**Jeremy E. Schreier**

jschreie@caltech.edu

*July 2023*

## Education

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| 2017 – 2023 | PhD Marine Biology, University of Georgia Athens, Athens, GA |
| 2014 | B.S. Marine Biology, Rutgers, The State University of New Jersey, New Brunswick, NJ, *cum laude* |

## Experience

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| 2017 – 2023 | **Graduate Research Assistant**, Department of Marine Sciences, University of Georgia, Athens, GA, supervised by Dr. Mary Ann Moran |
| 2014 – 2017 | **ORISE Post-Baccalaureate Researcher**, Center for Biologics Evaluation and Research, U.S. Federal Drug Administration, White Oak, MD, supervised by Dr. Scott Stibitz and Dr. Sheila Dreher-Lesnick |
| 2014 | **Research Technician**, Institute of Marine and Coastal, Rutgers, The State University of New Jersey, New Brunswick, NJ, supervised by Dr. Kay Bidle |
| 2012 – 2014 | **Undergraduate Researcher**, Institute of Marine and Coastal, Rutgers, The State University of New Jersey, New Brunswick, NJ, supervised by Dr. Kay Bidle |
| 2012 | **Intern**, Aquaculture Research Center, Department of Marine Biotechnology, Institute of Marine and Environmental Technology, University of Baltimore County, Baltimore, MD, supervised by Dr. Yonathan Zohar |
| 2007 | **Intern**, Aquaculture Research Center, Center of Marine Biotechnology, University of Maryland Biotechnology Institute, Baltimore, MD |

## Honors and Awards

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| 2023 | Postdoctoral Scholar Research Associate in Geobiology in the Division of Geological and Planetary Sciences |
| 2023 | Department of Marine Sciences Research Award, University of Georgia |
| 2018 – 2023 | National Science Foundation, Graduate Research Fellowships Program Fellow |
| 2017 | National Science Foundation, Graduate Research Fellowships Program Honorable Mention |
| 2014 | Outstanding Senior Award, Institute of Marine and Coastal Sciences, Rutgers University |

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| 2014 | *Aresty* Research Fellowship, Rutgers University |
| 2013 | American Society for Microbiology Undergraduate Research Fellowship |
| 2013 | Research Internship in Ocean Sciences (RIOS) recipient, Rutgers University |
| 2012 – 2014 | School of Environmental and Biological Sciences George H. Cook Honors Scholar |
| 2011 – 2014 | Dean's Honors List (six semesters), School of Environmental and Biological Sciences, Rutgers University |
| 2010 – 2014 | James Dickson Carr Scholarship, Rutgers University |

## Undergraduate Thesis

George H. Cook Honor's Thesis – "Exploring a possible link between quorum sensing and caspase-like activity in the halophilic archaeon *Haloferax volcanii*" co-advised by Dr. Kelly Bidle and Dr. Kay Bidle, 2014

## Publications

Estelle E. Clerc, **J. E. Schreier**, J. Słomka, C.B. Smith, H. Fu, J. B. Raina, M. A. Moran, R. Stocker. Substrates and signals: the role of chemotaxis and growth in shaping marine bacterial community composition. *In prep for submission to ISME J.*

D'Souza, G., J. Schwartzman, J. Keegstra, **J.E. Schreier**, M. Daniels, O. X. Cordero, R. Stocker, M. Ackermann. Interspecies interactions determine growth dynamics of biopolymer degrading populations in microbial communities. *Proceedings of the National Academy of Sciences. In submission. bioRxiv* (2023): 2023-03.

Dorosky, R.J., S. Lola, H. Brown, **J.E. Schreier,** S.M. Dreher-Lesnick, S. Stibitz. Characterization of *Lactobacilli* phage endolyin functional domains for use in biotechnological applications in live biotherapeutic product development. *In prep for submission to Viruses.*

Dorosky, R.J., **J.E. Schreier,** S. Lola, R. Sava, M. Coryell, A. Akue, M. Kukuruga, P.E. Carlson JR, S.M. Dreher-Lesnick, S. Stibitz. Nanobodies as tools for microbiological testing of live biotherapeutic products. *Applied Microbiology and Biotechnology*. *In review.*

**Schreier**, **J. E.,** C. B. Smith, T. Ioerger, M. A. Moran. A mutant fitness assay identifies bacterial interactions in a model ocean hot-spot. *Proceedings of the National Academy of Sciences, 120(12), e2217200120.*

Ferrer-González, F.X., M. Hamilton, C.B. Smith, **J.E. Schreier**, M. Olofsson, M.A. Moran. Bacterial transcriptional response to labile exometabolites from photosynthetic picoeukaryote *Micromonas commoda. ISME Communications* 3.1 (2023).

Olofsson, M., F. X. Ferrer-González, M. Uchimiya, **J. E. Schreier**, N.R. Holderman, C.B. Smith, A. S. Edison, M.A. Moran. Growth-stage related shifts in diatom endometaolome composition set the stage for bacterial heterotrophy. *ISME Communications* 2.1 (2022): 1-9.

