

# DOES AMERICA HAVE THE RIGHT STUFF?

STEM EDUCATION AND FINDING MORE PETE CONRAD



CPT. PETE CONRAD

- Third man to walk on the moon
- Commander of Apollo 12
- Expelled from high school because he struggled to read and spell
- Learned to apply a systems approach to learning after an educator recognized a "spark of genius" in him
- Did we mention he WALKED ON THE MOON?!

How many more *amazing students* would emerge if America's youth were introduced to *science, technology, engineering, and math (STEM)* in an exciting and dynamic way? How many more pioneers like Jobs, Zuckerberg, Gates, Brin, and Page would be created by the integration of STEM with innovation and entrepreneurship?



MARK ZUCKERBERG



STEVE JOBS



BILL GATES



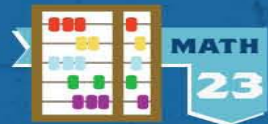
LARRY PAGE & SERGEY BRIN

*America is rooted in innovation and entrepreneurship. This is America's special sauce. That's how we got to the moon, and that's how companies like Apple, Facebook, and Google were formed.*

## BUT, AMERICA HAS FALLEN BEHIND IN STEM

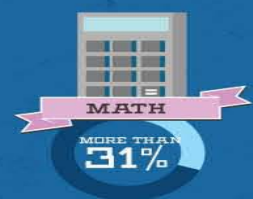
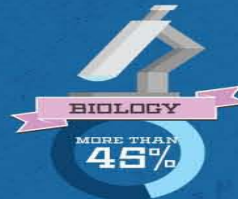
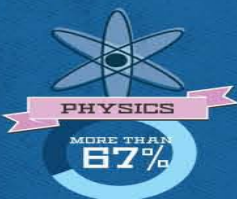
PISA, the Program for International Student Assessment, ranks 19-year-olds for basic skills achievement in 65 industrialized nations (2008).

AMERICA RANKS



## LACK OF MATH AND SCIENCE TEACHERS IN U.S. SECONDARY SCHOOLS WITH DEGREES

High school students taught by a teacher *WITHOUT* a major, minor, or certification in that area:



## STEM SCHOOLS AND EDUCATORS IN THE U.S.



- About *100* STEM-focused public high schools
- About *47,000* students, most at the high school level
- Fewer than *1* student in *1,000*



"The Department of Education, in collaboration with the National Science Foundation, should support the creation by the states of 200 new highly STEM-focused schools at the high school level and 800 STEM-focused elementary and middle schools over the next decade."

-President's Council of Advisors on Science and Technology

President Obama calls for recruiting 100,000 new STEM teachers over the next decade.

## WHAT CAN AMERICA DO RIGHT NOW?:

- 1 Experiment with high-quality rich media products produced by many companies around the world - STEM topics come alive for students via rich media learning tools, such as games, videos, labs, and simulations, in a way they never could with traditional text and questions.
- 2 Replace lectures with hands-on exercises - Allow students to grapple with big, open-ended problems. Have them design an alternative energy system or devise a plan to end world hunger.
- 3 Rethink the science fair - Enter *The Conrad Foundation's Spirit of Innovation Challenge* by *November 29, 2011*. The Challenge invites student teams to develop commercially viable products in aerospace, clean energy, and health and nutrition. Register for free at [www.conradawards.org](http://www.conradawards.org). (The Conrad Foundation was created by Nancy Conrad, the wife of the late Pete Conrad, to transform how science, technology, and engineering are taught in high schools and across all socioeconomic levels.)

WHAT OTHER IDEAS DO YOU HAVE FOR IMPROVING STEM EDUCATION IN AMERICA?