



2019 GeoPRISMS Synthesis & Integration Theoretical & Experimental Institute

Conveners:

Harm van Avendonk, Katie Kelley

Joe Dufek, Christie Rowe, Phil Skemer, Ikuko Wada

*Rob Harris, *Kyle Straub, *Katie Keranen, *Jessica
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GeoPRISMS Office & Steering Committee: 3-year staggered terms

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NSF Program Officers and many former GSOC and Margins Steering Committee members are here – feel free to ask them about the program!

ExTerra: Evolution of arc crust

Conveners: Stacia Gordon¹ and Alicia Cruz-Uribe²

¹University of Nevada-Reno, ²University of Maine

This mini-workshop will gather a broad group of geoscientists that use a variety of different approaches (field, experimental, petrological, geochemical, geochronological, seismic, numerical modeling) applied to different parts of the arc (the subducting plate, mantle, magma plumbing system, supracrustal rocks) to discuss the major questions that still surround the evolution of arc crust. The group will identify the best tools and methods to answer these questions. The meeting will also serve to provide a space for early career researchers to network with more senior personnel, where scientists from a variety of subdisciplines who work on different arc sections around the world can compare and contrast observations. In addition, this gathering of the arc crust community will make a plan for future convergent margin research, specifically on arc crust. It is important to establish new goals and questions concerning arc crust before GeoPRISMS has fully ended to keep the momentum that this program has established.

Keynote Speaker: Olivier Jagoutz (MIT)

Sunday December 9, 2018 • 1:15 – 5:30pm

Investigating subduction processes at the Hikurangi margin, New Zealand

Conveners: Laura Wallace^{1,2}, Dan Basset¹, Heather Savage³, Samer Naif⁴, Shuo Shuo Han³, Patrick Fulton⁴

¹GNS Science, New Zealand, ²University of Texas Institute for Geophysics, ³Lamont Doherty Earth Observatory, Columbia University, ⁴Texas A&M University

The Hikurangi margin offers an outstanding opportunity to address many of the key topics of GeoPRISMS Subduction Cycles and Deformation. Major international experiments to investigate subduction processes at the Hikurangi margin have taken place in the last year including two IODP drilling expeditions to investigate shallow slow slip events, and two seismic experiments with the R/V Langseth and R/V Tangaroa to investigate controls on plate coupling and slow slip. The objectives of a Hikurangi margin mini-workshop are to discuss new observations from the New Zealand focus site and their implications for an integrated understanding of subduction processes, as well as planning for upcoming experiments.

Keynote Speakers: Jamie Howarth, Demian Saffer, Nathan Bangs, Ryuta Arai, Becky Bell, Harm van Avendonk, Stuart Henrys, Donna Shillington, Laura Wallace, Evan Solomon, Samer Naif, Wiebke Heise



- 2015 SCD TEI
 - ~130 participants
 - >50% ECI
- 2017 RIE TEI:
 - 133 participants
 - 59 Students & postdocs
- 2019 Synthesis & Integration TEI
 - ~170 participants
 - ~70 students/postdocs

Underpinnings of GeoPRISMS Science

- Two integrated initiatives:
 - Rift Initiation & Evolution
 - Subduction Cycles & Deformation
- Cross-cutting thematic studies
 - Evolution of continental crust
 - Fluids, melts, and their interactions
 - Tectonic-sediment-climate feedbacks
 - Geochemical cycles
 - Plate boundary deformation
- A vibrant interdisciplinary research community and an intellectual incubator for collaborative research.



What is a Theoretical and Experimental Institute?

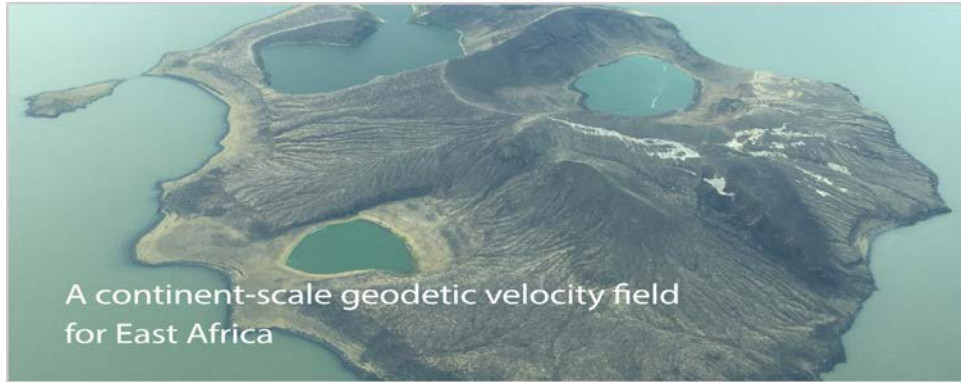
A hybrid workshop, symposium, and short-course – designed to:

- Share and discuss major advances & key findings (state of the science)
- Identify emerging questions, knowledge gaps
- Integrate findings across primary sites and disciplines
- Define new & necessary data, models, experiments, or collaborations



TEI Charge:

- Identify emerging directions and/or burning questions – pointing to **new collaborations, directions,** and/or a need for focused workshops.
- Engage ECI and students, foster cross-disciplinary exchange of expertise & results, and **identify areas primed for advances** through interdisciplinary collaboration.
- Position the GeoPRISMS community & its substantial intellectual momentum for what's next: - ***beyond just listing questions.*** Define and articulate future science and what's needed to make it happen.
- Develop concrete **ideas for legacy products or activities,** including both science and E&O.



Major Fall 2019 Newsletter

- Invited thematic and primary site reviews
- Individual project “nuggets”
- Summary of DLP, AGU awardees
- Profiles of scientists whose careers incubated in MARGINS /GeoPRISMS
- Forward looking pieces on opportunities and emerging questions
- An important legacy product