Moran, M.A., F. X. Ferrer-González, H. Fu, M. Olofsson, B. Nowinski, M.A. Powers, **J. E. Schreier,** W. F. Schroer, C.B. Smith, M. Uchimiya. The ocean's labile DOC supply chain. *Limnology & Oceanography*, *67*(5), 1007-1021.

Dreher-Lesnick, S. M., **J. E. Schreier**, S. Stibitz Development of phage lysin LysA2 for use in improved purity assays for live biotherapeutic products. *Viruses*, 7(12): 6675-6688; doi:10.3390/v7122965

## Book Chapters

**Schreier J. E.**, and Van Dover Cindy L, Hydrothermal Vent Ecology, 2019. In Cochran, J. Kirk; Bokuniewicz, J.

Henry; Yager, Patricia L. (eds.) Encyclopedia of Ocean Sciences, 3rd Edition, vol. [4], pp. 320-329. Oxford: Elsevier.

**Schreier J. E**., and Reysenbach Anna-Louise, Deep-Sea Ridges, Microbiology, 2019. In Cochran, J. Kirk; Bokuniewicz, J. Henry; Yager, Patricia L. (eds.) Encyclopedia of Ocean Sciences, 3rd Edition, vol.[4], pp. 291298. Oxford: Elsevier.

**Schreier J. E**., and Lutz Richard A, Hydrothermal Vent Biota, 2019. In Cochran, J. Kirk; Bokuniewicz, J. Henry; Yager, Patricia L. (eds.) Encyclopedia of Ocean Sciences, 3rd Edition, vol.[4], pp. 308-319. Oxford: Elsevier.

**Schreier J. E.**, Dynamics of Bacteria and Phytoplankton in the Surface Ocean, 2019. In Cochran, J. Kirk; Bokuniewicz, J. Henry; Yager, Patricia L. (eds.) Encyclopedia of Ocean Sciences, 3rd Edition, vol.[1], pp. 546552. Oxford: Elsevier.

## Oral and Poster Presentations

**Schreier, J.E**., C.B. Smith, T. R. Ioerger, M.A. Moran; 'Novel insights into phycosphere ecology through mutant fitness assays' **[Invited Oral].** C-CoMP Physiology Working Group, October 4, 2022, Virtual Meeting.

**Schreier, J.E**., C.B. Smith, T. R. Ioerger, M.A. Moran; 'Novel insights into phycosphere ecology through mutant fitness assays' **[Oral].** Simons Collaboration on Principles of Microbial Ecology, August 24-26, 2022, New York City, New York.

**Schreier, J.E**., C.B. Smith, T. Ioerger, M.A. Moran; 'Novel insights into phycosphere ecology through mutant fitness assays' **[Invited Oral].** UCSD qBio Meeting, March 22, 2022, Virtual meeting

**Schreier, J.E**., C.B. Smith, T. Ioerger, M.A. Moran; 'Novel insights into phycosphere ecology through mutant fitness assays' **[Oral].** Ocean Sciences Meeting, February 24-March 4, 2022, Virtual meeting

**Schreier, J.E**., C.B. Smith, T. Ioerger, M.A. Moran; 'Novel insights into phycosphere ecology through mutant fitness assays' **[Invited Oral].** FUME lab meeting, September 24, 2021, Virtual meeting

**Schreier, J.E.,** C.B. Smith, T. Ioerger, M.A. Moran. Fitness effects on bacterial mutants in a phycosphere community **[Oral]**. 1st Annual Marine Sciences Student Research Symposium. Department of Marine Sciences, UGA. Fall 2020. **Awarded a 'Top Three' Recognition.**

**Schreier, J. E.,** C.B. Smith, T. Ioerger, M.A. Moran. Fitness effects on bacterial mutants in a phycosphere community **[Oral].** Simons Collaboration on Principles of Microbial Ecology. September 2 – 7, 2020, Virtual Meeting.

**Schreier, J. E.** Environmental metatranscriptomics tutorial **[Oral]**. Simons Collaboration on Principles of Microbial Ecology. September 2 – 7, 2019, Tuscany, Italy.

**Schreier, J. E.,** C.B. Smith, H. Fu, E. Suggs, S, Sharma, M.A. Moran. Genetic basis of microbial success during marine microbiome assembly **[Poster]**. Simons Collaboration on Principles of Microbial Ecology. September 2 – 7, 2019, Tuscany, Italy.

**Schreier, J.E** & W. F. Schroer, M. A. Moran. Deconstructing trophic transfer between phytoplankton and bacteria **[Poster]**. Marine Particles and Phycosphere 2019. May 19 – 23, 2019, Ascona, Switzerland.

**Schreier, J. E.**, C.B. Smith, H. Fu, E. Suggs, S, Sharma, M.A. Moran. Genetic basis of microbial success during marine microbiome assembly **[Poster]**. ASLO 2019 Aquatic Sciences Meeting. February 23 – March 02, 2019, San Juan, PR. Poster 167.

William F. Schroer, **J. E. Schreier**, M.A. Moran. Qualitative method to address trophic transfer between phytoplankton and bacteria **[Poster]**. 104th ASM Southeastern Branch Meeting. November 30 – December 02, 2018, Atlanta, GA.

