



REAL WORLD DESIGN CHALLENGE

THE NATION'S INNOVATION ENGINE

U.S. Department of Energy

- REAL PROBLEMS
- REAL TOOLS
- REAL ROLES
- REAL CONTRIBUTIONS

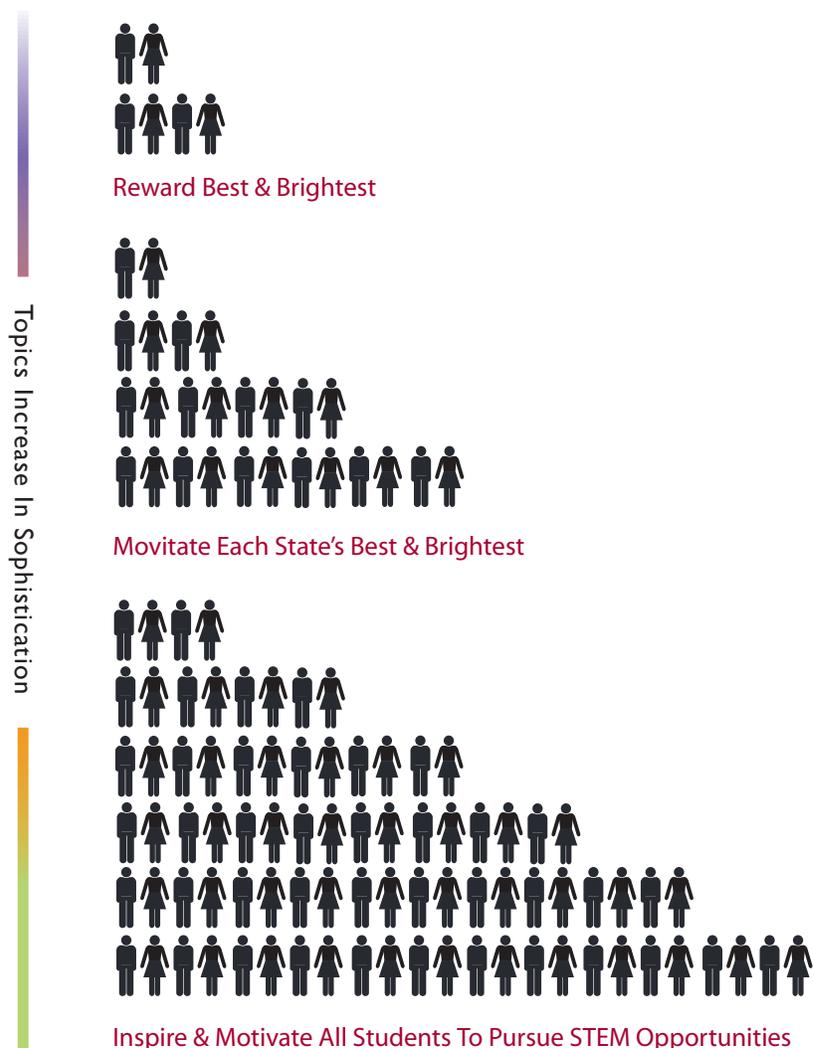
NOTHING INSPIRES INNOVATION LIKE A GREAT CHALLENGE

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. Innovation, creativity, and collaboration in industry are powered by advanced simulation, modeling and Internet collaboration tools. These concepts and tools need to be the foundation upon which real world, learning

solutions are built. Students today are "digital natives" adept at using mobile devices, collaborative social networks and other technologies. Most students distinguish between what they learn "in school" and what they learn in the "real world." The real world thrills them. It makes sense to give them the tools that authentic professionals use: simulation, modeling and collaboration tools.

