



IRIS

NEWSLETTER

YEAR 2009 • ISSUE 2

CURRENT EXPERIMENTS

Array of Arrays

Studying episodic, nonvolcanic tremor and slip with unprecedented resolution in Cascadia

A central dense array and several satellite arrays totaling 350 seismometers will precisely map temporal evolution of tremor to elucidate the physics of the ETS process.

http://www.pnsn.org/WEBICORDER/DEEPTREM/AofA_summary.html

Bighorns

Geological and geophysical investigation of contractional foreland arches

Upper crustal geometries from surface exposures and petroleum industry data will be integrated with data from a hybrid seismic experiment that includes 27 broadband and 220 short period sensors, and 9 shots recorded by grids of as many as 2400 high frequency seismometers.

<http://cires.colorado.edu/science/groups/sheehan/projects/bighorns/>

Batholiths

Generation and evolution of crust in continental magmatic arcs

Seismic experiments are part of a multi-disciplinary project to address fundamental questions about the quantity, composition and fate of the ultramafic residue that is produced when andesitic crust is generated from a basaltic protolith.

<http://www.passcal.nmt.edu/content/batholiths-onland-2009/>

More information on USArray is available on the web at www.iris.edu or in the EarthScope onSite newsletter.



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IRIS Activities at the AGU 2009 Fall Meeting

From the Membership Meeting to the IRIS booth, technical presentations, and workshops, this year's AGU Fall Meeting will be replete with IRIS activities.

As in recent years, you can meet with colleagues and IRIS staff at the Annual Reception and Membership Meeting at Yank Sing restaurant in the Ricon Center, 101 Spear Street, starting early Monday evening. Even before that, however, IRIS will offer several free half-day workshops for the community.

On Sunday, December 13, the PASSCAL Instrument Center will discuss passive source data archiving with the Antelope package in the morning and controlled source data processing utilizing the ph5 archival format in the afternoon. Computers with current software and small data sets will be available for guided, hands-on practice. For more information, visit <http://www.passcal.nmt.edu/content/data-archiving-workshop>.

On Monday morning, December 14, staff from the Data Management Center will answer questions users may have about data handling, archiving and retrieval using the various DMC systems. During this session, the JWEED data request tool and the PDCC metadata management tool will be demonstrated. Register for this free session by December 9 at <http://www.iris.edu/workshops/2009/data/index.htm>.

On Thursday and Friday mornings, Union sessions U41D and U51C, "Scientific Progress in Geophysics from 25 Years of Sharing Data and Resources" will focus on the pivotal role that organized sharing of



resources and data has played and continues to play in advancing geophysical research. Twenty-five years ago, the U.S. seismological community committed itself to the ideal of freely sharing seismological data and instrumentation to dramatically advance research and education in seismology. The explosion of resources and open data that flowed from this commitment transformed the science of seismology, revolutionized our holistic understanding of the structure and dynamics of our planet, and ushered in an exciting new era of cross-disciplinary research. Don't miss this session that includes a celebration of this success, an appraisal of how similar community efforts can facilitate exciting new opportunities for research across all disciplines of geophysics, and a clarion call to highlight the scientific progress that has blossomed from this approach.

The IRIS booth in the exhibition hall will be a venue to find IRIS staff and colleagues throughout the meeting, and will include a posting of IRIS-related sessions, oral presentations, and posters throughout the AGU meeting. ■

The IRIS Board of Directors Election

One of the strengths of IRIS is the direct involvement of individual researchers in IRIS governance. The Board of Directors is composed of nine representatives of the IRIS Member Institutions, who are elected at the Members' annual meeting. The Board appoints members of the committees that oversee individual programs and meets several times each year to review policies

and priorities and to set budgets. This year, Members will elect three Directors who will each serve three years. The newly elected Directors will help to lead IRIS through submission of a proposal during 2010 for a new Core Programs Cooperative Agreement with NSF, completion of the first EarthScope O&M Cooperative Agreement, and securing separate support for further

