

Jeffrey M. Schell, PhD

Curriculum Vitae

Professor of Oceanography & Chief Scientist
Henry L. and Grace Doherty Chair of Ocean Studies
Sea Education Association (SEA)
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<https://sea.edu/staff/dr-jeffrey-m-schell/>



HIGHLIGHTS

- ❖ College professor with more than 20 yrs. teaching experience in oceanography, marine environmental history, marine ecology, and related subjects
- ❖ PhD in Zoology, but **dissertation and coursework focused on limnology and aquatic ecology** (see EDUCATION DEVELOPMENT and PEDAGOGY below)
- ❖ **Over 1000 undergraduate, research projects mentored.**
- ❖ **Chief Scientist for >42 cruises with ~1700 days at sea.**
 - Oceanographic field research; includes collection and analysis of marine biogeographic, hydrographic, and climatological data.
 - Areas of operation include: South Pacific (Tahiti, Tuamotus, Marquesas, Kiribati,), North Pacific (Kiribati, Palmyra Atoll, Hawaiian Islands, Queen Charlotte Islands to Baja & Sea of Cortez), Atlantic Ocean (Gulf of Maine to Gulf of Mexico, Caribbean, Mediterranean and Sargasso Seas)
- ❖ Innovation and leadership through program creation and development; mentorship and coordination of faculty teams.
- ❖ Interdisciplinary team-teaching, course and curriculum design, classroom, lab and remote-field practice.
- ❖ Community outreach and supporting education and science literacy for all audiences.

EDUCATION

PhD	University of Wisconsin – Madison, WI (<i>Zoology/Aquatic Ecology</i>) <i>Focus: Limnology, Community Ecology, Environmental and Anthropogenic effects on Biodiversity</i>	2003
MS	SUNY Stony Brook, NY, (<i>Marine Science</i>) <i>Focus: Zooplankton dynamics, physical and behavioral mechanisms of larval dispersal and recruitment</i>	1996
BA	College of the Holy Cross, MA (<i>Biology</i>) <i>Focus: Animal and plant ecology with emphasis on aquatic systems (i.e., salamanders).</i>	1991

TEACHING, INNOVATION & LEADERSHIP with S.E.A.

Sea Education Association Woods Hole, MA; <https://sea.edu>

<i>Professor of Oceanography</i>	2019 – Present
<i>Associate Professor Oceanography</i>	2012 – 2018
<i>Oceanography Faculty</i>	2002 – 2011

Teaching (includes Classroom, Lab, Field, and Research Mentoring)

- **Courses developed and taught with SEA:** Oceanography (200-level), Oceans in the Global Carbon Cycle (300-level), Advanced Topics in Biological Oceanography (300-level), Advanced Oceanographic Field Methods (300-level), Directed Oceanographic Research (300-level), Oceanographic Field Methods (200-level), Practical Oceanographic Research (200-level), The Ocean & Global Change (300-level), Marine Environmental History (300-level)

Sea Semesters Taught

<https://sea.edu/programs/>

Marine Biodiversity and Conservation

Addresses contemporary marine conservation issues through the lenses of: scientific investigations into driving mechanisms underlying patterns in marine productivity and biodiversity, coastal zone management approaches, and the environmental communication skills and leadership dynamics that enable effective ocean policy to be implemented.

Atlantic Odyssey – Gap Year Program

Atlantic Odyssey is specifically tailored to gap year/winter start students that explores the conservation and sustainable management of marine environments, introduces students to the coastal and island communities that depend upon these natural resources, and concludes with an epic voyage spanning three climate zones and numerous coastal and open-ocean ecosystems.

Colonization to Conservation in the Caribbean

Examines the legacies of colonization and environmental change alongside ongoing modern issues of climate change and extreme weather events. Students explore themes of marine conservation and sustainability across the diverse Caribbean region in this place-based and comparative environmental studies semester.

Oceans and Climate

Contributes to baseline ocean climate and policy research across the central Pacific, a region key to global climate patterns. Engage with stakeholders directly impacted climate change by visiting a variety of Pacific Island communities faced with this threat. An investigative science and policy semester at sea examining how the oceans factor in the global climate system and evaluating technological, political, and economic strategies for a climate-resilient and sustainable future.

Ocean Exploration

Explores the global ocean through multiple disciplinary lenses. Students become conversant and proficient in physical, chemical, biological, and geological oceanography. Guidance and mentorship by the Chief Scientist allows students to successfully navigate the rigors and challenges of the scientific process while traversing the high seas.