CHALLENGE PROCESS

-  National Real World Design Challenge
 Nation's Best Global Engineering Teams Compete
-  Governor's Real World Design Challenge
 State's Best Global Engineering Teams Compete
-  Global Engineering Education
 Classroom experiences build capacity and teach students to work as global engineering teams





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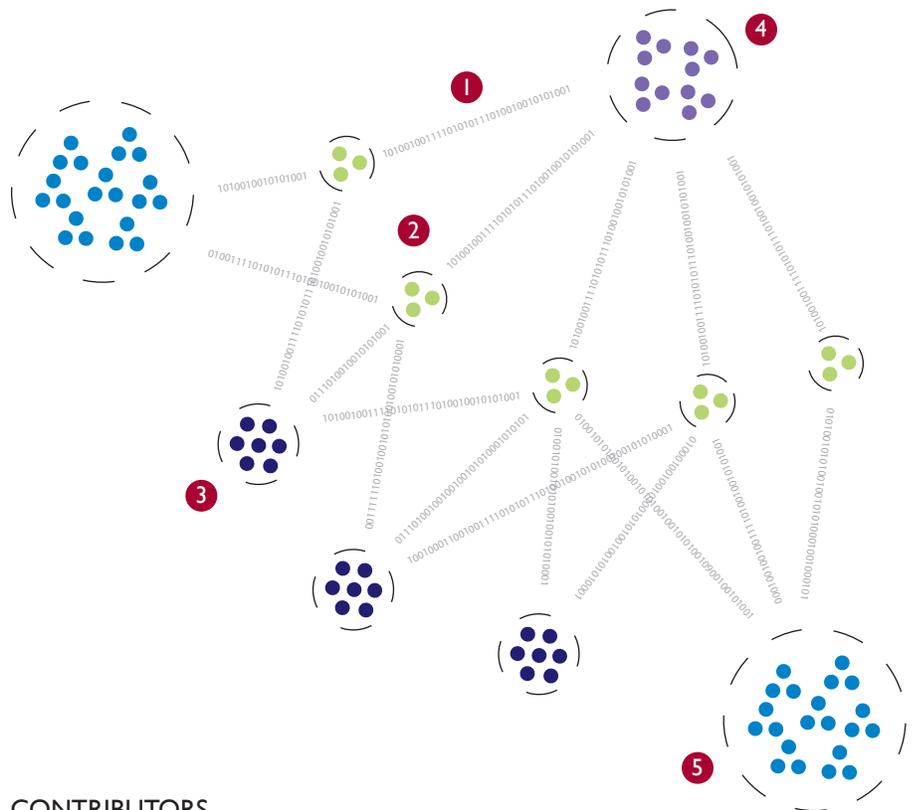
INDUSTRY, GOVERNMENT & EDUCATION WORKING TOGETHER

We need to "bridge the needs of industry with the future of education." We need to develop a sustainable strategy for transforming and ensuring our nation's global economic competitiveness for generations to come. To effect long-term, systematic transformation of education we need to link schools, universities, industry and government together in a voluntary federation. Product design and the design process are proven ways to teach innovation, creativity and collaboration. We have been perfect-

ing these concepts in industry for decades. By applying a design-driven approach to real world "education" challenges, we not only replicate the environment of professionals, but intertwine the inquiry and design processes. When students engage in the design process they employ the disciplines of science, technology, engineering and mathematics. When students work with mentors they have access to expertise needed to make real contributions.

CHALLENGE LANDSCAPE

- 1 Global Engineering Backbone**
Student teams and mentors use professional tools to collaborate across the Internet.
- 2 Global Engineering High School Teams**
Students take on real roles and solve real problems.
- 3 Federal Labs**
The labs infuse rare scientific and engineering expertise into the classroom via mentorships.
- 4 Community Colleges & Universities**
The challenge is managed by higher education in each state.
- 5 Industry Partners**
Corporations provide support and expertise.



CONTACT INFORMATION

Dr. Ralph K. Coppola
Director of Worldwide Education
Parametric Technology Corporation

Phone: 703-871-5176
Mobile: 703-298-6630
Fax: 703-871-5111
Email: rcoppola@ptc.com

CONTRIBUTORS

BRIDGING THE NEEDS OF INDUSTRY WITH THE FUTURE OF EDUCATION