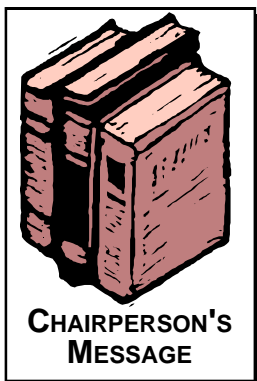




STRUCTURAL GEOLOGY AND TECTONICS DIVISION Newsletter

Volume 24. Number 2

September 2005



Chair's Message –

Hello to everyone out there in *structure-tectonics land*. It is an odd and unkind trick of nature that the older one becomes, time seems to fly by faster and faster. I cannot believe this is late July already – it seems like field camp just ended and now fall semester is only four weeks away. Arrrgh! This has been a busy, yet fulfilling week for **Bill Dunne** and myself, serving on the *Joint Technical Program Committee* for the GSA national meeting, representing structural geology and tectonics. There are an incredible number of excellent talks and posters in structure-tectonics planned for this meeting. You do not want to miss this year's GSA Annual Meeting on October 16-19 in Salt Lake City, Utah. Of course, in addition to the excellent technical presentations, we are also celebrating the 25th anniversary of the Structure-Tectonics Division. We are planning a birthday party at our annual business meeting, a new division logo (on coffee mugs, etc.), and of course the awarding of our prestigious career contribution, best paper, and student research awards. Someday you will be able to say, "...I was there!" But, you need to register for the meeting before September 12 in order to get the all-important discount.

The SGT Division needs help and support from the membership on an ongoing basis. There are several committees that rotate in "fresh blood" on an annual basis (see contents of this newsletter). *Please* – if anyone has interest in professional service to GSA's largest division, please let us know. Volunteerism fosters good karma!

The current SGT board members have been awesome to work with this year. They include **John Geissman** (first vice chair), **Bill Dunne** (second vice chair), **Peter Vrolijk** (secretary-treasurer), **Liz Schermer** (past chair), and **Darrel Cowen** (GSA Councilor and Division Liaison Representative). Liz has helped me innumerable times throughout the year with reminders and suggestions, and John, Bill and Peter are always ready to help and get things done. It has been professionally and personally rewarding, and I want to express my sincere thanks to everyone!

As a parting thought: In this age of everything electronic and digital, I still celebrate the drafting pencil and a hand-drawn structural cross section! Few things we do in the classroom or lab bring together for students the elements of structural geology like a rigorous cross section. They represent the architecture of the earth, the 'form and function' of crustal deformation. Cross sections are perhaps the ultimate blending of art and science, like the architectural blueprint of a building (artistic design + engineering). However, unlike the well-constrained architectural blueprint for a building, our "*crustal architectural blueprints*" are often very challenging for students (and professional geologists) due to incomplete data, particularly subsurface data. I have

reason to fear that the art and science of drawing structural cross sections is being lost in the modern classroom, perhaps in deference to canned structural software. I would like to hear from the division membership. Is this a real issue for us to consider?

How do you incorporate cross section construction in your classrooms or labs?

Should the SGT Division consider sponsoring a "cross section poster session" for students at the national meeting, or an annual award for the "best published cross section?" It would be fun to see what shakes out as the best cross sections over the next few years. It just seems to me that cross sections are such a fundamental, core intellectual element of our discipline that we should endeavor to place more emphasis on them. *What do you think?* Please email your thoughts to lageson@montana.edu and let's see what comes of this! Thank you!

See you in Salt Lake City this coming October for what promises to be a very good national meeting for GSA and the Structural Geology and Tectonics Division. Don't forget about our 25th anniversary party!

- Dave Lageson

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Visit the NSF website for Tectonics for the latest announcements and news:

http://www.nsf.gov/funding/pgm_summ.jsp?pims_id=13418&org=EAR

The new NSF-EAR Program Announcement 04-316 (posted September 9, 2004)

<http://www.nsf.gov/pubs/2004/nsf04613/nsf04613.pdf> is now available. Please be sure to consult it when writing proposals. It replaces <nsf03590>.

Recently Announced Funding Opportunities

Research Experiences for Undergraduates

(NSF 05-592) Posted June 9, 2005

Earth Sciences: Instrumentation and Facilities

(NSF 05-587) Posted May 5, 2005

ADVANCE: Increasing the Participation and Advancement of Women in Academic Science and Engineering Careers

(NSF 05-584) Posted April 15, 2005

Faculty Early Career Development (CAREER) Program

(NSF 05-579) Posted March 31, 2005

EarthScope News

For more information, visit www.earthscope.org.

EarthScope is coming to the Northern Rockies!

Sept. 16–18, 2005, Montana State University-Bozeman, MT

Geodetic instruments from the PBO component of EarthScope are currently being deployed in the northern Rocky Mountains, and the USARRAY transportable seismic network will arrive in 2007. Now is the time for all geoscientists working in this region to start making plans to fully utilize the wide range of observing capabilities EarthScope will bring to bear on the northern Rocky Mountains. The goals of this workshop are to familiarize earth scientists with interests in Rocky Mountain geology with the capabilities of the Earth Scope experiments and to identify the "big" scientific questions that can be addressed most effectively through EarthScope activities. The workshop results will be compiled in the form of a "white paper" that will outline an integrated research agenda for the use of the EarthScope facilities and identify ways to engage the public, students, and other geoscientists through a variety of education and outreach activities.

Scientific targets for EarthScope:

- Continental structure and evolution
- Fluids and magmas in the crust and upper mantle
- Convergent margin processes
- Large-scale continental deformation
- Fault properties and earthquake processes
- Deep-Earth structure
- Crust-mantle interactions
- Seismicity, active tectonics, and geohazards
- Evolution of landscapes
- Magmatism and mineralization

Workshop activities

On-campus workshop: September 16 (evening only), 17 and 18

Pre-workshop field trip: Fri. September 16 - A taste of Archean and Proterozoic geology

Post-workshop field trip: Mon. September 18 - Visit to a local hot spot (Yellowstone)

Both field trips are optional, and there is separate registration for each.

To apply, or for more information, visit <http://serc.carleton.edu/earthscoperockies>

Applications for travel stipends were due by July 15, 2005.

The registration deadline is September 1, 2005.

SLC 2005 Science—Learning—Colleagues

2005 GSA Annual Meeting & Exposition Salt Lake City, Utah—October 16-19, 2005

Abstracts Deadline: July 12
Standard Registration Deadline: September 12
Premeeting Field Trips: Thurs.-Sat., Oct. 13-15
Short Courses and Workshops: Fri. & Sat., Oct. 14-15
Presidential Address & Awards Ceremony: Sat., Oct. 15, 7-9pm
Welcoming Party & Exhibits Opening: Sun., Oct. 16, 5:30-7:30pm
Technical Program: Sun.-Wed., Oct. 16-19
Postmeeting Field Trips: Wed.-Sat., Oct. 19-22

REGISTER: Online at www.geosociety.org
By mail: 2005 GSA Annual Meeting, P.O. Box 9140, Boulder, CO 80301-9140
By fax: 303-357-1071, or 303-357-1072 if using a credit card

The following list highlights offerings that may be of interest to SG&T members; the complete lists of sessions, short courses, etc. are available at www.geosociety.org.

Pardee Keynote Symposia

P1. 2004 South Asian Tsunami

GSA Geophysics Division; GSA International Division; GSA Sedimentary Geology Division; GSA Structural Geology and Tectonics Divisions; GSA Geology and Society Division

Joanne Bourgeois, University of Washington, Seattle, Wash.; **Brian F. Atwater**, U.S. Geological Survey, Seattle, Wash.
The South Asian Tsunami of 26 December 2004 raises questions about the parent earthquake, the tsunami's generation and runup, and global access to the benefits of science.

P2. Research Opportunities, New Frontiers, and the Questioning of Paradigms in Structural Geology and Tectonics: Celebrating the 25th Anniversary of the SGT Division

GSA Structural Geology and Tectonics Division; NSF Tectonics Program

William Matthew Dunne, University of Tennessee, Knoxville, Tenn.; **John Geissman**, University of New Mexico, Albuquerque, N.Mex.; **David Lageson**, Montana State University, Bozeman, Mont.; **Elizabeth Schermer**, Western Washington University, Bellingham, Wash.; **Peter Vrolijk**, ExxonMobil Upstream Research Co., Houston, Tex.

