of Science
National Shellfisheries Association
Society for the Study of Evolution
Society for Women in Marine Science

OUTREACH AND SERVICE

2022-2023	The Compass School Career Day, Presenter
2022	University of Rhode Island Graduate School of Oceanography Science Saturday, Volunteer
2019-2020	Save the Bay Education Program, Volunteer
2019-2020	Save the Bay Shoreline Cleanup, Volunteer

SKILLS AND TECHNICAL PROFICIENCIES

Programming Languages: R, Python
Scientific Application: ImageJ, Onset HOBOconnect, Presens
Certifications: PADI Advanced and Open Water Scuba certified as of June/July of 2013

REFERENCES

Jonathan Puritz
Job Title: Associate Professor
Organization: University of Rhode Island Years Known: 6
Email: jpuritz@uri.edu
Phone: 401.874.9020

Christopher Powers
Job Title: Research Biologist
Organization: NOAA Northeast Fisheries Science Center Years Known: 5
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