

ELIZABETH A. SUTER, PhD

Curriculum vitae

Assistant Professor of Environmental Science
Biology, Chemistry and Environmental Science (BCES)
Molloy University

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EDUCATION

2016	Ph.D. Marine and Atmospheric Sciences School of Marine and Atmospheric Sciences at Stony Brook University, SUNY
2011	M.S. Marine and Atmospheric Sciences School of Marine and Atmospheric Sciences at Stony Brook University, SUNY
2009	B.A. Environmental Studies; Minor: Mathematics Macaulay Honors College at Hunter College, CUNY

WORK EXPERIENCE

2019 – present	Assistant Professor, Biology Chemistry and Environmental Science (BCES) Department & Center for Environmental Research & Coastal Oceans Monitoring (CERCOM), Molloy University
2021- 2022	Adjunct Assistant Professor, School of Marine and Atmospheric Science (SoMAS), Stony Brook University (SBU)
2017 – 2019	Assistant Professor, Department of Biological Sciences, Wagner College
2017	Postdoctoral Associate, SoMAS, SBU
2009-2016	Graduate Research Assistant and Teaching Assistant, SoMAS, SBU
2008-2009	Undergraduate Research Assistant, Lamont-Doherty Earth Observatory (LDEO), Columbia University

RESEARCH PROJECTS AND FIELDWORK

Ongoing	Assessing Ecosystem Resilience of the Great South Bay & Oyster Restored Sites through eDNA Monitoring of Biodiversity Development of a rapid, user-friendly bacterial health monitoring tool to assist urban oyster restoration eDNA for Management of Fish, Rays, and Sharks in Shinnecock Bay
2017	Post-doctoral research: Novel Fine-Scale Insights into Marine Nutrient Flow Via Chemical Fingerprinting and Imaging
2011-2016	PhD Research: Aggregate-Associated Microbial Processes in the Cariaco Basin and Their Implications for Cycling of Carbon, Nitrogen, and Sulfur
2009-2011	MS Research: Plankton Dynamics, Nutrient Stoichiometry, and Oxygen Utilization in Western Long Island Sound
2008- 2009	Effects of Temperature, Organic Matter, Predation, and Particle-Attachment on Survival and Growth of Sewage-Indicating Bacteria in Hudson River Water

