

Angeles) showed how advanced earthquake simulations using local geology have revealed that sedimentary basins in southern California exacerbate earthquake hazards by channeling wave energy. Serkan Bozkurt (USGS, Menlo Park, Calif.) showed how the integration of data from earthquake monitoring stations and plate models revealed a unique tectonic system underlying the Tokyo, Japan, area. Through an animation he developed, attendees saw how the spatial orientation of earthquakes within the crust implied that a dislodged microplate wedge was caught above the subducting Pacific plate.

Other talks focused on how developing common vocabularies and interoperable cyberinfrastructure will help with hazard management. Dina Venezky, a member of the USGS Volcano Hazards Team, discussed

USGS efforts to standardize the language used in volcano warnings. Mark Gahegan (Pennsylvania State University, University Park) spoke about how geoinformatics has the potential to aid United Nations disaster relief first response teams if local scientists create information networks of population, transportation, and other geospatial data before a disaster occurs.

Getting People on Board

A main conference theme involved how to create more enthusiasm for geoinformatics among the Earth science community. Conference members agreed that geoinformatics faces challenges on individual levels with getting people to share raw data, and on institutional levels with attracting skilled GIS technicians into Earth science departments.

John LaBrecque, head of NASA's Earth Surface and Interior focus area, said that organizations need to take a federated approach to data management, such as that being used to manage global satellite data under the developing Global Earth Observing System of Systems. He said that different agencies should work together to develop data standards, common nomenclature, and new technologies, to enlist the enthusiasm of the geoscience community.

Geoinformatics 2006 was held 10–12 May 2006 at USGS headquarters in Reston, Va. Geoinformatics 2007 is tentatively scheduled for May 2007. Additional information, including webcast archives, is available at <http://www.geongrid.org/geoinformatics2006/>

—MOHI KUMAR, Staff Writer

Young Scientists Focus on the Dynamics of the Lithosphere

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Young researchers face a wide choice of scientific approaches and directions that may shape their careers. The Earth sciences, in particular, offer a broad range of topics to study and techniques to use that exceeds what any current scientist was exposed to at the schools they attended. At early stages of their careers, researchers need to gain confidence in their expertise, and they often can benefit by expanding their scientific horizons and forging new collaborations.

The Meeting of Young Researchers in the Earth Sciences (MYRES) was founded to facilitate such career development activities. This grassroots effort provides an environment for young scientists to meet an international and interdisciplinary community through a biannual meeting and related Web activities. The first such conference (MYRES I) was held in 2004.

The theme of the recent MYRES II conference in Verbania, Italy was "Dynamics of the Lithosphere." Support from the U.S. National Science Foundation and the European Science Foundation enabled over 100 young scientists from 25 countries (from every continent except Antarctica) to attend the conference.

Keynote presentations dealt with the architecture and evolution of the lithosphere, and the brittle and ductile deformation processes affecting it, viewed from laboratory and field perspectives. These presentations described seismic and aseismic deformation transients, and summarized long-term observations of plate-boundary-scale mechanical behavior, from geodesy to numerical modeling. The lectures were complemented by plenary and thematic discussion sessions and by a poster session. For the first time for MYRES, hands-on tutorials introduced commercial and public-domain software commonly used in Earth sciences research.

The community at MYRES II included seismologists, geodesists, structural geologists, theoreticians and experimentalists, and volcanologists and geochemists. The relaxed and nonjudgmental atmosphere of the conference allowed for easy interaction between these various specialties. While the plenary lectures provided the primary setting of introducing the various scientific components needed for an integrated approach to lithosphere dynamics, much of the connections forged between young researchers occurred during the formal and informal discussions.

An Integrated Approach to Lithosphere Dynamics

While discussing the rheology of faults, conference attendees stressed the importance of combining field observations, laboratory experiments, and numerical modeling. The very definition of the fault zone was debated, as meeting participants noted that such a term needed to cover multiple scales with regards to thickness, depth extent, and relation with observable physical processes.

Rigorous criteria to recognize seismic ruptures in exhumed faults are particularly important to relate structural geology, seismology, and geodynamics. Discussion participants indicated that shear zone development modeling should explore various parameterization schemes, especially using internal state variables (such as accumulated damage, grain size, or clay deposition) inspired by field observations and quantified in the laboratory of various weakening processes, to ultimately determine what controls fault zone thickness under a variety of conditions. The meeting attendees specifically noted that a macroscopic description of energy dissipation and partitioning between fault core and wall rock also should be pursued.

The attendees indicated that the laboratory study of mature faults and the documentation of thermal pressurization in the lab were high-priority research challenges. They recommended that conditions similar to the middle crust should be particularly explored due to the variety of brittle, ductile, and metamorphic phenomena that interact at that level. Some attendees suggested that new machines should be developed to deform centimeter- to decimeter-scale samples at middle to lower crust conditions. Such machines would permit important new scientific developments, such as documenting microstructural development in situ or studying the interaction between deformation and chemical reactions.

