Experiences with the IRIS E&O Lecture

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NOVA programs are great. Interactive high-tech museum displays are very cool. Web-based teaching tools can be very instructive. However, there is still nothing that can take the place of contact with a knowledgeable human being, and that is why classroom teachers will not be replaced with computer screens and why the IRIS E&O Lectureship is so successful.

I have been fortunate to be able to represent the seismological community in a series of about a dozen lectures that I have given at Science Centers and other venues across the country (e.g., Smithsonian Museum, Chicago Field Museum, National Science Teachers Convention, etc.). My talk, nominally titled “Earthquakes, Tsunami, and a Modern Journey to the Center of the Earth,” has been a smattering of varied seismological topics that include plate tectonics, earthquake hazards, our changing perceptions of earthquakes, seismic wave propagation, exploration seismology, attempts to predict earthquakes, nuclear verification, and global dynamics as determined through 3D seismic tomography. The “tsunami” aspect of the talk was not part of my original plan for the lecture, but a strength of earthquake studies has always been its relevance to current activities, and following the events of December 26, 2004, the Sumatra-Andaman earthquake became a significant and well-received part of the presentation.

I tried to draw upon my experiences both teaching high school (long ago!) and currently training high school teachers (on how to teach earth science) to make the talk engaging, and I tried to alternate between the seriousness of earthquake hazards and nuclear monitoring and the humor of giant Namazu and Hollywood’s goofy attempts to portray a journey to the center of the earth. Though my presentation was primarily a PowerPoint lecture, I tried to break it up with some demonstrations of propagating and standing waves using a slinky and a gong, and having kids help me with the demonstrations.

In all cases I had wonderful responses from people attending, who enthusiastically said that they learned a tremendous amount. But I also learned some things as well:

1. People love earthquakes. If you don’t kick them out at some point, people will continue to ask questions about them all night. In one case, the question-and-answer period went on for more than an hour, and nobody left until the janitor had to close up the building!
2. People love slinkies. IRIS provided slinkies for everyone who attended (for use during the wave demonstrations), and kids of all ages loved them.
3. Show a picture of the fault area of the Sumatra-Andaman earthquake superimposed on the Juan de Fuca plate, and even if there are hundreds of people in the audience (more than 400 in the case of the talk at the American Museum of Natural History in NYC), you can hear a pin drop.
4. People think it is very cool that if you take four months of seismic records following the Sumatra-Andaman earthquake and speed it up, it really does sound like a gong.
5. Everyone has an earthquake story of their own.
6. Nearly everyone has an Aunt Bertha in San Francisco whose parakeet acted strangely before the 1989 Loma Prieta earthquake.
7. Put up an email address, and people will write to you. I put my email address at the end and offered to send my PowerPoint lecture to anyone interested. I was flooded with emails after each talk, especially from teachers who wanted to use parts of it in their classes.

Presenting the IRIS E&O Lecture has not only been an honor, but a tremendously rewarding experience. You never know what will be the inspiration that will cause someone to decide upon a field of study or research. And though there was nothing in my talk that someone couldn’t have found with a little work in a library or over the internet, the excitement I felt from people as they participated in a personal exchange with me, as well as the enthusiasm of the email correspondences that followed, demonstrated that these kinds of lectures can be very influential for people of all ages, professions, and interests.