Woods Hole Sea Grant Biennial Request for Proposals

Funding cycle:
February 1, 2020–January 31, 2022
Pre-proposals must be received by:
5:00 pm Eastern Time, Friday, February 22, 2019
» PRE-PROPOSAL INSTRUCTIONS
Full proposals must be received by:
5:00 pm Eastern Time, Friday, June 7, 2019
» FULL PROPOSAL INSTRUCTIONS
Other important dates and deadlines:
» Biennial RFP Calendar

Anticipated funding:
Approximately $500,000 per year will be available to support 5-8 research projects during the 2020-2022 funding cycle. Additional funding will be available for highly ranked proposals related to sustainable aquaculture. Sea Grant proposals require a match of $1 of non-federal funds for every $2 of federal funds requested.
Contact information:
Jennie Rheuban, Research Coordinator, (jrheuban@whoi.edu)
Matt Charette, Director, (mcharette@whoi.edu)
Abigail Archer, Marine Resource Specialist, (aarcher@barnstablecounty.org)
Greg Berman, Coastal Processes Specialist, (gberman@whoi.edu)
Shannon Jarbeau, Floodplain Specialist, (shannon.jarbeau@barnstablecounty.org)
Diane Murphy, Fisheries and Aquaculture Specialist, (dmurphy@whoi.edu)
Josh Reitsma, Marine Program Specialist, (jreitsma@barnstablecounty.org)
Grace Simpkins, Education Specialist (gsimpkins@whoi.edu)

Introduction
Woods Hole Sea Grant (WHSG) requests proposals for one- or two-year projects from investigators at academic, research and educational institutions throughout the state of Massachusetts. Funded projects will contribute to WHSG and Massachusetts priority information needs and advance knowledge in one of four focus areas: healthy coastal ecosystems; sustainable fisheries and aquaculture; resilient communities and economies; and environmental literacy and workforce development. Proposals must include a plan for how audiences beyond the academic research community can use anticipated results.

Program and Focus Area Priorities
Based at the Woods Hole Oceanographic Institution, WHSG supports research, education, and extension projects that encourage environmental stewardship, long-term economic development, and responsible use of the nation's coastal and ocean resources. It is part of the National Sea Grant College Program (NSGCP) of the

National Oceanic and Atmospheric Administration, a network of 33 individual programs located in each of the coastal and Great Lakes states.

Sea Grant's legislative charge is to "increase the understanding, assessment, development, utilization, and conservation of the nation's ocean and coastal resources by providing assistance to promote a strong educational base, responsive research and training activities, and broad and prompt dissemination of knowledge and techniques." In keeping with the strategic plans of the NSGCP and Woods Hole Sea Grant, the theme areas for 2020-2022 are Healthy Coastal Ecosystems, Sustainable Fisheries and Aquaculture, Resilient Communities and Economies, and Environmental Literacy and Workforce Development.

Healthy Coastal Ecosystems—Issues related to healthy coastal ecosystems on the coast of Massachusetts and in Northeastern U.S. are similar to those issues experienced in other areas of the U.S. coastline. Decline in water quality, loss of habitat, invasive species, and increasing pressure on coastal resources are just some of the items of concern. A significant portion of the research portfolio of the Woods Hole Sea Grant program during the past few years has focused on gaining a better understanding of nutrient enrichment in coastal watersheds, characterization of habitats for resource species and threats to those habitats, coastal ocean acidification, and wetland biogeochemistry and ecosystem services. Moving forward, priorities in this focus area include:

- Life history requirements and sources of mortality of juvenile river herring and/or American shad.
- Assessment of alternative nitrogen mitigation strategies including, but not limited to, floating wetlands, macroalgae removal, shellfish culture, and permeable reactive barriers.
- Interactions between climate change and marine ecosystem productivity or eutrophication.