Pacific Reef Expedition

Chronicles the state of coral reefs and effects of El Niño Southern Oscillation (ENSO), climate change, and human development on remote island atolls across the central Pacific Ocean while making an epic 3000-nautical mile passage across the Equator from Tahiti to Hawaii. This program is uniquely supported by 4-weeks of online coursework prior to the sea component.

Caribbean Reef Expedition

Assesses the effectiveness of Caribbean reef management strategies and contributes to local conservation policy efforts. Uses snorkel-based reef survey techniques to document the state of coral reef ecosystems in the Caribbean in response to human impacts and climate change.

The Global Ocean - Mediterranean

Explores the intimate relationship between humans and the Mediterranean Sea, a region where ancient and modern history, cultural practices, and marine resource use have been shaped by this unique ocean environment and shifting climate patterns.

Collaborative Programs Taught

<https://sea.edu/programs/collaborative-programs/>

(Note, some programs are not presently offered)

SEA's Program coordinator and lead faculty for several programs in collaboration with faculty and scientists from other institutions including:

- *Stanford @ SEA*
- *Hawai'i Pacific University – Aloha Aina*
- *WHOI/MIT Jake Pierson Graduate Program*
- *Harvard Earth and Planetary Science*
- *Williams Mystic @ SEA Undergraduate program*
- *Oceanography of the Southern California Bight* (USC Wrigley Institute for Environmental Science)

High School Programs Taught

<https://sea.edu/programs/high-school-programs/>

SEA Quest

An entirely remote learning curriculum developed in 2020 in response to ongoing COVID pandemic conditions and suspension of our in-person, shipboard programs. Online classes (~4 hrs daily instruction) were a balance of content presentations, group discussions, virtual ship voyages, and lastly, guided lab demonstrations and backyard/neighborhood field trips. Both, two-week sessions were fully enrolled and had the following scientific themes: *Ocean biodiversity and Issues of Marine Debris* and *Climate Change, Coral Reefs and the Ocean*.

SEA Expedition and Science at Sea

High school programs, offered in the summer, provided students with a hands-on sea-going experience. Emphasis was on scientific inquiry, fostering curiosity, honing their observation skills, and developing teamwork and leadership attributes.

Innovative Program Creation and Development

I was directly involved in formation of program themes, course structure, curriculum development, and associated oceanographic research directives for the following SEA Semesters:

- *Colonization to Conservation in the Caribbean, Caribbean Reef Expedition, and Pacific Reef Expedition*, all designed for upper-division college students
- *Atlantic Odyssey*, designed for gap year students
- *SEA Quest*, an entirely remote learning curriculum developed and taught this past summer in response to ongoing COVID pandemic conditions.

Leadership & Academic Coordination

- **Session Co-Chair (2023)** - *Ecology, Distribution, and Dynamics of Holopelagic Sargassum spp.*, for ASLO Aquatic Sciences Meeting: Resilience and Recovery in Aquatic Systems, 4–9 June 2023, Palma de Mallorca, Spain,
- **Academic coordinator** (2004 – Present) for each SEA Semester program taught.
 - Collaborate with a team (3-6) of faculty peers to create program curriculum, coordinate combined teaching calendar, and address student life issues.
- **Program Scheduling** (2018 – Present) – as senior faculty am responsible for selecting the suite of SEA Semesters offered each academic year. Work directly with Deans of Academic Programs, Admissions and Institutional Relations.
 - In response to COVID it was necessary to redesign all 12 SEA semester cruise destinations, research clearances, corresponding program vision, scientific and academic themes, and the course structure and curriculum that support each.
- **Search committee chair for recent faculty** hires; have served on search committees for all faculty presently employed by organization.
- **Mentorship of new faculty** and assistant scientist staff
- Support institutional relations and student recruitment (e.g., campus visits, marketing materials)

CHIEF SCIENTIST – RESEARCH MENTORSHIP with S.E.A.

Sea Education Association Woods Hole, MA <https://sea.edu>

Chief Scientist

2002 – Present

SEA Semester is a 12-week, interdisciplinary, team-taught, study abroad program that explores humanity's connection to the global ocean. Our ocean-based, experiential education curriculum combines state-of-the-art ocean science research with in-depth historical and cultural context to address contemporary marine conservation issues important to coastal and island communities around the world. Course themes, case studies, and oceanographic research projects are tailored to each region-based SEA Semester program.