PUBLICATIONS

- Geller-McGrath, D., Mara, P., Taylor, G.T., **Suter, E.A.**, Edgcomb, V., Pachiadaki, M. Diverse secondary metabolites are expressed from particle-associated and free-living microorganisms of the permanently anoxic Cariaco Basin. (2023) *Nature Communications*. 10.1038/s41467-023-36026-w
- Suter, E.A.**, Pachiadaki, M., Taylor, G.T., Edgcomb, V. (2022) Eukaryotic parasites are integral to a productive microbial food web in oxygen-depleted waters. *Frontiers in Microbiology*. doi: 10.3389/fmicb.2021.7646.
- Tully, B.J, Buongiorno, J. Cohen, A.B., Cram, J.A., Garber, A.I., Hu, S.K., Krinos, A.I., Leftwich, P.T., Marshall, A., Sieradzki, E.T., Speth, D.R., **Suter, E.A.**, Trivedi, C.B., Valentin-Alvarado, L.E., Weissman, J.L, Lee, M.D, Alexander, H., Collins, R.E., Pachiadaki, M., Rhodes, A.C.E, Decatur, W. (2021) The Bioinformatics Virtual Coordination Network: An open-source and interactive learning environment. *Frontiers in Education*. doi: 10.3389/feduc.2021.711618.
- Suter, E.A.**, Pachiadaki, M. Edgcomb, V., Scranton M., Montes, E. Taylor, G.T. (2020) Diverse nitrogen cycling pathways across a marine oxygen gradient indicate a decoupling from organic matter degradation. *Environmental Microbiology*. doi: 10.1111/1462-2920.15187.
- Mara, P., Vik, D., Pachiadaki, M.G., **Suter, E.A.**, Taylor, G.T., Sullivan, M., Poulos, B., Edgcomb V.P. (2020) Viruses and their auxiliary metabolic genes along the redoxcline of the permanently stratified Cariaco Basin. *ISME Journal*. doi: 10.1038/s41396-020-00739-3.
- Spanbauer, T., Briseno, C., Pitz, K., **Suter, E.A.** (2019) Salty sensors, fresh ideas: The use of molecular and imaging sensors in understanding plankton dynamics across marine and freshwater ecosystems. *Limnology and Oceanography Letters*. doi: 10.1002/lol2.10128.
- Suter, E.A.**, Pachiadaki, M. Taylor, G.T., Y. Astor, Edgcomb, V. (2018) Free-living chemoautotrophic and particle-associated heterotrophic prokaryotes dominate microbial assemblages along a pelagic redox gradient. *Environmental Microbiology* 20(2):693-712. doi: 10.1111/1462-2920.13997
- Millette, N.C., Grosse, J., Johnson, W., Jungbluth, M., **Suter, E.A.** (2018) Hidden in plain sight: The importance of cryptic interactions in marine plankton. *Limnology and Oceanography Letters*. doi: 10.1002/lol2.10084.
- Taylor, G.T., **Suter, E.A.**, Pachiadaki, Astor, Y., M. Edgcomb, V., Scranton, M. (2017b) Temporal shifts in dominant sulfur-oxidizing chemoautotrophic populations across the Cariaco Basin's redoxcline. *Deep-Sea Research Part II: Special Issue on Ocean Deoxygenation*. doi: 10.1016/j.dsr2.2017.11.016.
- Taylor, G.T., **Suter E.A.**, Li, Z.Q., Chow, S.C., Stinton, D., Zalitznyack, T., Beaupre, S.R. (2017a) Single cell growth rates in photoautotrophic populations measured by stable isotopic probing and resonance Raman microspectrometry. *Frontiers in Microbiol.* 8:1-16. doi: 10.3389/fmicb.2017.01449.
- Cernadas-Martín, S., **Suter E.A.**, Scranton M.I., Astor Y. Taylor G.T. (2017) Aerobic and anaerobic ammonium oxidizers in the Cariaco Basin: Distributions of major taxa and nitrogen species across the redoxcline. *Aquatic Microbial Ecology* 79:31-48. doi: 10.3354/ame01817
- Suter, E.A.**, Scranton, M.I., Chow, S., Stinton, D., Medina Faull, L., Taylor, G.T. (2016) Niskin bottle sample collection aliases microbial community composition and biogeochemical interpretation. *Limnology and Oceanography* doi:10.1002/lno.10447.
- Suter, E.A.**, Lwiza, K.M.M., Rose, J.M., Gobler, C., Taylor, G.T. (2014) Phytoplankton assemblage changes during decadal decreases in nitrogen loadings to the urbanized Long Island Sound estuary, USA. *Marine Ecology Progress Series* 497: 51-67. doi: 10.3354/meps10602.
- Suter, E.A.**, Juhl, A., O'Mullan, G. (2011). Particle Association for *Enterococcus* and Total Bacteria in the Lower Hudson River Estuary, U.S.A. *Journal of Water Resource and Protection* 3: 715-725. doi: 10.4236/jwarp.2011.310082.

TEACHING AND ADVISEMENT

Molloy University	<p>Courses: Introduction to Environmental Issues; Foundation in Oceanography; Water & Air Pollution; Organic and Biological Chemistry; Foundations in Earth System Science; Data Analysis in the Environmental Sciences; Scientific Research Techniques; Research in Environmental Sciences; Research Thesis</p> <p>Mentorship & Advising:</p> <ul style="list-style-type: none">• Research mentor for 13 undergraduate students• Academic advisor for 10-20 students per semester
Wagner College	<p>Courses: Biochemistry I & II with lab; Microbial Ecology with lab; Advanced Microbial Physiology with lab; Applied Food and Industrial Microbiology with lab; Graduate Seminar; Advanced Ecological Statistics in R; Global Change; Reflective Tutorial</p> <p>Mentorship/ Advising:</p> <ul style="list-style-type: none">• Research thesis advisor for 3 undergraduate and 2 graduate students• Committee member for 6 undergraduate and 4 graduate student theses• Academic advisor for the M.S. program in Microbiology, 4 semesters• Academic advisor for freshmen in First Year Program, 1 semester
Stony Brook University	<p>Courses: Environmental Issues & Solutions</p> <p>Invited Guest Lectures: Long Island Sound: Science & Use; Environmental Microbiology; Oceanography</p> <p>Mentorship/ Advising:</p> <ul style="list-style-type: none">• Mentor and thesis advisor for 11 undergraduate student research projects in marine microbial ecology during my Ph.D.

EDUCATIONAL VIDEOS & PROTOCOLS

[Bioinformatics lessons for processing Amplicon data](#) and [lessons in using R for Bioinformatics](#).

Bioinformatics Virtual Coordination Network.

Suter, E.A., Corbo, C., Blaize, J. [How diverse microbial species establish a unified ecosystem: The Winogradsky Column](#). *JoVE Journal of Visualized Experiments*.

