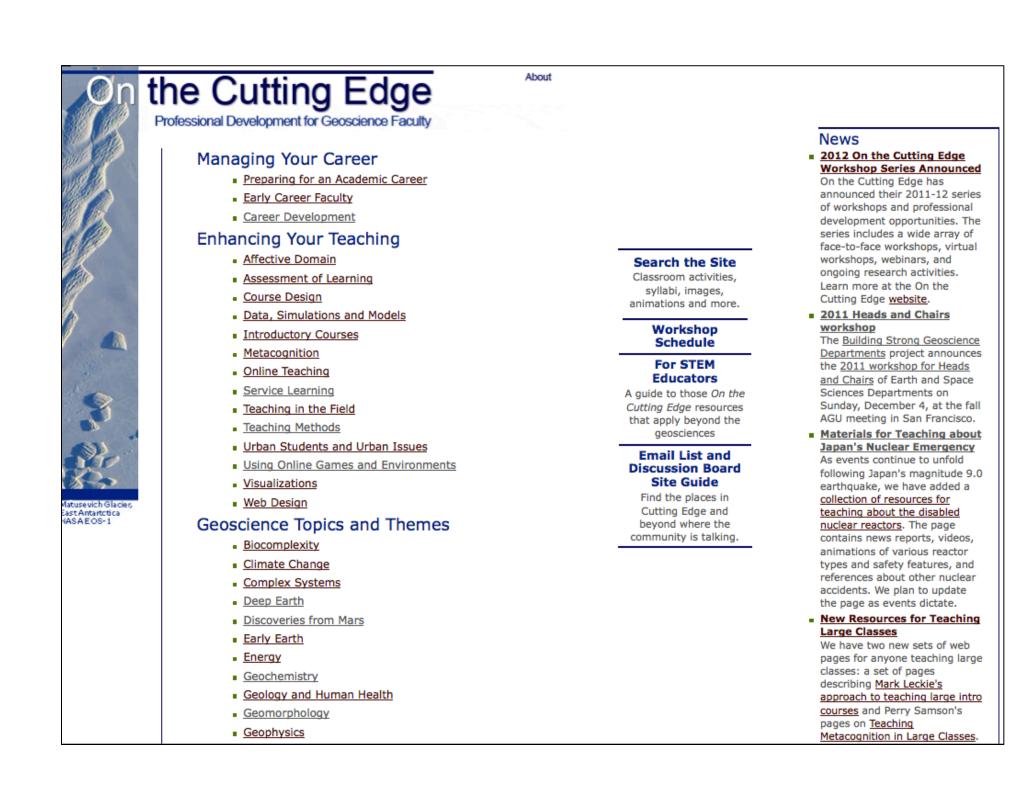
On the Cutting Edge: Face-to-Face and Virtual Professional Development for Current and Future Geoscience Faculty

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Program Description and Goals

- A comprehensive, discipline-wide professional development program for current and future geoscience faculty
- A synergistic, integrated multi-year series of faceto-face, virtual, and hybrid workshops
- A website of online resources
- Integrated workshops and websites
- Aim to develop a geoscience professoriate committed to high-quality instruction based on currency in scientific knowledge, good pedagogic practice, & research on learning
- Build a culture of sharing and communal improvement in support of undergraduate geoscience teaching. Faculty will:
- Participate in on-going professional development to improve teaching
- Contribute to improving geoscience education through development, publication, & review of new geoscience education resources
- Recognize standards for evaluating contributions
- Ultimate goal: improve undergraduate geoscience education



Program Hallmarks

- Workshops of a variety of types and lengths to address needs of faculty at all career stages at the full spectrum of institutions
- Workshop topics span the geoscience curriculum
- Web resources stimulated by workshops
- Searchable web resources integrated across the site
- Spinoffs and follow-on activities
- Emphasis on pedagogy in the context of geoscience
- Adaptation of teaching resources in the context of participants' specific situations

