Brenda María Soler Figueroa

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TECHNICAL EXPERTISE

More than fifteen years in Environmental and Coastal Studies. Relevant experience include phytoplankton field and laboratory research methods, field data collection and analysis in biology, ecology and oceanography. Experience in water quality studies including watershed sanitary surveys; surface water hydrology; and chemical and biological analysis. Experience working with community development projects and working with diverse groups. Significant time devoted to plankton samples collection, processing, and laboratory analysis (e.g., sampling has been bi-weekly for eight months, once or twice for 31 consecutive days).

EDUCATION

Biological Oceanography, **Ph.D.**, University of Puerto Rico, Mayagüez **2015**

Dissertation: Deciphering Bahía Fosforescente: New approaches towards the understanding of this unique ecosystem.

Biological Oceanography, **M.S.**, University of Puerto Rico, Mayagüez **2006**

Thesis: Comparación temporal y espacial de factores bióticos y abióticos en la Bahía Bioluminiscente en La Parguera y Puerto Mosquito en Vieques. (Temporal and spatial comparison of biotic and abiotic factors in the Bioluminescent Bay in La Parguera and Puerto Mosquito in Vieques, Puerto Rico)

Coastal Marine Biology, **B.S.**, University of Puerto Rico, Humacao **2000**

RELEVANT PROFESSIONAL EXPERIENCE

- **Plankton Analyst,** Smithsonian Environmental Research Center, Edgewater, MD **2016-present**
  Conduct research on plankton assemblages associated with ships' ballast water from bays and ports.
- **Marine Science Educator,** Puerto Rico Sea Grant Program **2016**
- **Independent Researcher/Scientist,** EcoEléctrica LP **2014-present**
  Conduct and coordinate phytoplankton samplings, water quality surveys and bioluminescence measurements. Conduct microscopic/FlowCAM counts of dinoflagellates. Train personnel. Write reports and present the results.
- **Principal Investigator (Ph.D. Student),** *University of Puerto Rico, Mayagüez* **2012-2015**
  Puerto Rico Sea Grant Program Project/Award Number: R-101-1-12
  Coordinated and conducted water quality surveys including: phytoplankton, nutrients, pH, dissolved organic matter fluorescence, chlorophyll, turbidity, salinity, dissolved oxygen, and temperature. Conducted microscopic counts of dinoflagellates. Processed water samples for the determination of phosphates, nitrites, nitrates, ammonium, silicates, dissolved organic matter fluorescence, and chlorophyll. Conducted bioluminescence measurements in the field. Trained personnel. Led an 8 people team.
- **Research Assistant (Zoo/Phytoplankton)**, *University of Puerto Rico, Mayagüez* **2011-2015**
  Biological Monitoring Program Plan for *Ecoeléctrica, LP*, Guayanilla, PR, an energy corporation of liquefied natural gas.
  Coordinated and conducted zoo/phytoplankton samples collection; examined Representative Important Species; processed and analyzed phytoplankton samples; performed statistical analyses, wrote reports, and presented research results.

- **Marine Science Educator**, *University of Puerto Rico, Mayagüez*
  Puerto Rico Sea Grant Marine Education Program **2011-2015**
  Magueyes Island Laboratories, Department of Marine Sciences **2003-2015**

- **Research Assistant,** *University of Puerto Rico, Mayagüez* **2010-2012**
  Puerto Rico Sea Grant Program, Project/Award Number: R-92-1-08
  (Project: Rapid Detection and Quantification of Fecal Pollution in the Caribbean Region)
  Sampled and processed water samples for the determination of *Enterococcus* and *E. coli* by membrane filtration methods 1600 and 1604 of *USEPA* and Enterolert™/Colilert Methods.

- **Undergraduate Teaching Assistant,** *University of Puerto Rico, Mayagüez* **2007-2011**
  Courses: Laboratory of General Biology I, Biological Sciences

- **Field Research Assistant,** *CSA Group*, Inc. San Juan, PR **2005-2009**
  - Water Quality Surveys in Treatment Plants Discharging Zones and Mixing Zones for the Clean Water Act Section 301(h), P.R.
    Sampled water for the determination of heavy metals, phyto/bacterioplankton, nutrients, pesticides, asbestos, and suspended sediments, among others. Responsible for the calibration of Hydrolabs and CTDs. Packed and shipped samples for laboratory analyses.
  - Manatee Watch Program, Monitoring Program for Port of Las Américas, Ponce, PR.
    Monitored manatee presence/absence during dredging activities for a port construction.

