# XTREME THINKING

uncovering science one model at a time

University High School

Fresno

**Offers**

## *Modeling Science Project Workshop*

***for***

***Science Teachers of All Disciplines***

**July 6th – July 17th, 2009 at Cal Poly SLO**

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**Location:** Cal Poly Campus, Building 38 (Mathematics and Science Building)

**Units:** 6 Continuing Education Units (CEUs) - $60.0 per unit (payable to Cal Poly Cont. Ed)

**Days:** July 6 – 17, M - F

**Time:** 8 am – 4 pm

**Instructors:**

Ms. Brenda Royce, Instructor, University High School, Fresno

Dr. David Gettman, Instructor, University High School, Fresno

**Cal Poly Site Coordinator:**

Dr. John Keller, Assistant Professor, Cal Poly Physics Department

**Participant Stipend:** $1,800 total

$800 for summer workshop
$200 for each of 5 weekend workshops

Pre-registration deadline is **April 17th, 2009** for priority enrollment!!!

**Apply by logging on to:**

**http://cesame.calpoly.edu/programs-modeling.html**

### Features of Course:

- ***Two-week intensive summer training***
- ***Five Saturday sessions during the 2009-10 academic year to provide support and additional training***
- ***On-site visits by instructional coaches available***
- ***End-of-year joint meeting of the Fresno and San Luis Obispo cohorts at Cal Poly, SLO***
- ***Teaching strategies based in science education research***
- ***The Modeling Instruction program is a nation-wide, NSF-funded effort located at Arizona State. The Web site URL is http://modeling.asu.edu***
- ***Curricular resources and evaluation tools will be available.***

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### *Project Description:*

The *Modeling Science Project* is designed to create systemic change in the way that students learn the sciences through intensive, hands-on professional development opportunities for science teachers. Based on recent science reform work, *Modeling Science Instruction* is rooted in a cohesive "minds-on" approach to learning. This professional development opportunity will examine highly effective methods for conceptualizing topics in science by having participants engage in and analyze effective, authentic teaching activities. The Modeling Science Instruction project will assist teachers and schools in organizing their courses around a small number of scientific models, thus enhancing course coherency and articulation. Further, the project is deeply rooted in both the California State standards and in scientifically-based instructional strategies, to address skill gaps in NCLB sub-group achievement.

This project is funded through the California Charter School Dissemination Grant award.

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### *Statement of Learning Outcomes*

**Participant will learn how to:**

- **Use computers and technology in ways that significantly increase student understanding**
- **Structure laboratory activities for more effective learning**
- **Engage students in articulating their developing understanding through Socratic dialog**
- **Develop a small set of conceptual models as the framework for understanding content**
- **Use multiple representations of core concepts to promote understanding and transferability**
- **Develop a course storyline that uncovers concepts in a meaningful sequence based in models**
- **Identify conceptual threads and representations that can provide concept continuity between science courses**

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**For preregistration and additional info, please log on to:**

**http://cesame.calpoly.edu/programs-modeling.html**

**or**

**Contact Dr. John Keller at jmkeller@calpoly.edu**

**(805-756-2095)**