The Structural Geology and Tectonics Division will use the opportunity of its 25th anniversary to convene a group of 12 leading geoscientists to present papers about exciting new opportunities and frontiers for the future of structural geology and tectonics, while encouraging all to challenge existing paradigms.

P3. Science, Politics, and Environmental Policy

GSA Geology and Society Division; Geology and Public Policy Committee; U.S. Geological Survey Science Impact Program

Herman A. Karl, Massachusetts Institute of Technology and U.S. Geological Survey, Cambridge, Mass.; **Judith A. Layzer**, Massachusetts Institute of Technology, Cambridge, Mass.

Too often scientists find their work ignored, marginalized, or misrepresented in environmental policy debates. This session explores the relationship between science and politics and describes emerging processes that aim to improve the effectiveness of science in environmental problem solving.

P4. Speaking Out for Evolution: Rationale and Resources for Supporting the Teaching of Evolution

Paleontological Society; Society of Vertebrate Paleontology

Judy Scotchmoor, University of California Museum of Paleontology, Berkeley, Calif.; **Carol M. Tang**, California Academy of Sciences, San Francisco, Calif.

Hear the latest efforts to strengthen the teaching of evolution, deep time, and geologic history in American classrooms. Through talks and a panel discussion, understand the relevance, strategies, resources, rationale, and support for teaching evolution.

Attention Students--Free \$\$\$

Student members of the SG&T Division are eligible to apply for grants to supplement the cost of field trips and short courses associated with the upcoming GSA Annual Meeting in Salt Lake City. Applications should be sent to Dave Lageson via email only lageson@montana.edu. Include your name, institution, class, specialty, poster or talk title, field trip title, and indicate why the field trip or short course is important to your research/professional development. Deadline: September 1.

Topical & Discipline Sessions

T1. Centennial Celebration Symposia for the Society of Economic Geologists, [Brian Hoal](#)

This session will present speakers from the 100th Anniversary Volume of the Society of Economic Geologists. Oral.

T3. Advances in the Understanding of Tectonic Settings and Structural Control of Ore Deposits, [John F. Thompson](#)

This session will present advances in our understanding of the tectonic setting and structural control of ore deposits. Oral.

T5. The Evolving Earth: Implications for Ore Deposit Formation, Evolution, and Benefaction, [Murray Hitzman](#)

This session will explore the relationship between ore deposit formation and the evolution of the earth. Oral.

T13. Fault Zone Controls on Fluid Movement, Earth Resources and Processes: Perspectives from Field, Laboratory, and Modeling Studies, [Victor F. Bense](#), Jonathan Caine

This session is intended to bring together people from diverse disciplines (e.g., groundwater hydrologists, geologists, petroleum engineers, numerical modelers) who face similar challenges in the geological characterization of fault zones and their impacts on fluid flow in the Earth's upper crust. Oral and Posters.

T29. Surface and Subsurface Geologic Characterization of the Edwards and Trinity Carbonate Aquifer Systems, Central Texas (Posters), [Charles D. Blome](#), Geary M. Schindel

This multidisciplinary session will highlight the recent advances in characterizing the surface and subsurface geology (mapping, 3-D modeling, geophysics, and isotope geology) of the Edwards and Trinity aquifer systems of central Texas. Posters.

T43. Recognition and Characterization of Neogene Faults, [Vincent S. Cronin](#), Keith A. Sverdrup

The death toll related to earthquakes since 1999 exceeds that of the previous decade. The importance of active-fault studies is self-evident. This forum includes the broad spectrum of efforts to find and characterize active faults. Oral and Posters.

T56. Carving the Western Landscape: The Evolution of the Colorado Drainage from Source to Sink, [Joel L. Pederson](#), Kyle House

New research is providing answers and raising more questions about the integration and erosion of the Colorado drainage.

This session brings together old and new work to revise the history of this famous landscape. Oral and Posters.

T68. Recent Advances in the Application of Sedimentology and Stratigraphy to Tectonic Problems, [David Barbeau](#), Andrew Leier

This session explores recent advances in tectonics and sedimentation research across a wide range of spatial and temporal scales, including studies of basin architecture, growth strata, active tectonics, and the composition of syntectonic sediments. Oral and Posters.

T71. Sedimentary Basins in Transition: Stratigraphic and Structural Records of Plate Tectonic Reconfiguration (Posters), [Cari L. Johnson](#), Kenneth Ridgway

This session features case studies of sedimentary basins that record fundamental changes in tectonic setting over time, such as shifting plate boundary configurations or multiphase reactivation of structures in intraplate settings. Posters.

T76. The Bureau of Land Management's National Landscape Conservation System as Outdoor Laboratories: New Research in Grand Staircase – Escalante National Monument and the Surrounding Area, [Alan L. Titus](#), John D. Powell

The session is to highlight recent geological research within Grand Staircase – Escalante National Monument and surrounding area. Potential topics are limited only by the regional context and all submissions are welcome. Oral.

T125. 4-D Evolution of the Continents: Integrated Solutions through Cyberinfrastructure, [A.K. Sinha](#), Robert D. Hatcher, G. Randy Keller

Several recent initiatives and programs are focused on studies of the 4-D evolution of continents. Answering key questions about continental tectonics requires highly integrated studies. Data and model integration through cyberinfrastructure facilitates scientific discovery. Oral and Posters.

- T121. **Thermochronology: Techniques, Applications, and Interpretations**, [Todd A. Ehlers](#), Peter W. Reiners
Time-temperature histories of rocks from thermochronologic approaches provide unique constraints on a wide range of tectonic, geomorphic, magmatic, and other processes. This session will explore recent developments in analytical and interpretation techniques, and new applications using both high and low-temperature thermochronology. Oral and Posters.
- T126. **Accretionary Orogens in Space and Time**, [Kent C. Condie](#), Peter A. Cawood, Alfred Kroner
This multidisciplinary session focuses on the origin and evolution of accretionary orogens through time. We encourage papers on tectonics, terrane accretion, juvenile crust production, seismology, changes in tectonic settings through time, and relationship to the supercontinent cycle. Oral and Posters.
- T127. **Geometry and Evolution of Extensional Basins and their Influence on Fluid Flow, Sedimentation, Seismicity, and Magmatism**, [Victoria E. Langenheim](#), V.J.S. Grauch
We solicit papers that discuss how the geometry and evolution of extensional basins influence seismicity, fluid flow, magmatism, and sedimentation, particularly but not exclusively in the Basin and Range and Rio Grande Rift. Oral.
- T128. **Processes of Basin and Range Extension: An EarthScope Primer**, [Dennis Harry](#), Craig H. Jones
Presentations on the geology, geophysics, geochemistry, and geodesy of the Basin and Range and its margins. Focus is on identifying and elucidating processes and problems that should be addressed by the EarthScope Program. Oral and Posters.
- T129. **The Yellowstone Hotspot: Its Influence on the Magmatic and Tectonic Evolution of the Western U.S.**, [Robert B. Smith](#), Richard Carlson, John Shervais
This session seeks to integrate the volcanic and tectonic history with geochemical, geophysical, and field data to understand the evolution of this and other intra-continental hotspot systems. In conjunction with session T130. Oral.
- T130. **The Yellowstone Hotspot: Integrated Field, Geochemical, and Geophysical Studies**, [John Shervais](#), Victor Camp, Dennis J. Geist, Jonathan M.G. Glen
This session seeks to integrate the volcanic and tectonic history with geochemical, geophysical, and field data to understand the evolution of this and other intra-continental hotspot systems. In conjunction with session T129. Oral and Posters.
- T133. **Insights into the Raising of the Colorado Plateau**, [Shari Kelley](#), Mousumi Roy
The latest ideas about the origin of the dramatic, incised landscape of the Colorado Plateau, particularly when and how this broad region came to stand at a modern elevation of ~1.9 km, will be presented. Oral.
- T134. **Mesozoic and Cenozoic Crustal Evolution of Alaska and Western Canada (Posters)**, [Jeff Trop](#), Kenneth Ridgway, Peter Haeussler
This multidisciplinary session integrates new studies focused on processes responsible for crustal growth in Alaska and western Canada, including collisional deformation, terrane accretion, mountain building, magmatism, accretionary wedge development, and sedimentary basin formation. Posters.
- T135. **Orogenic Plateaus From Top to Bottom**, [Bradley D. Ritts](#), Brian K. Horton
Resolving the evolution of orogenic plateaus is fundamental to understanding continental mountain building and its effects on the global environment. This cross-disciplinary session will explore the growth and decay of modern and ancient plateaus using geophysics, numerical modeling, petrology, stratigraphy, structural geology, and geodesy. Oral and Posters.
- T136. **Out of the Tethys: The Making of Asia**, [Rasoul Sorkhabi](#), Ezat Heydari
This multidisciplinary session examines how recent geoscientific studies have contributed to our understanding of Asian mountains, plateaus, and basins resulting from the birth and demise of Tethyan oceans and the collision of the Indian and Arabian plates with Asia. Oral and Posters.
- T137. **The Backbone of America from Patagonia to Alaska: Plateau Uplift, Shallow Subduction, and Ridge Collision**, [Mark Cloos](#), Suzanne Kay
This session is a precursor to the Backbone of the Americas Meeting in 2006. We seek presentations concerning tectonic and magmatic processes related to plateau uplift, shallow subduction, and ridge collision in either North or South America. Oral.
- T138. **Tectonic Hazards of the SE Asian Region**, [Ron Harris](#)
The Sumatra megathrust earthquake of 2004 is one of the epic disasters of recorded history. This session will present the latest geological and geophysical research of the earthquake's source region and other potentially hazardous and densely populated seismic source regions in SE Asia. Oral and Posters.
- T139. **Tectonics in the Information Age: Large Datasets and Numerical Models in Solid Earth Science**, [Christopher L. Andronicos](#), Aaron A. Velasco
We will bring together geologists and geophysicists to discuss the use and design of large high quality databases and numerical models focused on solving large-scale tectonic problems. Oral.

