Outreach: Highlights over this past year

Laurie Kovalenko & the TO team

A major objective of the Tectonics Observatory (TO) is to develop an Education & Public Outreach (EPO) program

Goals

- Educate the public about TO discoveries
- Inspire kids to learn science
- Provide TO graduates & postdocs with opportunities to engage in local schools

Approaches

- Divide students into groups so that the ratio of scientists to students is 1:10
- Partner with local schools
  - Karen Jain, PUSD Science Coordinator
  - James Matney, Caltech Classroom Connection & Summer Research Connection
  - Partner with Caltech outreach program
- Science Saturday, REE, Science, Watson Lectures
- Partner with GameDesk Institute

Visiting schools:

- Junior Internship de LA USA, Torrance (Sat.,day)
- Hamilton Elementary School (Pasadena Unified)
- St. Bede's School, La Cañada Flintridge
- Assumption School, Pasadena
- La Loma of Los Angeles
- South East High School, Los Angeles Unified
- Holy Angels School, Arcadia
- Chinese exchange students program led by Bruce Carter (PCC)
- Clark Magnet High School (Pasadena Unified)
- Robinson Club (Pasadena Unified)

Topics included:

- Looking inside the Earthquake Machine: How we stimulate the San Andreas Fault
- Are we children of the stars?
- Looking for the next earthquake in the Himalaya: Out to Sea
- Rocks and Minerals on the Move
- Exploring Mars
- Allowing Earthquakes in the Lab
- Forcused by Glaciers: Understanding these rivers of ice
- GeoScience using Mini Electrometers
- Testing the force of earthquakes
- Counting Fingers: How preseve students study deformation while sitting at their desks

Scientists:

- Thomas Adler
- Sachin Borkar
- Edin Bulut
- Matthew Cutter
- Jan Goette
- Jennifer Havareshtadel
- Justin Jung
- Ayaz Limaye
- Vito Rubino
- Kristen Savich
- Kate Shaw
- Robert Stanek
- Jeff Proctor
- Daniela Suny
- Marion Thomas
- Victor Tse

Scientists welcomed ~ 350 students (4th - 12th grades) to Caltech

Public Lectures this Past Year

- Caltech Science Saturday (for children 8 years old and up, and their families)
  - Grad Student Ayay Limaye (coming up on April 27, 2013) "Far from a Cold Case: Solving the Riddles of Ice on Mars"
- Caltech Watson Lecture
  - Professor John Eiler (March 2012) "The Isotope Time Machine"
- Presentations in Nepal at US embassy
  - Geoscientist John Gaedeke (March 2012) "Nepal: Japanese earthquakes, Volcanic infrastructure"

Hands-on Outreach Resources (More in coffee room, 300 N Mudd)

- Lego-and-playdoh models of a fault
- Photos above show Nina gathering rock samples, and Mark Garcia down the road

On-line Outreach Resources

- Descriptions of past outreach activities, with advice by the leaders
- Go to "For Members"
- Log in with TomMember GPSD member
- Animations and graphics, such as:
  - Mountain building - Armand Chazan
  - Subduction zone earthquakes and tsunami - Tim Fey (PAC)
  - Water waves - Tom Fey (PAC)

Tectonics Observatory

Lego-and-playdoh models of a fault

In a sandbox activity to explore mountain building

Other Outreach Activities

- Providing content expertise for the development of educational Earth Science video games:
  - GameDesk Institute, Lucien Lavel
  - Bill Nye (the science guy): "Emphasis: How do you know?"
  - Jim Baret, Mark Turner, Belle Philibosian, Erika Swenson
- Using GIS for LA Regional Foodbank
  - Steve Skinner is helping Visiting Professor Ken Portock use GIS for FoodBank, to make distribution more efficient and to better show the current need
- Serving as judges at local science fair
  - Thomas Adler
  - Jennifer Buz
  - Brian Schmandt
- Hiking with teachers in Rubio Canyon and pointing out geological features
  - Janet Harvey
- Restoring PUSD rock collections:
  - Jamshed Hassanzadeh

Working with Teachers

This year, the local school district (PUSD) is undergoing curriculum revision, as well as embarking on a project-based learning pilot program. We are helping the 6th grade teachers.

- Laurie Kovalenko
- Belle Philibosian
- For the third year in a row, scientists are partnering with a 6th grade teacher at McKinley Middle School (PUSD), making regular visits to the same classes
  - Joel Schenkov
  - Vito Rubino
  - Philip Stein
  - Jen Griffes

Upcoming Opportunities

- Visit 6th grade classrooms and lead Earth Science activities
  - Flexible dates
- Give a tour of your lab or a presentation to visiting students
  - Students coming in Feb, March, April

Let me know if you are interested in any of these! (lauriekie@gps.caltech.edu)

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