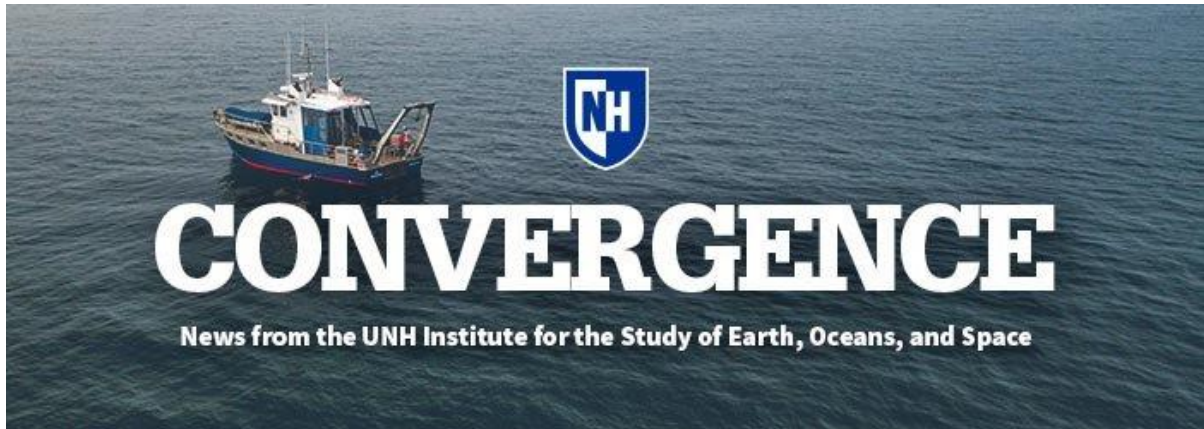


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EOS IN THE NEWS



Unearthing Great Bay's Past

Meghan Howey has summarized the findings of a five-year archaeology project with an online StoryMap



Could Feeding Seaweed to Cows Help Reduce Greenhouse Gas Emissions?

Alix Contosta's research focuses on a unique approach to reducing methane emissions



Giving Eelgrass an Edge

Kalle Matso is a lead collaborator on a new NOAA grant focused on eelgrass health



Record Funding

EOS researchers received a record \$175.7M in external funding for FY21



A Lifesaving Voyage

Shoals Marine Lab staff recognized for their role in an ocean rescue this summer



Entry to the CoRE

Researchers received CoRE



No Ice Liberty for Crew in Warming Waters as Coast Guard Cutter Healy Cruises the Arctic

Larry Mayer discusses changes in ice floes in Arctic waters



Powered by the Sea

Researchers from SMSOE/Ocean Engineering are leading new \$10M Atlantic Marine Energy Center

SEMINARS / EVENTS

[Ocean Discovery Day Challenge](#)

Nov. 1-15

A marine-focused interactive scavenger hunt

[Department of Energy Office Open Call Information Session](#)

Nov. 2, 2:30-4 p.m.

Focusing on priority research topics for FY22

[Collaborative Research and Scholarship: Managing Differences for Success](#)

Nov. 4, 2:10-3:30 p.m.

Speakers: Katharine Duderstadt, UNH Earth Systems Research Center

Charlie French, UNH Cooperative Extension

Shantel Palacio, UNH Education

Anita Tucker, UNH Social Work

Martin Wosnik, UNH Mechanical Engineering and Ocean Engineering

Part of the Fall 2021 UNH RCR Workshop Series

Title: TBD

Speaker: Peter Narins, College of Life Sciences, University of California - Los Angeles

Nov. 9, 12-1 p.m.

Part of the [CARE Environmental Acoustics Seminar Series](#)

[Broadening Participation Through Engagement](#)

Nov. 9, 12:40-2 p.m.

Part of the UNH Broadening Participation in Research Workshop Series

[Energetic particle injections and Earth's radiation belt electrons: Critical ties between the magnetotail and inner magnetosphere.](#)

Speaker: Drew Turner, Postdoctoral Researcher, UNH Space Science Center

Nov. 10, 3-4 p.m.

[Part of the Space Science Center Seminar Series](#)

Title: TBD

Speaker: Emma Davies, Postdoctoral Researcher, UNH Space Science Center

Nov. 17, 3-4 p.m.

[Part of the Space Science Center Seminar Series](#)

[Funding Scenarios and Search Strategies for Early-Career Researchers and Scholars](#)

Nov. 18, 1-2:30 p.m.