**Schreier, J. E.**, S. Sharma, C.B. Smith, M.A. Moran. Genetic basis of microbial success during community assembly **[Poster]**. 104th ASM Southeastern Branch Meeting. November 30 – December 02, 2018, Atlanta, GA.

**Schreier, J.E.**, M.A. Moran. How do the metabolic functions and interactions of microbes shape community assemblage on naturally occurring, complex substrates over time **[Poster]**. Simons Collaboration on Theory of Microbial Ecosystems (THE-ME). September 6-8, 2017, Cambridge, MA.

**Schreier, J. E.**, S. M. Dreher-Lesnick, S. Stibitz. Development of nanobodies and bacteriophage lysin LysA2 cell binding domain for use in improved potency assays for live biotherapeutic products **[Poster]**. ASM Microbe 2017. June 1-5, 2017, New Orleans, LA. Abstract 5499

**Schreier, J. E.**, S. M. Dreher-Lesnick, S. Stibitz. Development of nanobodies for improved potency assays for live biotherapeutic products **[Poster]**. Center for Biologics Evaluation & Research Science Symposium 2016. May 24-26, 2016, Silver Spring, MD. Abstract 91

**Schreier, J. E.**, S. M. Dreher-Lesnick, M. Libonati, A. Ngouajio, S. Stibitz. Developing assays for probiotic products to better determine purity and potency using recombinant phage lysins **[Poster]**. 21st Biennial Evergreen International Phage Meeting. August 2-7, 2015, Olympia, WA.

**Schreier, J. E.**, M. Seth-Pasricha, K. A. Bidle, and K. D. Bidle. Exploring a possible link between quorum sensing and caspase-like activity in the halophilic archaeon *Haloferax volcanii* **[Poster].** ASM 114th General Meeting. May 17-20, 2014, Boston, MA. Abstract I-253.

## Courses Taught/Developed

Developed lab and lecture on metabolism and energy flows in the pelagic environment for MARS 4500, Summer 2023

Screening transposon mutant libraries to identify novel substrate transporters, Center for Chemical Currencies of a Microbial Planet Course-based Undergraduate Research Experience “Hunting for Ocean Genes”. *In development 2023*

Developed lab and lecture on metabolism and energy flows in salt marsh and pelagic environments for MARS 4500, Summer 2022

Developed lab and lecture on microbial diversity for MARS 4500, Summer 2021

Developed lab and lecture on microbial ecology for UGAMI Marine Biology Spring Semester 2020

Developed lab and lecture on bacterial production for MARS 4500, 2019

## Outreach and Volunteering

Georgia Science & Engineering Fair Junior Division Judge, March 31, 2023

Georgia Science & Engineering Fair Junior Division Judge, April 1, 2022

Georgia Science & Engineering Fair, Senior and Junior Division Judge, March 24 – 27 / April 10, 2020

Georgia Science & Engineering Fair, Junior Division Judge, March 29, 2019

STEMzone at Auburn Game, Volunteer, November 10, 2018

Skidaway Marine Science Day, Volunteer, October 13, 2018

The Kindezi School West Middle School Science Fair, Judge, May 9, 2018

Georgia Science & Engineering Fair, Junior Division Judge, March 23, 2018

Montgomery County Science Fair, Middle School Biology Judge, March 18, 2017

Montgomery County Science Fair, Middle School Biology Judge, March 12, 2016

Montgomery County Science Fair, Middle School Behavioral and Social Sciences Judge, March 14, 2015

## Positions Held

Co-Chair, UGA Marine Sciences Diversity, Equity, and Inclusion Curriculum Subcommittee, June 2021 – June 2022.

Co-Chair, UGA Marine Sciences Diversity, Equity, and Inclusion Resources and Relationships Subcommittee, June 2020 – 2021.

Marine Sciences Graduate Student Association Treasurer, August 2017 – 2020

## Lab Skills

PCR, 16S analysis, Transposon-sequencing, DNA cloning and electrophoresis, western blotting, genomics, protein purification, FPLC, epi-fluorescent microscopy, confocal microscopy, flow cytometry, protein and enzyme assays, assay development, and microbial (bacteria, archaea, phytoplankton) culturing techniques

## Field Skills and Experience

Field experience aboard the R/V Melville, R/V Savannah, R/V Spartina, and salt marshes on Sapelo Island, GA., Real-time Kinematic GPS training

## Technical Skills

Business and technical writing, Adobe Illustrator, Adobe Photoshop, R, Krita, Procreate, Microsoft Word, Microsoft Excel, Microsoft Powerpoint, public speaking, conference organizing

## References

Dr. Mary Ann Moran, UGA – mmoran@uga.edu
Dr. Patricia Medeiros, UGA – medeiros@uga.edu
Dr. Scott Stibitz, FDA CBER – stibitz@helix.nih.gov
Dr. Sheila Dreher-Lesnick, FDA CBER – Sheila.dreher-lesnick@fda.hhs.gov
Dr. Kay Bidle, Rutgers – bidle@marine.rutgers.edu
Dr. Elisabeth Sikes, Rutgers – sikes@marine.rutgers.edu