- NSF 14-609
- Focus on deformation processes acting over time-scales of 10-100 years and longer
- Projects typically multi-investigator, multi-institution, and involve multiple disciplines across the earth sciences (e.g., structural geology; rock mechanics; petrology; geochronology & thermochronology; sedimentology & stratigraphy; geomorphology; paleomagnetism; geophysics (geodesy, seismology); geochemistry; numerical modeling)
- Tectonic Collaboratories: explore emerging frontier directions in tectonics research by supporting groups of investigators to communicate and coordinate their research activities across broad disciplinary boundaries in the earth sciences (up to $300,000 for up to 4 years duration)

From New Departures in Structural Geology and Tectonics, 2013
Some basic program data

- Annual budget $\approx$ $9.2$ M (down 10% from FY2013)
- 180 to 200 proposals per year
- Merit review: ad hoc reviews plus panel
- Success rate: 20% to 30% (last 5 yrs – 22% FY2015)
- Award size $\approx$ $90K$-$100K$ per year
- Collaborative and single investigator projects
- Project duration: 2 to 5 years (avg $\approx$ 3 years)
- Program manages about 200 active awards
SUCCESS RATES FOR SOME EAR PROGRAMS COMPARED TO EAR AND NSF
Community building and future directions

✓ Analog Modeling of Tectonic Processes: May 13-15, 2015, Amherst, MA (organizing committee: Michele Cooke*, Saad Haq, Jacqueline Reber)

✓ Comparative Geodynamics and Tectonics of Venus, Earth, and Rocky Exoplanets: May 4-6, 2015, Pasadena, CA (award to Laruent Montesi)

✓ US-Taiwan Workshop Feedbacks and Coupling Among Climate, Erosion, and Tectonics during Mountain Building (FACET): May 28-June 2, 2015, Taipei, Taiwan (US organizing committee: Tim Byrne*, Jean Crespi, Eric Kirby, Chris Poulsen, Brian Yanites, Francis Wu)

✓ Future Directions in Tectonics: May 20-22, 2016, Madison, WI (organizing committee: Richard Allmendinger, Marin Clark, Rebecca Dorsey, Paul Kapp, Kevin Mahan, James Spotila; award to Basil Tikoff, Laurel Goodwin, Yvette Kuiper)

✓ Fault Zone Processes: Spring, 2016, Arizona (organizing committee: Ramon Arrowsmith*, Margaret Boettcher, John Platt, Heather Savage, Michael Brudzinski)

✓ Gordon Research Conference and Seminar, Rock Deformation: August 20-26, 2016 (vice chair Julia Morgan)
Other opportunities

✓ Other Core Programs in EAR and OCE

✓ GeoPrisms

✓ EarthScope

✓ PREEVENTS (Prediction of and Resilience against Extreme EVENTS): Dear Colleague Letter NSF 15-117

✓ CAREER

✓ Office of International Science and Engineering
  ✓ EAPSI (East Asia and Pacific Summer Institutes for U.S. Graduate Students): deadline Nov. 12, 2015
  ✓ Partnerships for International Research and Engineering (PIRE): new solicitation in Spring 2016
  ✓ International Research Experiences for Students (IRES): deadline Aug. 16, 2016
  ✓ Partnerships for Enhanced Engagement in Research (PEER): funding for developing country researchers

✓ Science Across Virtual Institutes (SAVI): Dear Colleague Letter NSF 13-073

!!! Visit the NSF Booth in the Exhibit Hall !!!
Some Thoughts on Proposal Writing

Tectonics Program Solicitation – NSF 14-609
NSF Merit Review Criteria – Intellectual Merit

1. What is the potential for the proposed activity to advance knowledge and understanding within its own field or across different fields?

2. To what extent does the proposed activity suggest and explore creative, original, or potentially transformative concepts?

3. Is the plan for carrying out the proposed activities well-reasoned, well-organized, and based on a sound rationale? Does the plan incorporate a mechanism to assess success?

4. How well qualified is the individual, team, or organization to conduct the proposed activities?

5. Are there adequate resources available to the PI (either at the home organization or through collaborations) to carry out the proposed activities?
NSF Merit Review Criteria – Broader Impacts

1. What is the potential for the proposed activity to benefit society or advance desired societal outcomes?

2. To what extent do the proposed activities suggest and explore creative, original, or potentially transformative concepts?

3. Is the plan for carrying out the proposed activities well-reasoned, well-organized, and based on a sound rationale? Does the plan incorporate a mechanism to assess success?

4. How well qualified is the individual, team, or organization to conduct the proposed activities?

5. Are there adequate resources available to the PI (either at the home organization or through collaborations) to carry out the proposed activities?

Broader impacts may be accomplished through the research itself, through the activities that are directly related to specific research projects, or through activities that are supported by, but are complementary to the project.
NSF values the advancement of scientific knowledge and activities that contribute to the achievement of societally relevant outcomes. Such outcomes include, but are not limited to:

- full participation of women, persons with disabilities, and underrepresented minorities in STEM
- improved STEM education and educator development at any level
- increased public scientific literacy and public engagement with science and technology
- improved well-being of individuals in society
- development of a diverse, globally competitive STEM workforce
- increased partnerships between academia, industry, and others
- improved national security
- increased economic competitiveness of the United States
- enhanced infrastructure for research and education
Some tips from our experience

Hypothesis driven vs. curiosity/discovery proposals

• Proposals don’t have to be hypothesis driven
• Distinction should be made clear to reader
• In either case, be sure to close the loop – how will the expected outcomes either test hypothesis or advance knowledge (exercise should not be left to the reader)

Methods and techniques need to be well-justified in context of project and budgeted

Proposals using facilities from other institutions should have supporting letters and these facilities should be described in Facilities, Equipment, & Other Resources section

Results from Prior NSF Support – opportunity to document success from previous funding and provides additional justification for future support. We also use this to help answer Merit Review questions.
Some tips from our experience

Tectonics proposals do not have to be collaborative to be successful – success rates of single institution proposals about the same as collaboratives


- “You have to tell your story in 3 minutes” – grab reader’s attention
- “You need a memorable hook” – why is work important
- “Keep it fresh” – unexpected and novel results
- “Don’t go solo” – working with others is important
- “Inspiration isn’t everything” – close examination and rewriting