ELIZABETH A. SUTER, PhD

Curriculum vitae

Associate Professor
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

2025 – present	Associate Professor, Biology Chemistry and Environmental Science (BCES) Department, Molloy University
2024 – present	Research Affiliate, Institute for Ocean Conservation Science
2019 – 2025	Assistant Professor, BCES, Molloy University
2021- 2022	Adjunct Lecturer, 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

Current and Ongoing	Assessing Ecosystem Resilience of Oyster-Restored Sites in the Great South Bay through eDNA Monitoring of Biodiversity Shinnecock Bay Restoration Project: eDNA for Management of Fish, Rays, and Sharks
2021-2023	Development of a rapid, user-friendly bacterial health monitoring tool to assist urban oyster restoration
2019-2023	MicroPro: Key Microbial Processes in oxygen minimum zones: From in situ community rate measurements to single cells.
2017	Post-doctoral research: Novel Fine-Scale Insights into Marine Nutrient Flow Via Chemical Fingerprinting and Imaging of Single Celled Phytoplankton
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

Mara, P., Geller-McGrath, D., **Suter, E.A.,** Taylor, G.T., Pachiadaki, M., Edgcomb, V. (2024) Plasmid-Borne Biosynthetic Gene Clusters within a Permanently Stratified Marine Water Column. *Microorganisms*. doi: 10.3390/microorganisms12050929

Geller-McGrath, D., Mara, P., Taylor, G.T., **Suter, E.A.,** Edgcomb, V., Pachiadaki, M. (2023) Diverse secondary metabolites are expressed from particle-associated and free-living microorganisms of the permanently anoxic Cariaco Basin. *Nature Communications.* doi: 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.2021.764605.

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., Zaliznyack, 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	**Courses:** Introduction to Environmental Issues; Oceanography; Air Pollution; Water Pollution; Foundations in Earth System Science; Data Analysis in the Environmental Sciences; Physical Geology; Air and Water Pollution; Rocks and Minerals; Scientific Research Techniques; Research in Environmental Sciences; Research Thesis; Independent Study- Environmental DNA Analysis; Organic and Biological Chemistry lab; Microbiology lab **Mentorship & Advising:** ● Research mentor for 22 undergraduate students ● Academic advisor for 10-25 students per academic semester
Wagner College	**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 **Mentorship/ Advising:** ● 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	**Courses**: Environmental Issues & Solutions **Invited Guest Lectures:** Long Island Sound: Science & Use; Environmental Microbiology; Oceanography **Mentorship/ Advising:** ● 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. Creating a Winogradsky Column: A Method to Enrich the Microbial Species in a Sediment Sample. *JoVE Journal of Visualized Experiments*.

Corbo, C., Blaize, J., **Suter, E.A**. Enrichment Cultures: Culturing Aerobic and Anaerobic Microbes on Selective and Differential Medias. *JoVE Journal of Visualized Experiments*.

Blaize, J., **Suter, E.A.,** Corbo, C. Serial Dilutions and Plating: Microbial Enumeration . *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

GRANTS AND AWARDS

2025-2028	NY Department of State; "South Shore Estuary Reserve eDNA Coordination," *Principal Investigator*; Provisionally awarded $350,000
2025-2031	National Science Foundation (NSF); S-STEM, "ASPIRE (Alumni, Students, Professors, Internships, Research, Enrichment) to Careers in Science 2," *Co-Principal Investigator*; $2,000,000
2023-2026	National Science Foundation (NSF); Pathways into the Earth, Ocean, Polar and Atmospheric & Geospace Sciences (GEOPAths), "GP-UP: Project RESTORES (Retention of Earth Science Trainees through Opportunities in Restoration and Environmental Sciences)," *Principal Investigator*; $407,527
2023-2025	Gino Macchio Foundation, "Assessing Ecosystem Resilience of the Great South Bay & Oyster Restored Sites through eDNA Monitoring of Biodiversity," *Principal Investigator*; In-kind support estimate $60,000
2023	Emerging Scholar Award, Molloy University
2021- 2025	Various Molloy University Faculty Scholarship and Academic Advancement Committee (FSAAC) grants, totaling $17,000
2021-2022	NY State Water Resources Institute, "Development of a rapid, user-friendly bacterial health monitoring tool to assist urban oyster restoration," *Principal Investigator*; $20,000
2020-2021	Conference grant, "Holistic Bioinformatics Approaches used in Microbiome Research," Code for Science and Society (CS&S), Co-organizer; $20,000
2018	John Deane Fund for Research in Environmental Studies; $5,000
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, SBU
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

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)

