REBECCA J. STEVICK, PH.D.

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PROFESSIONAL APPOINTMENTS

2020-*present* **Institut Pasteur**, Genetics of Biofilms Laboratory
Postdoctoral Research Fellow
Advisor: Dr. Jean-Marc Ghigo

2021 **University at Albany SUNY**, RNA Institute, Valm Laboratory
Visiting Researcher

EDUCATION

2015-2019 **University of Rhode Island**, Graduate School of Oceanography
Ph.D. Biological Oceanography
Dissertation: "*Oyster-Associated Microbial Community Dynamics*"
Co-Major Advisors: Dr. Anton Post, Dr. Marta Gomez-Chiarri

2011-2015 **University of Maryland**, A. James Clark School of Engineering
B.S. Bioengineering, Minor in International Engineering
Honors Thesis: "*Measuring Cell Traction Forces in Simulated Microgravity*"

GRANTS AND FELLOWSHIPS

2020-2022 Phillipe Foundation Research Grant ($8,000 total)
"Understanding host-microbiome interactions leading to colonization resistance"

2017-2019 TNC/URI Global Marine Initiative Student Research Award ($24,000 total)
"Effects of estuarine acidification on adult Eastern oyster (Crassostrea virginica) microbiomes and health in Narragansett Bay, Rhode Island"

2015-2019 NSF Graduate Research Fellowship, awarded in Bioengineering ($138,000 total)
"Molecular Mechanisms in pH-Induced Demineralization of Bones and Coral"

PUBLICATIONS

Stevick, R.J., Hamilton, A.P., Moseman-Valtierra, S., Post, A.F., Gómez-Chiarri, M. Nutrient Enrichment Affects Tissue-Specific Mechanisms of Nitrogen Cycling in Oyster Microbiomes. *In preparation.*

Ray, N.E., Hancock, B., Brush, M.J., Colden, A., Cornwell, J., Labrie, M.S., Maguire, T.J., Maxwell, T., Rogers, D., **Stevick, R.J.**, Unruh, A., Kellogg, M.J., Smyth, A.R., Fulweiler, R.W. (2021). A review of how we assess denitrification in oyster habitats and proposed guidelines for future studies. *Limnology and Oceanography: Methods*. doi:10.1002/lom3.10456.

Stevick, R.J., Post, A.F., Gómez-Chiarri, M. (2021). Functional plasticity in oyster gut microbiomes along a eutrophication gradient in an urbanized estuary. *Animal Microbiome* 3, 5. doi:10.1186/s42523-020-00066-0.

Stevick, R.J., Sohn, S., Nelson, D.R., Rowley, D.C., Tammi, K., Smolowitz, R., Lundgren, K.M., Post, A.F. and Gomez-Chiarri, M. (2019). Bacterial Community Dynamics in an Oyster Hatchery in Response to Probiotic Treatment. *Frontiers in Microbiology* 10, 1060. doi:10.3389/FMICB.2019.01060.

Robledo, J.A.F., Yadavalli, R., Allam, B., Pales-Espinosa, E., Gerdol, M., Greco, S., **Stevick, R.J.**, Gómez-Chiarri, M., Zhang, Y., Heil, C.A. and Tracy, A.N. (2018). From the raw bar to the bench: Bivalves as models for human health. *Developmental & Comparative Immunology* 92, 260-282. doi:10.1016/j.dci.2018.11.020.

Yuan, L., **Stevick, R.J.**, Ahern, O.M., Daniels, N.M. (2017). Analysis of 16S Genomic Data using Graphical Databases. *Proceedings of ACM Conference on Bioinformatics, Computational Biology, and Health Informatics*, (ACM-BCB17), 2 pages. doi:10.1145/3107411.3108208.

HONORS AND AWARDS

2019	URI Graduate School of Oceanography Alumni Award
2019	First Place in Graduate Oral Presentations at Benthic Ecology Meeting
2018	URI Graduate School of Oceanography Ann Durbin Memorial Award
2017, 2018	URI College of the Environment and Life Sciences Travel Award
2017, 2018	National Shellfisheries Association Student Travel Award
2017	Gordon Gunter Outstanding Poster Award at NSA 109th Annual Meeting
2015	UMD Engineering Honors Program Citation
2015	UMD Fischell Department of Bioengineering Outstanding Research Award

RESEARCH EXPERIENCE

2020-*present* **Postdoctoral Research Fellow**, Genetics of Biofilms Laboratory
Institut Pasteur, Paris, France
Researching microbial ecology within gnotobiotic zebrafish and rainbow trout models to determine mechanisms of colonization resistance to *Flavobacterium columnare* and other pathogenic bacteria. Performing zebrafish husbandry and care for germ-free animals. Developing bioinformatic tools to study host-microbiome interactions.