Workshop Series

- Workshop series: several workshops and events each year with various follow-on activities. Recent changes include expanding the use of virtual workshops and events.
- Teaching core geoscience disciplines (e.g., hydrogeology, geomorphology, sedimentary geology) and currently in combination (e.g., mineralogy, petrology, & geochemistry)
- Teaching introductory geoscience
- Emerging themes accelerate introduction of new geoscience content or aspects of pedagogy into the curriculum (e.g., affective domain, metacognition, visualization, early Earth)
- Repeating workshops (e.g., course design, early career geoscience faculty, workshops and events for graduate students and post docs interested in academic careers)
- Journal clubs (multi-session virtual events)
- Webinar series and virtual events

Pursuing an Academic Career 201 Problem Solving & Problem Based Learning Journal Club 2012 Spatial Thinking Journal Club 20:

Strategies for Workshop Design:

Design follows good teaching practice

Pre-Workshop

- Leaders set goals that guide workshop planning & evaluation
- Participants prepare by contributing teaching materials, essays, or posters or by exploring materials on the website
- Short answer questions asked on the registration forms help workshop leaders tailor the workshop to the participants
- Workshops designed so they are useful and immediately applicable to participants

During the Workshop

- Icebreakers & other structured interactions promote a comfortable workshop community for both face-to-face and virtual workshops & webinars
- Interactive strategies are used including interactive lecture, gallery walk session, small-group and whole-group discussion; breaks provide other opportunities for participants share their experience and knowledge
- Reflection time, individual work time, action planning help to transform participants' thinking about their teaching and promote change in instruction
- When possible, participants' contributions are peer-reviewed by other participants, allowing the author to strengthen their activity and to learn what others are doing in the classroom
- Formative feedback allows leaders to address concerns & requests

Post-Workshop

- Participants' contributions are added to the collection of publicly available teaching materials
- Summative feedback from participants is used to improve future workshops & events

and its objectives by everyone involved, and realistic estimates for how long activities will really take. The workshop content and structures that we have developed result in high rates of satisfaction by participants.





