Caltech Grad Students and Professor Participate in Local Public Middle School's Science and Math Fair

Three graduate students and a professor from Caltech's Tectonics Observatory presented hands-on activities in Earth science at Sierra Madre Middle School's Science and Math Fair on February 18. About 70 of the school's sixth graders, along with their families, attended the event, at which the sixth graders presented posters of their science and math projects.

Graduate student Ravi Kanda (pictured) used styrofoam and playdough models of earthquake faults to demonstrate how mountains are built. After moving the blocks along the faults, the students compared the resulting deformation of the playdough to actual photographs of different types of mountains and stream offsets from California and Nevada.

Using an earthquake machine (a spring-slider model), graduate student Ozgun Konca demonstrated how plate motions on the earth cause earthquakes. The students tested the intensity of an earthquake by putting lego buildings on one plate to see whether they would topple over, and a few students stayed on to complete a triangulation exercise using actual seismograms to locate the epicenter of an earthquake that occurred in California.

Sparking student interest in plate tectonics by showing the highly detailed USGS map "This Dynamic Earth," graduate student Michelle Selvans asked students to find patterns, such as mid-ocean ridges and earthquake and volcano locations. The students then examined different types of plate motions and identified which might form these different types of features.

Profesor Jason Sleeby brought huge chunks of Xenoliths that were uplifted from the mantle by volcanoes in Hawaii and the southwest United States, and talked about what the mantle is made of, how pieces of it get brought to the surface in volcanic eruptions, and what the chemistry and mineralogy of the xenoliths tell us about how basalt lava forms. He also showed a movie of the current eruption of Kilauea volcano in Hawaii.