

STEM Outreach Program Initiatives

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The President's Council of Advisors on Science and Technology: Executive Report, September 2010, *excerpts*:

- The success of the United States in the 21st century – its wealth and welfare – **will depend on the ideas and skills of its population.**
- As the world becomes increasingly technological, the value of these national assets will be determined in no small measure by the effectiveness of science, technology, engineering, and mathematics (STEM) education in the United States. **STEM education will determine whether the United States will remain a leader among nations...**
- It will help **produce the capable and flexible workforce needed to compete in a global marketplace.**
- It will generate the scientists, technologists, engineers, and mathematicians who will **create the new ideas, new products, and entirely new industries of the 21st century.**
- It will provide the technical skills and **quantitative literacy needed for individuals to earn livable wages** and make better decisions for themselves, their families, and their communities.
- Despite our historical record of achievement, the **United States now lags behind other nations in STEM education** at the elementary and secondary levels. International comparisons of our students' performance in science and mathematics consistently place the United States in the middle of the pack or lower.
- It is important to note that the problem is not just a lack of proficiency among American students; there is also **a lack of interest in STEM fields** among many students.
- Recent evidence suggests that many of the most proficient students, including minority students and women, have **been gravitating away from science and engineering toward other professions.** Even as the United States focuses on low-performing students, we must devote considerable attention and resources to all of our most high-achieving students from across all groups.
- As a result, too many American students conclude early in their education that **STEM subjects are boring, too difficult, or unwelcoming,** leaving them ill-prepared to meet the challenges that will face their generation, their country, and the world.

The President's Council of Advisors on Science and Technology: Executive Report, September 2010, *Conclusions (C) & Recommendations (R), excerpts*

- *(C) TO IMPROVE STEM EDUCATION, WE MUST FOCUS ON BOTH PREPARATION AND INSPIRATION*
 - To meet our needs for a STEM-capable citizenry, a STEM-proficient workforce, and future STEM experts, the Nation must focus on two complementary goals: We must prepare all students, including girls and minorities who are underrepresented in these fields, to be proficient in STEM subjects. And **we must inspire all students to learn STEM and, in the process, motivate many of them to pursue STEM careers.**
- *(R) TEACHERS: RECRUIT AND TRAIN 100,000 GREAT STEM TEACHERS OVER THE NEXT DECADE WHO ARE ABLE TO PREPARE AND INSPIRE STUDENTS*

- The Federal Government should set a goal of ensuring over the next decade the recruitment, preparation, and induction support of at least 100,000 new STEM middle and high school teachers who have strong majors in STEM fields and strong content-specific pedagogical preparation, by providing vigorous support for programs designed to produce such teachers.
- *(R) STUDENTS: CREATE OPPORTUNITIES FOR INSPIRATION THROUGH INDIVIDUAL AND GROUP EXPERIENCES OUTSIDE THE CLASSROOM*
 - STEM education is most successful when students develop *personal connections with the ideas and excitement of STEM fields*. This can occur not only in the classroom but also through individualized and group experiences outside the classroom and through advanced courses. The Federal Government should develop a coordinated initiative, which we call INSPIRE, to support the development of a wide range of high-quality STEM-based after-school and extended day activities (such as STEM contests, fabrication laboratories, summer and afterschool programs, and similar activities). The program should span disparate efforts of science mission agencies and after-school programs supported through the Department of Education funding.

National Voice of America Museum of Broadcasting – Why are we involved in STEM?

- The cutting edge technology and innovative spirit that built the VOA Bethany Relay Station is alive and well and is the foundation for our outreach to the education community.
- STEM education must focus on both Preparation and Inspiration. The VOA legacy and approach addresses the can-do, inspirational aspect of STEM education with a unique VOA experience.
- VOA as a brand has a unique history that creates a natural leadership opportunity for STEM education focusing on electricity, magnetism, waves and radio.
- Achieving the Nation’s goals for STEM education in K-12 will require partnerships with federal, state and local government and with the private and philanthropic sectors – The VOA Museum sits in this intersection.
- The VOA Museum is forming its long-range mission and is evaluating partnerships with other organizations that will help us drive excitement, motivation and inspiration for STEM knowledge and future careers with K-12.

National Voice of America Museum of Broadcasting – 2015 STEM Initiatives:

- Develop and pilot the *VOA Radio STEM Lab* - an innovative, fun and inspirational hands-on lab for K-12 focusing on magnetism, electricity, waves and radio.
 - Fun, Custom Makers project to draw students
 - Innovative use of hands-on technology to create a unique VOA experience
- Engage students and teachers at the West Chester, OH / Northern Cincinnati annual Pi day event with the *VOA Radio STEM Lab*.
 - 2,000 attendees
- Pilot a classroom version of the VOA Radio STEM Lab with Lakota schools.
 - Engaged 100 6th graders with the VOA experience.
- VOA Radio STEM Lab monthly events.
 - Will be held at the VOA facility in West Chester, OH
- VOA Radio STEM Lab Teacher training.
 - Pilot involved AP Physics students

More information: www.voamuseum.org/the-museum/arri-handout/