Corbo, C., Blaize, J., **Suter, E.A.** [Needs of the Many; what different bacteria need to grow successfully](#). *JoVE Journal of Visualized Experiments*.

Blaize, J., **Suter, E.A.,** Corbo, C. [Too Numerous to Count! An evaluation of microbial enumeration through serial dilution and plating](#). *JoVE Journal of Visualized Experiments*

Taylor, G.T., Li, Z.Q., **Suter E.A.,** Chow, S.C. (2017) [Modified Filter-Transfer-Freeze \("FTF"\) Technique for Raman Microspectroscopic Analysis of Single Cells](#). *Protocols.io* doi: 10.17504/protocols.io.ikqccvw

AWARDS

2023	Gino Macchio Foundation, “Assessing Ecosystem Resilience of the Great South Bay & Oyster Restored Sites through eDNA Monitoring of Biodiversity,” Principal Investigator
2021-2022	NY State Water Resources Institute, “Development of a rapid, user-friendly bacterial health monitoring tool to assist urban oyster restoration,” Principal Investigator
2018-2023	Various Faculty Award grants, Wagner College & Molloy University
2020-2021	Conference grant, “Holistic Bioinformatics Approaches used in Microbiome Research,” Code for Science and Society (CS&S), Co-organizer
2018	John Deane Fund for Research in Environmental Studies
2018	Travel award, Ocean Observatories Initiative Early Career Workshop (NSF)
2016	Travel award, Ecological Dissertations in the Aquatic Sciences workshop (NSF & ASLO)
2013	Student Travel Award, ASLO Meeting, New Orleans, LA.
2012	Tuition and travel award to attend “Microbial Diversity” course at Marine Biological Laboratory (MBL)
2012	Squires Award for Best Master’s Thesis, SoMAS, Stony Brook University
2011	Sea Grant Thesis Completion Award
2011	Dean Prize, New England Estuarine Research Society Meeting
2009-2011	Sea Grant Scholar Fellowship Award, New York Sea Grant
2009	Tibor T. Polgar Fellowship recipient, Hudson River Foundation (declined)
2009	Miriam and Saul B. Cohen Prize for Excellence, Hunter College
2008	NSF REU Award recipient, Lamont Doherty Earth Observatory (LDEO), Columbia University

RECENT PROFESSIONAL SERVICE

- Reviewer of proposals for Maryland Sea Grant, 2023
- Reviewer of proposals for the National Science Foundation (NSF), 2019-2021
- Instructor and co-author of 7 video tutorials for Bioinformatics Coordination Network, 2020-2021
- Mentor for the ASLO Multicultural Program (ASLO-MP), 2021
- Invited speaker at *DNA Day* (Staten Island Technical High School), *After Dark Series* (Staten Island Zoo), and *Cyverse Roundtable Webinar: Research, Teaching, and Training* (Cyverse), 2020-2021
- Research mentor for students in New York CSTEP (Collegiate Science and Technology Program) and NSURP (National Summer Undergraduate Research Project), 2020-2023
- Reviewer of student research submissions to the Annual Biomedical Research Conference for Minority Students (ABRCMS, American Society for Microbiology), Eastern Colleges Science Conference (ECSC), and the MACUB Conference, 2018- 2019
- Reviewer of manuscripts for the following journals:
 - *Nature Communications*
 - *Limnology and Oceanography Letters*
 - *The ISME Journal*
 - *Continental Shelf Research*
 - *Aquatic Microbial Ecology*
 - *Environmental Microbiology*
 - *Geobiology*
 - *Biogeosciences*
 - *Frontiers in Microbiology*
 - *Microbiology Spectrum (ASM)*

WORKSHOPS & PROFESSIONAL TRAINING

2021	Ocean Hackweek
2021	URGE: Unlearning Racism in Geoscience
2020	Foundations of Open Science Skills (FOSS), Cyverse
2020	Bioinformatics Community Conference (BCC)
2019	Ocean Observatories Initiative (OOI) Data Labs workshop for undergraduate educators in Oceanography, Western Washington University, USA
2019	Tiny Earth initiative, Instructor training, University of Connecticut, USA
2018	OOI Chemistry Early Career Workshop, Rutgers University, USA
2018	Explorations in Data Analyses for Metagenomic Advances in Microbial Ecology (EDAMAME) workshop, Kellogg Biological Station, Michigan State University
2016	Ecological Dissertation in the Aquatic Sciences (Eco-DAS XII), University of Hawaii
2014-2016	Professional training in Dr. Virginia Edgcomb's laboratory for 10 weeks at Woods Hole Oceanographic Institution (WHOI)
2009-2016	Trained and certified in Radiation Safety for use of radioisotopes in research, Stony Brook University
2012	Microbial Diversity course, 6 weeks at Marine Biological Laboratory (MBL)
2011	Trained CTD Operator on the <i>R/V Seawolf</i> , Stony Brook University

