

**What Are We Doing?**  
**Central Coast STEM Education Collaborative Online Inventory – Spring 2011**

**BUSINESS**

**Organization: Drexel Consulting Group**

**Contact: Drexel L. Smith, CEO/President**

- California Space Authority Speakers Bureau
- National speaker on technology/workforce/education issues
- Youth Science Center Board of Directors
- Supporting several start-up enterprises initiate STEM education programs over past several years
- Guest speaker to high schools attempting to inspire students to pursue technology fields of study

**Organization: iFixit**

**Contact: Eric Doster, Market Development Manager**

- A free wikipedia of repair for anyone to read, edit and create.
- Popular product teardowns for the most hyped gadgets: this helps educate a more broad audience of the importance of good, sustainable design.
- College Partnerships: engaging students in hands-on technical writing to real audiences.
- Highschool bootcamps: introducing basic engineering concepts to highschoolers through product teardowns and repair.

**Organization: Solarponics, Inc**

**Contact: Mike Emrich, President/Founder**

- Industry representative for Atascadero Greenhounds Path Way.
- Tours and talks about renewables at the "Learning Center" 4700 El Camino Real, Atascadero.
- Guest educator for solar water heating and renewable's Cuesta College.
- Guest speaker renewable's CalPoly.
- Provide educational talks at elementary schools and demonstrations.

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**FORMAL EDUCATION: K-12**

**Organization: Atacadero Unified School District**

**Contact: Kathy Hannemann, Assistant Superintendent of Educational Services**

- Building a STEM facility at AHS in 2012 that will house all science, math and related engineering and technology classes.
- Visitation to state of the art STEM facilities in CA.
- Participation in Cal Poly Science Professional Development for middle grades
- Focus on math literacy with algebra as a foundation strand for K-8
- All 8th grade student enrolled in Algebra 1 so standard 9th grade math is geometry and 10th grade is Algebra II
- Professional Learning Community release time to support STEM dialogue

**Organization: Atascadero USD**

**Contact: Deborah Bowers, Principal**

- Hands-on lessons
- Developing a focus on STEM

**Organization: Branch Elementary**

**Contact: Stacey Russell, Principal**

Branch elementary is working towards becoming a science-focused school. We have a science lab and have conducted three school-wide science days for our students. We have a part-time science teacher funded by our PTO.

**Organization: CCST - CA Council of Science & Technology**

**Contact: Anne Marie Bergen, California Teacher Advisory Council, Chair**

CalTAC - California Teacher Advisory Council provides the teacher voice linking policy, research and practice. Our twelve-member council is composed of highly accomplished STEM K-14 educators. Our parent organization, CCST, is a nonpartisan, impartial, not-for-profit corporation offering expert advice to the state government and recommends solutions to science and technology-related policy issues.

Symposia and Summits held by CalTAC include:

- "Creating a Well-Prepared Workforce: How do we get there from here" (2/2/2009)
- "Working Towards an Assessment System with Value" (10/21/2010)
- "Imagining the Future: Digitally Enhanced Education in California" (3/24/11)

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**Organization: Lucia Mar Unified School District**

**Contact: Dawn Hinchman, Governing Board Member**

- Development of engineering academy at AGHS
- Competitive robotics teams at both comprehensive high schools
- Solar in the Schools at several sites via PG&E
- Renovation of career tech classrooms at AGHS
- Participation in Skills USA
- Too many more to list, or known by me personally

**Organization: Orcutt Academy High School**

**Contact: Ted Lyon, Jr., Principal**

Classes due to Partnership with Endeavor Academy:

- Conceptual Physics
- Mission to Planet Earth
- Intro to Engineering
- Mechatronics Robotics Team
- Tons of STEM related activities

**Organization: San Luis Obispo County Office of Education**

**Contact: Patricia Garrett, Director, C&I, Technology**

- SLO County P-16 Council
- SLO County P-16 STEM Steering Committee co-chair
- P-16 Math & Science Councils
- P-12 schools professional development in all curricular areas including STEM
- 12 schools professional development for school administrators

**Organization: San Luis Coastal Unified School District**

**Contact: Joyce Hunter, Principal Sinsheimer Elementary School**

- Foss science curriculum that is hands on with experiments and inquiry-based learning
- Math and science fair every three years
- Four student computers in each 4-6 grade classroom and a computer lab with 34 computers for grades 3-6. (includes keyboarding support in the lab, research skills, report writing and animation of Powerpoint presentations)
- Document cameras & projectors for all classrooms K-6
- Cal Poly professors who do classroom presentations on Engineering and Physics and science (however, it is up to the classroom teacher to arrange these)
- Starting to bring the MOBI Pad to selected classrooms in the fall of 2011
- School garden

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**Organization: San Luis Obispo County Office of Education**

**Contact: Teresa Lees, CREEC Coordinator**

- Promote environmental education in the K-12 school system through the CREEC Network.
- Provide a website of all environmental education, an online resource directory, EE calendar, monthly newsletter, database, funding opportunities and professional development workshop for teachers.
- Recruit school districts to adopt and implement the new EEI curriculum.
- Engaged in local green school and farm to school efforts.