All students conduct independent oceanographic research projects mentored by the Chief Scientist. Students also develop hands-on skills, experience true accountability for their actions, and foster their leadership identity as a working crewmember onboard our sailing, research ships.

- Imagine and design placed-based, oceanographic research expeditions tied to broader academic themes and aligned with needs of regional collaborators.
- Coordinate expedition planning, logistics and reporting: research clearances, crew hiring and training, science equipment/inventory needs, etc.
- Mission execution/project management – sea-going Chief Scientist on >40 research cruises: coordinate daily with captain, crew, and students to meet sampling and analysis objectives. Any given cruise may have up to 20 student research projects all competing for wire and lab time.
- Daily mentorship and training of students in a ‘class’ setting on the quarterdeck, in small group settings working on the science deck and in the lab, and on an individual basis discussing project details, results, and discoveries!

AWARDS, FELLOWSHIPS, and GRANTS

<i>Doherty Chair of Ocean Studies</i> , \$15,000.	2022-2023
Project Title: Environmental Tolerances of <i>Sargassum</i> - Solving the Great Atlantic Sargassum Bloom Mystery	
<i>Davis Educational Foundation</i> , \$66,556. (co-PI)	2012-2014
Project Title: Enhancing a multidisciplinary curriculum with innovative cross-disciplinary teaching.	
<i>Jim Millinger Award for Excellence in Teaching</i> Sea Education Association	2009
<i>NSF-GK-12 Teaching Fellow</i> University of Wisconsin – Madison	2001-2002
<i>College of Letters & Sciences Teaching Fellow</i> University of Wisconsin – Madison	2000
<i>Writing Across the Curriculum Teaching Fellow</i> University of Wisconsin – Madison	2000

PUBLICATIONS

- Siuda, A.N.S.; Blanfuné, A.; Dibner, S.; Verlaque, M.; Boudouresque, C.-F.; Connan, S.; Goodwin, D.S.; Stiger-Pouvreau, V.; Viard, F.; Rousseau, F.; Michotey, F.; **Schell, J.M.**; Changeaux, T.; Aurelle, D.; and Thibaut, T. Morphological and Molecular Characters Differentiate Common Morphotypes of Atlantic Holopelagic *Sargassum*. *Phycology* **2024**, 4, 256–275. <https://doi.org/10.3390/ phycology4020014>
- **Schell JM**, Goodwin DS, Volk RH, Siuda ANS. 2024. Preliminary explorations of environmental tolerances and growth rates of holopelagic *Sargassum* morphotypes.