- **Field Research Assistant**, *WM Ambienta Inc*., Aguas Buenas, PR **2002-2005**
  - Sea Turtles Monitoring Program in Playa Alambique. Isla Verde, Carolina, PR.
    Monitored and analyzed marine turtles and marine turtles nesting activities during the installation of fiber optic cables on the coastline.
  - Tree Assessment and Inventory for Costa Serena Condo-Hotel Resort. Loíza, PR.
  - Yellow-shouldered blackbird *(Agelaius xanthomus)* monitoring program for a residential development (Montesonia) in Salinas, PR.
  - Tree Inventory and Reforestation Plan for a residential development (Brisas del Cafetal) in Yauco, PR.

- **Research Assistant,** *University of Puerto Rico, Mayagüez*
  - Environmental Database for Puerto Mosquito Bay, Vieques, Puerto Rico **2004**
    Puerto Rico Sea Grant Program Project
    Conducted microscopic counts of *Pyrodinium bahamense* and *Ceratium furca*
  - Water Quality and Marine Ecosystem Health Indicators: Development of **2003-2004**
    Statistic Models for Integral Assessment, Puerto Rico Sea Grant Program Project
    Conducted water and sediment samplings, nutrient analysis, and phytoplankton counts.

PUBLICATIONS

- **Soler-Figueroa, B. M.** and E. Otero. 2016. Seasonal changes in bioluminescence and dinoflagellates composition in a tropical bioluminescent bay. *Journal of Experimental Marine Biology and Ecology* 43: 120-129.

- **Soler-Figueroa, B. M.** and E. Otero. Patterns of variability of two potentially harmful algal bloom forming dinoflagellates in a tropical bioluminescent bay, Bahía Fosforescente, La Parguera, Puerto Rico: The role of seasonality. In preparation, to be submitted to *Harmful Algae*.

- **Soler-Figueroa, B. M.** and E. Otero. 2015. The influence of rain regimes and nutrient loading on the abundance of two dinoflagellates species in a tropical bioluminescent bay, Bahía Fosforescente, La Parguera, Puerto Rico. *Estuaries and Coasts* 38:84-92 (Published online on May 2014)
- **Soler-Figueroa, B. M.** 2015. Deciphering Bahía Fosforescente: New approaches towards the understanding of this unique ecosystem. Ph.D. Thesis, University of Puerto Rico, Mayagüez. 120p.
- **Soler-Figueroa, B. M.** 2006. Comparación temporal y espacial de factores bióticos y abióticos en la Bahía Bioluminiscente en La Parguera y Puerto Mosquito en Vieques. M.S. thesis, University of Puerto Rico, Mayagüez. 93p.

TECHNICAL REPORTS

- **Soler-Figueroa, B. M.** 2014. Bioluminescence Levels and Dinoflagellates Abundances at Puerto Mosquito, Vieques, PR. Report for the *Puerto Rico Department of Natural and Environmental Resources.*
- **Soler-Figueroa, B. M.** and E. Otero. 2012. Bahías bioluminiscentes: Criterios compulsorios (Bioluminescent Bays: Mandatory and Additional Practices.) Ecotourism Guide *PR Tourism Company* p. 32.
- **Soler-Figueroa, B. M.** and E. Otero. 2011. Bioluminescent Bays and Climate Change. *PR Climate Change Council* p.206-2012.