- T140. **EarthScope: Challenges in Understanding the Heterogeneity of the Lithosphere**, [Rick Aster](#), Karl Karlstrom, Mike Williams
This session will discuss geologic and geophysical perspectives on vertical and lateral heterogeneity of the lithosphere and provide a forum for presentation of EarthScope results on the physical properties that control tectonic processes. Oral and Posters.
- T141. **Geology and EarthScope**, [David W. Mogk](#), Basil Tikoff, Michael Brown
EarthScope provides an unprecedented opportunity for integrated research from the Earth's surface to the lower mantle. This session provides numerous examples of how geoscientists can engage EarthScope for research and education and outreach. Oral.
- T142. **Controversies, Conundrums, and Innovative Approaches in Extensional Tectonics: A Tribute to Ernie Anderson**, [James E. Faulds](#), Robert G. Bohannon, Keith A. Howard, L. Sue Beard
This session honors Ernie Anderson, whose pioneering work on the highly extended Colorado River region 30 years ago and subsequent contributions inspired many to study extensional terranes. Contributions emphasizing existing conundrums and innovative approaches are encouraged. Oral and Posters.
- T143. **Great Basin Tectonics and Metallogeny**, [Albert H. Hofstra](#), David A. Ponce, Alan Wallace, Jonathan M.G. Glen
Relationships between tectonics and metallogeny in the Great Basin will be elucidated via a series of synoptic presentations on geophysics, crustal structure, basement, sedimentation, deformation, magmatism, paleogeography, ore deposit types, geochemistry, fluid flow and mass transport. Oral and Posters.
- T144. **The Edges of Extension: Boundaries of the Basin and Range Province as Natural Laboratories for Studying Tectonic and Structural Processes**, [Phillip Resor](#), Joseph Colgan, Eric Flodin
The goal of this session is to bring together an interdisciplinary group of scientists focused on understanding problems and processes of continental extension as expressed at the margins of the Basin and Range Province. Oral and Posters.
- T145. **The Nature, Significance, and Evolution of Transtensional Tectonic Regimes**, [Robert E. Holdsworth](#), Basil Tikoff, John Waldron
A session bringing together structural geologists, geophysicists, and geodeticists who have worked in obliquely divergent regimes worldwide allowing discussion of the key variables that control transtensional deformation patterns in the crust. Oral and Posters.
- T146. **Young and Active Transtensional Deformation along the Western Margin of North America: Walker Lane Belt/Eastern California Shear Zone to the Gulf of California**, [Paul Umhoefer](#), Jeffrey Lee
This session will explore and compare strain distribution and localization and geodynamic controls on faulting patterns along the length of a linked transtensional zone extending from the Walker Lane Belt to the Gulf of California. Oral and Posters.
- T148. **What is a Magma Chamber? The Role of Sheets in the Assembly of Intrusions**, [Sven Morgan](#), Basil Tikoff, Drew Coleman
A variety of data indicate the final shape of intrusions does not represent the shape of a single magma chamber. We solicit presentations on the structural, geochronological, petrological, and geophysical evidence concerned with understanding the dynamics of "magma sheeting." Oral and Posters.
- T149. **Rheological Information from Naturally Deformed Materials: New Approaches to Understanding Bulk Ductile Behavior**, [Dyanna Czeck](#), Cheryl Waters-Tormey
This session highlights challenges in and new approaches for inferring "bulk" rheology from natural heterogeneous ductile deformation zones. We seek studies that test predictions from experimental work and consider the multiscale factors affecting bulk mechanical behavior. Oral and Posters.
- T150. **Fracturing and Faulting of the Clastic Rocks of the Colorado Plateau**, [Atilla Aydin](#), James P. Evans
This session encourages discussion into the diverse processes of fracturing and faulting in clastic rocks of the Colorado Plateau. Contributions combining structure with diagenesis, fluid flow, and depositional environment are welcome. Oral and Posters.

Premeeting Field Trips

8. **Transect across the Northern Walker Lane, Northwest Nevada and Northeast California: An Incipient Transform Fault along the Pacific–North American Plate Boundary** [408]. Thurs.–Sat., 13–15 Oct. *Cosponsored by GSA Structural Geology and Tectonics Division.*

[James E. Faulds](#), Nevada Bureau of Mines and Geology, MS 178, University of Nevada, Reno, NV 89557, +1-775-784-6691, ext. 159, fax +1-775-784-1709; **Christopher D. Henry**; **Nicholas H. Hinz**.

The northern Walker Lane is one of the youngest and least developed parts of the Pacific–North American transform boundary and thus offers insight into how strike-slip fault systems develop. This trip will assess the geometry and

kinematics of this curiously left-stepping, dextral fault system and view spectacular exposures of tuff-filled Oligocene paleovalleys that constrain offset on the strike-slip faults.

Max.: 29; min.: 12. Cost: US\$285 (3L, 1D, R, 3ON, vans). Begins and ends in Reno.

9. **Brittle Deformation, Fluid Flow, and Diagenesis in Sandstone at Valley of Fire State Park, Nevada** [409]. Fri.–Sat., 14–15 Oct. *Cosponsored by GSA Structural Geology and Tectonics Division.*

[Peter Eichhubl](#), Physical and Life Sciences Dept., Texas A&M University, Corpus Christi, TX 78412, +1-361-825-2309, fax +1-361-825-3345; **Eric Flodin**.

Brittle deformation, fluid flow, and diagenetic reactions are coupled phenomena. We will study the interaction among these processes at various scales at Valley of Fire State Park near Lake Mead. Brittle structures and diagenetic alteration patterns in Jurassic Aztec Sandstone provided a record of multiple stages of basinal fluid flow that correlate with Sevier and Basin and Range tectonics.

Max.: 20; min.: 10. Cost: US\$170 (2L, R, 1ON, vans). Begins and ends in Las Vegas.

10. **Evolution of a Miocene-Pliocene Supradetachment Basin, Northeastern Great Basin** [410]. Sat., Oct. 15. *Cosponsored by GSA Structural Geology and Tectonics Division.*

[Alexander Steely](#), Dept. of Geology, Utah State University, Logan, UT 84321, +1-435-797-1273, fax +1-435-797-1588; **Susanne Janecke; Stephanie Carney; Sean Long; Robert Oaks, Jr.**

The Miocene-Pliocene Bannock detachment system in southeastern Idaho provides a unique opportunity to examine evidence for fault formation and slip at low angles along low-angle normal faults, flat-on-flat geometries, and changes in structural style across a lateral ramp. We will also examine evidence for the stratigraphic evolution of the supradetachment basin and its later disruption by Basin-and-Range normal faults.

Max.: 25; min.: 12. Cost: US\$95 (1L, R, vans).