Society Affiliations:

- American Society for Limnology and Oceanography (ASLO)
- American Society for Microbiology (ASM)
- American Geophysical Union (AGU)
- Metropolitan Association of College and University Biologists (MACUB)

SELECTED PRESENTATIONS

- Suter, EA 2023. [Oyster Pathogen Monitoring Using Third Generation Sequencers](#). *Invited*, 2023 Spring Speaker Series, New York State Water Resources Institute
- Suter, EA 2023. Oyster Pathogen Monitoring Using Third Generation Sequencers. *Invited*, Science and Technical Advisory Committee meeting, Long Island Sound Study
- Suter, EA. 2021. Ecosystem Services of Aquatic Microbial Communities: From Coasts to the Open Ocean. *Invited*, Hofstra University
- Suter, EA. 2021. [Teaching and Researching with Undergraduates in Cyverse's Discovery Environment](#). *Invited*, Cyverse monthly webinar series
- Suter, EA. 2019. My Career in Environmental Sciences. *Invited*, Saturday Science at the Explorer's Club. NY, NY
- Suter, EA, Pachiadaki, Taylor GT, Edgcomb VP. February 2019. Key Microbial Taxa Link Chemoautotrophic Carbon Fixation To Higher Trophic Levels in the Cariaco Basin Food Web. Association for the Sciences of Limnology and Oceanography (ASLO): Aquatic Sciences Meeting. San Juan, Puerto Rico. Oral presentation.
- Suter, E. January 2019. Microbial Ecology of Coastal And Marine Ecosystems. *Invited Talk*, SIZoo After Dark Series. Staten Island Zoo, Staten Island, NY.
- Suter, E. Juhl, A., O'Mullan, G. December, 2017. Particle Association of *Enterococcus* and Total Bacteria in the Lower Hudson River Estuary, U.S.A. Environmental Health and Health of the Environment. St. Francis College, NY. Oral presentation.
- Suter, EA, Pachiadaki M, Edgcomb VP, Scranton MI, Astor, Y. Taylor GT. February 2017

- Particle-Associated Microbes Contribute to Cryptic Cycling of Sulfur and Nitrogen. ASLO: Aquatic Sciences Meeting. Honolulu, HI. Oral presentation.
- Suter EA, Pachiadaki M, Edgcomb VP, Scranton MI, Taylor GT., February 2016. Redox Conditions and Microbial Particle Association: A Multi-Year Study in the Cariaco Basin. ASLO: Ocean Sciences Meeting. New Orleans, LA. Poster presentation.
- Suter EA, Montes E, Pachiadaki M, Edgcomb VP, Taylor GT., February 2015. Assessing Nitrogen loss from the Cariaco Basin Using ^{15}N Isotopic Pairing and Gene Expression Approaches. ASLO: Aquatic Sciences Meeting. Granada, Spain. Poster presentation
- Suter, E.A., Scranton, M.I., Tong, L., Astor, Y., Taylor, G.T., February 2014. Partitioning of Sulfur Cycling Between Particle-Associated and Free-Living Organisms in the Cariaco Basin. ASLO: Ocean Sciences Meeting 2014. Honolulu, HI. Oral presentation.
- Suter, E. Lwiza, K., Rose, J., Gobler, C., Taylor, G., February, 2013. Regime Shifts in Nutrients, Phytoplankton, and Hydrography Over the Last Fifteen Years in Long Island Sound. ASLO: Aquatic Sciences Meeting. New Orleans, LA. Oral presentation
- Suter, E. Taylor, G., Lwiza, K., Rose, J. October, 2011. Changing Nutrient Regimes in Long Island Sound. Student Conference on Conservation Science. New York, New York. Poster presentation
- Suter, E., Taylor, G., Lwiza, K. May, 2011. Evidence of Changing Nutrient Regimes in Long Island Sound. New England Estuarine Research Society Spring Meeting. Port Jefferson, New York. Poster presentation
- Suter, E. Juhl, A., O'Mullan, G. December, 2008. Effects of Temperature, Organic Matter Concentration, UV, and Predation on Survival and Growth of Sewage-Indicating Bacteria in Hudson River Water. American Geophysical Union Fall Meeting. San Francisco, California. Poster presentation

Additional Information

On leave for 6 months in 2022.