IRIS activities. The IRIS community is encouraged to talk with their Member representatives about their votes. IRIS Member representatives are posted at http://www.iris.edu/hq/about_iris/membership/member_institutions. Statements from the Director candidates are posted at http://www.iris.edu/09_bod_election/. ■



Beatrice Magnani

Assistant Research Professor
Center for Earthquake Research
and Information (CERI)
University of Memphis

<http://www.ceri.memphis.edu/people/magnani/index.html>

- PASSCAL Standing Committee (2009-2011)
- Continental Dynamics of the Rocky Mountains (CD-ROM) (2000-2004)
- SE Caribbean - BOLIVAR (2002-2007)
- High-resolution near surface seismic imaging projects



Douglas Wiens

Professor and Chair
Department of Earth &
Planetary Sciences
Washington University
in St. Louis

<http://epsc.wustl.edu/seismology/doug/doug.html>

- Chair, Polar Networks Science Committee (2008-present)
- DMS Standing Committee (2003-2008; chair, 2006-2008)
- GSN Standing Committee (1992-1994)
- IRIS Executive Committee (1991, 1995-1998)
- PASSCAL Principal Investigator



Francis Wu

Professor of Geophysics
Department of Geological
Sciences
SUNY Binghamton

<http://geology.binghamton.edu/faculty/wu/wu.html>

- DMS Standing Committee (1990-1996; chair, 1993-1996)
- NSF-EAR: Geophysics Panel (1993-1995) and Liaison for Continental Dynamics Panel (1993-1996)
- Program Co-Chair, WPGM, AGU (1992, 1998)
- BSSA board of directors, (1986-1992)
- Ocean Bottom Seismometer Instrument Pool Oversight Committee, (2008-present)



John Hole

Associate Professor of
Geophysics
Virginia Tech

<http://www.geos.vt.edu/people/hole/>

- E&O Standing Committee (2009-present)
- DMS Standing Committee (2006-2008)
- PASSCAL Standing Committee (2003-2005)
- Writing team for EarthScope Science Plan (2009)
- Writing team for Long-Range Science Plan for Seismology (Grand Challenges) (2008)
- Co-chair EarthScope Thematic Working Group on Continental Structure and Evolution (2009-present)
- Controlled-source PASSCAL field surveys (1989-2011), some with a coincident earthquake-source deployment



Michael Ritzwoller

Professor, Department of Physics
Director, Center for Imaging
the Earth's Interior
University of Colorado at
Boulder

http://ciei.colorado.edu/ritzwoller_m

- DMS Standing Committee (2007-present)
- Transportable Array Working Group (2005-2008)
- GSN Standing Committee (2004-2007)
- Research using GSN, PASSCAL, and USArray data from the DMS



Susan Bilek

Associate Professor
Earth and Environmental
Science Dept
New Mexico Tech

<http://www.ees.nmt.edu/bilek/>

- GSN Standing Committee (2007-2009)
- MARGINS steering committee (2008-2010)
- SSA Honors Committee student award chair (2008-2009)
- SSA Nominating Committee (2009)
- User of GSN/PASSCAL data



USArray Short Course

Advanced graduate students from all over the US gathered for a short course at Northwestern University held August 3-7, 2009. The purpose of the workshop was to address opportunities and challenges in USArray data processing. The 21 short course students were joined by 11 instructors, whose expertise ranged from basic seismogram processing to database management and the development of multichannel processing codes.

Participants learned about seismic data processing in general, its history and intricacies, current practices, and exchanged

ideas for future handling of the data flow from USArray. Each lecture was accompanied by hands-on exercises with actual USArray data. Students also worked in groups on different projects, which were presented on the last day of the short course. These projects included the development of manuals and tutorials on best practices in processing USArray data with existing tools, a wiki for exchanging information, tools, and data products, utilization of interactive graphical user interfaces for data processing and analysis, and a plan for visualizing and merging seismic-tomography results from USArray.

Participants came away from the short course inspired to further the development of new strategies and tools that deal effectively with this enormous volume of seismograms.