13. **Neotectonics and Paleoseismology of the Wasatch Fault, Utah** [413]. Sat., 15 Oct. *Cosponsored by GSA Structural Geology and Tectonics Division.*

[Ronald L. Bruhn](#), Dept. of Geology and Geophysics, University of Utah, Salt Lake City, UT 84112, +1-801-581-6619, fax +1-801-581-8219; **Ronald Harris; William R. Lund; Christopher DuRoss.**

The trip will highlight recent research on the neotectonics and paleoseismology of the Wasatch fault zone, one of the world's foremost sites for developing techniques to investigate the earthquake history and rupturing properties of normal faulting. We will visit segment-boundaries, fault scarps and bedrock exposures on the Great Salt Lake and Provo segments, and a new paleoseismology trench on the Nephi fault segment.

Max.: 40; min.: 12. Cost: US\$70 (1L, R, bus).

Concurrent Field Trips

15. **Geology of the Wasatch — A Two Billion Year Tour through the Upper Third of the Crust — A One-Day Trip** [415].

Mon., 17 Oct. *Cosponsored by National Association of Geoscience Teachers.*

[Michael Bunds](#), Dept. of Earth Science, Utah Valley State College, Orem, UT 84058, +1-801-863-6306, fax +1-801-863-8064; **William Dinklage; Daniel Horns.**

We will traverse the Wasatch Mountains to examine its two-billion-year-long geologic history, including sedimentation, plutonism and contact metamorphism, volcanism, mountain front uplift during Basin-and-Range extension, earthquakes, and glaciation. The trip is a great opportunity for professional geologists, academics, and teachers looking for an overview of the local geology.

Max.: 36; min.: 12. Cost: US\$60 (1L, R, vans).

Postmeeting Field Trips

18. **Anatomy of Reservoir-Scale Normal Faults in Central Utah: Stratigraphic Controls and Implications for Fault Zone Evolution and Fluid Flow** [418]. Wed.–Fri., 19–21 Oct. *Cosponsored by GSA Structural Geology and Tectonics Division.*

[Peter Vrolijk](#), ExxonMobil Upstream Research Company, Houston, TX 77252, +1-713-431-4151, fax +1-713-431-4114; **Zoe K. Shipton; Rod Myers; James P. Evans; Mike Sweet.**

We will examine the way that faults nucleate and grow through complex, 3-D stratigraphic sequences and more homogeneous sequences in Jurassic deposits, central Utah. Along-fault and cross-fault fluid flow will be considered in this context. This trip is intended to attract structural geologists, stratigraphers, and hydrogeologists interested in interdisciplinary research.

Max.: 24; min.: 10. Cost: US\$220 (2L, 1D, R, 2ON, vans).

19. **Sheet-like Emplacement of Satellite Laccoliths, Sills, and Bysmaliths of the Henry Mountains, Southern Utah** [419]. Wed.–Fri., 19–21 Oct. *Cosponsored by GSA Structural Geology and Tectonics Division.*

[Sven Morgan](#), Dept. of Geology, Central Michigan University, Mount Pleasant, MI 48859, +1-989-774-1082, fax +1-989-774-2142; **Eric Horsman; Basil Tikoff; Michel de Saint Blanquat.**

We will examine four satellite intrusions of the Henry Mountains, which may represent successive stages in the progressive growth of igneous bodies. Our research suggests that these intrusions have multiple, sometimes cryptic, sheets. Spectacular outcrops, outstanding scenery, and gourmet lunches will stimulate discussion of various emplacement models. The trip involves moderately strenuous hiking and very little local driving.

Max.: 36; min.: 12. Cost: US\$195 (3L, R, 2ON, vans).

20. Folds, Fabrics, and Kinematic Criteria in Rheomorphic Ignimbrites of the Snake River Plain, Idaho: Insights into Emplacement and Flow [420]. Wed.–Sat., 19–22 Oct. *Cosponsored by GSA Structural Geology and Tectonics Division.*

[Graham D.M. Andrews](#), Dept. of Geology, University of Leicester, Leicester, UK, (+44)1162523930; **Mike J. Branney**.

The Grey's Landing Ignimbrite provides an unrivalled opportunity to examine deformation structures in a rheomorphic ignimbrite and establish appropriate emplacement and deformation models. We will examine key localities displaying the range of features present and the relationships between them. This trip is aimed equally at physical volcanologists and structural geologists with interests in rheomorphism, lava emplacement, and ductile shear zones.

Max.: 24; min.: 10. Cost: US\$225 (1L, R, 3ON, vans).

24. Development of Miocene Faults and Basins in the Lake Mead Region: A Tribute to Ernie Anderson and Review of New Research on Basins [424]. Thurs.–Sat., 20–22 Oct. *Cosponsored by GSA Structural Geology and Tectonics Division.*

[Paul Umhoefer](#), Dept. of Geology, Northern Arizona University, Flagstaff, AZ 86011, +1-928-523-6464, fax +1-928-523-9220; **Thomas Hickson; Ernie Anderson; L. Sue Beard; Melissa Lamb.**

The Lake Mead area offers world-class exposures of Miocene rocks and faults related to large-scale extension. We will examine the development of Miocene faults and basins from Frenchman Mountain near Las Vegas to Overton Arm of Lake Mead. We will focus on critical framework studies and ongoing basinal studies and honor the fundamental contributions of Ernie Anderson.

Max.: 33; min.: 12. Cost: US\$320 (3B, 3L, 2D, R, 2ON, vans). Begins and ends in Las Vegas.

26. Paleoseismology and Geomorphology of the Hurricane Fault/Escarpment [426]. Thurs.–Sat., 20–22 Oct. *Cosponsored by GSA Structural Geology and Tectonics Division; GSA Quaternary Geology and Geomorphology Division.*

[Lee Amoroso](#), U.S. Geological Survey, 2255 N. Gemini Drive, Flagstaff, AZ 86001, +1-928-556-7186, fax +1-928-556-7196; **Cassie Fenton; Jason Raucii.**

We will see paleoseismic, structural, and geomorphic features of the Hurricane fault in southwestern Utah and northeastern Arizona. We will see examples of Quaternary deformation, fault linkage features, and visit the faulted lava flows in Whitmore Canyon. We will visit Pleistocene deposits that are evidence of the influence of pluvial climates on the geomorphic development along the Hurricane Escarpment.

Max.: 20; min.: 5. Cost: US\$175 (Camping, SUVs). Begins and ends in Las Vegas.

Short Courses

GSA-Sponsored Short Courses

1. Introduction to Geographic Information Systems (GIS), Using ArcGIS9 for Geological Applications [501]. Fri.–Sat., 14–15 Oct., 8 a.m.–5 p.m. *Cosponsored by GSA Geoscience Education Division; Environmental Systems Research Institute.*

This short course will introduce the use of GIS in geology related applications through brief lectures, and hands-on computer exercises. Concepts in creating a GIS project in geology will be discussed including creation of data (GPS, RS, digitizing), conversion of data, metadata, different data formats (vector and raster) and accessing data from several sources (tables, shapefiles, coverages, CAD, geodatabases and grids). Participants do not need to have experience with ArcGIS, but familiarity with Windows OS is beneficial.

Faculty: Ann B. Johnson, Higher Education Manager, Environmental Systems Research Institute, Redlands, Calif., Ph.D., California State University; Willy Lynch, Instructor, Environmental Systems Research Institute, Denver, Colo., M.S., University of Utah; Esther Worker, Education Account Manager, Environmental Systems Research Institute, Denver, Colo., B.A., University of Colorado–Boulder.

Limit: 24. Fee: US\$330; includes course manual and lunch. CEU: 1.6.

4. Science in Environmental Policymaking [504]. Sat., 15 Oct., 8 a.m.–5 p.m. *Cosponsored by GSA Geology and Society Division.*

This interactive course is for scientists whose research informs natural hazard, waste management, water, and other environmental and resource policy decisions. Participants will learn skills to help ensure that science is not ignored, marginalized, or misrepresented by decision makers. They will learn to work effectively within both the traditional adversarial regulatory process and alternative stakeholder-driven, collaborative problem solving approaches.

Faculty: Herman Karl, Massachusetts Institute of Technology, Cambridge, Mass., Ph.D., University of Southern California–Los Angeles; Judith Layzer, Massachusetts Institute of Technology, Cambridge, Mass., Ph.D., Massachusetts

Institute of Technology; Christine Turner, U.S. Geological Survey, Denver, Colo., Ph.D., University of Colorado–Boulder.

