Tuesday, May 12th, 2009

Pre-meeting, self-supported workshops and field trips. Agendas for several pre-meeting workshops are included on pages 6 & 7. NEW!

6:30 – 9:00 Reception and registration at the Stueckle Sky Center at Boise State University highlighting recent research by the Center for Geophysical Investigation of the Shallow Subsurface at BSU. A map to the Stueckle Sky Center is included on page 4. We anticipate that most people will want to walk. If you need a ride, please contact earthscope@coas.oregonstate.edu and meet at the entrance to the conference center at 5:30 pm. NEW!

Wednesday, May 13th, 2009

7:00 – 8:15 Breakfast (coffee, tea, juice and pastries only)
7:00 – 8:15 Student/post-doc recruiting breakfast (sponsored by ExxonMobil) NEW!
8:15 – 8:30 Introduction to the EarthScope National Meeting
8:25 – 8:30 Welcome to Session 1: Lithospheric Deformation of the Western U.S.
   Session 1 co-chairs: Thorsten Becker, Elizabeth Miller
8:30 – 9:00 Session 1: Invited keynote presentation
9:00 – 11:00 Session 1: Posters and break (coffee available from 10:00-10:30)
11:00 – 12:20 Session 1: Four 20-minute contributed talks
   Maureen Long (Yale) – Upper Mantle Structure and Dynamics Beneath the High Lava Plains of Oregon: Results from the HLP Project.
   Hersh Gilbert (Purdue) – Lithospheric Foundering: Observations from the Sierra Nevada EarthScope Project (SNEP)
   Brad Hacker (UCSB) – Velocity Anisotropy of the Basin and Range Crust from EBSD
   Corne Kreemer (UNR) – A High-Resolution Strain Rate Tensor Model for the Western U.S. (including applications for education and outreach)
12:20 – 12:30 Session 1: Brief discussion led by session chairs
12:30 – 1:30 Lunch
1:30 – 1:40 NSF comments
1:40 – 1:45 Welcome to Session 2: Fault Zone Processes
   Session 2 co-chairs: Judith Chester, Chris Marone
1:45 – 2:25 Session 2: Invited keynote presentation
   Paul Segall (Stanford) – Frictional, Thermal, and Pore-Fluid Processes in Fault Zones and the Physics of Slow and Fast Slip
2:15 – 4:15 Session 2: Posters (coffee available from 3:00-3:30)
4:15 – 5:35 Session 2: Four 20-minute contributed talks
   Steve Hickman (USGS) – Structure and Composition of the San Andreas Fault: Recent Results from SAFOD Sample Analyses
   Matt Knuth (U Wisconsin) – Ultrasonic Velocity Measurements in Deforming Fault Gouge: Results for Samples from the SAFOD Volume
   Bridget Smith-Kanter (UTEP) – Popularize or Perish: Communicating, Visualizing, and Publicizing EarthScope Data and Model Products for Non-Specialized Audiences
   Evelyn Roeloffs (USGS) – Aseismic Action in the Cascadia Subduction Zone: Detecting the Details with PBO Borehole Strainmeters
5:35 – 5:45  Session 2: Brief discussion led by session chairs
6:30 – 8:00  Buffet dinner
6:30 – 8:00  Informal meeting of the Controlled Source Seismology group NEW!
8:00 – 9:00  EarthScope celebration of facilities completion

Thursday, May 14th, 2009
7:00 – 8:15  Breakfast (coffee, tea, juice and pastries only)
8:15 – 8:25  Discussion of role of TWGs by ESSC chair (5 min)/introduction to session (5 min)
8:25 – 8:30  Welcome to Session 3: Deep Earth Structure and Processes
Session 3 co-chairs: Justin Revenaugh, Steven Jacobson
8:30 – 9:00  Session 3: Invited plenary presentation
  Jesse Lawrence (Stanford) –
9:00 – 11:00  Session 3: Posters and break (coffee available from 10:00-10:30)
11:00 – 12:20  Session 3: Four 20-minute contributed talks
  Karen Fischer (Brown) – Imaging the Lithosphere-Asthenosphere Boundary Beneath North America
  Matt Fouch (ASU) – Plate Tectonics and the Mantle Flow Field Beneath Western North America
  Ed Garnero (ASU) – USArray Data Support Whole Mantle Convection
  Nancee Hunter (Hatfield Marine Science Center) – Geovisualizations Using USArray Data
12:20 – 12:30  Session 3: Brief discussion led by session chairs
12:30 – 1:30  Lunch
1:30 – 3:00  TWG session 1
3:00 – 3:30  Break
3:30 – 5:00  TWG session 2
6:30 – 8:00  Basque BBQ

