2009 IRIS/SSA Distinguished Lectureship

The Incorporated Research Institutions for Seismology (IRIS) and the Seismological Society of America (SSA) are pleased to announce the selection of two experienced speakers from the Earth Science research community for the 2009 IRIS/SSA Distinguished Lectureship Series. IRIS and SSA will cover all of the speakers’ travel and lodging costs for large public venues and can also provide free seismology outreach materials.

The speakers and their topics are:

Dr. Richard C. Aster
New Mexico Institute of Mining and Technology
**Taking Earth’s Pulse and Temperature Using Seismology: Roaring Oceans and Singing Icebergs**

and

Dr. Aaron A. Velasco
University of Texas at El Paso
**Can a Large Earthquake in Another Country Cause One in Your Backyard?**

Our speakers are chosen each year for their interesting subject matter as well as their ability to convey scientific ideas to a general audience. This Lecture Series will start in January 2009. Please see the IRIS Web site for more information on both the 2009 and ongoing 2008 series, as well as general information on the Distinguished Lectureship program:


We provide new speakers each year, so please also keep us in mind in your future planning.

If you are interested in reserving a speaker, please contact:
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Dr. Richard C. Aster
New Mexico Institute of Mining and Technology

Taking Earth’s Pulse and Temperature Using Seismology: Roaring Oceans and Singing Icebergs

The worldwide network of seismographs designed to detect earthquakes is also recording aspects of Earth’s climate. Buried in the background of these continuous seismic recordings, even in the deep interiors of continents, are “microseisms” -- seismic waves created by ocean waves pounding the coast and interacting with the sea floor. From over 35 years of high-quality continuous global seismic recordings, my colleagues and I have been able to reconstruct a unique record reflecting past patterns of ocean-storm intensity. This work includes evidence suggesting that violent ocean storms across planet, and associated ocean waves, have been increasing in their frequency of occurrence during the past three decades.

Seismometers sited on the great ice sheets and icebergs of Antarctica are also revealing signals due to waves from extreme ocean storms and from regional iceberg calving. Hours-long collisions between Earth’s largest icebergs as they gyrate under the influence of coastal currents also cause the icebergs to “sing” with a newly discovered type of seismic and ocean acoustic tremor. Extreme storms occurring during the Arctic winter produce waves that propagate to Antarctica. One resulting hypothesis arising from seismic studies conducted atop giant icebergs is anecdotally supported by the breakup of Earth’s largest iceberg in late 2005. It seems that these waves can influence iceberg behavior in the Antarctic because they arrive during what is summer in the southern hemisphere, when large tabular icebergs and ice shelves are largely unprotected by sea ice and are thus susceptible to calving and breakup. Seismic investigations in polar regions will doubtless continue to reveal still more about these and other novel dynamic processes affecting Earth’s largest glacier systems and to illuminate previously unsuspected linkages between climate, oceanography, seismology, and glaciology.
Dr. Aaron A. Velasco

University of Texas at El Paso

Can a Large Earthquake in Another Country Cause One in Your Backyard?

Earthquake scientists had shown that earthquakes can set off smaller earthquakes on nearby faults, but now new evidence suggests that seismic waves from large earthquakes can ripple worldwide and trigger tremors thousands of miles away, even in places not prone to earthquakes. Since 1992, at least 12 of 15 major earthquakes stronger than magnitude 7.0 have triggered distant earthquakes, including the 2004 catastrophic Sumatra earthquake, which coincided with tremors in Alaska and Ecuador, and the 2002 Denali earthquake, which coincided dozens of small quakes at Yellowstone. This talk will investigate the physics behind earthquake triggering and its implications for hazard assessments, understanding how earthquakes start, and whether other events, such as nuclear explosions, can trigger earthquakes. The talk will also explore how seismologists use earthquake records to monitor nuclear explosion treaties and the importance of earthquake science in keeping the world safe.