The short course was organized by Gary Pavlis of Indiana University, Suzan van der Lee of Northwestern University, and Bob Woodward of IRIS/USArray. Direct support for the workshop came from the Earthscope and EAR Education and Human Resources Programs of the National Science Foundation with indirect support through the IRIS Education and Outreach program. ■

Hands-on exercises were an essential part of the short course experience.



Students and organizers at the short course held at Northwestern University.



EarthScope Symposium and Reception Attracts a Wide Range of Attendees

On Wednesday, April 29, 2009, a coalition of Earth science organizations led by the IRIS Consortium and UNAVCO, Inc. hosted a symposium and reception to

acknowledge and recognize the contributions of the National Science Foundation and the numerous organizations and agencies that have helped make the first five years of EarthScope a resounding success. Leading-edge science results were presented by four researchers during a well-attended EarthScope Symposium. This was followed by an EarthScope Reception where nearly 200 attendees informally exchanged information and ideas about EarthScope data, findings, and upcoming experiments. In addition to recognizing the National Science Foundation and the other organizations and agencies that played a role in the success of EarthScope, the

Lucy Flesch, Purdue University, presents geodetic findings during the EarthScope Symposium.



EarthScope equipment and operation are shown to guests during the reception.



Matt Fouch, Arizona State University, identifies some of the contributors to current research endeavors.

reception also featured displays of state-of-the-art EarthScope equipment that attendees could examine. EarthScope facilities staff was also on hand throughout the symposium and reception to answer any questions about the instruments and the observatories.

The EarthScope partners extend a special Thank You to all of the co-sponsors that made this successful event possible. ■



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JANUARY 21-22, 2010

Ground-Based Geophysics on the Moon

<http://www.lpi.usra.edu/meetings/lunargeo2010/>

APRIL 20-23, 2010

Seismological Society of America Annual Meeting

<http://www.seismosoc.org/meetings/2010/>

MAY 2-7, 2010

European Geosciences Union General Assembly

<http://meetings.copernicus.org/egu2010/>

The IRIS Newsletter, published several times each year, includes selected News Items and Notices previously posted on the IRIS web site. In addition, information about the EarthScope project is published quarterly in onSite and news related to the Data Management System, including a summary of newly available data, is published in the DMS electronic newsletter. IRIS encourages contributions for all of these publications that describe experiments supported by the PASSCAL or Flexible Array programs, analyses using data recorded by the GSN or EarthScope stations or downloaded from the DMC, education or outreach activities facilitated by the IRIS E&O program, and other activities of broad interest to the community.

IDSC Meets with CERESIS

IRIS's International Development Seismology Committee (IDSC) met jointly with national representatives to Centro Regional de Sismología para América del Sur (CERESIS) in Lima, Peru, during October. This was the second meeting of the IDSC, which the Board of Directors charged last year to “develop partnerships and collaborations that build infrastructure and human capacity in low- and middle-income countries for seismological and related research, education and training, hazard mitigation, and resource exploration.”

The joint meeting with CERESIS was an opportunity to learn more about recent developments in South America, which extend across virtually the entire continent. Opportunities for U.S.-based seismologists to collaborate are growing thanks partly to new broadband networks planned in Chile and Ecuador; a new pool of portable instruments in Brazil; and network modernization initiatives in Argentina, Bolivia, Colombia, Peru, and the Caribbean Sea region.

The joint meeting also helped to spread the word widely about IRIS's intention to partner with organizations in developing countries in order to implement mutually beneficial projects that might be funded by U.S. AID or international development banks. Project concepts that were discussed at the meeting include post-doctoral projects focusing on research that could benefit the host agencies in South America, and short courses that could lead to collaborative research projects applying new processing methodologies developed for USArray to data from analogous deployments in South America. ■



IRIS participants at the IDSC at the meeting in Lima were (front row) Susan Beck, Anne Meltzer, Olga Cabello, (back row) Eric Sandvol, Ray Willemann, Sergio Barrientos, and Art Lerner-Lam. IDSC members Noel Barstow, Karen Fischer, and Andy Nyblade were not able to attend.

