

## **Workshop Agenda**

### **Wednesday, April 4 – Registration (and Student Symposium)**

5:30 PM Registration and Ice Breaker (at Marriott Waterfront)

### **Thursday, April 5 – Workshop Day 1**

7:30 AM Breakfast (at World Trade Center)

*Moderators: Adam Kent, Katie Kelley*

8:30 AM Welcome from the conveners, logistics, goals for the workshop

8:45 AM Comments from NSF representatives

#### **9:00 AM Cascadia Crustal Evolution and Deformation**

9:00 *Evolution of the Cascadia convergent margin-an introduction- **Ray Wells***

9:30 *Cascadia pre-quaternary geologic context - **Anita Grunder***

9:50 *Holocene and recent volcanism in the Cascades – **Kathy Cashman***

10:10 *Discussion*

10:30 AM COFFEE BREAK

*Moderators: Anne Trehu, Kelin Wang*

#### **11:00 AM Earthquakes and Other Faulting Processes**

11:00 *Research on mega-thrust earthquakes in the Japan Trench and the Nankai Trough - **Shu-ichi Kodaira***

11:30 *Paleoseismic history of Cascadia from onshore and offshore record - **Rob Witter***

11:50 *Seismic and aseismic processes from the modern record - **Ken Creager***

12:10 *Discussion*

12:30-1:30 LUNCH

*Moderators: Geoff Abers, Adam Kent*

#### **1:30 PM Large-scale and Deep Processes**

1:30 *Thermal-petrologic-fluid flow structure and dynamics of the subduction zones - **Ikuko Wada***

2:00 *Geodynamic framework of the Pacific NW - **Gene Humphreys***

2:30 *Structure, composition, and evolution of the incoming plate at the Cascadia Subduction Zone – **Suzanne Carbotte***

3:00 *Generation of magmas in Cascadia - **Tom Sisson***

3:30 *Discussion*

Moderators: Joan Gomberg, Anne Trehu

**3:50 PM Project Summaries: Ongoing studies in Cascadia and elsewhere (5 min each)**

- *Cascadia Initiative – offshore update - **Doug Toomey***
- *Cascadia Initiative - onshore update - **Richard Allen***
- *IODP studies - **Rob Harris***
- *Cabled observatories, Canada – **Martin Heesemann***
- *Cabled observatories, US - **William Wilcock***
- *Offshore GPS - **Dave Chadwell***
- *Mount St. Helens project - **Alan Levander***
- *Open-access Langseth cruise: Reflection imaging of the central Cascadia margin- **Katie Keranen***
- *Mocha Project – **Adam Schultz***
- *GeoPRISMS Portal and MGDS - **Andrew Goodwillie***

**4:40 PM Poster Session**

**6:30 PM CONFERENCE DINNER (at World Trade Center)**

- *Earth to Humans: The importance of connecting people with their planet – **Ellen Morris Bishop***

**8:00 PM Poster Session w/ CASH BAR**

**8:00 PM Projects and Implementation Discussions**

Objective: Break-out groups to discuss existing and planned projects, activities, opportunities and future directions (90 minutes). Reports will guide closing discussions on Day 2.

- *What infrastructure exists for Cascadia; what are associated opportunities?*
- *What major research products and data streams will be available?*
- *What gaps remain to be filled; what are future directions?*
- *What challenges exist, and how can they be overcome?*

- (a) Cascadia Initiative & Amphibious Arrays – **Richard Allen, Doug Toomey**
- (b) Volcano Imaging – **Ken Creager, Olivier Bachman**
- (c) Cascadia Geohazards – **Brian Sherrod, Roy Hyndman**
- (d) Energy & Mineral Potential – **Andrew Meigs, Michael Rowe**
- (e) Education & Outreach – **Bob Butler, Ellen Bishop**
- (f) GeoPRISMS Portal and MGDS - **Andrew Goodwillie**

## Friday, April 6 – Workshop Day 2

7:30 AM Breakfast (at World Trade Center)

8:30 AM Introduction to Day 2

*Moderators: Josh Roering, Harvey Kelsey*

### 8:40 PM Sediment Transport, Accretion, and Subduction

8:40 *Mass Balance and terrestrial surface processes - Mark Brandon*

9:10 *Accretionary prism processes and comparison with other subduction zones - Lisa McNeill*