Highlighting tools and assistance from the UNH Office of Research and Large Center Development

ARCHIVED SEMINAR

[Experiential Design, Evolutionary Influence, and Spaces for Human Connection: Learning to leverage our access to great design to make change](#)

Speaker: Scott Pfeiffer, Threshold Acoustics

Part of the CARE Environmental Acoustics Seminar Series

2022 UNH RESEARCH COMMUNICATIONS ACADEMY

Improve how you communicate the power and impact of your scholarship with broad audiences with UNH's fourth annual [Research Communications Academy](#), now accepting cohort member applications. Open to UNH faculty, graduate students (Master's and Ph.D.), postdoctoral researchers and research staff from all schools, colleges, institutes and disciplines. Apply here by November 15.

RISING TIDES PHOTO CONTEST

The N.H. Coastal Adaptation Workgroup is hosting the [2021 Rising Tides Photo Contest](#) from Nov. 5-8 to bring awareness to high tide flooding that occurs at the coast and around Great Bay.

VIDEO FEATURE

Take a [virtual tour of the AquaFort](#), an integrated multi-trophic aquaculture raft off the coast of N.H. that was developed by a team from N.H. Sea Grant, UNH and local fishermen.

NSF EPSCoR PRE-PROPOSAL COMPETITION

UNH is conducting an [internal competition for pre-proposals](#) to lead the 2022 NSF EPSCoR Track-1 project. Pre-Proposals are due Dec 6.

PASSINGS

UNH [mourns the loss of Karsten Pohl](#), a longtime physics professor and Department Chair

[Edward McIntosh remembered](#) as first captain of the original UNH research vessel

CONFERENCE FUNDING AVAILABLE FOR STUDENT RESEARCHERS

Each year, EOS raises funds during The (603) Challenge to support our student researchers who attend professional conferences to present their work. These funds can cover travel and/or registration and are applicable for both in-person and virtual conferences. Please contact [Rebecca Irelan](#) to apply for funding.

Please send any news items or suggestions for future Convergence content to Rebecca Irelan at rebecca.irelan@unh.edu.

Convergence is produced by the [Institute for the Study of Earth, Oceans, and Space](#).

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Unearthing Great Bay's Past

Archaeology project documents social, ecological changes over 400 years

Monday, October 18, 2021

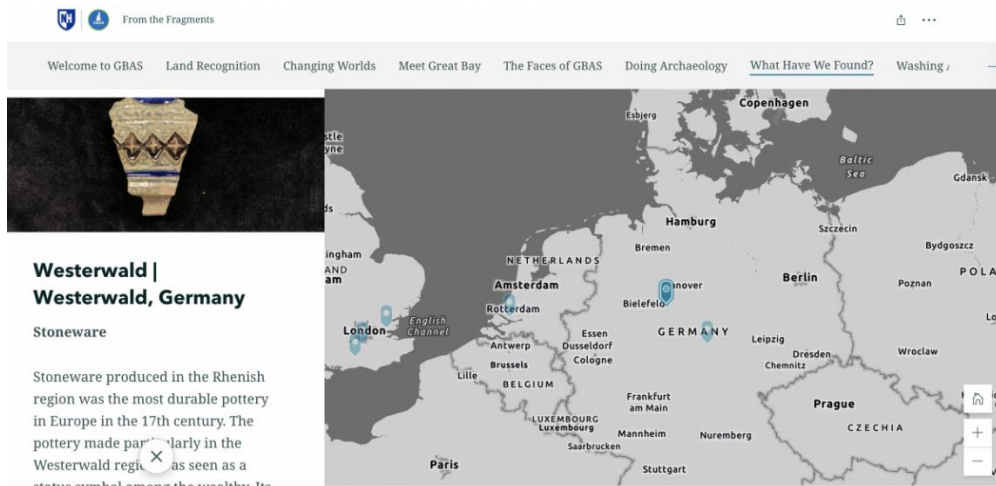
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As an archaeological survey based near P8bagok Bay — Great Bay’s ancestral name in the Indigenous Abenaki language — begins to wrap up, UNH researchers are piecing together a more accurate vision of the region’s past, one that pushes back on the colonial narrative of Indigenous savagery and warfare and uncovers some uncomfortable truths about local landowners who enslaved people from Africa.

That history is now on display as an [online StoryMap](#) featuring artifacts from the project and their country of origin, audio clips from project collaborators and details on the nuanced relationships between people and the environment.

