

A Newsletter from the New Jersey Sea Grant Consortium

Fall - Winter 2025

New Jersey Sea Grant Consortium Undergoes National Review



From January 13-16, 2025, the New Jersey Sea Grant Consortium (NJSGC) welcomed a review team convened by the National Sea Grant College Program to evaluate the Consortium's programs and impact. The review, conducted at NJSGC's headquarters in historic Fort Hancock on Sandy Hook, provided a comprehensive assessment of the Consortium's management, organization, performance, and stakeholder engagement. It also examined its collaborative efforts, including partnerships with various offices of the National Oceanic and Atmospheric Administration (NOAA).

A highlight of the site visit was a dynamic poster session showcasing many of the groundbreaking research projects supported by NJSGC. This opportunity allowed the Consortium to share the breadth and impact of its work with the review team, reinforcing its commitment to advancing coastal research, education, and resilience efforts in New Jersey.

Pictured above, Michael Danko, Director of Extension and Research and Marine Recreation Agent for Fisheries and Boating, addressed the review team. At right, researchers whose projects are funded by NJSGC, displayed posters explaining their work.



KNAUSS FELLOWSHIP NEWS

Laura Geronimo, Ph.D., named the 2025 Knauss Fellow with the NOAA Budget Office's Budget Formulation and Communications Division



Laura Geronimo is a policy analyst and an urban and environmental planner with over 10 years of research and work experience in governance, public administration, land use planning, and climate change adaptation. Laura is thrilled to advance her career in coastal policy and management as a 2025 Sea Grant Knauss Fellow. She is drawn to the fellowship because of her love of coastal and marine natural resources, concern about

impacts of climate change and human development, and a profound sense of public service. As part of the Executive Cohort, she hopes to gain a deeper understanding of interagency efforts to manage complex and dynamic coastal regions. Laura hopes to gain leadership experience, broaden her network, and become part of a community of practice tackling difficult coastal challenges.

Laura currently works as a Post-doctoral Associate in the Department of Earth and Planetary Sciences at Rutgers University. In this position, she leads integrated climate risk management research for urban coasts as part of the Megalopolitan Coastal Transformation Hub. Laura brings together diverse research teams with coastal stakeholders and decision-makers to advance equitable climate adaptation solutions.

Laura was awarded her Ph.D. from the Bloustein School of Planning and Public Policy in May 2024. She was recently

awarded the 2024 Best Dissertation in Planning from the Association of Collegiate Schools of Planning (ACSP) for her thesis titled Prioritizing Federal Investments for Coastal Adaptation. Laura obtained funding to support her dissertation work through the New Jersey Sea Grant Consortium, serving as co-Principal Investigator on her research projects that involved program evaluation at the national level, public outreach, and case study work along the Jersey shore.





Prior to receiving her doctoral degree at Rutgers, Laura obtained her master's degree in city and regional planning from the Georgia Institute of Technology. Laura was driven to pursue higher education in her field after living in Puerto Rico for five years, where she worked as a planning assistant for a local consulting firm on climate adaptation, coral reef management, transportation, and land use plans for the island. At Georgia Tech, Laura co-led a student driven Disaster Planning and Mitigation Studio in collaboration with local partners in response to the impact of Hurricane Maria in 2017. Laura's diverse work experience and education have prepared her to be an effective Knauss fellow.

Her skills include data analytics and visualization (R, GIS, Stata, Excel), statistical analysis, financial and economic analysis, scenario design and analysis, project management, and strategic planning. She speaks Spanish and French. When Laura is not busy working on innovative coastal climate solutions, she can usually be found outdoors riding a bike, hiking, or (if in the Caribbean) snorkeling, swimming, surfing, or sailing.

EDUCATION at NJSGC

Save the Date:



New Jersey's favorite coastal celebration is back. Ocean Fun Days 2025 will take place on May 17 and 18, offering a weekend filled with FREE, family-friendly activities focused on marine science, coastal stewardship, and environmental education.





Event Details:

- Saturday, May 17 Island Beach State Park
- Sunday, May 18 Sandy Hook, Gateway National Recreation Area

Visitors can explore interactive exhibits, participate in handson science demonstrations, take guided eco-tours, and learn from leading environmental organizations. Designed for families, students, educators, and anyone with a passion for the ocean, Ocean Fun Days provides a unique opportunity to engage with experts and discover the importance of New Jersey's coastal ecosystems.