**Organization: San Luis Obispo County Office of Education**

**Contact: Debbie Guardado, Senior Coordinator - Education Technology**

- Coordinated teacher training in technology and other areas
- Coordinated partnership with CSU, San Marcos to provide middle school teacher technology training
- Advertised Cal Poly's upcoming CSEverwhere Institute for middle and high school teachers
- Etc.

**Organization: Coast Unified**

**Contact: Henry Danielson, Director of Technology**

- iphone/android programming for mobile devices
- Scratch
- Cisco in progress
- Mouse squad in progress
- Gaming lab

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**FORMAL EDUCATION: COMMUNITY COLLEGE/UNIVERSITY**

**Organization: Allan Hancock College**

**Contact: Christine Reed, MESA Counselor/Coordinator**

- Coordinate Mathematics, Engineering, Science Achievement (MESA) Program at Allan Hancock College

**Organization: Allan Hancock College**

**Contact: Dominic Dal Bello, Associate Professor, Engineering**

- STEM education, college
- Transfer of STEM students to university
- STEM grants (MESA, technology)
- Friday Night Science: Community outreach
- Career Exploration Day
- Mechatronics Summer Institute

**Organization: Cal Poly, Academy of Inquiry Based Learning**

**Contact: Stan Yoshinobu, Associate Professor of Mathematics**

The Academy of Inquiry-Based Learning (AIBL) is an association of professors, instructors, teachers and non-teaching supporters (such as retired professors or teachers having IBL experience, administrators, foundation personnel) who are committed to developing and disseminating inquiry-based learning (IBL) techniques.

AIBL has:

- Workshops for college math faculty
- Small grants for college math faculty and secondary math teachers.
- Mentoring network
- Visiting Speakers Bureau

**Organization: Cal Poly**

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**Contact: James Gentilucci, Associate Professor of Educational Leadership**

- Editor, "Proceedings: The Journal of STEM Education Leadership"
- Host academic program, annual K-12 STEM Education Leadership Symposia at Cal Poly
- Presenter, national conferences, on STEM Education Leadership for K-12 schools

**Organization: Cal Poly**

**Contact: Lola Berber-Jimenez, Central Coast Science Project Co-Director, Liberal Studies Chair**

- K-12 Science Teacher Professional Development
- In-service or pre-service
- School/district partnerships
- Leadership development
- Professional Learning Communities
- Standard and project-based learning
- Language & literacy development

**Organization: Cal Poly**

**Contact: Bryan Rebar, Science Teacher and Researcher (STAR) Program Director**

The STAR (Science Teacher and Researcher) Program provides paid summer research experiences for pre-service and early career science and math teachers at national lab and other research facilities.

**Organization: Cal Poly**

**Contact: John Keller, CESaME Co-Director**

## What Are We Doing?

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The Cal Poly Center for Excellence in Science and Mathematics Education (CESaMe) focuses on the recruitment, preparation, and retention of STEM teachers. Programs and efforts include:

- Learn By Doing Lab (LBDL) - Over 3700 3rd-8th grade students have visited the Cal Poly campus for morning field trips and been taught hands-on science activities by over 130 science, math, and engineering undergraduates who are considering STEM teaching as a career. This program (started by an ARCHES grant put together by the P-16 STEM Steering Committee) has served as recruitment tool to encourage STEM undergrads to go into teaching and has also been a very well received program by classroom teachers, who see the added advantage of giving younger students a glimpse of what college looks like.
- Teacher Apprentice Program (TAP) - This is a paid internship for the undergraduates and a great recruitment effort for getting STEM majors interested in teaching and an opportunity for students and teachers on the central coast to interact with STEM majors. This year, the program has placed roughly 25 science and math undergrads in classrooms.
- Noyce Scholars Program – Pre-service science and math teachers receive \$10K-\$36K scholarships in return for committing to teach for 2-6 years in high need school districts. This program is sponsored through 5 year NSF grants. The Cal Poly Science Noyce Program will also be partnering with the Cal Poly Upward Bound Program starting this summer.
- Science Teacher and Researcher (STAR) Program - Over the past 4 summers, Cal Poly has coordinated a program for CSU undergraduates and credential students that places them in an 8-9 week authentic research experience at a Department of Energy or NASA Laboratory with a research mentor. The program has arranged 156 research placements at 16 laboratory sites (12 in California along with labs in Washington, Colorado, Maryland, and Tennessee). This program is run by CESaME on behalf of the CSU system and has received national attention. The is a tremendous recruitment and teacher preparation tool that provides prospective STEM teachers with insight into the nature of science research.
- Supporting Teacher Professional Development – CESaME is also committed to supporting professional development opportunities for in-service STEM educators. The center has partnered with the Central Coast Science Project, the CSU-NASA Education Collaborative, and the P-16 STEM Steering Committee to offer summer teacher professional development opportunities. The Center is particularly interested in supporting cooperating teachers who work with Cal Poly student teachers.

