

STRUCTURAL GEOLOGY AND TECTONICS DIVISION Newsletter

Volume 21, Number 1

March 2002

Welcome new co-editor

As sad as I am to say goodbye to **Mary Hubbard**, I certainly understand her need to go. Mary has assumed the position of department head at Kansas State University, Manhattan, and is more than busy keeping her department going. Thanks for all your help Mary, and best of luck in your new position!

I am excited to welcome my new co-editor **Barbara Sheffels**. She received B.S. degrees in biology and geology from Stanford University in 1980. She went on to do graduate work at MIT, completing her PhD in 1988. Her thesis examined structural constraints on the amount of shortening in the Bolivian Andes. She also received a Bunting Fellowship at Radcliffe (91-92). Before moving east, however, she worked at the (then) Office of Earthquake Studies at the USGS in Menlo Park. After receiving her PhD, she held a post-doctoral research position at Harvard, as well as various teaching positions.

Her areas of interest are in structural geology and seismology. She is currently at home with her two children, and working in the local elementary school system on the science curriculum (succeeded in restoring a plate tectonics unit for the fourth grade).

Hello All:

The 2001-2002 academic year has been, and continues to be, a year of change, both at the national level and in our relatively small society. Events during this period of time demonstrate that a community is only as strong as the individuals it comprises, and that can be very strong indeed.

It seems appropriate, then, that this newsletter is largely about people.

We learned in October that Tom Wright had retired from his position as Program Director of Tectonics at NSF; the division thanked him with the world's largest card for his many years of service. In this newsletter, we welcome **Art Goldstein** as interim Program Director. Art jumped into the deep end of the pool, and appears to be swimming strongly; I've already heard positive comments about his helpful feedback. See his letter to the Division on page 4. **Mary Hubbard**, who served for many years as one of our newsletter editors, was precipitously tossed into the position of chair of her department, which forced her to resign as editor. **Barbara Sheffels** has agreed to take her place, joining pro **Bobbie John**. We also welcome new webmaster **Kevin Smart**, who has taken over for **Steve Hurst**. Kevin has updated our web page and moved it to the GSA server, where it resides at <http://rock.geosociety.org/sgt/index.html> - check it out. We all lead lives that are much too busy - trying frantically to keep up with the responsibilities of work, home, and broader communities. It is therefore with gratitude for the donation of time and energy that I thank Tom, Mary, and Steve for their service; thank Bobbie for her continued volunteer efforts; and extend a warm welcome to Art, Barbara, and Kevin.

Later this year, our editors will introduce yet another change when we switch to an electronic newsletter. As we explained at our annual meeting last November, this will free ~\$3500/year to be used for student support and other division priorities; the suggestion to go electronic met with no objections from those who attended the meeting. If for some reason an electronic format doesn't work for you, please let our editors know (bjohn@uwyo.edu and Barbsheffels@aol.com); we can handle a few paper copies through desktop publishing.

At last year's GSA meeting we lauded (appropriately named) **Don Wise** for his contributions to advancing the fields of structural geology and tectonics. Don received a citation from **Art Snoke** and **Art Goldstein**; Goldstein read the introduction. **Mike Williams** introduced **Jim Dunlap**, **Christian Teyssier**, and **Greg Hirth**, whom we recognized for their exceptional paper "Thermochemical evolution of a ductile duplex", published in *Tectonics* in 1997. These awards are the highlight of our annual business meeting; they allow us to thank key people who have enriched our intellectual lives. Another high point is surely the recognition of up-and-coming members of the division through student awards. This year's Student Research Awards were presented to **Katherine Scharer** (University of Oregon) and **Matt Strine** (University of Rochester). The meeting itself, of course, is the product of many hours of effort. For example, **Christian Teyssier** and I reviewed structural geology and tectonics abstracts and organized general and poster sessions; **Martha Withjack** and I will do the same for the Denver meeting, so you know who to blame if you don't like the schedule! Thanks are due to the members of the committees

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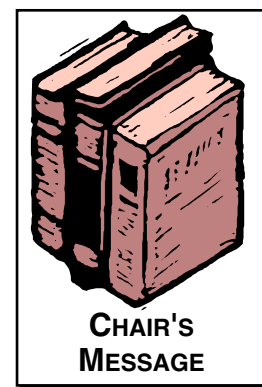