PRESENTATIONS

Oral Presentations

- Soler-Figueroa, B. M. and E. Otero. **2015**. Patterns of variability of two potentially HAB dinoflagellates in Bahía Fosforescente, PR: The role of seasonality. *23rd Biennial Conference Coastal and Estuarine Research Federation.* Portland, OR.
- Soler-Figueroa, B. M. and E. Otero. **2014**. Bioluminescence levels at Bahía Fosforescente: Myth vs Reality. *2nd Congress of Natural Protected Areas*, San Juan, P.R.; *5th Applied Research Symposium of the Sea Grant Program*, University of Puerto Rico, Mayagüez, PR.
- Soler-Figueroa, B. M. and E. Otero. **2013**. Bioluminescence levels at Bahía Fosforescente: Myth vs Reality. *36th Scientific Meeting Association of Marine Laboratories of the Caribbean.* Ocho Rios, Jamaica.
- Soler-Figueroa, B. M. and E. Otero. **2011**. Daily, spatial and seasonal variability of *P. bahamense* and *C. furca* at Bahía Fosforescente, La Parguera, P.R. *Aquatic Science Meeting: Association for the Sciences of Limnology and Oceanography*. San Juan, PR.

Poster Presentations

- Soler-Figueroa, B. M. **2010**. *Pyrodinium bahamense* and *Ceratium furca* growth rates and bloom dynamics at Bahía Fosforescente, La Parguera, P.R. *30th Puerto Rico Interdisciplinary Science Meeting*. University of Puerto Rico, Mayagüez, PR.
- Soler-Figueroa, B. M. and J.G. González-Lagoa. **2008**. Comparisons between nutrient concentration and dinoflagellate population density at two bioluminescent bays in Puerto Rico. *Ocean Sciences Meeting Association for the Sciences of Limnology and Oceanography*. Orlando, FL.
- Soler-Figueroa, B. M. **2007**. Comparisons between nutrient concentration and dinoflagellates populations density at two bioluminescent bays in Puerto Rico. *31th Scientific Meeting Association for the Sciences of Limnology and Oceanography.* St. Thomas, USVI.

TECHNICAL COURSES AND WORKSHOPS

- Phytoplankton, Algal Blooms and Biotoxins. **2011.** Universidad Nacional Autónoma de México, Sede Mazatlán, August 1-12. Mexico
- Management of Radioactive Materials. **2009**. University of Puerto Rico, Mayagüez, Puerto Rico
- Continental Phytoplankton. **2003** Universidad Nacional, Bogotá. October 27-31. Colombia

SKILLS AND LICENSES

Languages – Fluent: Spanish and English

Computer Software – MS Office (Word, Power Point, Excel); Statistics (SigmaPlot, Primer, PC-ORD, Statistica); VisualSpreadsheet© Particle Analysis Software, Blink and others

Field and Laboratory Instrumentation – FlowCAM, UBAT, YSI, CastAway CTD, SCUFA II fluorometer/turbidimeter, ADCPs, HOBO Weather Station, pH meters, spectrophotometers, GER1500

Licenses - PADI Open-water Diver; Navigation License, Auxiliary U.S. Coast Guard; Small craft navigation license, PR Department of Natural and Environmental Resources; Driver's license

FELLOWSHIPS, GRANTS AND AWARDS

Grants

2012 Puerto Rico Sea Grant Program - Healthy Coastal Ecosystems. Award Number: R-101-1-12. *Deciphering Phosphorescent Bay: New Approaches Towards The Understanding Of This Unique Ecosystem*. **PI: Brenda M. Soler Figueroa**; Co-PI: Ernesto Otero ($145,000)

Fellowships

2009 Alliance for Graduate Education and the Professoriate Fellowship
2009 Central New York-Puerto Rico Alliance for Graduate Education and the Professoriate Fellowship
2001 National Science Foundation Graduate Teaching Fellow in GK-12 Education.

Awards

2008 & 2010 Association for the Sciences of Limnology and Oceanography Scholarship for Minority Students (Travel awards)

VOLUNTEER AND EXTRACURRICULAR ACTIVITIES

- Public and private schools science fairs judge; beach clean-ups and dune restorations
- Marine/Environmental educator - *Marine Adventure Program* Puerto Rico Sea Grant Program

AFFILIATIONS

- Ecological Society of America
- Association for the Sciences of Limnology and Oceanography
- International Society for the Study of Harmful Algae
- Marine Science Student Association (Vice-president 2009, 2010; Secretary 2005-2006)

REFERENCES

Ernesto Otero Morales, Ph.D.
Director, Department of Marine Sciences, University of Puerto Rico, Mayagüez
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Professor Emeritus, University of Puerto Rico, Mayagüez
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