

IEEE-USA POSITION STATEMENT

K-12 STEM EDUCATION

*Adopted by the IEEE-USA
Board of Directors, 18 June 2016*

IEEE-USA supports federal and state-based efforts to enhance K-12 science, technology, engineering and mathematics (STEM) education, and especially programs and initiatives that seek to infuse engineering and computer science into K-12 education curriculum and learning experiences.

The introduction of engineering design concepts, computing, and practical applications in America's schools, especially its middle and high schools, has the potential to improve student learning and achievement in science and mathematics, increase student interest in engineering and computer related careers and boost students' basic technological literacy. This, in turn, will help to ensure that U.S. schools are graduating students capable of succeeding in an increasingly sophisticated, technologically driven world, meeting America's high-tech workforce needs, and creating innovations that will drive the economy and solve the grand challenges that confront our nation and the global community.

Ultimately, K-12 education is administered at the state and local level, where there is some resistance to federal intrusion. IEEE-USA applauds Congress for passing the Every Child Succeeds Act in 2015, which rebalances authority for K-12 education between the state and federal governments. We urge Congress to maintain the federal government's commitment to helping states establish K-12 educational standards and curriculum requirements, while at the same time giving states the flexibility to enhance the STEM literacy and capabilities of the communities they serve.

In support of this position, IEEE-USA endorses the following programs and initiatives:

- State initiatives to adopt engineering curricular standards and programs, including STEM magnet schools, pre-engineering tracks, after school programs and student preparation partnerships between secondary schools and engineering institutions.
- State-based efforts to adopt and implement education standards which incorporate engineering principles into science and math courses.
- Efforts by the Computing in the Core Coalition and others to elevate computer science education to a core academic subject in K-12 education

- The Robert Noyce Teacher Scholarship Program administered by the National Science Foundation, which encourages talented science, technology, engineering, and mathematics majors and professionals to become K-12 mathematics and science teachers
- Federal legislation that supports research into best practices and promising innovations in K-12 engineering and computer science education and/or that would allow states to leverage existing federal K-12 education funding resources to support STEM-related education, such as:
 - Allowing states to award grants using federal Title II funding to support professional development of K-12 STEM teachers and instructional materials for STEM education,
 - Expanding the federal Math and Science Partnership (MSP) program to encompass all STEM subjects, including engineering and computer science

This statement was developed by the IEEE-USA Government Relations Committee, and represents the considered judgment of a group of U.S. IEEE members with expertise in the subject field. IEEE-USA advances the public good and promotes the careers and public policy interests of the more than 200,000 engineering, computing and allied professionals who are U.S. members of the IEEE. The positions taken by IEEE-USA do not necessarily reflect the views of IEEE, or its other organizational units.