



# National Association of Marine Laboratories

**Official Written Testimony for Fiscal Year 2009  
Submitted to the Subcommittee on Commerce, Justice and Science  
Committee on Appropriations  
United States House of Representatives  
Washington, DC**

**Submitted by Dr. James Sanders  
President, National Association of Marine Laboratories  
March 28, 2008**

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On behalf of the National Association of Marine Laboratories I am pleased to submit this statement for the official record in strong support of the research and education programs under the subcommittee's jurisdiction that play a vital role in the ocean, coastal, and Great Lakes research and education enterprise. I will focus my remarks on four key areas: federal support for extramural ocean, coastal and Great Lakes research; the next generation of ocean infrastructure; U.S. innovation and competitiveness through investment in the marine sciences; and ocean education, literacy, diversity and workforce development.

The National Association of Marine Laboratories (NAML) is a nonprofit organization of about 100 institutions employing more than 10,000 scientists, engineers, and professionals and representing ocean, coastal and Great Lakes laboratories stretching from Maine to the Gulf of Mexico, Guam to Bermuda, and from Alaska to Puerto Rico. NAML labs support the conduct of high quality ocean, coastal and Great Lakes research and education in the natural and social sciences and the effective use of that science for decision-making on the important issues that face our country.

## **FEDERAL SUPPORT FOR EXTRAMURAL OCEAN, COASTAL AND GREAT LAKES RESEARCH**

***NAML strongly urges the Subcommittee to maintain and strengthen its support for cutting-edge ocean, coastal, and Great Lakes research and education across the federal funding agencies within its jurisdiction.***

The marine sciences are inherently interdisciplinary, push the envelope in terms of technology development, test the boundaries of our data collection and analysis systems, and offer an effective training ground for future scientists and engineers. NAML believes that competitive, merit-based research support by all relevant federal agencies is essential to the overall progress of coastal, ocean and Great Lakes science and education. Specifically, NAML calls on the Subcommittee in the FY 2009 appropriations bill to support the research and education programs of the National Science Foundation, the National Oceanic and Atmospheric Administration, and the National Aeronautics and Space Administration one of its highest priorities.

**National Science Foundation (NSF).** NSF provides vital support for basic research and education which enhances public understanding of the Nation's oceans, coastal areas, and the Great Lakes and strengthens the long-term economic competitiveness and national security of

our country. NSF support for cutting edge research, cyberinfrastructure, as well as more traditional instrumentation and infrastructure is essential for the health of the Nation's research enterprise. NSF also plays a large role in supporting education and training for the next generation of scientists and engineers and enhancing diversity by attracting and retaining women and minorities. Marine labs contribute significantly to this objective through the research and education programming conducted with NSF support. **NAML is supportive of proposals from the Administration (\$6.9 billion request for FY 2009) and the Congress (via the America COMPETES Act) to substantially increase NSF support for FY 2009 and urges that in the provision of such resources, they be distributed in a balanced way to include all of the NSF directorates consistent with similar guidance provided in the FY 2008 appropriations conference report.**

**National Oceanic and Atmospheric Administration (NOAA).** NOAA is a critical player in ocean, coastal and Great Lakes research and education and many NAML labs are co-located with, or linked to, NOAA laboratories. Through its partnerships with marine labs and universities, NOAA has access to world-class expertise and unique research facilities. In addition, by partnering with the external research and education community, NOAA can leverage funds and facilitate multi-institution cooperation, all for the purpose of promoting the very best science. **NAML urges the Subcommittee to recognize the value of NOAA by funding the agency at a budget of \$4.5 billion for FY 2009, as supported by the Friends of NOAA Coalition.** In addition, we call on the Subcommittee to emphasize NOAA's key extramural research and education programs which assist NOAA in addressing its mission. These programs include: the National Sea Grant College Program, the National Undersea Research Program, Ocean Exploration and Research, the National Estuarine Research Reserve System, the Competitive Research Program within NOAA's Climate Program Office, the Integrated Ocean Observing System, Oceans and Human Health, Coastal Zone Management, Office of Education and the various joint and cooperative institutes. In addition, NOAA supports important research in aquaculture and invasive species.

In 2007, NOAA released a comprehensive five year research plan<sup>1</sup> that highlights the linkage between NOAA research and the Nation's economic competitiveness. A healthy NOAA budget coupled with solid partnerships with the extramural research and education communities will only strengthen NOAA's research and education capabilities and ultimately make our nation safer.

