



RHUMB LINES

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The Naval STEM Advantage

"Our overarching STEM objective is simple. Increase, inspire and support the talent pool from which the future's great Sailors, naval scientists and engineers will come."

—Chief of Naval Research Rear Adm. Nevin Carr

The Navy and Marine Corps team has been a leader in developing science and technology (S&T) solutions to defend U.S. interests since its inception - from superior ship design in the War of 1812 and radar that provided a significant advantage in World War II, to nuclear submarines for strategic deterrence during the Cold War. The United States is the world's technology leader; however, in recent years the supply of graduates in science, technology, engineering and mathematics (STEM) education has not kept up with an increasing demand. For example, China graduates nearly three times as many four-year degrees in engineering and computer sciences than the United States, surpassing the United States in the number of STEM-related Ph.D. graduates. This trend threatens America's future economic security and ability to provide advanced technologies that give warfighters the edge.

Investing in Science and Technology

- Investments in S&T help naval forces maintain an advantage as the high-tech service of the future and sustain the vitality of our nation's STEM workforce, upon which the Department of the Navy (DoN) depends.
- To address this shortfall, the secretary of the Navy set a goal to double our naval STEM investments throughout the next five years. Targeted areas for significant attention in the near term include:
 - Increase [hands-on learning opportunities](#) for students and their families
 - Expand opportunities to develop close [mentoring relationships](#) with naval STEM professionals
 - [Increase outreach to K-12](#), under-represented minority and economically disadvantaged students
 - [Increase high-level advanced research opportunities](#) at top universities focused on naval-relevant topics

Promoting the Navy STEM Program

- The DoN has historically promoted STEM education and outreach to strengthen the future S&T workforce. In 2009, the [Office of Naval Research](#) (ONR) invested more than \$55 million to coordinate more than 170 STEM initiatives Navy-wide, and this investment is growing. The program's goals are twofold: help build the nation's STEM talent base, and draw from this high-quality talent pool to meet the DoN's future workforce needs.
- In 2009, the Navy launched www.Stem2Stem.org, a central resource for information about naval STEM programs and how to get involved. Managed by ONR, STEM2Stem provides coordination for STEM leaders at system commands, warfare centers, naval laboratories and Navy schools.
- ONR will host a [Naval STEM Forum](#) June 15-16 that will assemble leaders from across the Navy, industry, academia and nonprofits to share [best practices](#) and discuss ways to partner with the DoN on STEM initiatives. Secretary of the Navy Ray Mabus and Chief of Naval Operations Adm. Gary Roughead plan to speak at the STEM Forum.

Key Messages

- The goal of naval STEM is to increase the talent pool of future Sailors, naval scientists and engineers.
- STEM enables the success of naval missions and protects the lives of Sailors and Marines.
- For security reasons, DoN must rely on U.S. citizens for classified technology work, which presents a unique challenge.
- Naval STEM ensures continued access to a variety of Navy-unique professional skills. See "[Why naval STEM](#)," for more information.

Facts & Figures

- [Naval Sea System Command](#) Warfare Centers supported more than 16,500 students and 800 teachers through in-school and summer camp STEM events.
- In 2011, [Space and Naval Warfare Systems Command](#) scientists and engineers will volunteer more than 10,000 hours in K-12 student communities.
- [Naval Air Systems Command](#) reached 16,000 students and 700 teachers through engineering challenges, speakers bureaus, summer camps, student employment and teacher training.