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**Organization: Cuesta College**

**Contact: Richard Fryer, Physics Instructor**

Our organization provides an exceptional foundation for students following traditional math and science studies.

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**INFORMAL EDUCATION**

**Organization: Avila Beach Sea Life Center**  
**Contact: Priscilla Kiessig, Executive Director**

- Hands on marine science education classes
- Informal public education
- Camps/workshops for science education

**Organization: Cal Poly**  
**Contact: Teana Fredeen, EPIC Program Director**

Cal Poly's EPIC - Engineering Possibilities in College - program is an engineering camp for high school students. The program is designed for outreach to draw more underrepresented students to engineering. By educating and inspiring the students with hands-on activities, the program encourages students to study engineering in college.

**Organization: California Space Authority**  
**Contact: Andrea Seastrand, Executive Director**

- STEM Collaborative Action Plan (STEMCAP) (see InnovateCalifornia.net)
- STEMinventory.com

**Organization: Discovery Institute for the Advancement of Science and Technology Education**  
**Contact: Derrick Lavoie, Executive Director**

- STEM Showcase – County-wide STEM event for 4th grade through college. Includes keynote speaker and robotics competition.
- Science in our Community Lecture Series - talks on various STEM subjects
- Island Ecology Course for Teachers conducted at USC Marine Science Center
- Children's Day in the Plaza Discovery Booth
- Young Scientist Banquet honoring student's accomplishments in STEM

**Organization: dsk architects**

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**Contact: Mark Seiberlich AIA, LEEDap, Partner**

We have been attentive to the goals of STEM in our practice of educational architecture. Our efforts are at the local school level, although we hope to support these efforts in both the state and national level.

**Organization: Endeavour**

**Contact: Edmund Burke, Board Chairman and Founder**

- Endeavour Academies - UC approved lab science D STEM courses in middle and High School. Replicable in any California middle and/or high school.
- Endeavour Center, NASA Educator Resource Center at Vandenberg AFB.

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**Organization: Endeavour Institute**

**Contact: Steve Kliewer, Director**

The Endeavour Institute has many programs:

- Endeavour Academies - Exciting and relevant STEM course sequences for high schools and middle schools; recognition by the University of California of our highly effective lab science courses (i.e. meeting their "d" entrance requirement with honors).
- Student STEM Events - exciting opportunities for students  
Space Endeavour Center
- Science Education Field Trips
- Science Fairs
- Astronomical observatory and astronomy club
- NASA Educator Resource Center
- STEM Education Workshops - professional development for teachers
- NASA Educator Launch Conferences
- Collaborations with universities, industry, and community to develop presenters, mentors, and internship opportunities

**Organization: Exploration Station**

**Contact: Deborah Love, Executive Director**

The South County Family Educational and Cultural Center operated the Exploration Station, a hands-on, interactive science center for children and families. Currently we feature exhibits on the solar system, simple machines and human anatomy.

**Organization: Greyhound Revolutionary Robotics -FIRST Robotics Team 973**

**Contact: Larry Price, Senior Mentor**

FIRST Robotics

- Mentoring of students for participation in FIRST.
- Training in fabrication of a competition robot.
- Chaperone of students to events and competitions.

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**Organization: GRID Alternatives**

**Contact: Steven Fernandez, Central Coast Regional Director**

Provide an opportunity for job trainees to get hands on experience on solar (PV) installations.

**Organization: Santa Ynez Environmental and Science Community Program**

**Contact: Mary Jo Nordyke, Teacher**

My interest is to provide STEM activities for after school programs such as Boy and Girl Scouts, Boys and Girls Club and for individual tutoring to students who are interested in learning about science, as well as the environment. In addition, my organization would like to offer information and workshops utilizing the NOAA/BWET program where students will study the watershed of the local area of Santa Ynez, Lompoc, and Santa Maria, and how it affects the ocean areas surrounding Point Conception and Point Sal.