



National Association of Marine Laboratories
Position Paper: Marine and Great Lakes Laboratory Infrastructure
October 2021

Issue: Modernizing and enhancing the aging infrastructure of marine and Great Lakes laboratories to increase capacity to support research, education and training, extension and outreach, local economic growth and resilience, and opportunities for currently underrepresented groups of researchers and students.

Background: Many U.S. marine and Great Lakes laboratories in this country as well as in the Caribbean, Micronesia, and elsewhere were established 50 to 100 years ago during various periods of scientific and educational expansions. Funding for the original infrastructure came from many sources including universities, private donations, and foundations. Marine and Great Lakes laboratory infrastructure is often more complex than that of regular campus facilities. Such facilities may include not just laboratory buildings, teaching facilities, housing, and dining areas (with associated roads, water, electricity, and sewer requirements), but also docks, boats (small and large), underwater operational equipment (monitoring equipment, SCUBA, ROVs, etc.) and reliable systems to continuously deliver seawater and/or freshwater to tanks in shore-based facilities. Many laboratories are co-located with other state, local, and federal facilities which stimulates innovation and partnerships along with valuable education and training opportunities for all partners.

Justification: Acquiring funding to maintain and replace aging laboratory infrastructure is a persistent challenge. For marine and Great Lakes labs, this challenge is exacerbated by the high cost of unique infrastructure elements such as boats, instrumentation (both surface and subsurface), docks, and related equipment. Universities and other owners of these facilities may expect them to be self-sustaining via user fees but creating reserve funds of sufficient size to cover depreciation would necessitate charging fees that would be unacceptably high. Funding to build and maintain these infrastructure elements in recent decades have come from private foundations or the U.S. government, but these opportunities are limited. In addition, relatively predictable but modest funding sources such as the Field Stations and Marine Labs program at NSF now require that grant requests focus on novel purposes, i.e., not generally for replacement or repair of aging facilities. With universities unable or unwilling to provide funds for such basic needs, and private donors generally being less interested in requests for funds for “unglamorous” work like replacing septic pipes or lab roofs, the consequence is that there are few sources of funding to keep marine and Great Lakes labs operational.

NAML Recommendation: NAML recommends significant expansion of existing NSF and NOAA research infrastructure programs, such as Capacity: Biological Field Stations and Marine Laboratories (FSML), Major Research Instrumentation, Mid-Scale Infrastructure, Academic Research Infrastructure, Commercial Engagement through Ocean Technology, the National Ocean Partnership Program, and other relevant programs to include projects aimed at major infrastructure repair and replacement at marine and Great Lakes laboratories. This expansion should include items like piers, docks, upgrades for coastal research vessels, underwater operational equipment, and both seawater and freshwater systems that connect to free-standing shore-based facilities as well as wet and dry laboratory spaces. The new scope should also consider support for bringing facilities up to code where appropriate along with increasing the resilience of these highly vulnerable facilities to increased sea level rise, and storm frequency and intensity.

About NAML: The National Association of Marine Laboratories (NAML) is a network of place-based marine and Great Lakes laboratories (<https://www.naml.org>). NAML’s geographic network includes estuaries, the coastal zone, the Great Lakes and inland watersheds, the global ocean including polar regions, and the sea floor. NAML labs provide scientists, students, public, and civic leaders with leading edge science, environmental and coastal intelligence, and professional training that contributes to the understanding, management, and stewardship of our ocean, coastal zones and Great Lakes. The research, observational, and educational activities of NAML contribute to the nation’s economic, environmental, and national security.