The Great Bay Archaeological Survey (GBAS) is a five-year, community-engaged project that focuses on the time period around the 17th and 18th centuries, when British colonialists descended on the region to capitalize on its abundant natural resources. The project has been led by Meghan Howey, a UNH professor of anthropology in the [College of Liberal Arts](#) and the [Earth Systems Research Center](#).



THE GREAT BAY ARCHAEOLOGICAL SURVEY'S STORYMAP SHOWCASES ARTIFACTS DUG UP NEAR GREAT BAY AND THEIR COUNTRY OF ORIGIN.

“The landscape we’re living in today is the legacy of radical changes from the past,” says Howey. “There was a major shock to the ecological and social systems when the colonialists arrived. Great Bay serves as a living lab — it’s very sensitive to human impacts — and our archaeology provides an opportunity to interrogate moments in time.”

Howey’s StoryMap, which was built with help from [UNH Extension](#)’s GIS specialist Shane Bradt, allows the reader to take a deep dive into their findings; she’s also working on a book about the research. “My mind is blown at how much is here, and by how little archaeology has been done so far,” she adds.



UNH STUDENTS WERE INVOLVED IN THE GBAS FIELD WORK.

Over the past five years of the project, Howey has amassed a crew of collaborators from all walks of life: UNH students and faculty, community volunteers, Indigenous people, amateur historians, genealogists and teachers worked side by side, poring through historical deeds, digging test holes, flying drones equipped with ground-penetrating radar and identifying ceramics, tools and food remains, all in an effort to sift through the ages and set the record straight.

“What we’ve discovered will rewrite the book on our history,” says Denise Pouliot, head female speaker of the Cowasuck Band of the Penacook Abenaki People. Pouliot, along with her partner Paul Pouliot, the head male speaker of the same band, have worked closely with Howey on GBAS field sites as artifacts were unearthed. “We found our native foods in the hearths of the colonialists, tools that were traded, clay pipes from around the world – there was an intersection between the two cultures; it wasn’t all warfare,” Paul Pouliot says.

The team continued to dig through time; the world’s political climate drove the Raid on Oyster River in 1694, during which the lives of one colonial family were spared — likely because of their harmonious relationship with the Indigenous people, Howey says. Some years later, that family claimed neighboring lands for their own and enslaved eight people from Africa.

"Some things we can only find out through archaeology - the remnants of our past are really buried now."

Indentured Scottish soldiers were also part of the region’s history, and Howey hopes that future archaeological projects can focus on these specific focal points in greater depth. “We haven’t heard those stories yet,” she notes.

Every physical artifact supporting GBAS’s findings has been washed, catalogued and stored by Emily Mierswa ’18, who has served as its archaeology lab manager since 2017. In her role, she helps to plan for each archaeology field season and manages all the paperwork and notes to keep detailed records of their work. From tiny fragments of porcelain cups to French gunflint, Mierswa has kept tabs of it all.

“A project like this that offers free opportunities to learn archaeological field methods is so rare,” Mierswa says, noting that it allowed her gain the experience necessary to apply for graduate school at Simon Fraser University, where she is currently pursuing her master’s degree in archaeology.

Paul Pouliot notes that although he and Denise have a lot of expertise in identifying potential dig sites and adding their cultural perspective on the importance of the findings, a project like GBAS benefits from collaboration among people with a variety of knowledge and skill sets.

“Some things we can only find out through archaeology — the remnants of our past are really buried now,” he adds.

The GBAS StoryMap can be accessed and shared via the website <https://bit.ly/greatbayarchaeology>. The GBAS Project was funded by the James

H. and Claire Short Hayes Professor of the Humanities, UNH Center for the Humanities as well as supported by an Andrew Carnegie Fellowship.

The [Institute for the Study of Earth, Oceans, and Space \(EOS\)](#) is UNH's largest research enterprise, comprising six centers with a focus on interdisciplinary, high-impact research on Earth and climate systems, space science, the marine environment, seafloor mapping and environmental acoustics. With more than \$60 million in external funding secured annually, EOS fosters an intellectual and scientific environment that advances visionary scholarship and leadership in world-class research and graduate education.

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INSTITUTE FOR THE STUDY OF EARTH, OCEANS, AND SPACE (EOS)



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Could Feeding Seaweed to Cows Help Reduce Greenhouse Gas Emissions?