Friday, May 15th, 2009
7:00 – 8:15  Breakfast (coffee, tea, juice and pastries only)
8:15 – 9:15  Plenary Session: Summaries of TWGs with discussion
9:15 – 10:15  Session 4: Strain Transients and Seismic Tremor
  Session 4 chair: Bill Holt
Invited keynote presentations:
  Mike Brudzinski (Miami U) – New Insights into Episodic Tremor and Slip from EarthScope and Beyond
  Jessica Murray (USGS) – Automated Detection and Characterization of Transient Signals in Geodetic Data, a Blind Test
10:15 – 10:45  Coffee break
10:45 – 12:15  Session 5: Geophysics, Volcanism and Geothermal Resources of the Snake River Plain and Yellowstone National Park
  Session 5 chair: Basil Tikoff
Invited keynote presentations:
  Spencer Wood (Boise State) – Tectonic, Volcanic, and Depositional History of the Western Snake River Plain and its Hot and Cold Water Resources
  John Shervais (Utah State) – Plume Tales: How Mantle Plumes Modify Continental Lithosphere (and Vice-versa)
  Bob Smith (Utah) – Geodynamics of the Yellowstone Hotspot and Mantle Plume: Seismic and GPS Imaging, Kinematics, and Mantle Flow
12:30  Pick up box lunches and leave for the field trips
Session descriptions

1) Lithospheric Deformation of the Western US
This session will explore the dynamics of lithosphere deformation in western North America. Questions to be addressed include the extent to which current deformation results from the tectonic history of the region. Studies that integrate seismological, geological, geochemical, and geodetic data sets to probe dynamics through time will be highlighted.

c-co-chairs: Thorsten Becker (USC) and Elizabeth Miller (Stanford)
keynote speaker: George Zandt (Arizona)
contributed oral presentations: Maureen Long (Yale), Hersh Gilbert (Purdue), Brad Hacker (UCSB), Corne Kreemer (UNR).

2) Fault Zone Processes
This session will focus on the processes active in fault zones, including results from SAFOD. The session will include direct observation (architecture, fabrics, mineralogy, fluid reactions), timing, modeling (analytical, experimental, and numerical), and in-situ monitoring.

c-co-chairs: Chris Marone (Penn State) and Judith Chester (Texas A&M)
keynote speaker: Paul Segall (Stanford)
contributed oral presentations: Evelyn Roeloffs (USGS), Steve Hickman (USGS), Matt Knuth (Wisconsin), Bridget Smith-Konter (UTEP).

3) Deep Earth Structure and Processes
This session will examine new discoveries on deep Earth structure made possible by USArray data (seismic and/or MT components), laboratory experiments, and petrologic and geochemical studies. Topics will range from the core-mantle boundary to the upper mantle and its role in the evolution of the continent.

c-co-chairs: Justin Revenaugh (Minnesota) and Steven Jacobsen (Northwestern)
keynote speaker: Jesse Lawrence (Stanford)
contributed oral presentations: Karen Fischer (Brown), Matt Fouch (ASU), Ed Garnero (ASU), Nancee Hunter (Hatfield Marine Science Center).

4) Strain Transients and Seismic Tremor
This session will highlight new discoveries on time scales of lithospheric deformation enabled by integrating data from the three EarthScope observatories.

chair: Bill Holt (Stony Brook)
keynote speakers: Mike Brudzinski (Miami U) and Jessica Murray (USGS).

5) Geophysics, Volcanism and Geothermal Resources of the Snake River Plain
This session will include an introduction to the field trip and historical context related to the influence of geology on the development of Boise.

chair: Basil Tikoff (Wisconsin)
keynote speakers: Spencer Wood (Boise State), John Shervais (Utah State), and Bob Smith (Utah).
EarthScope National Meeting

Registration and Reception at the Stueckle Sky Center at Boise State University

May 12th, 2009, 6:30 – 9:00 pm
(refreshments sponsored by ExxonMobil)
Additional information

Registration times in the main lobby of the Centre on the Grove:

Tuesday, May 12th: 7:30 am – 3 pm
Wednesday, May 13th: 7:00 am – 9 am

Special meetings:

Tuesday:
  Meeting planning committee and session co-chairs – informal
  HLP steering committee
  At the reception
  TBD