Aquatic Botany 190:103723 <https://doi.org/10.1016/j.aquabot.2023.103723>

- Goodwin DS, Siuda ANS, **Schell JM**. 2022. *In situ* observation of holopelagic *Sargassum* distribution and aggregation state across the entire North Atlantic from 2011 to 2020. *PeerJ* 10:e14079 <https://doi.org/10.7717/peerj.14079>
- Dibner S, Martin L, Thibaut T, Aurelle D, Blanford A, Whittaker K, Cooney L, **Schell JM**, Goodwin DS, Siuda ANS. 2021. Consistent genetic divergence observed among pelagic *Sargassum* morphotypes in the western North Atlantic. *Marine Ecology*. 00e1-12. <https://doi-org.library.proxy.mbl.edu/10.1111/maec.12691>
- Martin L, Taylor M, Grayson H, Goodwin DS, **Schell JM**, Siuda ANS. 2021. Pelagic *Sargassum* morphotypes support different rafting motile epifauna communities. *Marine Biology*. 168 (7):115. <https://doi-org.library.proxy.mbl.edu/10.1007/s00227-021-03910-2>
- Martin L, **Schell JM**, Siuda ANS. 2019. *Probopyrinella latreuticola* parasite infestation frequencies in pelagic *Sargassum*-associated shrimp, *Latreutes fucorum*. *Journal of Plankton Research*. 41: 219-222. <https://doi-org.library.proxy.mbl.edu/10.1093/plankt/fbz011>
- Amaral-Zettler LA, Dragone NB, **Schell JM**, Slikas B, Murphy LG, Morrall CE, Zettler ER 2017. Comparative mitochondrial and chloroplast genomics of a genetically distinct form of *Sargassum* contributing to recent “Golden Tides in the Western Atlantic. *Ecology and Evolution*, 7: 516-525. <https://doi-org.library.proxy.mbl.edu/10.1002/ece3.2630>
- Hu C, Murch B, Barnes B, Wang M, Marechal J, Franks J, Johnson D, LaPointe B, Goodwin DS, **Schell JM**, and Siuda ANS. 2016 *Sargassum* Watch warns of incoming seaweed. *EOS Earth and Space Science News*, v 97 no. 22, p10-15.
- Taylor M, Siuda ANS, Goodwin DS, Huston G, and **Schell JM**. 2016. Biogeographic and temporal changes in mobile fauna community on pelagic *Sargassum* in the Caribbean Sea, 2015-2016. In *Proceedings of the 69th Annual Gulf and Caribbean Fisheries Institute Conference*, November 7-11, 2016. Gulf and Caribbean Fisheries Institute, Grand Cayman.
- Wrinn C, **Schell JM**, Goodwin DS, and Siuda ANS. 2016. Taxonomic Guide to Pelagic *Sargassum* in the Caribbean Sea and North Atlantic. In *Proceedings of the 69th Annual Gulf and Caribbean Fisheries Institute Conference*, November 7-11, 2016. Gulf and Caribbean Fisheries Institute, Grand Cayman.
- Broache A, Goodwin DS, **Schell JM**, Siuda ANS 2015 Sailing Researchers Study a Seaweed Invasion. *Sailors for the Sea - OceanWatch Magazine* March 2015 issue.
- **Schell JM**, Goodwin DS, and Siuda ANS. 2015 Recent *Sargassum* inundation events in the Caribbean – Shipboard observations reveal dominance of a previously rare form. *Oceanography* 28(3): 8-10.
- **Schell JM**, Santos C, Hunker B, Michelson A, Kloehn S, Lillie R. and Dodson S, 2001. Classification of ponds and wetlands in Wisconsin using zooplankton species composition and associations. *Hydrobiologia*, 445: 37-50.

PRESENTATIONS

- **Schell JM**, Siuda ANS, Goodwin DS, Martin L. Holopelagic *Sargassum* Morphotype Growth and Decay Responses to Temperature and Salinity During a Multi-Week *ex situ* Experiment. Proceedings, *Ocean Sciences Meeting*, 2024 New Orleans, LA February.
- Siuda ANS, Thibaut T, **Blanfune A**, Aurelle D, Dibner S, **Schell JM**, Goodwin, D. Morphological and molecular characters differentiate common morphotypes of North Atlantic holopelagic *Sargassum*. Proceedings, *ASLO Aquatic Sciences Meeting*, 2023 Palma de Mallorca, Spain June.
- **Schell, JM**, Siuda ANS, Goodwin DS, Volk RH. Environmental tolerances and growth rates of holopelagic *Sargassum* morphotypes. Proceedings, *ASLO Aquatic Sciences Meeting*, 2023 Palma de Mallorca, Spain June.
- **Goodwin DS**, Siuda ANS, **Schell JM**. 27-year record of *in situ* pelagic *Sargassum* observations in the Western North Atlantic & Caribbean reveals a shift in distribution & range expansion of three common morphotypes. Proceedings, *Ocean Sciences Meeting*, 2020 San Diego, CA February.
- **Martin LM**, Taylor M, Huston D, Goodwin DS, **Schell JM**, Siuda ANS. Diversity of mobile fauna associated with the three common holopelagic *Sargassum* morphotypes in the western North Atlantic, Caribbean Sea and Gulf of Mexico. Proceedings, *Ocean Sciences Meeting*, 2020 San Diego, CA February.
- **Dibner S**, Goodwin DS, **Schell JM**, Whittaker K, Siuda ANS. Molecular diversity among holopelagic *Sargassum* morphotypes in the North Atlantic. Proceedings, *Ocean Sciences Meeting*, 2020 San Diego, CA February.
- **Whittaker K**, **Schell JM**, Goodwin DS, Siuda ANS. 2019 Molecular divergence of holopelagic *Sargassum* using extensive field samples from the tropical and subtropical Atlantic. Proceedings, *Gulf and Caribbean Fisheries Institute 71st Annual meeting* 2018.
- **Siuda ANS**, **Schell JM**, and Goodwin DS. Unprecedented Proliferation of Novel Pelagic *Sargassum* Form has Implications for Ecosystem Function and Regional Diversity in the Caribbean. *Ocean Sciences Meeting*, 2016 New Orleans, LA
- **Martin L**, **Schell JM**, and Goodwin DS, Biggs D, and Siuda ANS. *Sargassum*-associated mobile fauna communities in the Caribbean, Gulf of Mexico, and Sargasso Sea. *Ocean Sciences Meeting*, 2016 New Orleans, LA
- **Schell, JM**, Siuda ANS, and Goodwin DS 2015 Shipboard Observation of Pelagic *Sargassum* spp. Reveals Proliferation of a Rare Form and Differences in Associated Mobile Fauna Community Structure. In *Proceedings of the 68th Annual Gulf and Caribbean Fisheries Institute Conference*, November 9-13, 2015. Gulf and Caribbean Fisheries Institute, Panama City, Panama.
- **Zettler E**, Coughlin P, Goodwin DS, Jensen J, Joyce P, Law KL, Land McGuire V, Lea C, Malloy M, Quilter J, Rappaport E, **Schell JM**, Siuda ANS, Witting J. Training the next generation of ocean science and policy leaders by taking them to sea. *2nd International Ocean Research Conference*, Barcelona, Spain, November 2014.
- Goodwin DS, **Schell JM**, Siuda ANS. *Sargassum natans* and *S. fluitans* exhibit geographically distinct distributions in a 20-year neuston net dataset from the western North Atlantic. *Ocean Sciences*, Honolulu, HI. February 2014.