Sustainable Fisheries and Aquaculture—Fisheries, aquaculture, and marine and freshwater resources provide food, jobs, and economic and cultural values. Natural resources must be sustained to support fishing communities and industries, including commercial, recreational, and subsistence fisheries, and aquaculture. The revitalization of our nation's fisheries and sustainable aquaculture are priority areas that fit within the capacity of the academic and research environment for the region served by our program. Priority research areas include:

- Studies or technologies that foster expansion of sustainable aquaculture practices in Massachusetts. Highly ranked aquaculture proposals received through this competition will allow WHSG to take advantage of up to 50% co-funding by the NSGCP.
- Market related challenges to aquaculture expansion including shellfish aquaculture for nitrogen mitigation.
- Diversifying aquaculture opportunities in Massachusetts.
- Microplastics in the environment and their impact on biota.

Resilient Communities and Economies—Seventy-five percent of the population of Massachusetts lives in coastal counties. Coastal ponds, embayments, open coasts, and coastal resources are impacted by commercial, recreational and residential activities. Threats to coastal communities include climate change driven sea-level rise and shoreline erosion. WHSG's research in this theme should serve to inform the management community charged with making regulatory decisions. Priority research areas include:

- Economic impacts of increasing flooding, particularly focused on real estate.
- Transferable best practices for preserving historic communities at risk from flooding.
- Factors affecting resilience of coastal wetlands (e.g. water quality, storms, sea level rise) and facilitating adaptation to climate change related impacts.
- Interactions between marine based alternative energy development and other traditional (and valuable) uses of marine resources, such as fisheries, recreation, transportation, etc.

Environmental Literacy and Workforce Development—WHSG supports the need to build a competent workforce that is literate in science, technology, engineering and mathematics in order to meet the global challenges of the 21st century. This need is directed at not only the next generation of scientists and engineers, but also those who will develop new approaches to managing resources, and the general public who will make decisions. Examples include:

- White shark/seal issues as they relate to human interaction and safety such as early warning technologies or socio-economic studies.
- Programs focused on experiential learning related to Focus Areas for K-12 students, in particular those that engage with underserved communities or populations.
- MA standards-based curriculum development that explores current coastal issues.

Engagement plan

In addition to having a strong basis for the proposed research activities, proposals must include a plan for disseminating findings and/or products to relevant stakeholders. A project's broader impacts are an important consideration in advancing the WHSG's mission — to improve the translation of scientific information into knowledge for use in the marine environment. PIs are encouraged to work with WHSG's outreach, communications and education staff and to identify and contact communities, individuals and organizations that will benefit from project outcomes. Examples include: partnering with a state agency or industry that will be an end user of the research, providing student training opportunities (undergraduate-graduate), sharing your findings with educators at a professional development workshop, developing a classroom activity based on your research, designing an interactive exhibit based on your work for use at a science center, engaging citizen scientists in your project, or producing an engaging written or digital product that helps translate your findings for stakeholders.

While WHSG staff may engage with members of a project team (see contact information on page 1), the cost of their participation should not be included in project budgets; rather they are funded separately through the WHSG outreach budget. Staff also are available to facilitate interaction with potential project partners and participants and to discuss specific outreach, communications and education ideas. Funded investigators will be paired with a member of our outreach staff and will be encouraged to maintain an informal line of communication with the staff member during the course of the study period.

Funded investigators (or their proxies) will be required to attend a kickoff meeting at the beginning of the funding cycle, as well as an annual meeting with the Sea Grant staff to summarize findings to date. These meetings are designed to help align WHSG's research and outreach efforts.

Diversity, Equity and Inclusion

The NSGCP champions diversity, equity, and inclusion by recruiting, retaining and preparing a diverse workforce, and proactively engaging and serving the diverse populations of coastal communities. WHSG is committed to building inclusive research, extension, communication and education programs that serve people with unique backgrounds, circumstances, needs, perspectives and ways of thinking. The program encourages applicants of all ages, races, ethnicities, national origins, gender identities, sexual orientations, disabilities, cultures, religions, citizenship types, marital statuses, education levels, job classifications, veteran status types, and income, and socioeconomic status types to apply for this competitive research opportunity.

Further, the Woods Hole Sea Grant program encourages applicants to recruit and engage with students and fellows from underrepresented racial and ethnic groups, individuals with disabilities and individuals from economically or educationally disadvantaged backgrounds that have inhibited their ability to pursue a career in STEM. WHSG encourages applicants to clearly identify how this research will have broader societal impacts on the coastal community including stakeholders from underrepresented or underserved communities.