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## Forum Planning Committee

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# STEM EDUCATION

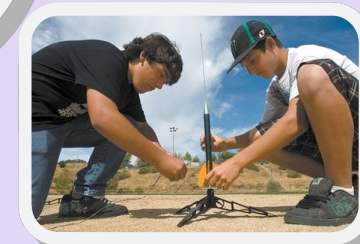
**Building Partnerships:  
For our Children and  
the Future of our Nation**

Date: May 24, 2011

Time: 9am—3pm

## Central Coast STEM Education Forum

**Rancho El Chorro Outdoor School, auditorium**  
2450 Pennington Creek Road, San Luis Obispo, CA 93405



**STEM: S**cience, **T**echnology, **E**ngineering, and **M**ath

<http://endeavours.org/STEMforum>

## Forum Schedule

Start	Topic
8:30	Registration and refreshments
9:00	Welcome
	<b>WHAT ARE WE DOING NOW?</b>
	<ul style="list-style-type: none"><li>• Inventory results</li><li>• Current Central Coast STEM activities</li><li>• Reflections: Chris Roe</li></ul>
10:00	<i>Keynote speech</i> : Lt. General Susan Helms
10:30	Atascadero High School robotics team presentations
10:45	Break
	<b>WHAT DO WE WANT TO DO?</b>
11:00	<u>VISION OF SUCCESS</u> :What do we want to see or have in place in 2-5 years that is helping all central coast students be enthusiastically inspired and engaged in STEM fields?
11:45	Working lunch: meet in breakout groups
	<b>HOW DO WE GET THERE?</b>
12:00	<u>BREAKOUT GROUP question</u> : <i>What will it take to bring that vision about?</i> <i>Suggested groups:</i> <ol style="list-style-type: none"><li>1. Central Clearinghouse / Calendar</li><li>2. Future event planning</li><li>3. Collaborative organization and structure</li><li>4. Business Involvement</li><li>5. Fundraising</li><li>6. Teacher Support</li></ol>
1:10	Break
	<b>WHAT'S NEXT?</b>
1:25	Dr. Julian Crocker <i>County Superintendent of Schools</i>
1:35	Group reports and discussion/action steps <i>Keynote speech</i> : Chris Roe <i>CLOSING QUESTION</i> : <i>What are you willing to do to support STEM education? Next steps?</i>
3:00	Forum Ends

## Sally Ride – First American woman in space

“In elementary school, repeated NCES studies consistently show that 68% of 4<sup>th</sup> grade boys and 66% of girls self-report that they like science. There are good messages there. Fully 2/3 of our kids still like science and the second good message is that it’s as many girls as boys.

But then starting at about fifth, sixth, or seventh grade we start to lose both the boys and girls. But we lose girls in greater numbers than boys. It starts right there and that trend continues. By eighth grade, two times as many boys as girls are willing to say that they are considering careers in science and by twelfth grade 5 times as many boys than girls are likely to say they are considering a career in engineering.

Why? It is not because of aptitude. It is not because of interest. It tends to be the messages that our society sends to our kids that science and math aren’t cool. For example, maybe an eleventh grade girl who says she wants to be an electrical engineer, even though there are no obstacles, still gets a different reaction than an eleventh grade boy who says the same thing. These are the things that kids at that age tend to internalize and turns them away from science. They may be good at it. They may still like it. But, they may not think it cool to pursue a career in science or math.

We need to make it cool again. We need to show them examples of a diverse group of scientists and engineers, normal people, real people, men, women, ethnic minorities, who are involved in science and engineering, and who enjoy those careers.

We have to make the connection to them that science is relevant to their daily lives and if they are interested in having an impact on their world, and we know that many kids today are interested, that science and engineering are an excellent way to make such a difference.”