A discussion on the strength of the lithosphere identified two key questions to explore with a multidisciplinary approach: Do earthquakes occur in the lower crust and/or the upper mantle? What are the primary controls on the effective elastic thickness of continental cratons? Attendees agreed that accurate estimates and an appraisal of the uncertainties of elastic thickness and hypocentral depth are needed; however, they noted that complementary approaches involve recognizing the shortcomings of the commonly used 'Christmas tree' crustal strength profile, which assumes a depth-independent strain rate. The meeting attendees advocated exploring alternative assumptions and improving how the strength profile is converted into an effective elastic thickness.

Some attendees suggested that field work on the composition of the lower crust and laboratory tests should complement theoretical studies on the strength of the lithosphere.

In addition, meeting participants indicated that the determination of effective elastic thickness in cratons should be complemented by looking at flexure in dynamic areas such as subduction zones, and by using postglacial and postseismic data to determine rheological laws at the very largest scales. Attendees stressed the importance of including seismic anisotropy, tomography,

and magnetotelluric studies when discussing the constitution of the lithosphere

Finally, subduction megathrusts, which have seismic as well as aseismic transients, were the focus of a specific discussion group that urged studying the role of fluids on seismogenesis and the strength of the crust in this environment.

Another meeting contingent, which focused on the lithosphere-asthenosphere transition, became interested in the possible presence of melt there. Once again, a multidisciplinary approach—including field observations of the link between tectonics and magmatism in rifting environments, complemented by geophysical observations, numerical modeling, petrology, and laboratory determination of phase and melting relations and associated rheologies—was suggested as a method to provide the greatest potential to advance knowledge. The migration and focusing of magma—observed in many tectonic environments—and the interaction between magma migration, deformation, and shear zones, present modeling challenges that meeting participants felt can be tackled in the near future. Attendees indicated that questions to stimulate research include: Is there melt under the oceanic and/or continental lithosphere? How much rifting is required to produce melting? How much melt is present at a hot spot or a mid-ocean ridge? How is melt extracted? Is there water in melt?

The conference was complemented by a field trip to the Monte Rosa Massif in the Western Alps. The field trip—organized by two young scientists, Matteo Massironi and Andrea Bistacchi—introduced a group composed predominantly of geophysicists to the intricacies of Alpine tectonics and the variety of metamorphic terranes present in the

massif. The excursion, designed to observe natural phenomena and discuss their implication for large-scale tectonics and geophysical observations also again demonstrated the synergy between various branches of geosciences.

Developing an Interdisciplinary and International Community

MYRES is a scientific meeting series that also strives to bolster a community of young geoscientists. The scientific themes are not restricted to 'young' scientists, and the meeting is open to all. However, many scientific themes increasingly require interactions between disciplines that may be easier to develop during the formative years of scientists' careers, before a more sustained scientific focus and perhaps administrative responsibilities dominate working activities.

MYRES meetings differ from more traditional meetings because they are organized entirely by early-career scientists. MYRES meetings are attended mainly by graduate students, postdocs, and young faculty. According to some of the extensive feedback that was gathered at and after the meeting, the vast majority of the attendees were satisfied with the meeting, and they believed that it was an important complement to more traditional conferences. The open, nonjudgmental spirit, in which everything could be discussed, even at a moment's notice, was especially appreciated, according to feedback comments.

Meeting coordinators recognize that the MYRES community needs to continue to be as inclusive as possible in order to accurately reflect the evolving gender, geographical, and ethnic demographics of young researchers involved in geoscience fields.

Attendance at MYRES II was 30% more than MYRES I, and included researchers from twice as many countries, and half of attendees were female. The meeting received applications from everywhere, and was able to welcome (and fund), for the first time, participants from East Asia, Australia, and sub-Saharan Africa. Future installments may reach out even further.

Future of MYRES: Call for Proposals

The current MYRES Steering Committee is calling for suggestions for the scientific theme of forthcoming MYRES meeting in 2008. These suggestions will be presented to the community during the 2006 AGU Fall Meeting and the 2007 Spring Meeting of the European Geophysical Union. Proposals will be open for comment until late spring of 2007. Proponents of the selected suggestion will become the new MYRES chairs, and they will be expected to obtain funding for the next meeting. For more information, visit the Web site: <http://www.myres.org>

The MYRES II conference was held 3–6 July 2006 in Verbania, Italy.

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ABOUT AGU

Opportunity to Name Candidates for the William Kaula Award

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The William Kaula Award recognizes unselfish service to the scientific community through extraordinary dedication to, and exceptional efforts on behalf of, the Union's publications program. Individuals may be recognized for such contributions as outstanding reviewing, editorial service beyond

expectations, and innovative leadership. It is fitting that recognition to the publications program be named in honor of William Kaula, who gave unstintingly of his talents and energies to AGU publications. He served as Editor of *Reviews of Geophysics* and *JGR-Solid Earth*, led the development of a number of policies and practices during his service on the Publications Committee, was a

mentor to more junior scientists serving as journal Associate Editors and Editors, and pressed always for higher standards for AGU journals.

The Publications Committee selects a recipient annually, who is recognized at one of the Editors' Evenings and through *Eos*. Past recipients include Alex Dessler, Marcia Neugebauer and William Hinze.

AGU would like input from the community on who might be a candidate for this award.

Please send your nominations outlining as clearly as possible why this particular individual is a worthy recipient of this award, to pubmatters@agu.org by 28 November 2006.