2021 **Visiting Researcher**, Valm Laboratory
University at Albany SUNY, Albany, NY
Visualized interactions between zebrafish host and associated bacteria using Fluorescent In Situ Hybridization (FISH), imaged with confocal fluorescent microscopy. Analyzed images using Imaris and FIJI softwares. Taught R and RNAseq workshops and mentored PhD students.

2015-2019 **Graduate Research Assistant**, Marine Diseases Laboratory
University of Rhode Island, Kingston, RI
Conducted experiments and analysis on the effects of probiotics or environmental conditions on the health, disease status, microbiomes, and ecosystem services of larval or adult oysters. Developed protocols for DNA and RNA co-elution from various tissue and sample types, microbial analysis, and pathogen detection. Performed bacterial cell culture, sequencing library prep, nucleic acid quality control, and bioinformatic analysis to determine the microbial and host response to perturbations.

2015 **Program Coordinator**, Space Biosciences Division
NASA Ames Research Center, Mountain View, CA
Supported the Space Life Sciences Training Program (SLSTP) in the Space Biosciences Division. Managed and organized activities for 10 student interns, while continuing research on the effects of microgravity and exercise on DNA methylation during bone remodeling.

2014-2015 **Undergraduate Research Assistant**, Orthopaedic Mechanobiology Laboratory
University of Maryland, College Park, MD
Investigated the effects of microgravity on human mesenchymal stem cell growth and traction forces. Designed and manufactured a microfluidic device to determine forces from stem cells on PDMS substrate. Cultured stem cells and performed mechanical analysis based on microscope images.

2014 **Research Associate**, Bone and Signaling Laboratory, Space Biosciences Division
NASA Ames Research Center, Mountain View, CA
Participant in the Space and Life Sciences Training Program, where I researched the effects of microgravity and exercise on DNA methylation during bone remodeling. We also developed a NASA Project Plan to investigate the effects of deep space radiation on DNA in *C. elegans*.

2013 **Exchange Research Intern**, Marine Molecular Biotechnology Lab
Pohang University of Science and Technology, Pohang, South Korea
Conducted bioadhesive mussel protein research to increase knowledge of fp-151 protein expression and its applications. Optimized electrospray techniques to create more effective polymer shapes for tissue engineering.

CONFERENCE PRESENTATIONS

Perez Pascual, D., **Stevick, R.J.**, Vendrell-Fernandez, S., Audrain, B., Ghigo, J.M. *A new gnotobiotic rainbow trout (Oncorhynchus mykiss) model to investigate microbiota-based resistance to infection.* Fish Microbiome Workshop, Online, September 22-25, 2021. *Oral presentation.* *Presented by Jean-Marc Ghigo.

Stevick, R.J., Post, A.F., Gómez-Chiarri, M. *Linking Environmental Variability to Oyster Microbiomes in Narragansett Bay*. Rhode Island Microbiome Symposium, Kingston, RI, January 16-17, 2020. *Invited oral presentation*.

Stevick, R.J., Hamilton, A.P., Moseman-Valtierra, S., Post, A.F., Gómez-Chiarri, M. *Metabolic Activity of Oyster-Associated Microbiomes in Response to Nutrient Enrichment*. American Society for Microbiology Microbe, June 20-24, 2019. *Poster*. Awarded student travel grant from department ($1000).

Gómez-Chiarri, M., Modak, T.H., Roberts, E., **Stevick, R.J.**, Nelson, D., Rowley, D. *Immune Responses of American Oysters to Bacterial and Parasitic Challenge*. International Conference on Fish & Shellfish Immunology, Las Palmas de Gran Canaria, Spain, June 16-20, 2019. *Oral presentation.* *Presented by Marta Gómez-Chiarri.

Stevick, R.J., Spada, S., Rojas, D., Post, A.F., Gomez-Chiarri, M. *Oysters and Microbes and Narragansett Bay, oh my!*. RI NSF EPSCoR Annual Research Symposium, Kingston, RI, April 10, 2019. *Poster*.

