



September 25, 2017

MEMORANDUM FOR THE SECRETARY OF EDUCATION

SUBJECT: Increasing Access to High-Quality Science,
 Technology, Engineering, and Mathematics
 (STEM) Education

By the authority vested in me as President by the Constitution and the laws of the United States of America, it is hereby directed as follows:

Section 1. Policy. A key priority of my Administration is to better equip America's young people with the relevant knowledge and skills that will enable them to secure high-paying, stable jobs throughout their careers. With the growing role of technology in driving the American economy, many jobs increasingly require skills in science, technology, engineering, and mathematics (STEM) -- including, in particular, Computer Science. These skills open the door to jobs, strengthening the backbone of American ingenuity, driving solutions to complex problems across industries, and improving lives around the world. As part of my Administration's commitment to supporting American workers and increasing economic growth and prosperity, it is critical that we educate and train our future workforce to compete and excel in lucrative and important STEM fields.

Today, too many of our Nation's K-12 and post-secondary students lack access to high-quality STEM education, and thus are at risk of being shut out from some of the most attractive job options in the growing United States economy. Courses in Computer Science are especially scarce in too many schools and communities, despite the job opportunities that these skills create. Nearly 40 percent of high schools do not offer physics and 60 percent of high schools do not offer computer programming. Of the nearly 17,000 high schools that were accredited to offer Advanced Placement exams in 2015, only 18 percent were accredited to teach Advanced Placement Computer Science (AP-CS). Minorities and students in rural communities often have even less access to Computer Science education. Nationwide, only 34 percent of African American students and 30 percent of rural high school students have access to a

Computer Science class. Furthermore, even where classes are offered, there is a serious gender gap: less than a quarter of the students who took the AP-CS A exam nationally in 2016 were girls.

Shortages in high-quality STEM teachers at all levels, particularly in Computer Science, often drive these problems. The Department of Education, therefore, should prioritize helping districts recruit and train teachers capable of providing students with a rigorous education in STEM fields, focusing in particular on Computer Science. This will help equip students with the skills needed to obtain certifications and advanced degrees that ultimately lead to jobs in STEM fields.

Sec. 2. Expanding Access to Computer Science and STEM Education. (a) Establish promotion of high-quality STEM education, with a particular focus on Computer Science, as a Department of Education priority. The Secretary of Education (Secretary) shall, consistent with law, establish the promotion of high-quality STEM education, including Computer Science in particular, as one of the priorities of the Department of Education. The Secretary shall take this priority into account, to the extent permitted by law, when awarding grant funds in fiscal year 2018 and in future years.

(b) Funding level. The Secretary shall, to the extent consistent with law, establish a goal of devoting at least \$200 million in grant funds per year to the promotion of high-quality STEM education, including Computer Science in particular. Within 30 days of the Congress passing final appropriations for each fiscal year for which the priority established under subsection (a) of this section is in effect, the Secretary shall identify the grant programs to which the STEM priority will apply and estimate the total amount of such grant funds that will support high-quality STEM education, including Computer Science. The Secretary shall communicate plans for achieving this goal to the Director of the Office of Management and Budget (OMB Director) each fiscal year.

(c) Explore administrative actions to promote Computer Science at the Department of Education. The Secretary shall explore appropriate administrative actions, to the extent consistent with law, to add or increase focus on Computer Science in existing K-12 and post-secondary programs. As part of this effort, the Secretary shall identify and take action to

provide guidance documents and other technical assistance that could support high-quality Computer Science education.

(d) Report. Not later than 90 days after the end of each fiscal year, the Secretary shall submit to the OMB Director a report on the activities carried out during the preceding fiscal year under subsections (b) and (c) of this section. In particular, the report shall describe how the grant funds referenced in subsection (b) were spent, any administrative actions that were taken, guidance documents that were released, or technical assistance that was provided pursuant to subsection (c) of this section, and whether these actions succeeded in promoting and expanding access to high-quality STEM education, including Computer Science in particular, both generally and with respect to underserved populations.

Sec. 3. Definition. The term "Computer Science" means the study of computers and algorithmic processes and includes the study of computing principles and theories, computer hardware, software design, coding, analytics, and computer applications.

Sec. 4. General Provisions. (a) Nothing in this memorandum shall be construed to impair or otherwise affect:

- (i) the authority granted by law to an executive department or agency, or the head thereof; or
- (ii) the functions of the OMB Director relating to budgetary, administrative, or legislative proposals.

(b) This memorandum shall be implemented consistent with applicable law and subject to the availability of appropriations.

(c) This memorandum is not intended to, and does not, create any right or benefit, substantive or procedural, enforceable at law or in equity by any party against the United States, its departments, agencies, or entities, its officers, employees, or agents, or any other person.

(d) The Secretary is hereby authorized and directed to publish this memorandum in the *Federal Register*.

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