Alix Contosta's research focuses on a unique approach to reducing methane emissions

Read the article on [NHPR](#)

Giving Eelgrass an Edge

Grant aims to understand role of water quality in plant's decline

Friday, October 22, 2021

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PHOTO BY JERRY MONKMAN.

Eelgrass, the flowering plant whose underwater meadows provide a range of benefits for marine organisms and humans, has declined significantly in the Great Bay Estuary in recent decades. A new grant led by [Bill McDowell](#), professor of natural resources and the environment, aims to understand how changes in water quality — with a particular focus on nitrogen and sediments — affect eelgrass health. The research, funded by a \$550,000 grant from the National Oceanic and Atmospheric Administration (NOAA),

combines modeling and field observations and will ultimately help inform management tools that ensure the health of eelgrass and the estuary.

Anna Lowien, a UNH Ph.D. student and Margaret A. Davidson Fellow at the Great Bay National Estuarine Research Reserve (GBNERR), will help lead the project, along with GBNERR manager Cory Riley. Kalle Matso of the [Piscataqua Region Estuaries Project](#), part of UNH's [School of Marine Science and Ocean Engineering](#), is a lead collaborator on the three-year project, which also includes researchers from N.H. Department of Environmental Services, University of Massachusetts at Dartmouth as well as UNH.

- **WRITTEN BY:**

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Record Funding

UNH secured \$260M in new grants and contracts in FY21

Friday, October 8, 2021

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For the second year in a row, UNH broke its record for competitive research funding, closing fiscal year 2021 with more than \$260 million in new grants and contracts, double its FY20 record. The funding, from federal agencies, state collaborators, business and industry and private foundations, supports a range of projects that improve life in New Hampshire and beyond.

“Our scholars overcame the significant challenges of the pandemic to submit competitive research proposals that fund important work that aims to understand our world and make it a better place.”

Among the projects funded:

- Genomic testing of positive COVID-19 cases to [monitor variants of concern](#) in New Hampshire, with \$757,000 from the National Institutes of Health to UNH’s COVID testing lab and Hubbard Center for Genome Studies;
- The first-ever randomized clinical trial studying the effectiveness of [wilderness therapy](#) for teens struggling with mental health and substance use disorders, funded by nearly \$3 million in grants from private foundations;
- Support for more than 1,000 low-income [New Hampshire middle and high school students](#) to overcome barriers to higher education, with \$3.2 million from the U.S. Department of Education;
- Research that aims to understand [ecosystem and climate interactions](#), such as the thawing of Arctic permafrost, funded by \$3.6 million from the National Science Foundation;
- Nearly \$2 million from the National Oceanic and Atmospheric Administration for research to [protect critical transportation infrastructure](#) from sea level rise and increased coastal flooding;
- A [book fellowship](#) that focuses on the causes and consequences of wars in the Middle East on civilian infrastructure.

“For the second year, our scholars overcame the significant challenges of the pandemic to submit competitive research proposals that fund important work that aims to understand our world and make it a better place,” says Marian McCord, senior vice provost of [research, economic engagement and outreach](#). “I’m proud of them, and the staff that supports them, for generating new opportunities for basic and applied research, extension and economic development.”

The Institute for the Study of Earth, Oceans, and Space (EOS), UNH’s largest research center, received \$175.7 million, the largest share of external funding in FY21. The College of Health and Human Services received \$23.8 million. Funding to the College of Life Sciences and Agriculture was \$20.5 million; the College of Engineering and Physical Sciences received \$9.7 million; \$4.3 million went to the College of Liberal Arts, \$3.9 million to Extension, nearly \$1 million to Paul College and the Small Business Development Center, and \$385,000 to UNH Manchester.

The federal government was the largest source of funding, sending \$163 million to UNH, led by NASA (\$121.2 million), the Department of Health and Human Services (\$22.2 million) and the National Science Foundation (\$19.6 million).

Expanding competitive funding for research is essential to maintaining the [Carnegie Classification R1](#) status, which puts UNH in the top tier of research universities nationwide, and advancing an institutional goal to become a [top-25 public university](#).

External grants and awards fund specific research projects and are carefully accounted for through a robust compliance process mandated by grantors. In addition to major scientific instruments and laboratory supplies, a significant share of external funding supports scholarships and salaries for graduate and undergraduate students, postdocs and faculty researchers. The new knowledge generated through research projects improves education by bringing new ideas and theories into the classroom, deepens understanding of our world and beyond, solves local and global challenges and drives economic development.