Stevick, R.J., Post, A.F., Gómez-Chiarri, M. *Trends in Oyster-Associated Microbial Transcriptomes*. Eastern Fish Health Workshop, Lake Placid, NY, April 2-5, 2019. *Oral presentation*. *Presented by Marta Gómez-Chiarri.

Stevick, R.J., Spada, S., Post, A.F., Gómez-Chiarri, M. *Effects of Estuarine Conditions on Eastern Oyster (Crassostrea virginica) Microbiomes and Health*. Benthic Ecology Meeting, St. John's, Newfoundland and Labrador, Canada, April 3-6, 2019. *Oral presentation*. Awarded 1st Place in Graduate Oral Presentation contest.

Stevick, R.J., Post, A.F., Gomez-Chiarri, M. *It Takes all Kinds: Microbiomes and Oysters in Narragansett Bay, RI*. RI NSF EPSCoR Annual Research Symposium, Kingston, RI, April 9, 2018. *Poster*.

Stevick, R.J., Sohn, S., Modak, T., Nelson, D., Rowley, D., Smolowitz, R., Post, A.F., Gómez-Chiarri, M. *Bacterial Community Dynamics in an Oyster Hatchery in Response to Probiotic Treatment*. National Shellfisheries Association Annual Meeting, Seattle, WA, March 18-22, 2018. *Oral presentation*. Awarded student travel grant from department ($250).

Stevick, R.J., Post, A.F., Gómez-Chiarri, M. *Trends in Oyster-Associated Microbial Transcriptomes*. National Shellfisheries Association, Annual Meeting, Seattle, WA, March 18-22, 2018. *Oral presentation*. Awarded student travel grant from association ($275).

Yuan, L., **Stevick, R.J.**, Ahern, O.M., Daniels, N.M. *Analysis of 16S Genomic Data using Graphical Databases.* Proceedings of ACM Conference on Bioinformatics, Computational Biology, and Health Informatics (ACM-BCB17), Boston, MA, August 21, 2017. *Poster.*

Stevick, R.J., Modak, T., Post, A.F., Gómez-Chiarri, M. *Probiotic-Driven Changes in Rearing Water Microbial Communities in an Oyster Hatchery*. Gordon Research Conference, Marine Molecular Ecology, Hong Kong University of Science and Technology, Hong Kong, China, July 23-28, 2017. *Poster*.

Stevick, R.J., Pimentel, Z., Post, A.F., Gómez-Chiarri, M., Zhang, Y. *Probiotic-Driven Changes in Rearing Water Microbial Community Structure and Function in an Oyster Hatchery.* Gordon Research Conference, Animal-Microbe Symbiosis, West Dover, VT, June 11-16, 2017. *Poster*.

Stevick, R.J., Modak, T., Pimentel, Z., Zhang, Y., Post, A.F., Gomez-Chiarri, M. *Probiotic-Driven Changes in Rearing Water Microbial Community Structure and Function in an Oyster Hatchery*. RI NSF EPSCoR Annual Research Symposium, Brown University, Providence, RI, April 12, 2017. *Poster*.

Stevick, R.J., Pimentel, Z., Zhang, Y., Post, A.F., Gomez-Chiarri, M. *A Metagenomic Approach to Analyze Changes in Rearing Water Microbial Communities in an Oyster Hatchery*. National Shellfisheries Association Annual Meeting, Knoxville, TN, March 26-30, 2017. *Oral presentation*. Awarded student travel grant from association ($275).

Stevick, R.J., Modak, T., Pimentel, Z., Zhang, Y., Post, A.F., Gomez-Chiarri, M. *Probiotic-Driven Changes in Rearing Water Microbial Community Structure and Function in an Oyster Hatchery*. National Shellfisheries Association Annual Meeting, Knoxville, TN, March 26-30, 2017. *Poster*. Awarded student travel grant from department ($250). Awarded Gordon Gunter Outstanding Poster Award.

Stevick, R.J., Luna, C., Hsieh, AH. *Measuring Cell Traction Forces in Simulated Microgravity*. UMD-JHU BMES Undergraduate Research Festival, Baltimore MD, March 27, 2015. *Invited oral presentation*. Third place overall.

Luna, C., **Stevick, R.J.**, Yew, A., Hsieh, AH. *Forces Behind Cell Adhesion and Migration in Microgravity*. The Biophysical Society Annual Meeting, Baltimore MD, February 7-11, 2015. *Poster*.