RECENT PROFESSIONAL SERVICE

- Reviewer for New Jersey Sea Grant, 2025
- Research mentor for students in New York CSTEP (Collegiate Science and Technology Program) and NSURP (National Summer Undergraduate Research Project), 2020-2025
- Expert contributor to the eDNA Knowledge Base at the DNA Learning Center at Cold Spring Harbor Laboratory, 2024
- Reviewer of proposals for the National Science Foundation (NSF), 2019-2024
- Reviewer of proposals for Maryland Sea Grant, 2023
- 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), *Cyverse Roundtable Webinar: Research, Teaching, and Training* (Cyverse), Genspace, 2020-2024
- 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, 2017-present:
  - *Nature Communications*
  - *Nature Microbiology*
  - *Limnology and Oceanography*
  - *The ISME Journal*
  - *Continental Shelf Research*
  - *Aquatic Microbial Ecology*
  - *Environmental Microbiology*
  - *Geobiology*
  - *Biogeosciences*
  - *Frontiers in Microbiology*
  - *Microbiology Spectrum (ASM)*

WORKSHOPS & PROFESSIONAL TRAINING

2024	3rd National Workshop on Marine eDNA, Johns Hopkins Applied Physics Laboratory
2021	Ocean Hackweek
2021	URGE: Unlearing 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, SBU
2012	Microbial Diversity course, 6 weeks at Marine Biological Laboratory (MBL)
2011	Trained CTD Operator on the *R/V Seawolf*, Stony Brook University

SELECTED PRESENTATIONS

Suter, E.A., 2025 From microbes to megafauna: How eDNA is shaping Oceanography. *Invited*, Friends of the Bay, Environmental News and Brews Series. Oyster Bay, NY

Suter, E.A., 2025 From microbes to megafauna: The role of metabarcoding in shaping oceanography. *Invited Keynote Speaker.* DNA Learning Center Urban Barcode Project Student Symposium. Brooklyn, NY.

Suter, E.A., 2025 Becoming Human Through Research. *Invited Keynote Speaker*. Molloy Multidisciplinary undergraduate Research Conference. Rockville Centre, NY.

Suter, E.A., Franolich, M.*, Benevento, J.* 2024. Development of a rapid, user-friendly bacterial health monitoring tool to assist urban oyster restoration. *Invited*, Genspace, Brooklyn, NY.

Suter, E.A. 2024. Environmental DNA (eDNA) in the SSER. *Invited*, South Shore Estuary Reserve (SSER) Technical Advisory Committee (TAC), online

DiDomenico, D.*, Bonacchi, E.*, & Suter, EA. 2024 Using eDNA to assess impacts of oyster restoration on ecosystem biodiversity at a heavily impacted coastal lagoon. New England Eastuarine Research Society (NEERS) Annual Conference. Freeport, Maine.

DiDomenico, D.*, Bonacchi, E.*, & Suter, EA. 2024 Using eDNA to assess impacts of oyster restoration on ecosystem biodiversity at a heavily impacted coastal lagoon. Ocean Sciences Meeting, American Geophysical Union (AGU). New Orleans, LA.

Franolich, M.*, Benevento, J.* & Suter, EA, 2023 Oyster Pathogen Monitoring Using 3rd Generation Sequencers. Billion Oyster Project Scy-posium . NY, NY.

Suter, EA 2023. Oyster Pathogen Monitoring Using Third Generation Sequencers. *Invited*, 2023 Spring Speaker Series, New York State Water Resources Institute, online

Suter, EA 2023. Oyster Pathogen Monitoring Using Third Generation Sequencers. *Invited*, Science and Technical Advisory Committee meeting, Long Island Sound Study, online

Suter, EA. 2021. Ecosystem Services of Aquatic Microbial Communities: From Coasts to the Open Ocean. *Invited*, Hofstra University. Uniondale, NY.

Franolich, M.*, Benevento, J.* & Suter, EA, 2023. Oyster Pathogen Monitoring Using 3rd Generation Sequencers. Aquatic Sciences Meeting- ASLO. Palma de Mallorca, Spain

Suter, EA. 2021. Teaching and Researching with Undergraduates in Cyverse's Discovery Environment. *Invited*, Cyverse monthly webinar series, online

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.

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. Brooklyn, NY.

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.

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.

Suter EA, Montes E, Pachiadaki M, Edgcomb VP, Taylor GT., February 2015. Assessing Nitrogen loss from the Cariaco Basin Using 15N Isotopic Pairing and Gene Expression Approaches. ASLO: Aquatic Sciences Meeting. Granada, Spain.

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.

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.

Suter, E. Taylor, G., Lwiza, K., Rose, J. October, 2011. Changing Nutrient Regimes in Long Island Sound. Student Conference on Conservation Science. NY, NY.

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, NY.

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, CA.

* *Indicates undergraduate student mentee*

Additional Information

On leave for part of 2022.