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A Lifesaving Voyage

Shoals Marine Lab staff recognized for ocean rescue

Monday, October 11, 2021

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SHOALS MARINE LABORATORY STAFF MEMBERS MACKENZIE MEIER, GREGG MOORE, MIKE ROSEN AND ROGER TRUDEAU FLANK UNITED STATES COAST GUARD CAPT. AMY FLORENTINO AS LCDR RYAN KOROKNAY READS AN ADDRESS TO THE SHOALS STAFF DURING A CEREMONY RECOGNIZING THEM FOR MAKING AN OCEAN RESCUE THIS SUMMER. Rain was threatening but still holding off on a gray July morning when staff from the [Shoals Marine Laboratory](#) (SML) boarded a vessel for a routine trip to town that quickly turned in to anything but.

About 10 minutes after departing Appledore Island – where the Shoals Marine Laboratory is jointly run by UNH and Cornell University – Shoals boat captain Roger

Trudeau noticed a propane tank and milk crate floating among other debris in the water, and given the odd discovery decided to throttle down and have the staff do a man overboard drill to clean up the mess.

It wouldn't be a drill for long.

While surveying the scene Trudeau discovered a person floating in the water not far from the debris. He maneuvered the vessel close to the victim, and the crew worked together to pull the person aboard. SML staff jumped into action removing wet clothes and keeping the person warm while Trudeau radioed to the United States Coast Guard's nearby Portsmouth Harbor station.

The Coast Guard had an ambulance waiting when the SML crew arrived a little more than 20 minutes later, and the patient – who was hypothermic after an estimated two hours or so in the water – was taken away to receive medical attention. That person has since made a full recovery.

On Sept. 29, the Coast Guard held a small ceremony at the Portsmouth Harbor station to recognize the SML staff for their response to the situation. Members of the SML staff aboard the vessel were Trudeau; Mike Rosen, SML's director of operations; Mackenzie Meier, SML laboratory coordinator; Collin Love, SML communications coordinator; and Gregg Moore, SML academic coordinator and associate professor of biological sciences in the College of Life Sciences and Agriculture.

"We search to rescue, and oftentimes when you are in these cold-water environments and there's an accident, it can have a much more tragic ending," United States Coast Guard Capt. Amy Florentino, commander of Sector Northern New England, said during the presentation. "I really commend you for stopping, taking the initiative to look around and doing all the right things – without a doubt, based on the information we have, you saved this person's life."

The SML crew wasn't certain there was a life to save when they first approached the scene. The person had been floating for several hours after the boat they'd been in had sunk – the debris that Trudeau first spotted was from his sunken vessel – and though conscious, wasn't responsive until Rosen verbally made contact.

Had either party's path been even slightly different that morning, the outcome could have been very different.

"If we had left a half-hour later, his drift and our course probably would have been different enough that we would have never seen him," Trudeau said.

Thankfully, the members of the SML team had a wealth of training and preparation to lean on that proved invaluable. Rosen oversees a staff that routinely practices rescue situations on the water, as they often encounter floating debris – most commonly items like balloons or trash bags – and use the opportunities to keep the water clean as a chance to practice how they'd respond in precisely the situation they found themselves in.

“We train for man overboard regularly, and we just did what we had trained for,” Rosen says. “I think we were fortunate to be in the right place at the right time.”

“I appreciate that those drills serve both to clean up the ocean and as very important safety training,” Jennifer Seavey, John M. Kingsbury Executive Director of the Shoals lab, says. “You don’t have to be in this extreme circumstance to utilize all that training, but you appreciate it even more and realize it can really pay off in ways you don’t typically think about.”

The connection between the SML staff and the Coast Guard also proved vital, as the two groups worked seamlessly together to ensure the safety of everyone involved.

“We’re really lucky to have the Coast Guard right here. When we came in, they had no less than eight people on the dock to greet us and catch lines and transfer our patient to the ambulance,” Rosen says. “I know if we had an emergency at sea, they would be there to help us. It’s an amazing resource we have right here.”

That communal approach to keeping the ocean as safe and clean as possible is something the entire SML team prides itself on. There’s a “code” among those who regularly spend time on the water, Seavey said, and the members of the SML staff are always focused on being aware of that responsibility.

Though the members of the SML team aren’t charged with patrolling the waters to enhance safety as their primary focus, it’s something they willingly accept as part of their commitment to the local ocean ecosystem.