- Siuda ANS, Goodwin DS, **Schell JM**. Hot topics in marine science: Building a *Sargassum* Observing Network. Tall Ships America, *40th Annual Conference on Sail Training and Tall Ships*, Erie, PA. February 2013.
- Morét-Ferguson S, Siuda ANS, Proskurowski G, **Schell JM**, Engels M, Twichell N, Zettler ER. Biological communities in concentrated debris regions: who shares the ocean surface with plastic in the Eastern Pacific and North Atlantic? *5th International Marine Debris Conference*, Honolulu, HI. March 2011.
- Joyce P, M Engels, K Law, C Lea, S Morét-Ferguson, G Proskurowski, **J Schell**, ANS Siuda, RJ Wilber, J Witting, E Zettler. Forty Years of At-sea Marine Debris Data Collection. *5th International Marine Debris Conference*, Honolulu, HI. March 2011.
- Morét-Ferguson S, Siuda ANS, **Schell JM**. Spatial and temporal variability in zooplankton density of east Pacific surface waters (Poster). *American Society of Limnology and Oceanography*, Orlando, FL. March 2008.
- **Schell JM** and Dodson SI. The role of zooplankton as water quality indicators and in the determination of important land use effects on aquatic communities. *North American Lake Management Society Conference*, 2001
- **Schell JM** and Dodson SI. Zooplankton assemblages in small ponds: the role of land use on local processes. *American Society of Limnology and Oceanography Conference*, 2000
- **Schell JM** and Morgan SG. Variation in larval transport mechanisms between diurnal and semidiurnal tidal regimes. *12th Biennial Estuarine Research Federation Conference*, 1993.

COMMUNITY OUTREACH & EDUCATION (recent)

<i>Secrets of the Sargasso Sea: Blooms, Biodiversity, & Ocean Tipping Points</i>	2022
Highfield Hall Science Speaker Series - Biodiversity is key to life on Earth.	
<i>Dispatches from the Sargasso Sea</i>	2020
Class on the Quarterdeck Public Lecture Series	
<i>Science at SEA and Other Stories</i>	2020
World Ocean Day Public Lecture for The Gundalow Company	
<i>Sailing the Sargasso Sea</i>	2018
Meet the Ocean podcast, episode 13	
<i>What's the story with all the Sargassum?</i>	2015 & 2017
Proctor Academy-World Ocean Classroom	
<i>New England Ocean Ecosystems and SSV Cramer Lab Tour</i>	2018
Woods Hole Science Stroll	
<i>Welcome to Marine Zooplankton!</i>	2017
Woods Hole Science Stroll	
<i>Science Under Sail and Other Sea Stories</i>	2017
Singles Under Sail Cruising Club of Connecticut	
<i>Caribbean Sketchbook: A journey through history, culture and conservation</i>	2015
SEA Community Lecture Series	

<i>What's the Story with Sargassum?</i> SEA Community Lecture Series	2015
<i>The tragic secret of Playa Escondida</i> Story Collider podcast - On the Hook Science Storytelling	2014
<i>Ocean Motion-Thermohaline Circulation demonstration</i> Climate Action Week-Climate Fair and several visits to middle and high school classrooms.	2011-2014
<i>Ocean Conservancy International Coastal Clean-Up</i> In partnership with local Sea Grant Office, organized annual class participation in community beach cleanup and final data reporting.	2009-present

EDUCATION DEVELOPMENT and PEDAGOGY

<i>Faculty Mentor and co-PI</i> on Davis Educational Foundation Grant Sea Education Association	2012-2014
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Enhancing a multidisciplinary curriculum with innovative cross-disciplinary teaching.