More details, including a full schedule of events and participating exhibitors, will be announced soon. Save the date and plan to join in for a weekend of discovery and learning by the shore.

Coffee & Petersons: NJSGC Welcomes PolyGone Co-Founder

New Jersey Sea Grant Consortium (NJSGC) kicked off its first Coffee & Petersons event of 2025 with an engaging discussion on microplastic pollution. On Wednesday, February 19, staff gathered to hear from Nathaniel Banks, co-founder of PolyGone, who joined via Zoom to share insights on his company's innovative work.

PolyGone was founded by Yidian Liu and Nathaniel Banks while they were completing their thesis at Princeton University, focusing on aquatic plastic waste and microplastics. Since then, the company has developed cutting-edge microplastic collection technology and launched a pilot project with the Atlantic County Utilities Authority in South Jersey to remove microplastics from wastewater. Attendees had the opportunity to learn about the challenges of microplastic pollution and the solutions PolyGone is developing to tackle this growing environmental issue. The event provided a great platform for discussion and knowledge-sharing, reinforcing NJSGC's commitment to serving New Jersey's coastal waters.

Thank you to everyone who joined us—we look forward to more insightful conversations at future Coffee & Petersons events!

PolyGone has been collaborating with the New York Sea Grant and ACUA to host educational presentations and tours for the public. We have hosted over 60 joint tours attracting hundreds of individuals, many of whom are children. Our collaboration with NY Sea Grant and ACUA has helped us pilot our innovative microplastic filtration technology and increase public education about the threat of microplastics on the planet and our next generation.

Marine Science Day Camp 2025 – Registration Now Open!

Spots are limited – Register today!

Get ready for another summer of exploration, discovery, and hands-on learning at Marine Science Day Camp, hosted by the New Jersey Sea Grant Consortium (NJSGC)! Designed for students entering 3rd through 9th grades, this immersive program offers five weeks of in-person sessions, each tailored to specific age groups. Held in the historic Fort Hancock District at Sandy Hook, campers will dive into marine science through outdoor adventures, scientific investigations, live animal observations, and hands-on experiments—all while enjoying fun games and creative crafts!

With a 1:6 instructor-to-camper ratio and a 30-camper limit per session, our program ensures an engaging and personalized experience.

Session I: July 7-11

SEA CREATURES OF THE JERSEY SHORE For 3rd, 4th, 5th graders (as of September 2025) Session Time: Monday — Friday, 9:00 a.m. — 3:00 p.m. Tuition: \$350.00

Introduce your child to the excitement of the local sea creatures and help them expand their appreciation of all living things including plants, animals, and habitats and local history. Shell collecting, animal identification and anatomy, sand science, saving energy and recycling with follow up experiments and crafts are sure to increase their love of the shore.

Session 2: July 14-18 OCEAN EXPLORATION For 6th, 7th, 8th graders (as of September 2025) Session Time: Monday — Friday, 9:00 a.m. — 3:00 p.m. Tuition: \$350.00

Campers explore how scientists make exciting discoveries by using STEM skills to increase their understanding of ocean sciences. They will be challenged to use science and engineering through hands-on experiences and projects that solve problems in buoyancy, hydrodynamics, and experimental design. Participants will be encouraged to observe the marine environment as explorers and make their own discoveries of the biological, chemical, physical, and geological aspects of Sandy Hook.

Session 3: July 21-25 THE SCIENCE OF SANDY HOOK For 4th, 5th ,6th graders (as of September 2025) Session Time: Monday — Friday, 9:00 a.m. — 3:00 p.m. Tuition: \$350.00

Campers become marine scientists as they are guided through in-depth studies of Sandy Hook's coastal environment. Through direct observation and data collection and analysis, campers will draw conclusions and construct solutions, as they learn ways to protect the ocean for future generations.

Session 4: July 28- August I INTRODUCTION TO OCEANOGRAPHY For 7th, 8th, 9th graders (as of September 2025) Session Time: Monday — Friday, 9:00 a.m. — 3:00 p.m. Tuition: \$350.00

There will be plenty of opportunities to explore ocean concepts and experiments in detail including the geographical location of Sandy Hook and its importance to our area. Activities include animal investigation, marine habitat comparison and water quality monitoring. Campers explore Sandy Hook's Bay and beach environments each day.

