

Workshop Program
STEPS, A-Concourse and Rm 101 (Breakout session rooms listed separately)

Thursday, 27 October – Workshop Day 1.

7:00 – 8:00 BREAKFAST and registration. **STEPS A-concourse.**

Morning Session (Moderators: Frank Pazzaglia and Vadim Levin)

8:00 – 8:15 Welcome, introductions, and workshop goals. **F. Pazzaglia**

8:15 – 8:45 NSF Program director comments – **C. Estabrook and B. Haq**

8:45 – 9:30 Review of EarthScope and GeoPRISMS science and implementation strategies and key decisions that must be made by each program.

- ⤴ GeoPRISMS, research corridors, leveraging effort with industry and USGS, integration with EarthScope efforts – **J. Morgan**
- ⤴ EarthScope, foundation of the 2004 workshop, key ENAM research topics, fate of TA and FA instruments and the possibility of an east coast observatory, extension of PBO to the east coast, integration with GeoPRISMS efforts – **B. Tikoff**

9:30 – 10:30 Plenary talks to introduce the ENAM region session I.

- ⤴ Modification of continental crust and lithosphere by continental rifting/breakup and by terrane accretion – **W. Thomas**
- ⤴ Rifting and drifting in Eastern North America – **P. Olsen**
- ⤴ Insights into rifting processes from variations in magmatism and structure along eastern North America - **Donna Shillington.**

10:30 – 11:00 Working Break, Questions and discussion.

11:00 – 12:00 Plenary talks to introduce the ENAM region session II.

- ⤴ The lithosphere of the Appalachian orogen and the Atlantic passive margin: A seismological perspective – **K. Fischer**
- ⤴ Analogue and numerical models that inform the rifting process – **J. Armitage**
- ⤴ Forward modeling of rift and passive margin formation; implications for South and Central Atlantic rifted margins. – **R. Huismans**

12:00 – 12:40 Recent relevant EarthScope and GeoPRISMS projects

- ⤴ Southeastern suture of the Appalachian Mountain experiment (SESAME) project – broadband seismic experiment to study continental accretion and rifting – **L. Wagner**
- ⤴ The Salton Seismic Imaging Project (SSIP): A joint GeoPRISMS + EarthScope + USGS investigation of Rift Initiation and Evolution – **J. Hole**

12:40 – 1:30 LUNCH. University Center Rm 303 (a short walk from STEPS).

**EarthScope-GeoPRISMS Science Workshop on
Eastern North America (ENAM)**

Lehigh University, Bethlehem, PA, Oct 27-29, 2011

Afternoon Session (Moderators: Martha Withjack and Peter Flemings)

1:30 – 2:10 Emerging Hot Topics (all of these are inter-related and important cross-program, synergy building activities)

- ⤴ Late Cenozoic fluvial incision through the Susquehanna River drainage basin: A response to dynamic topography – **S. Miller**
- ⤴ Mantle dynamics and the recent evolution of the Eastern North American margin – **R. Moucha**
- ⤴ Earthscope seismology – **M. Benoit**
- ⤴ GeoPRISMS seismology – **J. Gaherty**

2:10 – 2:45 Working Break, questions and discussion. Includes an introduction to Break-out process and objectives.

2:45 – 4:00 Breakout session I. Topical Breakouts – introduction of key research ideas, participants are asked to rotate among two or more.

- 1a. Orogenic processes – building the ENAM framework. STEPS 101
- 1b. Rifting processes – magmatism and the opening of the Atlantic Ocean. STEPS 102
- 1c. Post-rift processes – transformation to a passive margin. STEPS 290
- 1d. Neotectonics and surface processes – active processes on the passive margin. STEPS 394

4:00 – 5:00 Emerging Hot Topics (all of these have important Broader Impacts)

- ⤴ Active deformation in Eastern North America – **M. Pritchard**
- ⤴ Offshore active processes and hazards – **P. Flemings**
- ⤴ Diachronous Evolution of Syn-rift Deformation and Onset of Seafloor Spreading in the Central Atlantic: Application of Inverse Continuum-based Plate Reconstruction Methods – **E. Kneller**
- ⤴ Cenozoic History Written in a Passive Continental Margin: It's there for the reading – **Greg Mountain**

5:00 – 5:30 Working Break, questions and discussion

5:30 – 6:45 Breakout session II. Focus areas (e.g. Discovery Corridors) of the science topics; identification of GeoPRISMS and EarthScope overlap.

