



Department of Defense

DoDSTEM

Science · Technology · Engineering · Mathematics



Strategic Plan
FY2016 - FY2020

DoD STEM VISION

A STEM talent pool with minds for innovation, diversity of thought, and the technical agility to sustain the Department's competitive edge.

DoD STEM MISSION

Attract, inspire, and develop exceptional STEM talent across the education continuum to enrich our current and future DoD workforce to meet defense technological challenges.

A LEADERSHIP IMPERATIVE



“They’re [the Department’s Scientists and Engineers] working with cutting-edge technologies, like robotics and biomedical engineering... they mobilized to Africa to save thousands of lives, helping keep the deadly Ebola virus from spreading around the world. I’ve made a commitment to the men and women in uniform, to President Obama and to the American people that as Secretary of Defense, I will drive change to build what I call the Force of the Future: the military and the broader Defense Department that we need to serve and defend our country in the years to come.”
- Dr. Ash Carter, Secretary of Defense, 30 March 2015



“The scientists and engineers who work in our labs and Defense industry are the bedrock of the Department’s technological superiority- our power is in our people. Excellence in Science, Technology, Engineering, and Mathematics (STEM) fields and innovation are imperative to national security and the Nation’s economic well-being.” - Frank Kendall, USD (AT&L), 22 May 2015

OUR ROLE IN THE FEDERAL STEM EDUCATION STRATEGIC PLAN

The 2013 report from the Committee on STEM Education (CoSTEM) of the National Science and Technology Council noted that investing in STEM education and outreach is critical to the Nation and its economic future for the following reasons:

- The demand for STEM professionals will exceed the expected supply over the next decade.
- Our K-12 education system and the students it produces are “middle of the pack” when evaluated in a group of 33 Organization for Economic Cooperation and Development (OECD) countries.
- Participation and achievement of underrepresented groups (women and minorities) is lower than desired.

The Federal STEM Education 5-Year Strategic Plan challenges the CoSTEM agencies, which includes DoD, to develop education initiatives that are unique to their mission, needs, and resources; to leverage assets and expertise already available; engage in cross-agency collaboration; and articulate a strategy that includes goals that support the goals laid out in the Federal STEM Plan.

The goals laid out in the Federal STEM Education Strategic Plan are:

- Improve STEM instruction by preparing 100,000 excellent new K-12 STEM teachers by 2020, and support the existing STEM teacher workforce;
- Increase and sustain youth and public engagement in STEM by supporting a 50% increase in the number of US youth who have an authentic STEM experience each year prior to completing high school;
- Enhance STEM experience of undergraduate students by graduating one million additional students with STEM degrees over the next 10 years;
- Better serve groups historically under-represented in STEM fields by increasing the number of students from groups that have been underrepresented in STEM fields that graduate with STEM degrees in the next 10 years and improve women’s participation in areas of STEM where they are significantly underrepresented; and,
- Design graduate education for tomorrow’s workforce by providing graduate-trained STEM professionals with basic and applied research expertise, options to acquire specialized skills in areas of national importance, mission-critical workforce needs for the CoSTEM agencies, and ancillary skills needed for success in a broad range of careers.

The Federal STEM Education coordination approaches are:

- Build new models for leveraging assets and expertise. Implement a strategy of lead and collaborating agencies to leverage capabilities across agencies to achieve the most significant impact of Federal STEM education investments.

- Build and use evidence-based approaches. Conduct STEM education research and evaluation to build evidence about promising practices and program effectiveness, to be used across agencies, and share with the public to improve the impact of the Federal STEM education investment.

THE DEPARTMENT'S STRATEGY

In alignment with the Federal plan, the Department's strategy collectively addresses critical STEM challenges as a national priority through communication, talent inspiration and cultivation, and diversity emphasis using evidence-based approaches. Throughout the DoD, the Components have invested in the future STEM talent pool to meet their unique mission needs. This Department-wide strategic plan is an overarching framework that is driven by the Federal priorities with a focus on developing education and outreach initiatives that are unique to DoD's mission, needs, and resources and required to build the Force of the Future needed to serve and defend our Nation.

Goal 1.0 – COMMUNICATE the value and purpose of the DoD STEM Strategy and the need for engagement.

- Obj. 1.1 – Engage DoD Senior Leaders and other stakeholders on the value of STEM programs as critical enablers of DoD's missions, requirements and technology superiority and support them through strategic communications resources.
- Obj. 1.2 – Develop DoD outreach messages to attract STEM talent and relay the Department's involvement in developing innovative solutions that address global challenges.
- Obj. 1.3 – Promote increased partnerships within DoD and other Federal agencies for STEM initiatives and activities.
- Obj. 1.4 – Identify current programs (see Table 1) and best practices that attract, retain, and network the Department's STEM professionals and share them across the Department.

Goal 2.0 – INSPIRE youth and community engagement in STEM education and outreach in the K-12 domain by supporting and enhancing student and educator participation in DoD-sponsored STEM events.

- Obj. 2.1 – Increase public awareness of education and outreach opportunities as measured by promotional metrics.
- Obj. 2.2 – Improve the quality of STEM resources (i.e., mentors, equipment and activities) and events by implementing research-based programs focused on knowledge, skills, and abilities associated with STEM education.
- Obj. 2.3 – Encourage STEM educators by increasing and supporting volunteering of DoD scientists and engineers in schools, labs and STEM events.

Goal 3.0 – CULTIVATE the future STEM talent pool through supporting and enhancing undergraduate and graduate students served by DoD-sponsored STEM programs.

- Obj. 3.1 – Enhance the portfolio of DoD STEM programs targeted toward students pursuing higher education in STEM fields.
- Obj. 3.2 – Enhance internship opportunities in DoD laboratories and facilities across the STEM-disciplined domain.
- Obj. 3.3 – Improve the accessibility of higher education programs through direct hire initiatives and other streamlined authorities afforded DoD laboratories and facilities.
- Obj. 3.4 – Establish an outreach mechanism to servicemembers transitioning to veteran status to make them aware of STEM higher education opportunities.
- Obj. 3.5 – Promote the use of current authorities to foster students through STEM mentorship.

Goal 4.0 – PROMOTE increased participation of underserved groups in STEM activities and education programs.

- Obj. 4.1 – Improve engagement of underserved populations in STEM events through innovative approaches to existing and new programs.
- Obj. 4.2 – Increase the exposure of DoD STEM opportunities to underserved groups by supporting increased involvement of DoD laboratories and facilities.
- Obj. 4.3 – Expand the exposure of DoD sponsored STEM education and outreach by engaging in opportunities that reach all populations, tailoring specific messages to reach underserved populations.

GOAL 5.0 - ENHANCE the efficiency and effectiveness of STEM initiatives by gathering evidence using a systematic approach.

- Obj. 5.1 – Implement a systematic approach to identify and share STEM best practices across the DoD components in educational and engagement environments.
- Obj. 5.2 – Evaluate the efficiency and effectiveness of each program annually.
- Obj. 5.3 – Generate a results oriented report to guide programmatic decisions.



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