Limit: 30. Fee: US\$340; includes course manual and lunch. CEU: 0.8.

6. Three-Dimensional Geologic Mapping for Groundwater Applications Workshop [506]. Sat., 15 Oct., 8 a.m.–5 p.m.

Cosponsored by GSA Geology and Society Division; GSA Hydrogeology Division.

Increased diligence in management of groundwater systems for the long term is coinciding with progress in digital data, analytical methods, and computing power. Geologic mappers seeking to support groundwater applications should attend this workshop to obtain an overview of 3D methods made possible by these advances, including basin analysis, data management, model construction, geophysical methods, and hydrogeological characterization.

Faculty: Richard C. Berg, Illinois State Geological Survey, Champaign, Ill., Ph.D., University of Illinois–Urbana-Champaign; Hazen Russell, Geological Survey of Canada, Ottawa, Ph.D., University of Ottawa; Harvey Thorleifson, Minnesota Geological Survey, University of Minnesota, Ph.D., University of Colorado–Boulder.

Limit: 50. Fee: US\$195; includes course manual and lunch. CEU: 0.8.

Research Proposal Writing Workshop

GSA's Second Annual FREE Workshop!

If you are interested in improving your chances of receiving a GSA student research grant or are looking for tips to improve your proposal writing for future funding, come join GSA's proposal-writing workshop aimed specifically at graduate students. Led by a member of the GSA Research Grant Committee, this workshop will be based on recent GSA graduate research grant proposals and will put several examples into hypothesis-driven studies illustrating the dos and don'ts of the proposal-writing process. A brief overview of the review process by the GSA Research Grant Committee will also be outlined. This was a huge success last year, with standing room only. Please check www.geosociety.org in August for updates on date, time, and location.

K-16 Education Workshops

1. Earthquakes—A One-Day Workshop for College and University Faculty [601]. Sat., 15 Oct., 8 a.m.–5 p.m. *Cosponsored by IRIS Consortium; U.S. Geological Survey; National Science Foundation; Purdue University.*

Intended audience: College and university faculty. Fee: US\$10.

This workshop will cover the following topics: causes of earthquakes, plate tectonics, propagation of seismic waves, seismographs, statistics and data, Earth's structure, and earthquake hazards. Learning activities emphasizing hands-on and inquiry-based learning will be used to deliver content to participants. Participants are encouraged to reflect on how these activities could be used in their classrooms. Materials (hands-on activities, maps, earthquake book, posters, software and other teaching aids) will be provided to participants as part of the workshop.

Information: [Michael Hubenthal](#); Larry Braile; John Lahr; John Taber; Lisa Wald.

3. How to Establish and Sustain an Undergraduate Research Program [603]. Sat., 15 Oct., 1–5 p.m. *Cosponsored by Council on Undergraduate Research.*

Intended audience: College and university faculty, graduate students. Fee: US\$35.

This workshop will present strategies for developing and sustaining research programs at the undergraduate level. It is open to all but is designed for new geosciences faculty, graduate students applying for academic positions, and faculty interested in expanding their research programs to include undergraduates. Presentations will cover strategies for obtaining a job at a predominantly undergraduate institution, funding opportunities to support undergraduate research, project selection and mentoring of undergraduates, and models of successful undergraduate research programs.

Information: [Lydia Fox](#).

Sunday Workshop

5. Designing Effective Geoscience Education Research: Qualitative and Quantitative Methods [605]. Sun., 16 Oct., 8 a.m.–noon. *Cosponsored by Ohio University; National Science Foundation.*

Intended audience: Graduate students, college and K–12 educators, and researchers. Fee: US\$15.

In this workshop, participants will learn about the qualitative and quantitative data collection and analysis methods used in geoscience education research. Workshop leaders will use case studies, demonstrations, and hands-on activities to introduce participants to the variety of education research methods. This workshop is geared for students, college and K–12 educators, and researchers who are engaged in or who plan to be engaged in education research. Written materials will be handed out to augment the content in the workshop.

Information: [Julie Sexton](#); [Julie Libarkin](#).



Hot off the presses NEW Structural Geology Textbook

Fundamentals of Structural Geology by David D. Pollard, Stanford University, and Raymond C. Fletcher, Pennsylvania State University

Cambridge University Press, 503 pages, Hardback, 150 line diagrams, 200 half-tones, (ISBN-10: 0521839270 | ISBN-13: 9780521839273)

Fundamentals of Structural Geology provides a new framework for the investigation of geological structures by integrating field mapping and mechanical analysis. Assuming a basic knowledge of physical geology, introductory calculus and physics, it emphasizes the observational data, modern mapping technology, principles of continuum mechanics, and the mathematical and computational skills, necessary to quantitatively map, describe, model, and explain deformation in Earth's lithosphere. By starting from the fundamental conservation laws of mass and momentum, the constitutive laws of material behavior, and the kinematic relationships for strain and rate of deformation, the authors demonstrate the relevance of solid and fluid mechanics to structural geology. This book offers a modern quantitative approach to structural geology for advanced students and researchers in structural geology and tectonics. It is supported by a website hosting images from the book, additional color images, student exercises and MATLAB scripts, at http://pangea.stanford.edu/projects/structural_geology/. Solutions to the exercises are available to instructors.

- The book integrates field mapping using modern technology with the analysis of structures based on a complete mechanics
- MATLAB is used to visualize physical fields and analytical results and MATLAB scripts can be downloaded from the website to recreate textbook graphics and enable students to explore their choice of parameters and boundary conditions
- The supplementary website hosts color images of outcrop photographs used in the text, supplementary color images, and images of textbook figures for classroom presentations
- The textbook website also includes student exercises designed to instill the fundamental relationships, and to encourage the visualization of the evolution of geological structures; solutions are available to instructors

Contents

1. Motivations and opportunities; 2. Structural mapping techniques and tools; 3. Characterizing structures using differential geometry; 4. Physical quantities, fields, dimensions and scaling; 5. Deformation and flow; 6. Force, traction and stress; 7. Conservation of mass and momentum; 8. Elastic deformation; 9. Brittle behavior; 10. Viscous flow; 11. Rheological behavior; 12. Model development and methodology; Index.

Keep your eye on:

GeoTraverse—find a workshop summary at <<http://www.globalchange.umich.edu/Ben/geotraverse/GeoTraverse05.htm>>. Watch for an upcoming meeting in spring, 2006.

Teaching Structural Geology in the 21st Century—check for updates at The Cutting Edge website at <<http://serc.carleton.edu/NAGTWorkshops/>>. Or, for more information, contact Barbara Tewksbury at Hamilton College at <btewksbu@hamilton.edu>.

Second Earth System Processes Meeting, Calgary, Alberta Canada, August, 2005—information on this meeting is at <<http://www.geosociety.org/esp2/>>.

VOTE FOR OFFICERS ONLINE

If you haven't already voted, please go to <http://rock.geosociety.org/balloting/sgt.asp> or use the paper ballot to vote for SGT Division officers. Brief biographies are presented below.

Candidate for Chair:

John W. Geissman jgeiss@unm.edu

John W. Geissman is a Professor in the Department of Earth & Planetary Sciences at the University of New Mexico. He received his Ph.D. from the University of Michigan in 1980. He is a long-time GSA volunteer, serving as chair of the Geophysics Division (1995), JTPC rep (1994-1995), associate editor of the GSA Bulletin (1989-1994), co-editor of the GSA Bulletin (1995-2000), editorial board member for Geology (1993-1998), co-chair for two combined Rocky Mountain/South-Central GSA section meetings, Technical Program Chair for the Denver 2002 Annual Meeting, and member of the Annual Program Committee (2001-2003). John is a GSA Fellow and received the GSA Distinguished Service Award in 2002. His current research interests include the tectonics and paleomagnetism of North America, rock magnetism and relations to igneous and sedimentary oxide mineralogy, lithosphere structure, geomagnetic field behavior, general geodynamics, exploration geophysics, and extensional tectonics.