Created a faculty professional development, workshop series that led to the development, in-class implementation, and assessment of test ten cross-disciplinary teaching modules in an effort to:

- enhance connectivity between the parallel disciplines of Oceanography, Maritime Policy/History, and Nautical Science in the introductory-level *SEA Semester: Ocean Exploration* program,
- diversify the range of teaching approaches employed by SEA faculty, and
- foster deeper understanding by students.

Lessons learned and teaching modules were presented and shared during the Ocean Sciences conference in 2014 in Honolulu, Hawaii.

<i>Lead Instructor</i> , Center for Biology Education University of Wisconsin - Madison	2001-2002
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Deciphering the Scientific Process

Developed and taught a Professional Development Course, a UW-Madison accredited seminar mentoring the scientific process for middle school science teachers (20 students).

Limnology Explorers

Developed and taught a class for UW Madison's Saturday Enrichment Program promoting science-inquiry for middle school students (15 students).

Limnology Explorations

Developed and taught a class for UW Madison's Pre-college Enrichment Opportunity Program for Learning Excellence for minority high school students (18 students).

NSF GK-12 Teaching Fellow

2001-2002

University of Wisconsin - Madison

Science in the Schoolyard - Education Outreach

Middle school science classroom visits. Aid teachers in implementing inquiry-based science curriculum while personally benefiting from a 'master class' in effective teaching techniques each day. Worked with all school districts in Madison metro area, 10 separate classrooms and 100s of students.

OCEANOGRAPHIC PROFICIENCIES

(supporting student research)

Oceanographic Equipment and Software (select):

Knudsen Model 3260 Chirp sub-bottom profiling system, 2-7 kHz; consisting of: TR-109 transducers and digital recorder / Water sampling Carousel SBE 32-16 with: Seabird Electronics (SBE) 90208 Auto Fire Modules, SBE SEACAT Conductivity, Temperature and Depth (CTD) Profiler - Model SBE 19plus & 19plus v.2 unit, Biospherical PAR sensor, Sea Point in-vivo chlorophyll-a Fluorometer, Wetlabs CDOM Fluorometer and Transmissometer, SBE-43 oxygen sensor, and (12) 2.5-L Water Sampling Bottles / Acoustic Doppler Current Profiler (RDI Ocean Surveyor 75kHz) / Orion 3-star benchtop pH meter / Ocean Optics USB2000 digital spectrophotometers / Secchi Disk / Turner Designs Model 10-AU Benchtop Fluorometers / Sea Gear plankton nets various mesh sizes / Tucker Trawl multiple opening/closing net / MOCNESS with 9 net, 333 μm mesh, $\frac{1}{4}$ m² opening (*Robert C. Seamans* only) / McLane Large Volume Water Transfer System (WTS-LV) / Shipek Sediment Grab / Gravity Corer / Fisher Sediment Scoop Underway clean-flowing seawater system with SBE-45 thermosalinograph, in-vivo chlorophyll and CDOM fluorometer, and transmissometer. System logs salinity, temperature, in-vivo chlorophyll fluorescence, beam attenuation, CDOM fluorescence, as well as GPS position once per minute while underway / acoustic hydrophone and recording equipment / various data visualization and statistical software including: Ocean Data View, Tableau, StatPlus, Raven Lite and Excel. For more details see: https://www.sea.edu/ships_crew/shipboard_equipment

Sample Analysis and Processing Techniques (select):

Seafloor mapping and slope determination / Grain size and mineral composition / Stratigraphy / Paleoclimatology / algae, fish, invertebrate, and plankton taxonomic identification / water mass mapping and geostrophic flow / fluorometry / spectrophotometry / chemical titration / delineation of biogeographic boundaries / enumeration and qualitative description of marine debris / taxonomic composition, diversity, richness, evenness, and functional group structure of marine communities / visual surveys of marine debris, seabirds, marine mammals / ocean soundscape characterization and mapping / snorkel-based reef surveys