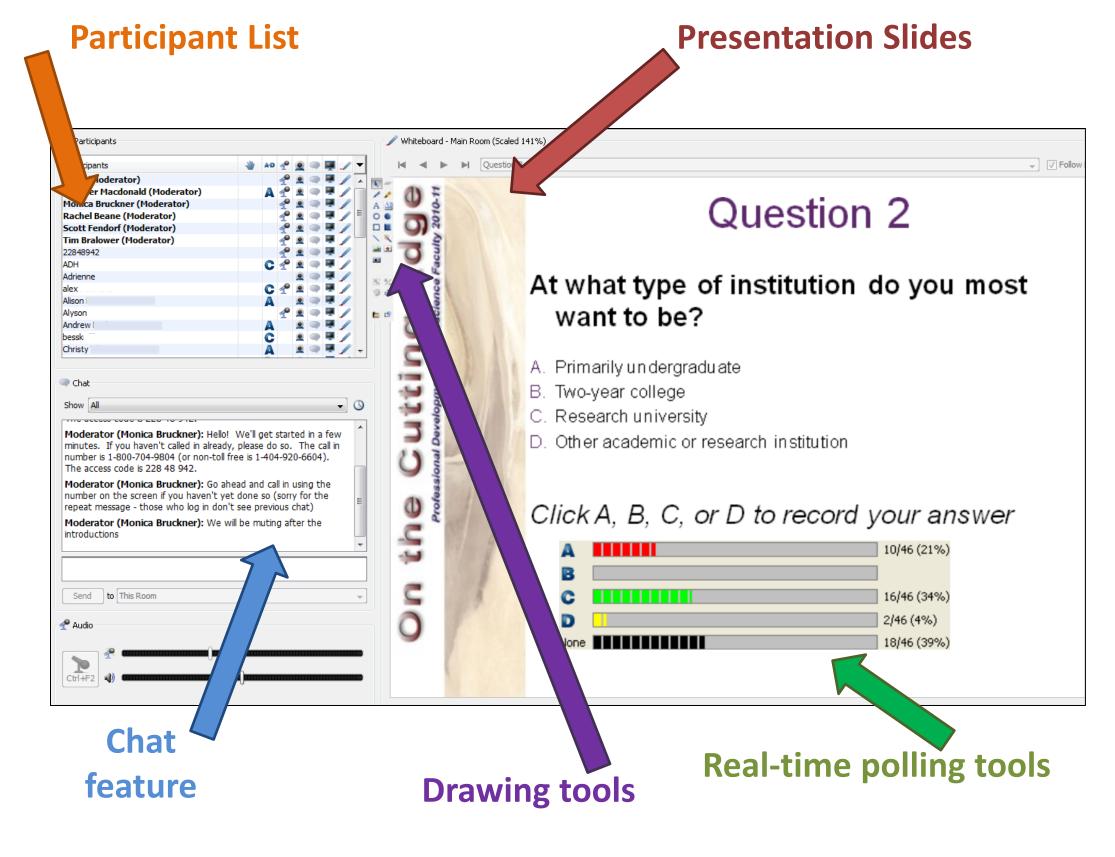


Virtual Workshop Considerations

• Promote interaction through features on webinar software, chat-aided question and answer, small-group synchronous interactions, and/or discussion boards

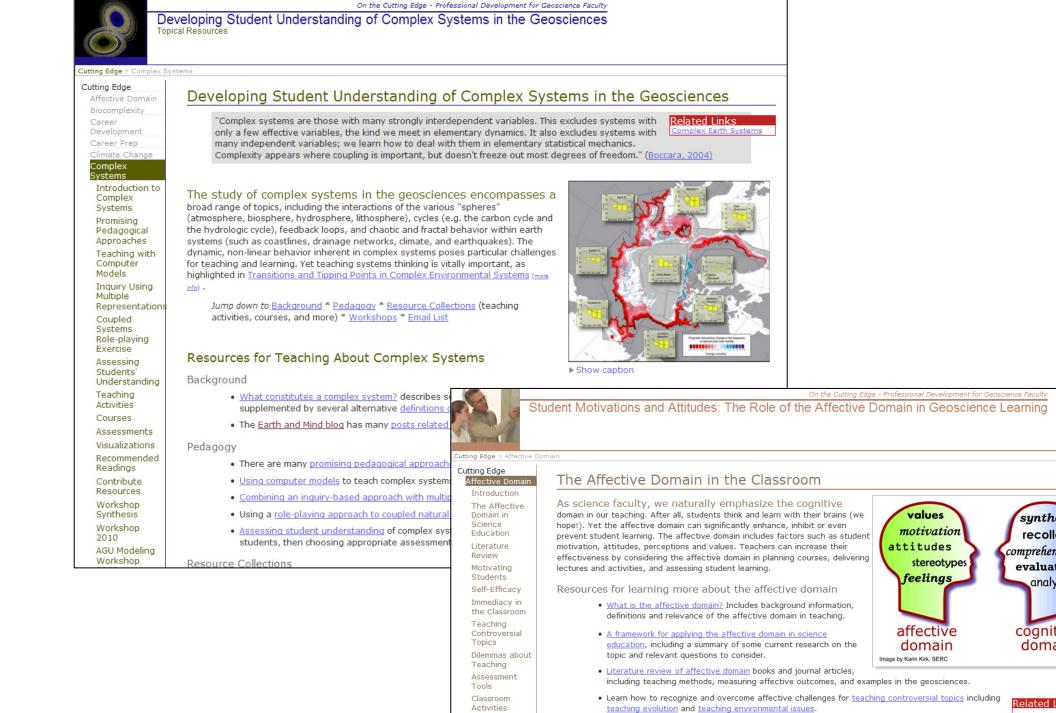
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- Be purposeful with virtual communication strategies; each element needs a specific purpose or product
- Plan detailed schedules for workshop events
- Use asynchronous discussions and recordings of synchronous events
- Provide sufficient technical support for participants & leaders prior to and during the virtual event



Website: A Resource for the Community, by the Community

- 40 topical collections
- Over 850,000 unique visitors in 2010
- Over 1500 community-contributed activities





Workshops that appear to flow spontaneously reflect extensive planning, a clear understanding of the program



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http://serc.carleton.edu/NAGTWorkshops