*Sally Ride, President and CEO, Sally Ride Science, former Astronaut, first American woman in space*

*STEM hearing before congress, 7/22/08*



Family Science Night

## STEM Quotes

**“It’s suicidal to create a society that depends on science and technology, in which no one knows anything about science and technology.”**

*Carl Sagan*

“Science is a way of engaging with the world so that one can employ rational reasoning, deductive logic to really understand what’s true, what’s right, and what’s actually accurate about the world around us. That is not a subject it is a perspective.”

“If you don’t have a public that’s willing to engage with the scientific ideas it is nearly impossible to have informed decision making.”

“In order that we can really participate in the ongoing development of life and culture, in order that we can play a part in the global dialogue about where our planet is going to go in the 21<sup>st</sup> century, we all have to speak at some level the language of science.”

*Brian Greene, Professor of Physics and Mathematics at Columbia University*

“The most common educational background of CEOs in S&P 500 companies is not business. It is not finance or economics, it is **engineering**. Nothing can prepare you better for success than an education in math and science.”

*President Barack Obama, White House Science Fair, Oct 18, 2010*

### **Notice of Event Photography:**

We will have photographers and videographers present (both public media and private) who will be documenting the day. Some of the images may be published in local media or on the web and may be used as a promotion for our sponsors and funders. Your participation or presence acknowledges this and grants permission to use any images in such manner.



State Champion Roller Coaster Design

## Inspire — Engage — Educate — Employ



Susan Helms,  
NASA astronaut



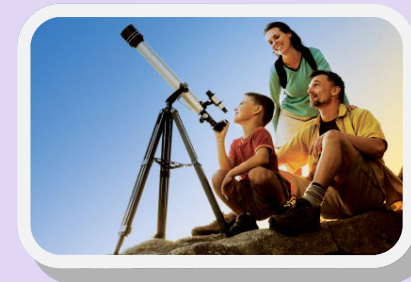
Atascadero Greybots  
2011 FIRST Robotics World Champions



Balloon Fest



Templeton Rocketry Team



Hands-On

Learn-by-Doing

Project-based Learning

## Speakers

### Lt. General Susan Helms:

Commander of the 14th Air Force (AFSPC), Commander of the Joint Functional Component Command for Space (USSTRATCOM) at Vandenberg AFB, and former NASA Astronaut

### Chris Roe:

CEO, California STEM Learning Network (CSLNet) and former Deputy Director, Business-Higher Education Forum (BHEF), Washington, D.C.

### **CNN \_Education in America: Don't Fail Me**

*(aired Sunday, May 15, 2011 at 8pm ET)*

“At this very moment, America's future is at stake. "If we don't generate the next group of innovators, scientists, engineers, and problem solvers," inventor Dean Kamen warns, "our standard of living, our quality of life, our security, will plummet!" American students rank 17th in science and 25th in math when compared to other industrialized nations. They don't have the skills to take on the high tech jobs of the future. This is because of how and what we teach American kids. It is also because of a culture that values sports and celebrities above all. The United States needs to change the way students are taught math and science, and children need to be encouraged and inspired to take the toughest classes in those subjects.



Endeavour InvenTeam at MIT

## STEM Quotes

**“The countries that out-educate us today will out-compete us tomorrow.”**

*President Obama*

**“A world-class education is a prerequisite for success.”**

*President's Council of Advisors on Science and Technology*

**“Almost one-third of U.S. manufacturing companies responding to a recent survey say they are suffering from some level of skills shortages.”**

*Manufacturing Institute*

**“The United States ranks 20th in high school completion rate among industrialized nations and 16th in college completion rate.”**

*Organization for Economic Cooperation and Development*

**“The primary driver of the future economy and concomitant creation of jobs will be innovation, largely derived from advances in science and engineering.”**

*National Academy of Science*

**“Innovation offers the only means by which a high-skill, high-wage economy can successfully compete with lower-wage economies without reducing the standard of living.”**

*National Governors Association*

**“Gentlemen, we have run out of money. It is time to start thinking.”**

*Sir Ernest Rutherford*



PRHS Balloon Engineering