Candidate for 1st Vice-Chair:

William M. Dunne wdunne@utk.edu

William Dunne is Professor in the Department of Earth & Planetary Sciences and Associate Dean for Research for the College of Arts & Sciences at the University of Tennessee Knoxville (UTK). Bill received his Ph.D. in structural geology from the University of Bristol, England, with Paul Hancock as his advisor, for an investigation into the structural development of southwest Wales. He began his academic career as an assistant professor at West Virginia University in 1980, and then moved to UTK as an associate professor in 1988. Through that time, he has used the central Appalachian foreland thrust belt to investigate the low-temperature deformation of sedimentary rocks in compressive settings. At the same time, he has maintained his interest in improving the characterization of joint systems with field sites in Wales, Nevada, Pennsylvania and West Virginia, and subsurface sites in Nevada and Colorado. He has been lead editor for a special issue of the Journal of Structural Geology honoring Paul Hancock, has been a member and chaired the Best Paper Award Committee for the Structure and Tectonics Division, was a co-organizer for a SEGSA meeting, an active participant in Division short courses and meetings, and has been a leader of that fine informal organization, the Appalachian Tectonic Studies Group (which just celebrated its 20th fieldtrip!) He chaired the then Department of Geological Sciences at UTK for 5 years prior to being becoming an associate dean. He currently supervises two graduate students and is involved in a few funded research projects when being a professor as opposed to an associate dean.

Candidates for 2nd Vice-Chair:

Yildirim Dilek dileky@muohio.edu

Yildirim Dilek's expertise lies in tectonics and structural geology. His research interests include the structure and tectonics of ophiolites and oceanic crust; the geodynamic evolution of the Alpine, Caledonian, Cordilleran & Himalayan orogenic belts; and the extensional tectonics of the eastern Mediterranean region. Education: BS and MS Geological Engineering, Univ. of Istanbul (Turkey); MS Geology, PhD Geology, Univ. of California (Davis). Professional Experience: The Getty Conservation Inst., California, Senior Research Fellow 89-90; Vassar College, Dept. of Geol. & Geogr., Asst Prof 90-96; Miami Univ., Oxford, Asst Prof 96-98, Assoc Prof 98-03, Professor 03-present, Harrison Scholars Professor 04-present.; University of Bergen, Bergen-Norway, Visiting Scientist 96; University of Tsukuba, Tsukuba-Japan, Visiting Research Professor 05; China University of Geosciences, Beijing-The People's Republic of China, Adjunct Foreign Professor 04-Present. Professional Affiliations: GSA since 82, Fellow 02; Geol. Soc. of London Fellow 95; AGU, AAAS, The Sigma Xi, NAGT. GSA Service: GSA Bulletin, Assoc Ed 00-03; GSA Bulletin, Editor 03-present; GSA Publications Committee Member 04-present; GSA International Division First Vice Chair 04-present; Convener of GSA Penrose Conference and Pardee Keynote Symposium; Editor of two GSA Special Papers. Additional Service: Council on Undergraduate Research (CUR), Councilor 94-00; National Assoc. of Geoscience Teachers (NAGT), Councilor 96-00; Ofioliti, Assoc Ed 98-present; Journal of Geoscience Education, Assoc Ed 00-04; Journal of the Geol. Soc. of London, Assoc Ed 01-present; The Island Arc, Assoc Ed 04-present; NATO Scientific Affairs Division (Brussels-Belgium), Expert Scientist 01-present. Honors/Awards: Miami Univ. Distinguished Research Scholar Award 03; Miami Univ. E. Phillips Knox Excellence in Teaching Award 03.

Eric Erslev erslev@cnr.colostate.edu

Eric is a professor at Colorado State University. He received his B.A. from Wesleyan University in 1976 and his Ph.D. from Harvard University in 1981. Two years at Lafayette College was followed by 22 years at Colorado State University where he teaches structural geology and tectonics. Eric has contributed to geoscience societies as a field trip leader (including 2 field trips at '04 annual GSA meeting), GSA annual meeting field trip co-chair ('02, '04), GSA Student Research Grant Committee (member '03-'05, chair '06), GSA and AAPG symposia co-convener ('90, '94, '95, '96, '99, '02, '04), Penrose meeting co-organizer ('95), and Colorado Scientific Society (councilor '92-'94, president '98). In addition, he has served as a co-editor of GSA, RMAG, Journal of Structural Geology, and Rocky Mountain Geology volumes. Eric's research has evolved from studies of field-based metamorphic petrology and Precambrian geology in southwest Montana to his current studies of basement-involved foreland tectonics, kinematic fold mechanisms, and fracture genesis. Research accomplishments include a DNAG synthesis of the Precambrian geology of southwest Montana; the development of computer-implemented, area-normalized center-to-center strain analysis (normalized Fry method); the definition and quantification of triangular shear zone folding (trishear); geochemical determination of non-volatile volume loss in slates; and development of integrated models for basement-involved thrusting and detachment folding with both tectonic (as part of the multi-university CDROM project) and petroleum (in collaboration with ConocoPhillips colleagues) applications.

BALLOT

Election of Officers for the Structural Geology & Tectonics Division

There is an online ballot available at: <http://rock.geosociety.org/balloting/sgt.asp>. At that site, access the electronic ballot using your GSA member number (or your e-mail address if it is in your GSA records).

To Fellows and Members of the Division:

The slate of officers of the Division presented by the Nominating Committee is submitted herewith. Please vote by checking the appropriate box or by typing in the name of your nominee in the space provided.

Biographical data for the nominees can be found on the previous page. This ballot or the electronic version must be received no later than **September 15, 2005**. The election results will be announced at the business meeting of the Division in Salt Lake City in October.

CHAIR (One candidate)

John W. Geissman

☐

Write in: _____

FIRST VICE-CHAIR (One candidate)

William M. Dunne

☐

Write in: _____

SECOND VICE-CHAIR
(Vote for one)

Yildirim Dilek

☐

Eric Erslev

☐

Write in: _____

Send to: Ballot SGT Division
Geological Society of America
PO Box 9140
Boulder, CO 80301-9140

Your Name (printed) _____

Your Signature (required) _____

Your GSA Member Number (required)*

*Given at the top of your mailing label. For assistance, please contact GSA at gsaservice@geosociety.org or (303) 357-1000 (option 3), or tollfree in the U.S. at (888) 443-4472.

Ballot may be faxed to (303) 357-1074.

Geological Society of America Structural Geology and Tectonics Division

CAREER CONTRIBUTION AWARD NOMINATION

This award will be given for the nineteenth time in 2006. It is given to an individual who throughout his/her career has made numerous distinguished contributions that have clearly advanced the science of structural geology or tectonics. The deadline for nominations is February 15, 2006. Nominees need not be citizens or residents of the United States, and membership in the Geological Society of America is not required. The Career Contribution Award cannot be given posthumously, unless the decision to give it was made before the death of the awardee. Past recipients are:

1988: John H. Handin	1994: Richard P. Nickelsen	2000: S. Warren Carey
1989: John Rodgers	1995: B. Clark Burchfiel	2001: Don Wise
1990: John G. Ramsay	1996: Winthrop D. Means	2002: Robert Wallace
1991: Clint D. A. Dahlstrom	1997: Hans Ramberg	2003: Gregory A. Davis
1992: John C. Crowell	1998: Albert W. Bally	2004: Kevin Burke
1993: Benjamin M. Page	1999: Hans Laubscher	2005: Jan Tullis

Name of nominee, present institutional affiliation and address:

Summary statement of nominee's major career contributions to the science of structural geology or tectonics (attach additional page if necessary):

Selected key published works of the nominee (attach additional page if necessary):

Name and address of nominator:

Mail to: Shankar Mitra
School of Geology and Geophysics
The University of Oklahoma
100 East Boyd St., Suite 810
Norman, OK 73019
smitra@ou.edu

Meeting Summary

International Symposium on the Geodynamics of Eastern Mediterranean: Active Tectonics of the Aegean

by

¹Tuncay Taymaz and ²Yildirim Dilek

¹Istanbul Technical University/Kadir Has University, Istanbul-Turkey

²Geology Department, Miami University, Oxford, OH 45056

The International Symposium on the Geodynamic Evolution of Eastern Mediterranean: Active Tectonics of the Aegean was held during June 15-18, 2005, at Kadir Has University Haliç Campus, Istanbul, Turkey. Over 400 scientists from 24 countries participated in this conference.