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that keep the division running smoothly: the Career Contributions Award committee: **Ron Bruhn** (chair), **Margi Rushmore**, and **Jan Tullis**; the Best Paper Award Committee: **Sondra Wyld** (chair), **Mike Williams**, **Sue Agar**, **Gary Axen**, **Rick Law** and **Paul Umhoefer**; and the Short Course committee: **Marcia Bjornerud** (chair), **Andrew Meigs**, **Basil Tikoff** and **Martha Withjack**. Ron, Sondra, Mike, Marcia and Martha retire from these committees this year; **Don Fisher** joins the CCA committee; **Harold Tobin** and **Frank Pazzaglia** become BPA committee members, and **Claudia Lewis** and **Liz Schermer** join the Short Course committee.

Also at our annual meeting, Earth Sciences Division Director **Herman Zimmerman** (invited by division member **Eldridge Moores** - thank you Eldridge !) gave us an update of events at the National Science Foundation. Among the topics he addressed was EarthScope, the 'new view into the Earth'. In a surprise development in this year of anti-terrorist activities and burgeoning defense costs, EarthScope has ended up in the President's budget, enhancing its chance of becoming a reality. At www.earthscope.org, you can check out the latest information, including updates on upcoming workshops. In addition, division members **Basil Tikoff** and **Tracy Rushmer** will convene a Town Hall meeting on EarthScope on Sunday afternoon, the first day of this year's GSA meeting. The purpose of this activity is to introduce participants to the different facets of EarthScope, and to explore avenues for research. I hope that you will participate in these activities; EarthScope *will* happen, perhaps sooner than later. It *will* impact our community. I urge you to learn about it, get involved, and be there when the RFPs come out for proposals. To continue to keep us informed about developments, Zimmerman has agreed to a standing invitation to speak annually at our GSA division meeting. Plan now to attend!

Let me alert you to more thunder in the distance: there are rumblings among the membership about getting together members of the Structure and Tectonics community to discuss ways to facilitate communication and build solidarity. The exact form that such a meeting would take is still being discussed, but it would be scheduled for the Saturday before GSA. We will notify you of developments in this arena as they take place.

I should not reach the end of an update without mentioning our management board. At the end of our annual meeting, the division thanked **Christian Teyssier** for his service as Chair over the past year; as Past Chair, he is still providing me with information and advice, for which I am personally grateful! **Martha Withjack** has taken over the duties of the First Vice Chair, and we welcomed Second Vice Chair **Liz Schermer** to the board. **Peter Vrolijk** continues the critical duties of Secretary - without him, we would be lost.

I'd like to end with yet another plea for involvement. Each year, we choose 3 candidates to be considered for service on the management board and appoint new members to the CCA, BPA, and short course committees. Less frequently, we choose a new secretary. In addition, we episodically experience the need for a new newsletter editor or webmaster, as current volunteers become even more over-committed. If you would like to volunteer for one of these activities or wish to nominate a colleague, please contact me at lgoodwin@nmt.edu. We will keep the list of names that results; sooner or later, we will call on you! Your participation makes things work; a division without active members is not a division at all.

Thanks,
Laurel Goodwin

Please Note:

National Science Foundation

Open Position as Tectonics Program
Director

This is a permanent position -
details may be found on the NSF web
site

Announcement #E20020082

Contact

Art Goldstein (AGOLDSTE@NSF.GOV)
or Herman Zimmerman
(HZIMMERM@NSF.GOV) with
questions.