“I think it’s really wonderful that the Coast Guard recognized this, because it reinforces community,” Seavey says. “I appreciate that they are recognizing their maritime community as part of their mission, and we are indeed enhancing safety between the mainland and Shoals and anyplace else we are on the water. We’re protecting more than just the Shoals people, and this was a great lesson to me to remember how important and valuable that is.”

- **WRITTEN BY:**
[Keith Testa](#) | Communications and Public Affairs

PHOTOGRAPHER:

[Keith Testa](#) | Communications and Public Affairs

SHOALS MARINE LABORATORY



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Interdisciplinary to the CoRE

Initiative funds 14 UNH teams for collaborative research

Friday, October 8, 2021

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Fourteen research teams representing 79 UNH faculty and staff from across the university, as well as 19 external partners, have received [Collaborative Research Excellence \(CoRE\)](#) funding for FY2022. The CoRE initiative supports interdisciplinary and collaborative efforts driven by UNH researchers that address local, regional, and world issues.

“Interdisciplinary research and scholarship play a critical role in solving complex societal challenges.”

“Interdisciplinary research and scholarship play a critical role in solving complex societal challenges. We are pleased to support our researchers as they cross disciplinary boundaries, collaborate with other thought leaders and practitioners and tackle difficult and important questions,” says Marian McCord, senior vice provost for research, economic engagement, and outreach.

FY2022 projects fall into four categories:

Strengthening Existing Centers better positions existing interdisciplinary research centers for success.

- JEDI-EOS (Leads: Harlan Spence, director of the Institute for the Study of Earth, Oceans, and Space and Katharine Duderstadt, research scientist in the Earth Systems Research Center)

Supporting Large, Complex Proposal Development provides funding to shape and position major, interdisciplinary external grants (annual budget greater than or equal to \$3.5 million) for success.

- Proposals to Fly Space Science Center Instrumentation on the NASA GDC Mission (Leads: Lynn Kistler, professor of physics and astronomy and Jim Clemmons, professor of physics and astronomy)

Pilot Research Projects provides one year of seed funding for collaborative research projects with strong potential to attract future funding from external sources and/or with outstanding commercial potential.

- Work-related Musculoskeletal Disorders (WrMSDs) Prevention Team (Lead: Diliang Chen, assistant professor of electrical and computer engineering)
- Assessment of Food Environment and Health Behaviors Throughout the COVID-19 Pandemic in NH Hispanics (Lead: Carlota Dao, assistant professor of agriculture, nutrition, and food systems)
- Neuroinflammation Team (Lead: Sherine ElSawa, associate professor of molecular, cellular, and biomedical sciences)
- The Beetle Aerial Tracking Team (The BAT Team) (Lead: Jeff Garnas, associate professor of natural resources and the environment)
- MoirWaves (Lead: Shawna Hollen, assistant professor of physics and astronomy)
- Civic Health Team (Lead: Michele Holt-Shannon, director of NH Listens)
- Thriving with Theater (Lead: Elizabeth Moschella, research scientist in the Prevention Innovations Research Center)
- Tumor-on-Chip for Drug Delivery (Leads: Sarah Walker, assistant professor of molecular, cellular, and biomedical sciences and Linqing Li, assistant professor of chemical engineering)
- MicroPlastics (Lead: Kai Ziervogel, director of the Ocean Process Analysis Laboratory)

Interdisciplinary Working Groups support groups of faculty for one year to convene around research topic areas to build awareness and relationships across disciplines, allow for cross-fertilization of ideas, identify potential collaborative research opportunities and provide a venue for finding partners.

- The SLATE IWG: Developing a Science Language Arts TEachers (SLATE) Collaborative PD Model (Leads: Christina Ortmeier-Hooper, associate professor of English and Bethany Silva, research assistant professor of education)
- The Nature Economy Collaborative (Lead: Shannon Rogers, associate extension professor of community and economic development)
- Cybersecurity Assessment Testbed for Advanced Manufacturing (CATeAM) (Lead: Qiaoyan Yu, associate professor of electrical and computer engineering)

CoRE received 28 applications for this year’s competition, with proposals seeking almost \$900K in funding. The CoRE initiative launched in FY18 and has invested more than \$2 million in 74 interdisciplinary awardees through annual competitions. Over its first three years, 46 interdisciplinary project teams received awards. CoRE-funded projects have reported a breadth of research and scholarship outputs that include over \$134 million in external grant proposal submissions; \$44 million in new awards; 33 courses impacted by CoRE-related teaching and instruction; 130 activities such as conferences, workshops and presentations engaging over 8,000 academic, community, and industry partners; and numerous manuscripts and publications.