9:40 *Understanding the turbidite record: genesis, transport, and preservation – David Piper*

10:10 *Discussion*

10:30 AM COFFEE BREAK

### 11:00 PM Special Interest Discussion Groups

*Objective: Break-out groups to discuss scientific topics, targets, and research approaches, (2 sessions, 45 minutes each). Reports will guide closing discussions on Day 2.*

- *What are the key exciting scientific questions that can be addressed in Cascadia?*
- *What infrastructure exists in Cascadia research to address them?*
- *What knowledge gaps remain to be filled; what are future research directions?*
- *What challenges exist, and how can they be overcome?*

#### 11:00-11:45 AM - Session 1

- (a) Subduction Zone Structure I: **Anne Sheehan, Gary Egbert (Scribe: Rob Porritt)**  
*Deep geophysical imaging (e.g., mantle wedge, slab), passive seismic, resistivity*
- (b) Faulting Processes I: **David Schmidt, Harmony Colella (Scribe: Abhi Ghosh)**  
*Megathrust processes, properties, and behaviors*
- (c) Sedimentary Processes: **Chris Goldfinger, Becky Dorsey (Scribe: Karl Wegmann)**  
*Sediment transport, linkages among hillslopes, estuaries, turbidite processes, preservation of extreme events (flooding, landslides, earthquakes)*
- (d) Volcanism and Volcanic Processes: **Marc Parmentier, Sue de Bari (Scribe: Alison Koleszar)**
- (e) *Distribution, composition, and output through time and space, correlations with seismic record, imaging and monitoring*

#### 11:45-12:30 PM - Session 2

- (a) Subduction Zone Structure II: **Tom Pratt, Helene Carton (Scribe: Lee Liberty)**  
*Shallow imaging (forearc structure), active source, potential fields, resistivity*
- (b) Faulting Processes II: **Rick Blakely, Sue Bilek (Scribes: Simon Engelhart)**  
*Margin segmentation from modern, paleoseismologic and paleogeodetic perspectives, forearc and backarc deformation, intraplate faults*

*Note: We recognize that there may be considerable topical overlap between a and b. At the discretion of the discussion group chairs, these may be combined into a single group.*

**11:45-12:30 PM - Session 2 (cont.)**

- (c) Geodetic studies: **Spahr Webb, Herb Dragert (Scribe: Jay Patton)**  
*Present-day ground motions, on- and off- shore, causes and consequences*
- (d) Volatile Processes and Cycles: **Glen Spinelli, Stacia Gordon (Scribe: Dan Ruscitto)**  
*Fluids and melting, from trench to arc*

12:30-1:30 PM      LUNCH

Moderators: *Kelin Wang, Joan Gomberg*

**1:30 PM      Cascadia Hazards Plenary Presentations**

- 1:30    *Implications for the built environment – hazard mapping - Art Frankel*
- 1:45    *Tsunami potential and modeling - George Priest*
- 2:00    *Volcanic Hazards - Seth Moran*
- 2:15    *Characteristics of the Earthquake Early Warning Problem in Cascadia- Ingrid Johanson*

**2:30 PM      Special Interest Groups Reports (5 minutes each)**

3:20 PM      COFFEE BREAK

Moderators: *Katie Kelley, Josh Roering*

**3:40 PM      Student Perspective**

**4:00 PM      Implementation Discussion and Roadmap to the Future**

- 4:00    *Implementation Discussion Summaries (5-10 mins each), setting stage for*
- 4:30    *Future Research Directions and Opportunities, e.g.,*
- *What are the key exciting scientific questions that can be addressed in Cascadia?*
  - *What infrastructure exists for Cascadia; what are associated opportunities?*
  - *What major research products and data streams will be available?*
  - *What gaps remain to be filled; what are future directions?*
  - *What interdisciplinary activities / collaborations will advance understanding of Cascadia?*
  - *What challenges exist, and how can they be overcome?*

**5:30 PM      Wrap-up and Closure**

6:30 PM      DINNER ON YOUR OWN