Art Goldstein
Tectonics Program Director
National Science Foundation
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GSA Structural Geology and Tectonics Management Board Minutes

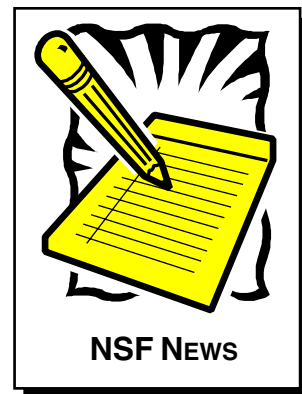
November 6, 2001

Boston, MA

Board members present: Jane Selverstone (past-Chair), Christian Teyssier (Chair),
Laurel Goodwin (1st Vice Chair), Martha Withjack (2nd Vice Chair), Peter Vrolijk (Secretary/Treasurer)
Guest: Mary Hubbard (Co-editor, SG&T Newsletter)

1. Christian identified Liz Schermer as the 2nd vice chair elect (unable to attend)
 2. Budget: several issues surround the budget. First, GSA has altered the beginning and end of the fiscal year, changing from a Jan 1-Dec. 31 calendar to a July 1-June 30 calendar. For the fiscal year ending June 30, 2001, the division's unrestricted net assets stand at \$11,567.74. Second, some inconsistencies were identified in draft versions of financial summaries provided to the treasurer (i.e. unmatched balances from the end of one year and starting balance for the subsequent year). These problems continue to be worked out with GSA staff. Third, the division's budget continues to experience annual surpluses. We discussed if there exists some optimal target for the budget and decided that \$8000 was a reasonable target. Peter agreed to check the division's by-laws to check whether there exists any restriction on the budget. We agreed that extra funds should be spent on student support, particularly to support student participation in GSA short courses and field trips. Additionally, a proposal was brought forward to pay a fixed sum to support travel to the annual meeting for those students who receive division research awards.
 3. Membership: The membership was down by 141 from last year giving a total of 1,483. Of the total, about 350 are students. The division continues to be the largest in GSA.
 4. Committee assignment: A new/permanent division liaison to GSA is needed. Laurel will pursue this nomination.
 5. Short courses for the 2002 meeting (Martha): No proposals were available for discussion at the meeting. Similarly, no division-sponsored fieldtrips were available for discussion. The field trip proposal deadline was delayed to December 1.
 6. Newsletter: Mary Hubbard has resigned as co-editor of the newsletter because of increased work responsibilities as her department's chair. A new co-editor will be sought.
- We discussed the benefits and detriments of distributing the division's newsletter electronically. At present, production and distribution of the newsletter is the division's single largest expense, accounting for approximately \$3500 of expense each year. One concern is whether members would stop paying dues if the newsletter were available on-line without password restriction. Balancing the low cost of division dues (\$8) and the cost of newsletter production against the risk of dues revenue loss, we concluded that there was probably minimal risk of substantial lost income by distributing the newsletter electronically. Moreover, the benefit of freeing thousands of dollars for more student support (e.g. field trip and short course support) seems a much better use of this money.
7. Division website: The construction and maintenance of a division website came under consideration. At present there is no one to maintain the division's website. Possible volunteers are unwilling or unable to construct a website from scratch, but are willing to maintain an existing website. Christian will continue to seek a webmaster and has some solid leads.
 8. Blast e-mail messages: Peter proposed some guidelines to be distributed to the division membership to govern the content of blast e-mail messages. The proposed guidelines are consistent with established informal GSA guidelines. The guidelines were discussed and approved with change. Peter will forward a copy of the guidelines to Barbara John for inclusion in the next division newsletter.

Submitted by Peter Vrolijk
SG&T Secretary and Treasurer



It has been a truly interesting experience coming to NSF and attempting to fill Tom Wright's shoes; those are some pretty big Birkenstocks. As most of you know, Tom retired in October after a long and successful career at NSF. We all owe Tom a deep debt of gratitude for the service and leadership he provided for over 20 years. The transition to a new Program Director in Tectonics has not been completely smooth with a two-month absence of anyone in this program. Tom did all he could following the September panel meeting, but with only three weeks before retirement, there were a limited number of proposals he could deal with. Since arriving in December, I have been taking care of this backlog and I want to thank each and every PI who submitted on June 1 for their patience and forbearance. As of this writing, all proposals submitted June 1 have been dealt with and I have tried to e-mail every PI, only the lead PI's on collaborative proposals, with notification of the decision and copies of reviews. If you haven't heard from me, it is probably because it slipped through the cracks in the crush of trying to get everything done in a timely manner. Please give me a call or e-mail, and I will clear things up.