For more information on CoRE, contact [Mark Milutinovich](#), senior director, Research & Large Center Development, and [Maria Emanuel](#), CoRE initiative manager, or visit the [CoRE website](#).

Awardees of the FY22 UNH CoRE initiative will share information about their projects at the CoRE kickoff event October 14, 3 p.m. The approximately hour-long event is open to CoRE team members (internal and external) and the entire UNH community. Please [register](#) to receive a Zoom link.

- **WRITTEN BY:**
[Maria Emanuel](#) | CoRE | maria.emmanuel@unh.edu

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No Ice Liberty for Crew in Warming Waters as Coast Guard Cutter Healy Cruises the Arctic

Larry Mayer discusses changes in ice floes in Arctic waters

Read the article in [Anchorage Daily News](#)

Powered by the Sea

UNH receives \$10M award to lead Atlantic Marine Energy Center

Tuesday, November 2, 2021

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BENEATH THE MEMORIAL BRIDGE IN PORTSMOUTH, N.H., UNH'S LIVING BRIDGE PROJECT PROVIDES TIDAL ENERGY.



LIVING BRIDGE PROJECT EXPLORES TIDAL ENERGY ON THE PISCATAQUA RIVER BENEATH MEMORIAL BRIDGE.

Anyone who's swum, surfed or boated in the ocean has felt the power of its tides and waves. Now, with major funding from the U.S. Department of Energy, UNH researchers will launch a research center that seeks to harness that power as a major source of renewable energy.

The new Atlantic Marine Energy Center (AMEC), led by UNH in partnership with several East Coast universities, has been awarded \$9.7 million over four years from the [U.S. Department of Energy \(DOE\)](#). The center will focus on research and development to address ongoing needs for sustainable renewable ocean energy. It will be one of only four National Marine Renewable Energy Centers (NMREC) in the country.

"This is an exciting opportunity to expand on existing research and advance new technologies in a rapidly evolving field," says [Martin Wosnik](#), associate professor of mechanical engineering and AMEC director and principal investigator. "We're looking forward to working with our partners on new solutions for marine energy, building upon current projects and implementing vital laboratory capabilities and open water testing sites for future advancements."

"This is an exciting opportunity to expand on existing research and advance new technologies in a rapidly evolving field."

AMEC will be a consortium of academic institutions including UNH, Stony Brook University, Lehigh University and Coastal Studies Institute, which is administered by East Carolina University. Partnering with each other, as well as with several other key energy collaborators, researchers and engineers will work to further ocean energy technology through research, education and outreach, complementing work being done at the [DOE's National Labs](#). The applications developed by the partners will help power the "blue economy" — an emerging concept that encourages better use of the ocean as a resource while reducing environmental harm.

Scientists and engineers from each institution, including faculty and students, will work in the field, the laboratory or computationally to study and implement ocean energy projects. The focus will be on the scientific understanding and overall effectiveness of wave energy and tidal energy conversion, including wave powered water pumps and tidal turbine farms. Crossover research will explore applications for ocean sensing, aquaculture, resilient coastal communities, supply chains, marine foundations and marine microgrids.

Expansion of existing projects will include UNH's [Living Bridge project](#), located on the Piscataqua River in Portsmouth, which provides tidal energy to the iconic Memorial Bridge between New Hampshire and Maine. Researchers will pursue accreditation for the project to become a scaled test site for tidal energy. The Coastal Studies Institute's Jennette Pier project, located in the Outer Banks of North Carolina, will be developed as an accredited, scaled test site specifically for wave energy.

“Being selected for this DOE award is a testament to the continued accomplishments and innovations of UNH’s scientists and engineers,” says Diane Foster, director of UNH’s [School of Marine Science and Ocean Engineering](#). “It recognizes the achievements made at our state-of-the-art facilities, which are easily accessible to the Gulf of Maine, and has put UNH at the forefront of marine energy research for over a decade.”

Along with the partner universities, AMEC will also collaborate with the [National Renewable Energy Laboratory](#), [Sandia National Laboratories](#), [Pacific Northwest National Laboratory](#), European Marine Energy Center and Old Dominion University.

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