**National Aeronautics and Space Administration (NASA).** Budgets for NASA earth and space science have declined in recent years despite fervent calls from the community to protect science funding at the agency. The National Academy of Sciences released a report in 2007<sup>2</sup> calling on NASA to "renew its investment in Earth observing systems and restore its leadership in Earth science and applications." NAML is not alone in its contention that this nation is in need of a balanced investment in NASA that will maintain a strong and vibrant earth and space science

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<sup>1</sup> Research in NOAA: Toward Understanding and Predicting Earth's Environment, National Oceanic and Atmospheric Administration, June 2007

<sup>2</sup> Earth Science and Applications from Space: National Imperatives for the Next Decade and Beyond, Committee on Earth Science and Applications from Space: A Community Assessment and Strategy for the Future, National Research Council, January 2007

enterprise. NASA's support for earth observations and research is vital in helping us better understand our own planet. We are encouraged that the Administration has called for Earth and Space science increases in its FY 2009 budget request. **NAML urges the Subcommittee to renew its investment in the NASA Earth Science budget for Fiscal Year 2009.**

### **NEXT GENERATION OF OCEAN INFRASTRUCTURE**

In addition to program support for research at the various federal funding agencies, support for infrastructure and instrumentation—including long term planning for the next generation of infrastructure—is critical to the operation of marine labs. NSF in particular provides important support for basic laboratory facilities, instrumentation, support systems, computing and related cyberinfrastructure, and ship access through the important Major Research Instrumentation (MRI) and the Field Stations and Marine Laboratories (FSML) programs. The U.S. Commission on Ocean Policy's report<sup>3</sup> made several recommendations about the need for development and enhancement of ocean, coastal and Great Lakes research infrastructure. NAML recognizes the need for infrastructure investment at all scales, from traditional infrastructure—such as marine laboratories, ships, observation systems, satellites—to next generation infrastructure and technology like genomics, proteomics, robotics, nanotechnology, and other advanced computational approaches. As federal research budgets grow, so too must support for critical infrastructure required to effectively implement research and education. We are hindering our brightest scientific minds by denying them the proper infrastructure needed to support their research. **NAML urges the Subcommittee to recognize the importance of sustained support for infrastructure across the federal research agencies and provide commensurate funding for FY 2009.**

### **FEDERAL SUPPORT FOR U.S. INNOVATION AND COMPETITIVENESS THROUGH INVESTMENT IN THE MARINE SCIENCES**

NAML notes that the Federal government has targeted the “physical sciences” for funding increases in recent years, despite the outcome of the FY 2008 appropriations process. The Congress, through enactment of the America COMPETES Act (Public Law 110-069), recognized that the physical sciences did not only refer to science coming out of the National Science Foundation, the Department of Energy's Office of Science, and the National Institute of Standards and Technology, as defined by the Administration. In addition to these agencies the COMPETES Act acknowledged the role that many Federal agencies – such as NOAA and NASA – play in U.S. innovation and competitiveness. **For FY 2009, NAML urges the Subcommittee to fund all of the “physical science” agencies, including NSF, NOAA, and NASA, at levels that will help the nation keep pace on the global stage.**

### **OCEAN EDUCATION, LITERACY, DIVERSITY AND WORKFORCE DEVELOPMENT**

*NAML believes that an informed, engaged and ocean literate populace is critical for the economic, environmental health of our planet and to the quality of life of all Americans.*

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<sup>3</sup> An Ocean Blueprint for the 21st Century, U.S. Commission on Ocean Policy, April 20, 2004

***NAML encourages the federal government to strengthen its commitment to enhancing ocean, coastal and Great Lakes education, literacy, diversity and workforce development.***

In early 2008 NAML developed a whitepaper<sup>4</sup> addressing the ocean education mission at NOAA and calling on NOAA to be a strong contributor to the implementation of the recommendations made within the 2006 Conference on Ocean Literacy (CoOL) report<sup>5</sup>. The Conference on Ocean Literacy was a watershed event that brought together for the first time all of the Federal entities overseeing ocean education and literacy. Its subsequent report issued key recommendations for fostering an ocean-literate society and increasing ocean workforce diversity. NAML looks forward to working with NOAA, as well as other federal agencies with ocean education missions, in implementing the report's recommendations.

A strong national ocean policy can only be sustained with the most up to date and reliable scientific information. To ensure that the Nation will continue to generate the very best knowledge investment is needed today in coastal, ocean, and Great Lakes education programs that support learning at all age levels, by all disciplines, and for all Americans. NAML labs work closely with many programs throughout the Federal government to produce a more ocean-literate populace. **These include the Centers for Ocean Science Education Excellence program (COSEE) and the Louis Stokes Alliance for Minority Participation program at NSF, and the Office of Education and National Sea Grant College Program within NOAA.** Not only do marine labs serve as excellent training grounds for experiential ocean education, they are also committed to enhancing diversity within the field of ocean, coastal and Great Lakes research and education by fostering relationships with community colleges and minority-serving institutions (MSIs) to provide distinctive learning opportunities for underrepresented groups. At marine laboratories, students achieve a greater understanding of the oceans and coastal ecosystems and take with them a sense of stewardship for these important environments. Given the interdisciplinary nature of the ocean sciences, a continued interagency approach will be needed by the Federal government to foster a truly ocean-literate populace. **NAML urges the Subcommittee to provide priority funding for the science education programs noted above for FY 2009.**

Thank you for the opportunity to express these views on behalf of the National Association of Marine Laboratories. We hope the Subcommittee will take these points into consideration as you move forward in the FY 2009 appropriations process.

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<sup>4</sup> Ocean Literate America: A Whitepaper in Support of the National Oceanic and Atmospheric Administration's Ocean Education Plan, National Association of Marine Laboratories, February 2008

<sup>5</sup> Conference on Ocean Literacy Report, Washington, D.C., June 7-8, 2006