



Promoting Enhanced STEM Education Through Partnerships

Who Should be involved?

High school teachers need to be trained and build teams of 3-7 students to compete in the Challenge. There can be multiple teams in a class and multiple teachers in a school. In the 2008-2009 pilot year, ten states participated in the Challenge: Connecticut, Hawaii, Kansas, Massachusetts, Minnesota, Oklahoma, Pennsylvania, Vermont, Virginia, and Washington. This year fifteen new states are joining the Challenge.

What is the Real World Design Challenge?

The Department of Energy's Real World Design Challenge aligns secondary education with 21st Century workforce needs, and strengthens professional development for teachers by providing and facilitating industry collaboration. Mentors from National Laboratories, the FAA, industry and higher education, will provide support, to teachers and students, using a web-based global engineering backbone.

The reason for the success of the aerospace industry in our country is our workforce, our intellectual capital, and engineering is at the core of what makes the aerospace industry successful. Unfortunately, the industry nationally is facing a critical shortage of engineers. Between 60,000 and 68,000 engineers in the U.S. aerospace industry will retire by 2010. We will only be able to replace half of those. With modest growth in the U.S. aerospace industry, there will be a shortage of 40,000 to 85,000 engineers in the industry by 2010. The aerospace is a \$1.85 billion industry and is an important part of the U.S. economy.

The Real World Design Challenge bridges the needs of industry with the future of education. It teaches innovation, creativity, and collaboration using the expertise that industry, government and higher education have been perfecting for decades. With this real world approach to learning, we can keep our workforce strong, and ensure America's prosperity for the future.

The Goals of the Challenge: are to (1) inspire and engage all students in STEM education and (2) systematically highlight the potential future workers in science and engineering fields.

What Schools Get: (1) Teacher Professional Development; (2) Science and Engineering Mentors; (4) Real Aviation Challenge Defined by Industry; (3) Professional Engineering Tools. **Total software donation per teacher is approximately \$1 million.**

Why is this important?

There are critical workforce needs that the United States faces in the areas of science, technology, engineering and mathematics (STEM) fields. A large percentage of the STEM workforce is eligible to retire and there are not enough students in the pipeline to satisfy the need. If the U.S. does not have the human resources to satisfy these needs, U.S. national security and economic competitiveness will be at risk. The DOE's Real World Design Challenge addresses this workforce need by building capacity in the state, motivate students, and provide significant resources to enhance education in STEM fields.

Website: <http://www.scied.science.doe.gov/RWDC/index.html>

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Free online Teacher Training: www.ptcademy.com