The meeting comprised nine parallel sessions on geological and geophysical aspects of the eastern Mediterranean region, including Geodynamics of the Aegean and Mediterranean Region; Metamorphic Massifs in the Aegean Region; Seismotectonics and Neotectonics of the Aegean and Mediterranean Region; Earthquake Hazard, Risk and Loss Scenarios in Earth Sciences; Seismological Instrumentation and Regionalization of the Networks; Evolution of the Corinth Gulf, Greece; Ophiolites and Suture Zones in the Eastern Mediterranean; Potential Source Regions and Tsunami Generation in the Mediterranean Region; and, Subduction and Extensional Tectonics in the Development of Tertiary and Quaternary Volcanism in Anatolia: Volcanological and Petrological Constraints. In addition, two plenary talks, "*Examining the Evolution of the Aegean and Tethyan Backarcs by slab Retreat in a Mantle Reference Frame*" by William B.F. Ryan (Lamont Observatory, New York) and "*Morphotectonic Development of Eastern Turkey*" by Yücel Yılmaz (Kadir Has University, Istanbul) provided an overview of the regional tectonics and landscape evolution of this geologically complex area.

In the geodynamics session, several dynamic and kinematic (block) models for the recent deformation were presented. The dynamic models dealt with the interaction among backarc extension in the Aegean Sea and strike-slip tectonics along the North Anatolian Fault Zone (NAFZ), and mantle flow related to sinking slabs and Arabia-Eurasia collision. The latest regional GPS velocity field (from the EMED GPS consortium) data triggered lively discussions because of its implications for active extension between the colliding Arabian Anatolian plates. It plausible that trench pull, rather than forced lateral extrusion from the Arabia-Eurasia collision, drives the westward motion of the Anatolian plate.

In the seismotectonics section, one hot topic was the architecture of the NAFZ beneath the Marmara Sea: at least three new interpretations were presented and discussed in great detail. New submarine images from the Marmara Sea also showed spectacular fault scarps from the 1912 earthquake rupture (which extends further east than previously thought). Smaller scarps from the Izmit earthquake rupture were also visible, illustrating its westward extent beneath the Marmara Sea. An encore presentation of a video coverage of the undersea scarps was also presented at the end of the session.

The Gulf of Corinth session allowed the participants to discuss new data for the structural architecture of the crust and upper mantle, multi beam bathymetry, as well as high resolution geophysical data from this actively extending region in the Hellenides.

The most important new development in our understanding of the recent geodynamics of the region was the contrasting visions of the neotectonic deformation of Anatolia presented by the short term GPS and long term palaeomagnetic evidence. It was discussed in detail that interpretations of neotectonism based on the GPS have no long term validity. Instead, on the scale of hundreds of thousands to several millions of years Anatolia (and the Aegean) has been clearly undergoing distributed and differential deformation. The pattern of block rotations that we have now resolved across Anatolia is highly consistent and matches the predicted extrusion between Eurasia and the Arabian indenter. Whether this tectonic escape has been driven by "push" or "pull" was one of the interesting questions addressed during the symposium. The challenge for the next decade will be to address why the short term and long term analyses are so different. Are the GPS studies missing something that we are only picking up by studying much longer periods of time?

This symposium was highly fruitful for interactive discussions and for mutual exchange of data and interpretations among the participants, and provided an excellent forum for cross-pollination of ideas for future studies and collaborative projects in the region.



Tectonics of Strike-Slip Restraining and Releasing Bends in Continental and Oceanic Settings

September 28-30, 2005

The Geological Society, Burlington House, London, UK

Organizers: Dickson Cunningham and Paul Mann

Restraining bends and releasing bends are common but enigmatic features of both continental strike-slip and oceanic transform faults. Restraining bends are sites of topographic uplift and shortening while releasing bends are sites of topographic depression, extensional structures, volcanism, and mineralisation. The origin of bends has been related to: 1) pre-existing basement structures (particularly for those in continental crust); 2) the degree of transpression or transtension across the strike-slip fault plane that is related to large-scale tectonics; and 3) complex changes in stress state near the fault plane. The societal significance of bends includes: 1) pull-apart basins form zones of high heat flow and crustal dilation that can be exploited as sources of geothermal energy, hydrocarbons, and economic mineralisation; 2) restraining bends form major topographic uplifts that are expressed geomorphologically in the modern record and stratigraphically in the ancient record; 3) both types of bends are known to act as barriers or nucleation sites for major earthquake ruptures along both continental and oceanic strike-slip faults. To understand the enigmatic origin of bends and their tectonic and geologic evolution, we propose to assemble a multidisciplinary group of earth scientists that include both numerical and analogue modelers, field-based structural geodesists, geologists, stratigraphers, geomorphologists, volcanologists, marine geologists and geophysicists, seismologists, and mineral and petroleum geologists.

This will be the first ever meeting dedicated to advancing our understanding of restraining and releasing bends and is timely because of recent developments in the application of geodetic methods, analogue and numerical modelling, seismology, deep crustal and mantle imaging, quantitative tectonic geomorphology, and marine geophysics to restraining and releasing bend research. In addition, several recent large magnitude earthquakes associated with restraining and releasing bends have had significant societal impacts (2003, Bam, Iran event, 2002 Denali Alaska event, 1999 Izmit Turkey event), and this has underscored the immediate importance of bringing together leading researchers who are investigating restraining and releasing bends in order to share information and ideas and to stimulate new research activities.

Oral sessions will include: 1) An overview of strike-slip bends in continental and oceanic crust; 2) Seismicity, stress, and earthquake hazards of strike-slip bends; 3) Evolving transform boundaries and strike-slip bends; 4) Basement structural controls on strike-slip bends; 5) Intraplate strike-slip bends and oblique deformation; 6) Strike-slip bends, uplift and exhumation; 7) Strike-slip bends and basin deposits through time; 8) Fault bends, fluid flow and economic resources; and 9) Final discussion and session summaries.

The oral part of the meeting is fully subscribed but we will continue to accept posters up to the time of the meeting. A meeting summary is posted at:

http://www.ig.utexas.edu/news/spotlights/tect_bends.htm

Meeting registration and hotel information through the Geological Society can be obtained at:

http://www.geolsoc.org.uk/template.cfm?name=TSG_and_MSG_Conference_

Additional Meetings

September 11-14, 2005. AAPG International Conference and Exhibition, New Tracks to New Highs, CNIT La Defense, Paris, France, by the American Association of Petroleum Geologists. (AAPG Convention Department, PO Box 979; Tulsa, OK 74101 USA; Phone: 1-918-560-2617; FAX: 1-918-560-2684; <convene2@aapg.org>; <http://www.aapg.org/paris/>)

October 10-14, 2005. Penrose Conference, [Lessons in Tectonics, Climate, and Eustasy from the Stratigraphic Record in Arc Collision Zones](#), *Conveners: Peter D. Clift, Amy E. Draut*, Price, Utah USA

October 16-19, 2005. GSA Annual Meeting, Salt Lake City, Utah, USA, by the Geological Society of America. (GSA Meetings, PO Box 9140, Boulder, CO 80301-9140 USA; Phone: (303) 357-1000; FAX: (303) 357-1072; meetings@geosociety.org; <http://www.geosociety.org/meetings/2005/>)

October 19-20, 2005. Compressional Deformation within Passive Margins: nature, causes & effects, Geological Society of London, Tectonic Studies Group, Burlington House, London, UK; www.geolsoc.org.uk

December 5-9, 2005. 2005 AGU Fall Meeting, San Francisco, California, U.S.A. AGU Meetings Department, 2000 Florida Avenue NW, Washington, DC 20009 USA; Phone: +1-202-777-7335; Fax: +1-202-328-0566; meetinginfo@agu.org; www.agu.org/meetings

January 4-6, 2006. Annual General Meeting 2006, Tectonic Studies Group, Geological Society of London, University of Manchester, Manchester, UK; <http://www.seaes.manchester.ac.uk/TSG2006>

March 6-7, 2006. South-Central Section Meeting, GSA, University of Oklahoma, Norman, Oklahoma, Contact: [Neil Suneson](#), *Abstracts due: 12/6/05*

March 20-22, 2006. Northeastern Section Meeting, GSA, Radisson Penn Harris Hotel & Convention Center, Camp Hill/Harrisburg, Penn., Contact: [Noel Potter](#), *Abstracts due: 12/13/05*

March 23-24, 2006. Southeastern Section Meeting, GSA, Marriott Hotel, Knoxville, Tennessee, Contact: [Claudia Mora](#), *Abstracts due: 1/5/06*