- 2a. Orogenic processes – building the ENAM framework. STEPS 101
- 2b. Rifting processes – magmatism and the opening of the Atlantic Ocean. STEPS 102
- 2c. Post-rift processes – transformation to a passive margin. STEPS 290
- 2d. Neotectonics and surface processes – active processes on the passive margin STEPS 394.

6:45 Board bus in from of STEPS for transport to the mountain-top campus.

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7:00 – 8:30 DINNER (Wood Dining Hall) – Dinner presentation by Bob Sheridan on historic integrated approach to ENAM rifting and passive margin evolution.

Evening Session (Moderator: Maggie Benoit)

8:30 – 9:30 ENAM datasets and broad undergraduate involvement

- ⤴ GeoPRISMS and MARGINS data portal – **A. Goodwillie**
- ⤴ Potential for an ENAM REU – **E. Johnson**

9:30 Board bus for transport back to STEPS

Friday, 28 October – Workshop Day 2.

7:00 – 8:00 BREAKFAST. **STEPS A-concourse**

Morning Session (Moderators: Dan Lizarralde and Peter Flemings)

8:00 – 9:30 Report from breakout sessions I and II and open discussion.

9:30 – 10:30 Short Presentations (10 minutes each).

- ⤴ Mineral, Virginia, earthquake illustrates seismicity of a passive-aggressive margin - **S. Stein**.
- ⤴ Geodynamic modeling of the Canadian Margin – **Steven Ings**.
- ⤴ TBD presentations – **participants**.

10:30 – 11:00 Working break and open discussion

11:00 – 12:30 Reports from aligned facilities and international partners

- ⤴ USGS: USGS work along the Atlantic margin – **D. Brothers**
- ⤴ Implications of RIE basic science and models for an understanding of source and reservoir rocks on passive margins – **Lori Summa, Exxon-Mobil**
- ⤴ Exploring pre-Cretaceous terranes and basins beneath the Atlantic Coastal Plain: Implications for rift-initiation and evolution – **W. Horton**
- ⤴ New geoscience programs and initiatives for offshore Nova Scotia – **D. Brown**
- ⤴ European perspective on rifted margins – **R. Huismans**
- ⤴ Magma Starved Rifting: Galicia/Newfoundland Breakup and Initiation of Seafloor Spreading – **D. Sawyer**

12:30 – 1:00 Questions and discussion

1:00 – 2:00 LUNCH. STEPS Concourse A.

Afternoon Session (Moderators: Basil Tikoff and Lori Summa)

2:00 – 3:15 **Breakout session III. Focus Areas, Discovery Corridors, and Synergy**

(Specific breakouts TBD based on previous breakout sessions). Rooms TBD.

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3:15– 4:00 Working Break, Preliminary Reports from Breakout Session III and discussion.

4:00 – 4:30 Panel discussion of science logistical considerations; permitting

IRIS – **B. Woodward**

Geodesy – UNAVCO – **R. Arrowsmith**

R/V *M.G. Langseth* facility – **S. Higgins**

4:30 – 6:00 **Breakout session IV – Implementation.**

(Specific topics to be defined by the group discussion, possible including ES-GP synergy, fate of the TA in ENAM, and a possible PBO in ENAM). Rooms TBD.

6:30 – 8:00 DINNER in the UC Dining Hall, return to STEPS for poster session.

8:00 – 9:30 Posters (Posters are up the entire meeting)

Saturday, 29 October – Workshop Conclusion.

7:00 – 8:00 BREAKFAST. STEPS Concourse A.

Morning Session (Moderators: Frank Pazzaglia and Juli Morgan)

8:00 – 9:30 Breakout session reports and open discussion

9:30 – 10:00 Student reports and perspectives

10:00 – 10:30 Break

10:30 – 11:00 Broader Impacts

Panel discussion

EarthScope – **R. Arrowsmith and M. Fouch.**

GeoPRISMS – **J. Morgan and M. Benoit**

DaVinci Science Center – **D. Smith**

11:00 – 12:30 Decision making

(1) Where are the GeoPRISMS focus areas?

(2) Where/how does GeoPRISMS leverage their efforts (industry and USGS)?

(3) Are there GeoPRISMS thematic studies to be performed?

(4) What are the highest priority EarthScope science targets ?

(5) What is the fate of the TA and FA once the scheduled deployment ends in 2015?

(6) What would be the goals of an ENAM PBO ?

(7) What emerges as the best opportunity for GeoPRISMS-EarthScope synergy?

12:30 – 1:30 LUNCH (box lunch for field trip participants) and Closure

1:30 – 6:00 Field trip to the Newark basin exposures along the Delaware River