Wednesday:
  ESSC and TWG co-chairs breakfast
    – Pines room
  Student/postdoc breakfast with Exxon Mobil representatives
    – Firs/Cottonwoods room
  Controlled source seismology discussion
    – TBD
  7:00-8:00 am
  7:00-8:00 am
  6:30-8:00 pm

Thursday:
  Judges Lunch for Student Poster Competition
    – Salmon room
  12:30-1:30 pm
High Lava Plains Workshop Program
Payette River Room
May 12th, 2009

8:30 – 8:45 Welcome and overview – Rick Carlson

Session 1: Crustal Structure/Volcanic Record (Discussion Leaders – Bill Hart, Randy Keller)
8:45 – 9:05 Overview of volcanic record – Bill Hart
9:05 – 9:25 Petrology of HLP basalts – Tim Grove
9:25 – 9:45 Crustal structure from Active Experiment – Randy Keller
9:45 – 10:05 Crustal structure from Active Experiment – Catherine Cox
10:05 – 10:25 Crustal structure from receiver functions – Kevin Eagar

Session 2: Mantle Structure (Discussion Leaders – Matt Fouch, Rick Carlson)
10:30 – 10:50 Tomographic results, HLP oriented – David James
10:50 – 11:10 Tomographic results, broader/deeper PNW – Matt Fouch
11:10 – 12:00 General discussion

12:00 – 1:30 Lunch

Session 3: Mantle Flow (Discussion Leaders – Chris Kincaid, Maureen Long)
1:30 – 1:50 HLP shear wave splitting – Maureen Long
1:50 – 2:10 Dynamic modeling of flow beneath the HLP – Chris Kincaid
2:10 – 2:30 Western US shear wave splitting – Matt Fouch
2:30 – 2:50 Western US mantle dynamics – Gene Humphreys
2:50 – 3:10 General discussion

Session 4: Why so Volcanically Active? Plume/No Plume? (Discussion Leaders – David James, Tim Grove)
3:10 – 3:30 Constraints from volcanism – Rick Carlson
3:30 – 3:50 Plume – wedge-flow interaction – Chris Kincaid
3:50 – 4:10 Where is the Juan de Fuca plate at depth? – Matt Fouch
4:10 – 4:30 Can the plume be detected seismically? – David James/Matt Fouch
4:30 – 5:30 General discussion
Leveraging USArray: Opportunities for Onshore/Offshore Experiments
Organizers: Dayanthie Weeraratne, Anne Trehu
May 12th, 2009

9:00 – 10:30 Presentations
   Introduction    Dayanthie Weeraratne
   NSF               Greg Anderson

Overview of existing programs
   USArray        Bob Woodward
   USArrayMT     Adam Schultz
   PBO            Mike Jackson
   OBSIP          Doug Toomey, J. Collins, J. Gaherty
   MARGINS        Geoff Abers

Science objectives
   Great Lakes    David Dolenc, Yevgenie Kontar
   Gulf Coast     Maria Beatrice Magnani
   East Coast     Karen Fischer
   Alaska        Jeff Freymueller or Doug Christensen

10:30 – 10:45 Break
10:45 – 11:30 Continue science objectives & participants
   (1-2 slides) S. Webb, A. Trehu, D. Wiens, D. Weeraratne, others
11:30 – 12:00 Discussion and Planning
12:00 – 1:00 Lunch – Joint with workshop on Planning for USArray in Alaska

Planning for USArray in Alaska
Organizers: Jeff Freymueller and Doug Christensen

1:00 – 2:30 Presentations
   Introduction, Goals, Tectonics & Science Targets    Jeff Freymueller
   PBO in Alaska                                  Max Enders and Karl Feaux
   Seismic network & PASSCAL deployments           Doug Christensen
   Subduction Zone imaging                        Geoff Abers
   Crustal imaging, Alaska Range                  Patrick Brennan
   Imaging the Yakutat collision                  Roger Hansen and Gary Pavlis
   Trans-Alaska Crustal Transect                  Gary Fuis

2:30 – 4:00 Discussion of Science Targets
   Focus topics: crustal imaging, mantle imaging, seismicity, deformation regimes, scientific synergy between USArray and PBO (includes a break).
4:00 – 5:00 USArray TA logistics and deployment discussion
   AEIC and STEEP network ops                    Roger Hansen
   Insight from PASSCAL deployments             Doug Christensen
   Focus topics: Town/village logistics vs. remote sites, helicopter and aircraft installs