April 2-7, 2006. EGU General Assembly 2006, Austria Center Vienna, Vienna, Austria, by the European Geosciences Union. (EGU Meeting Office, Max-Planck-Str. 13, D-37191 Katlenburg-Lindau, Germany; Phone: +49-5556-91099; FAX: +49-5556-4709; egu.meetings@copernicus.org; <http://meetings.copernicus.org/egu2006/>)

April 3-7, 2006. Backbone of the Americas — Patagonia to Alaska, Congress & Exhibition Center, Mendoza, Argentina, by the Geological Society of America, Asociación Geológica Argentina. (Deborah Nelson, PO Box 9140, Boulder, CO 80301-9140; Phone: 303-357-1014; FAX: 303-357-1074; dnelson@geosociety.org; <http://www.geosociety.org/meetings/06boa>)

April 9-12, 2006. [AAPG 2006 Annual Convention](http://www.aapg.org/houston/index.cfm), Perfecting the Search • Delivering on Promises, Houston, Texas; <http://www.aapg.org/houston/index.cfm>

April 20-21, 2006. North-Central Section Meeting, GSA, University of Akron, Akron, Ohio, Contact: [John Szabo](mailto:John.Szabo@akron.edu), Abstracts due: 1/25/06

May 8-10, 2006. Cordilleran Section Meeting, GSA, University of Alaska, Anchorage, Alaska, Contact: [Greg Wilson](mailto:Greg.Wilson@alaska.edu), Abstracts due: 2/7/06

May 17-19, 2006. Rocky Mountain Section Meeting, GSA, Western State College, Gunnison, Colorado, Contact: [Rob Fillmore](mailto:Rob.Fillmore@westernstate.edu), Abstracts due: 2/21/06

May 14-17, 2006. GAC-MAC Annual Meeting, Planet Earth in Montreal, [Montreal 2006](http://www.montreal2006.org).

May 23-26, 2006. 2006 Joint Assembly, Baltimore, Maryland, USA. AGU Meetings Department, 2000 Florida Avenue NW, Washington, DC 20009 USA; Phone: +1-202-777-7335; Fax: +1-202-328-0566; meetinginfo@agu.org; www.agu.org/meetings

May 27-June 3, 2006. The Geology and Origin of the Caribbean Plate, Geological Society of London, Hotel Parador, Sigüenza, Spain; [http://www.geolsoc.org.uk/template.cfm?name=Caribbean Plate](http://www.geolsoc.org.uk/template.cfm?name=Caribbean_Plate)

July 24-28, 2006. Western Pacific Geophysics Meeting, Beijing, China. AGU Meetings Department, 2000 Florida Avenue NW, Washington, DC 20009 USA; Phone: +1-202-777-7335; Fax: +1-202-328-0566; meetinginfo@agu.org; www.agu.org/meetings

October 22-25, 2006. **GSA Annual Meeting, Philadelphia, Pennsylvania, USA.** (GSA Meetings, PO Box 9140, Boulder, CO 80301-9140; Phone: (303) 357-1000; FAX: (303) 357-1072; meetings@geosociety.org; <http://www.geosociety.org/meetings/2005/>

October 22-25, 2006. [AAPG 2006 International Conference and Exhibition](http://www.aapg.org/meetings), Reunite Gondwana - Realize the Potential, Perth, Australia; <http://www.aapg.org/meetings>

December 11-15, 2006. AGU Fall Meeting, San Francisco, California, USA. AGU Meetings Department, 2000 Florida Avenue NW, Washington, DC 20009 USA ; Phone: +1-202-777-7335; Fax: +1-202-328-0566; meetinginfo@agu.org; www.agu.org/meetings

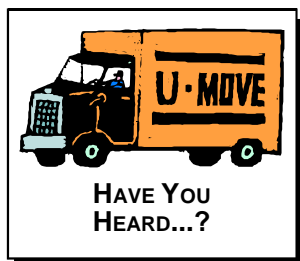
Division Members—

Don't forget! Next spring we need you to:

- Volunteer for our Division committees (Career Contribution Award Committee, Best Paper Award Committee, Short Course Committee); AND
- Nominate deserving recipients for the Career Contribution and Best Paper Awards; AND
- Volunteer or make a nomination for SG&T Officers.

Start planning now!

Greetings! Please send your news and information to **Barb Sheffels** barbsheffels@comcast.net or **Tim F. Wawrzyniec**, tfw@unm.edu. We welcome your contributions (jobs, awards, book publications or reviews, meeting summaries, topics for discussion, etc.) anytime. If we missed your news because you were out in the field, send it along to Tim for the spring newsletter. Also check the SG&T website at <http://rock.geosociety.org/sgt/index.html> for Division news and information. The site is maintained by **Kevin Smart**, who can be reached at ksmart@swri.edu.



Here's the latest news ...

Diana K. Latta (advisor **Dave Anastasio**) is completing her PhD at Lehigh University this summer and will join ExxonMobil in Houston in the fall. Her thesis is titled Structural, Lithotectonic, and Rock Magnetic Studies of Décollement Folding, Coahuila Marginal Folded Province, northeast Mexico.

Michael J. Quinn, formerly of ExxonMobil Exploration Company, has joined the West Africa and Americas Exploration Group at Amerada Hess Corporation, where he will continue working in petroleum systems analysis.

Chris Andronicos will be leaving the University of Texas at El Paso this summer to start a position at Cornell University as an associate professor.

Tim Lawton writes that **Jeff Amato** was promoted to Associate Professor with tenure in the Department of Geological Sciences at New Mexico State University in May.

Ben A. van der Pluijm writes that there are several changes at the University of Michigan. The Department has further expanded in neotectonics, with the addition of two new assistant professor appointments, **Marin Clark** from MIT and **Nathan Niemi** from CalTech. **Jeffrey Rahl** (Yale) joined the group as Turner Postdoctoral Fellow; the previous Turner Postdoctoral Fellow **Phil McCausland** (Memorial) has moved to a research position at Western Ontario, and **John Solum** became a USGS Mendenhall Postdoctoral Fellow. Congratulations to Ben, who will receive the 2005 GSA Distinguished Service Award!

Lirim Hoxha of the Albanian Geological Survey presented his paper, "New insights in geology of Albanides (Albania)", co-authored by **Hans-Juerger Gawlick Sr.**, at the GSA Northeastern Section Meeting in March, 2005. His paper, The geological setting of volcanogenic sulphide orebodies in Albanian ophiolites, co-authored with **Peter W. Scott** and **John M. Eyre** appears in Transactions of Institute of Materials, Minerals and Mining and Australian Institute of Mining and Metallurgy (Applied Earth Sciences) (Trans. Inst. Min. Metall., B, March 2005 Vol. 114 B1-B20) London, UK.

2003-2004 Structural Geology and Tectonics Division Contacts

Chair: Dave R. Lageson, USGS-MSU Earthquake Science Laboratory, Dept of Earth Sciences, PO Box 173480, Montana State Univ, Bozeman, MT 59717-3480 USA; (406) 994-6913; lageson@montana.edu. **First Vice-Chair:** John W. Geissman, Dept of Earth & Planetary Sciences, 203 Northrop Hall, University of New Mexico, Albuquerque, New Mexico 87131-0001 USA; (505) 277-3433; jgeiss@unm.edu. **Second Vice-Chair:** Bill Dunne, Department of Earth & Planetary Sciences, University of Tennessee, Knoxville, TN 37996-1410 USA; (865) 974-2366; wdunne@utk.edu. **Secretary/Treasurer:** Peter J. Vrolijk, ExxonMobil Upstream Research Co., PO Box 2189, Houston, TX 77252-2189 USA; (713) 431-4151; peter.vrolijk@exxonmobil.com. **Past Chair:** Elizabeth R. Schermer, Department of Geology, MS 9080, Western Washington University, 516 High Street, Bellingham, Washington 98225-9080 USA; (360) 650-3658; schermer@cc.wvu.edu. **Newsletter Editors:** Tim F. Wawrzyniec, Department of Earth & Planetary Sciences, University of New Mexico, MSC03-2040, Albuquerque, NM 87131-0001 USA; (505) 277-2740; tfw@unm.edu and Barbara M. Sheffels, 9 East Road, Wayland, MA 01778-1903 USA; (508) 358-5461; barbsheffels@comcast.net. **Website Manager:** Kevin J. Smart, Southwest Research Institute, CNWRA – Division 20, 6220 Culebra Road, San Antonio, TX 78238-5166; (210) 522-5859; ksmart@swri.edu.