

Education:

Ph.D., Marine Sciences, University of North Carolina, Chapel Hill, NC, 1998

B.S. (Magna Cum Laude) Industrial Microbiology, University of Puerto Rico, Mayagüez, PR, 1990

Courses Taught:

- BIOL 205, Ecology and Adaptation
- BIOL 521, Bioecology
- BIOL 800, Supervised Doctoral Research
- BIOL 996, Dissertation Research
- BIOL 997, Dissertation Guidance

Research Interests:

The Cruz-Rivera lab welcomes interested undergraduate and graduate students to join investigations in the following general areas of inquiry -

- Marine and freshwater ecology
- Consumer-prey interactions
- Invertebrate biology
- Chemical ecology
- Animal nutrition
- Invasive species
- Algal and zooplankton blooms
- Symbiosis
- Marine Biotechnology

Short Bio: Dr. Cruz-Rivera started at Morgan State in 2022 and has held faculty positions in the USA, Egypt, Bangladesh, and the US Virgin Islands. His research interests lie in the ecology and evolution of aquatic consumer-prey interactions, from the organismal to the ecosystem level, with an emphasis on the nutritional and chemical properties of prey and how these affect animal consumption and fitness. This work combines natural history observations and diversity surveys with manipulative experiments assessing animal feeding behavior and fitness, and measurements of food nutritional traits, secondary chemicals, and structural properties. More recently, the inclusion of remote sensing and molecular techniques has become part of this research. Within the overall interest in aquatic environments, the Cruz-Rivera lab studies mechanisms affecting marine plant-herbivore interactions, the links between aquatic biodiversity and ecosystem health, the effects of introduced species on natural communities, the development of harmful blooms (including algae and gelatinous zooplankton), the nature of aquatic symbioses including parasitism, and how ongoing climate change may alter aquatic communities. Some of the unexpected outcomes of this research have included the discovery and taxonomic description of various invertebrate species new to science. Insights gained from this work are also applied to aquaculture and marine biotechnology investigations. Using a comparative approach, this work has been conducted in broadly different environments, including the temperate North Atlantic and North Pacific coasts, the Chesapeake Bay, the Mediterranean Sea, both sides of the tropical Pacific, South Australia, the Red Sea, the Caribbean, brackish lakes in Egypt, temporary freshwater bodies in the Virgin Islands, and the South African intertidal. Dr. Cruz-Rivera serves in the editorial boards of *Frontiers in Marine Science*, *Diversity*, and *Journal of Crustacean Biology*, has reviewed proposals and fellowship

applications for NASA, NOAA, NSF, USGS, and National Geographic, and is a member of the Caribbean Fishery Management Council's Ecosystem-Based Fishery Management Technical Advisory Panel (EBFMTAP). In 2021 he was selected for a 17-person panel to evaluate progress, and propose the future direction, of the National Science Foundation's EPSCoR Program. He also serves on the board of the Environmental Justice Journalism Initiative (EJJI), a non-profit aiming to enhance environmental education and community involvement in Maryland.

Recent Publications (since 2020):

- Cassell, J.S., **E. Cruz-Rivera**, S. Wyllie-Echeverria, and P. Jobsis. 2024. Variation in nutritional quality of an invasive seagrass does not explain its low palatability to two key herbivores in a Caribbean Bay. *Aquatic Botany* 190:103711. DOI: 10.1016/j.aquabot.2023.103711
- Cruz-Rivera, E.** and T. Hafez. 2023. Sex and reproductive behavior modify herbivory in an aquatic consumer. *Aquatic Sciences* 85:12 DOI: 10.1007/s00027-022-00911-1
- Chiquillo, K.L., P.H. Barber, M.A. Vázquez, **E. Cruz-Rivera**, D.A. Willette, G. Winters, and P. Fong. 2023. An invasive seagrass drives its own success in two invaded seas by both negatively affecting native seagrasses and benefiting from those costs. *Oikos* 2023 (3), e09403. DOI: 10.1111/oik.09403
- Kumari, G., A.D. Phillott, and **E. Cruz-Rivera**. 2022. Sediment processing by two estuarine crabs: small efficient consumers alongside big inefficient ones. *Journal of Crustacean Biology* 42(3):1-6. DOI: 10.1093/jcbiol/ruac051
- Cruz-Rivera, E.**, M.-E.-D. Sherif, S. El-Sahhar and T. Lombardi. 2022. Spatial variability in a symbiont-diverse marine host and assessing ecological interactions from observational data. *Diversity*. 14(3):197. DOI: 10.3390/d14030197
- Cruz-Rivera, E.** and D. C. Rogers. 2022. An unavoidably short history of inland aquatic animal diversity research in the US Virgin Islands. *Aquatic Ecology* 56:719–740. DOI: 10.1007/s10452-021-09933-7
- Rogers, D. C. and **E. Cruz-Rivera**. 2021. A preliminary survey of the inland aquatic macroinvertebrate biodiversity of St. Thomas, US Virgin Islands. *Journal of Natural History* 55(13-14):799-850. DOI: 10.1080/00222933.2021.1923850
- Halliday-Isaac, A.K., J.B. Robinson, **E. Cruz-Rivera**, A.G. Campbell, and P.C. Sikkell. 2021. Environmental correlates of prevalence of an intraerythrocytic apicomplexan infecting Caribbean damselfish. *Parasitologia* 1(2):69-82. DOI: 10.3390/parasitologia1020009
- Rogers, D.C. and **E. Cruz-Rivera**. 2020. A new *Eulimnadia* (Branchiopoda: Spinicaudata: Limnadiidae) from the US Virgin Islands. *Zoological Studies* 59:e42 DOI: 10.6620/ZS.2020.59-42

Links to Current and Past Research:

Google Scholar: https://scholar.google.com/citations?user=WQK1_78AAAAJ&hl=en

ResearchGate Profile: <https://www.researchgate.net/profile/Edwin-Cruz-Rivera>

Invasive Seagrass: <https://www.youtube.com/watch?v=X0F8hyl2eZE>

Seagrass and Climate Change: <https://www.viepscor.org/news/2018/10/edwin-cruz-rivera>

Seaweed Accumulations in the Caribbean: https://www.youtube.com/watch?v=xEr4v7_Mkdw&t=1525s

Seaweed Accumulations (Good Morning America): <https://www.youtube.com/watch?v=kzCCPtyTBeg>

The Environmental Justice Journalism Initiative: <https://www.ejji.org/>

New Species Discovered in St. Thomas: https://www.virginislandsdailynews.com/news/scientists-discover-species-of-ancient-shrimp-at-uvi-campus/article_b5e94d63-095e-5a7a-be00-bc3ff04f50ab.html