

December 23, 2016

President-Elect Donald Trump  
1800 F Street, NW, Room G117  
Washington, DC 20270-0117

Dear President-elect Trump:

We, the member organizations of the Physical Sciences Education Policy Coalition (PSEPC), write to ask you to implement policies and make decisions that support robust programs in science, technology, engineering and mathematics (STEM) education, specifically in the physical sciences including physics, chemistry, astronomy, and meteorology, among others. With current innovations in technology, it is evident that the 21st century workforce must have access to skills and knowledge that are obtained through education in the physical sciences.

**Training in the physical sciences is essential to the nation for a highly-productive workforce, healthy economy, and strong security.** In this age of internet connectedness and abundant digital technology, more jobs rely on the technical skills and critical thinking that physical science students receive. In the healthcare sector, professionals must store and utilize a [wealth of patient data](#) and effectively use [new medical devices](#). The [New Hampshire Machining Association](#) cites “knowledge and application of physical sciences” as necessary to being a machinist, especially one that deals with computer-programmed machinery. [Welders](#) not only need problem-solving skills to repair defects, but also knowledge of physics, chemistry, and metallurgy to handle their materials. The development of [safe, secure, and sophisticated computer hardware using semiconductors](#) is crucial for the U.S.’s cybersecurity, and those professionals researching that technology must have a good understanding of the physical sciences, especially physics. Physical science graduates bolster the private sector, serve in government national laboratories, and contribute to the nation’s security. The resulting economic growth and technological advancements raise America’s standing in the global scientific enterprise, allowing the U.S. to be a significant player in the increasing amount of international science collaborations.

**The physical sciences are crucial to satisfying a national need** – both to produce physical scientists and also to provide necessary skills and knowledge to the other parts of the STEM workforce. The President’s Council of Advisors on Science & Technology (PCAST) wrote in its 2012 report *Engage to Excel: Producing One Million Additional College Graduates with Degrees in Science, Technology, Engineering, and Mathematics* that in order to meet the needs of a workforce that is ever-increasingly integrated with technology, the U.S. “must produce approximately 1 million more STEM professionals over the next decade than are projected to graduate at current rates.”

During the time of transition for your administration, PSEPC urges your team to specifically consider several recommendations in the transition document titled “[STEM Education: A National Imperative](#)” provided to the Trump administration by the National Science Teachers Association (NSTA), National Council of Teachers of Mathematics (NCTM), American Association of Physics Teachers (AAPT), Computer Science Teachers Association (CSTA), American Chemical Society (ACS), American Society

for Engineering Education (ASEE), National Association of Biology Teachers (NABT), the International Technology and Engineering Educators Association (ITEEA) and the STEM Education Coalition. These include:

- **Every Student Succeeds Act (ESSA):** Proposing and encouraging Congress to provide the highest possible funding for the STEM-related programs outlined in ESSA.
- **STEM Master Teacher Corps:** Directing the Secretary of Education to implement the STEM Master Teacher Corps to enhance teacher leadership and service to the nation, as authorized in Section 2245 of ESSA.
- **Support science education across federal agencies:** Sustaining and increasing investments in STEM education programs at the mission agencies and STEM-related educational research and innovation at the National Science Foundation.

Implementing these suggestions will help lead to the scientifically-literate workforce that is so desperately needed to fill the jobs that will be created by American innovation in the coming years. They will also help in making sure that Americans of all backgrounds and identities have access to the skills and knowledge afforded them by education in the physical sciences, increasing participation in and further growing America's STEM workforce. Providing more Americans with high-quality physical science education will lead to greater innovation, more advancements in technology, and an increase in the U.S.'s global competitiveness.

Please do not hesitate to contact PSEPC through Mike Henry at [mhenry@aip.org](mailto:mhenry@aip.org) or (301) 209-3094 if you have any questions, require additional information, or would like to further discuss our recommendations.

Thank you for your time and consideration.

Physical Sciences Education Policy Coalition Members:

*American Association of Physics Teachers*  
*American Astronomical Society*  
*American Institute of Physics*  
*American Physical Society*  
*Optical Society of America*