Stevick, R.J., Tran, L., Nalavadi, M., Alwood, J.S. *Does Simulated Weightlessness Alter the Methylation Status of Gene Promoters During Bone Remodeling?* American Society for Gravitational and Space Research Annual Meeting, Pasadena CA, October 22-26, 2014. *Poster*.

TEACHING EXPERIENCE

2018-2019	**Teaching Assistant**, AFS 105G Food from the Sea University of Rhode Island, Kingston, RI Assisted with grading exams and assignments: 125 students total (2 semesters)
2017-2018	**Curriculum Development**, BIO 104 Introduction to Biology Lab II University of Rhode Island, Kingston, RI Implemented 4 teaching modules with RStudio and wrote supplementary material (PowerPoints, troubleshooting guides, informational posters, and lab manuals) for this core curriculum course. All course materials available: github.com/rjstevick/BIO103R
2018	**Teaching Assistant**, OCG 106G You, Me, and Life in the Sea University of Rhode Island, Kingston, RI General education class with emphasis on human impacts on the ocean: 80 students Guest lecturer, "Sustainable Aquaculture"
2017	**Laboratory Instructor**, BIO 104 Introduction to Biology Lab II University of Rhode Island, Kingston, RI General lab practices and data analysis using R: 75 students in 3 2-hour lab sections. Prepared weekly quizzes, administered labs, and grading

RESEARCH CRUISE AND FIELD WORK EXPERIENCE

2017	Narragansett Bay Oyster and Environmental Sampling August – September 2017
2016	R/V Endeavor: Export Processes on NE Shelf (EN581) June 13, 2016 – June 18, 2016 (6 days) Narragansett, RI – Narragansett, RI; PI: Dr. Susanne Menden-Deuer
2016	R/V Endeavor: Z-Inventories of Primary Production (EN575) Mar 3, 2016 – Mar 11, 2016 (9 days) Fort Lauderdale, FL – Narragansett, RI; PI: Dr. Brice Loose

ADDITIONAL TRAINING AND WORKSHOPS

2021	**Data Science Instructor Training**, Online The Carpentries Organization
2020	**Certification for Animal Experimentation**, Paris, France Level I project designer regulatory course Administered at Institut Pasteur, approved by the Ministry of Agriculture
2018-2019	**Science Communication and Career Development Program**, Kingston, RI Hosted by RI NSF EPSCoR and Metcalf Institute for Environmental Reporting
2018	**Mental Health First Aid Certification**, Kingston, RI National Council for Behavioral Health training workshop
2016	**Strategies and Techniques for Analyzing Microbial Population Structure** Woods Hole, MA. Marine Biological Laboratory summer program
2016	**ECOGEO Workshop: Introduction to Environmental 'Omics**, Honolulu, HI Unix for bioinformatics, analysis of 16S rRNA surveys & metagenomic libraries
2016	**Scientific Diving: Coral Reef Ecology**, Kralendijk, Bonaire Field work and diving as part of AAUS certification course through URI

MENTORING EXPERIENCE

2019	**Keegan Hart**, URI Undergraduate Coastal Fellow student
2018	**Stephanie Spada**, URI Undergraduate Coastal Fellow student
2018	**Dana Rojas**, URI Undergraduate NSF SURF student

OUTREACH AND LEADERSHIP ACTIVITIES

2021	Presenter, Innovator Speaker Series, St. Peter's School, Philadelphia, PA
2019	R ShinyApp of Oysters in Narragansett Bay https://rjstevick.shinyapps.io/nbay_shinyapp/
2019	Exhibitor, High School Agriculture Day at URI
2018-*2020*	Pen pal, Letters to a Pre-Scientist
2018	Panelist, "Preparing for Graduate School" at URI
2018	Exhibitor, Women in Science Day at Mystic Aquarium, Mystic, CT
2018	Exhibitor, Volvo Ocean Race Ocean Exploration Zone, Newport, RI
2018	Facilitator, Society for Women in Marine Science Symposium
2017-2019	Outreach Scientist, URI Office of Marine Programs
2017-2019	Organizer and Webmaster, Bay Informed Discussion Series at URI Presenter, "The Microbial Ocean" (February 2018)
2016-2018	Exhibitor and Tour Guide, URI-GSO Open House
2016-2019	Volunteer TCQ Grader, National Ocean Sciences Bowl CT/RI Regional Competition
2016-2018	Communications Chair, URI-GSO Chowder & Marching Student Society
2015	Exhibitor, Newport International Boat Show