Session 5: August 4 – 8 COASTAL ECOSYSTEMS AND CRAFTS For 3rd, 4th, 5th, 6th graders Session Time: Monday — Friday, 9:00 a.m. — 3:00 p.m. Tuition: \$350.00

This session explores the coastal ecosystems of the Jersey Shore with an artist's eye. Campers will turn shells, trash and beach finds into treasures as they learn about our coast and local sea creatures. Participants will spend a portion of their day outdoors exploring and collecting artifacts for use in their marine science-related arts and crafts.

To register for Marine Science Day Camp contact Rosemary Higgins, College and Special Programs Coordinator, by email at <u>rhiggins@njseagrant.org</u> to reserve your spot and receive your camp code necessary for registration.

REFUND POLICY:

Refunds will be given up until July I minus a \$50.00 processing fee. After July I all camp fees are NON-REFUNDABLE. There will be no refunds issued from missed days or early departures. Please contact Rosemary Higgins by email at rhiggins@njseagrant.org for more information.



Monmouth University Climate Change Learning Collaborative (MU CCLC): Empowering Educators for a Sustainable Future

The Monmouth University Climate Change Learning Collaborative (MU CCLC) was created by Dr. Michelle Schpakow, Dr. Catherine Duckett, and Dr. Peter Jacques in partnership with the New Jersey Sea Grant Consortium (NJSGC), Monmouth University's Urban Coast Institute (UCI), and the Monmouth Conservation Foundation (MCF). This initiative, supported by the New Jersey Department of Education's Expanding Access to Climate Change and NJ Student Learning grant, is designed to equip New Jersey K-12 educators with the knowledge and tools to teach climate change in ways that are developmentally appropriate for students across all grade levels and subject areas.

The MU CCLC program offers teachers a unique blend of resources, including place-based curriculum and experiential learning opportunities, provided by NJSGC, UCI, and the MCF. These hands-on, real-world experiences are designed to deepen understanding of climate change while fostering a passion for environmental stewardship in students. The program officially launched in June 2024 and continued



New Jersey First Lady Tammy Murphy addresses the attendees.

to offer professional development opportunities through March 2025, with events scheduled multiple times each month. One of the highlights of the program's ongoing efforts occurred on March 20, 2025, at the MU CCLC Culminating Showcase. NJSGC staff participated in a special symposium where they presented educational activities, such as Greenhouse Gas Dodge Ball and Food Web Jenga, to the students. This creative and hands-on approach helped students better understand the interconnectedness of ecosystems and the impact of climate change on food systems.

The symposium also featured a variety of visionary projects from students, demonstrating their enthusiasm for STEM (science, technology, engineering, and mathematics) and their dedication to addressing the challenges posed by climate change. The afternoon was filled with excitement, as students showcased their ideas for making a positive environmental impact and advancing sustainability.



NJSGC Education team at the Showcase Symposium table.

New Jersey First Lady Tammy Murphy attended and spoke at the event, offering inspiring words to the attendees. Her participation underscored the importance of programs like the MU CCLC in shaping the future of climate education in the state. Additionally, the event featured keynote speaker Dr. William K. Hallman, who executed a thought-provoking speech on the challenges and opportunities in climate change education.

Monmouth University President Dr. Patrick Leahy also addressed the audience, emphasizing the significance of forward-thinking approach to tackling climate change.

The Expanding Access to Climate Change and NJ Student Learning grant has been instrumental in making programs like the MU CCLC and such impactful events possible. By supporting teachers and students in their efforts to understand and combat climate change, the grant is helping to lay the foundation for a sustainable future for New Jersey and beyond. A second year has been awarded, so there will be more to come.



NJSGC Education staff showing students food web Jenga during the breakout activities.

NJSGC in YOUR COMMUNITY

NJSGC Brings Fun and Learning to the New Jersey **Boat Sale and Expo**



New Jersey Sea Grant Consortium (NJSGC) made a splash at the New Jersey Boat Sale & Expo, held from February 13-16, 2025, by hosting the exciting "I SPY" Scavenger Hunt at the event's Kids Cove. Young attendees embarked on an interactive adventure, searching for hidden treasures while learning about New Jersey's coastal environment. Participants who completed the scavenger hunt were rewarded with fun prizes. NJSGC was thrilled to bring hands-on activities to the event, fostering curiosity and enthusiasm for marine life and coastal stewardship among the next generation.

Dr. Michael Acquafredda presented at Aquaculture conference





Dr. Mike Aquafredda attended the Aquaculture 2025 Conference, Innovation Through Technology, on March 6 in New Orleans, Louisiana. His topic was Testing the Ability of Atlantic Surfclam Subspecies (Spisula solidissima solidissima and S.s.Similis) to Hybridize.

NJSGC Extension provides updated information for anglers

2025 NJ R

Each year, New Jersey anglers are provided with readily available cards and posters informing them of the regulations on recreational fishing. NJSGC has partnered over the years with the New Jersey Department of Environmental Protection and the New Jersey Department of Fish and Wildlife to produce

waterproof laminated cards which can be easily packed

with fishing gear. The cards list most species of fish found in coastal waters along with the regulations for allowable season, size and number of fish for each species. The cards also include a handy ruler for measuring the catch. The cards are distributed at many fishing-related businesses and municipal buildings at no charge to the public. NJSGC's Extension also distributes posters to bait shops, party boats, marinas, and other fishing-related businesses. The posters also include the regulations on season, size, and catch allowable for New Jersey's common species of fish.



RESEARCH SPOTLIGHT

NJSGC Funded Research: Applications of Ecoenzymes to Marine Oil Spill Mitigation

Philip Sontag, Ph.D. – Department of Environmental Sciences, Rutgers University John Reinfelder, Ph.D. – Department of Environmental Sciences, Rutgers University



Our response driven research aims to use environmentally sensitive oil spill dispersants (Eco-Dispersants) in conjunction with the application of ecoenzymes to facilitate the breakdown of crude oil and avoid toxic exposures to valuable commercial resources in marine ecosystems (Figure 1).

Dr. Sontag



As petroleum is a complex mixture of organic and inorganic compounds, a multifaceted approach is necessary to treat an oil spill and maintain environmental sustainability. Dispersants, along with wave action, facilitate the removal of oil slicks from the surface into the water column through the formation

Dr. Reinfelder

into the water column through the formation of small oil droplets available for enzymatic breakdown.

One of the goals of this project is the development of a more sensitive and efficient method to detect crude oil in aqueous environments. Current methods employ a lower-sensitivity analytical assessment of crude oil concentrations. However, current analytical methods limit the ability of environmental responders to quickly evaluate 1) the type of crude oil spilled, 2) chemical properties of the spill environment, and



Figure 1. Application of Eco-Dispersants and Enzymes following fluorescence detection of crude oil during a coastal oil spill.



Figure 2. Fluorescence detection of two crude oils.

3) ongoing changes to crude oil physical and chemical properties.

Our goal is to develop a more dynamic, high-throughput method to detect crude oil. This will allow scientists to test the effectiveness of dispersants and enzymes on a variety of crude oils, on recovered oil during an oil spill, and in a range of aqueous environments. We are currently developing a fluorescence detection method for crude oil in seawater.

The fluorescence response of two crude oils (Hibernia, light; Alaskan North Slope, medium) using specifically selected excitation and emission filters is shown in Figure 2.

As many oil spills occur within inland waterways, there is a growing need for environmentally benign dispersants that can tolerate a range of salinities. An Eco-Dispersant suitable for fresh and brackish waters is currently being developed. This will provide oil spill responders with a valuable resource that could be deployed in deep, as well as fresh to brackish waterways.

For further information regarding the development of environmentally sustainable oil spill treatments at Rutgers University please reach out to Philip Sontag <u>philip.sontag@rutgers.edu</u>.



New Jersey Sea Grant Consortium 22 Magruder Road Fort Hancock, NJ 07732 732-872-1300 <u>njseagrant.org</u>

This publication is the result of work, research sponsored by the New Jersey Sea Grant Consortium (NJSGC) with funds from the National Oceanic and Atmospheric Administration (NOAA) Office of Sea Grant, U.S. Department of Commerce, under NOAA grant number NA24OARX417C0154-T1-01 and the NJSGC-The statements, findings, conclusions, and recommendations are those of the author(s) and do not necessarily reflect the views of the NJSGC or the U.S. Department of Commerce, NJSG-25-1029.