Proposals were submitted on June 1 for 79 projects, and we funded 24 of them, a success rate of approximately 30%. Whereas this isn't as good as we might like, it is still reasonable. On December 1, we received proposals for 85 projects requesting in excess of \$18,000,000. Considering what we have remaining in the budget, we will probably be able to fund approximately 25% of the requested amount. Thus, it looks like we will be consistent in our funding levels for this year. We don't yet know what our FY'03 budget will look like, and it will probably be some time before we do. However, the general mood at NSF is not defeatist or downbeat, so I am not anticipating that our FY'03 budget will be gutted and we can only hope that will be the case.

I am at NSF as a visitor and am planning on working in the Tectonics program until the summer of 2003. The permanent Program Director's position, Tom's true replacement, has been approved and advertised (see note page 2). One never knows how long such a search takes, but I would be very much surprised if this was filled before late summer. If you are interested in this position, contact Herman Zimmerman, the EAR Division Director, or check the NSF website, and follow those instructions for applying (<http://www.nsf.gov/>). If you want to know what it is like being a Program Director, please don't hesitate to contact me.

A NOTE REGARDING COLOR IMAGES IN PROPOSALS: It has become increasingly common for PI's to use color images and figures in their proposals. Because NSF printers are black-and-white, these images won't be printed in color, and on occasion, they can't be printed at all, requiring the PI's to send us hard copies. I note here that the Grant Proposal Guide specifically states that proposals which contain color images must be submitted in hard copy as well as via FastLane, arriving at NSF within five days after FastLane submission. Please comply with this requirement if you use color figures. This will make it possible to send your proposal to reviewers and panelists in a timely manner and will help the entire process move at a better pace.

THANKS !

--Art Goldstein
Program Director, Tectonics
Earth Sciences Division
National Science Foundation

FastLane: <https://www.fastlane.nsf.gov/fastlane.htm>

NSF: <http://www.nsf.gov/>

Geosciences Directorate (GEO): <http://www.nsf.gov/home/geo/>

LIST OF AWARDS GRANTED

(June 2001- December 2001)

Horton - Collaborative Research: 3-D Kinematic Evolution of the Charleston-Nebo Salient, Sevier Fold-Thrust Belt

McNaulty and Horton - Collaborative Research: Detachment Faulting and Basin Development in a Convergent Setting: The Cordillera Blanca, Peru

Anderson - Caves As Recorders of River Incision, Tectonics, and Landscape Evolution In the Sierra Nevada California

Oldow and - Collaborative Research: Geodetic and Geologic Study of the Kinematics of Late Cenozoic Displacement Transfer, Central Walker Lane, Western Great Basin

Roeske and McClelland - Collaborative Research: Kinematics and Timing of Early Paleozoic Tectonic Events In the Easternmost Precordillera Terrane, Argentina: An Evaluation of Gondwana-Laurentia Interaction

Teyssier - Lithospheric Coupling At The Caribbean-South America Plate Boundary: Deformation And Exhumation Of Ductile Crust In Oblique Convergence

Andronicos - Deciphering the Tectonic History of Slowly Cooled Precambrian Polymetamorphic Terranes in the American Southwest

Yin - Investigating the Kinematic History of the Kongur Shan Normal Fault System, Western Tibet

S. Johnson - Architecture and Evolution of an Accretionary Orogen

Tucker and Kusky - Collaborative Research: Investigation of a Proposed Suture Between East and West Gondwana -- An Integrated Field, Geochronologic, and Remote-Sensing Analysis in East Madagascar

Pollard - Strain Accommodation by Fracturing during Folding of Sedimentary Rock

Dorsey, Janecke, Housen, and Axen - Collaborative Research: Late Cenozoic Detachment Faulting in the Western Salton Trough: Strain Partitioning in an Oblique Active-Margin Rift

Bowring - The Geology of Donegal: A Geochronological Study of Granite Emplacement and Unroofing (Insights Into Terminal Orogenesis)

Stockli and Lee - Collaborative Research: Late Cenozoic to Recent Fault Slip Distribution in the Central Walker Lane Belt, Western Nevada

Hodges - The Significance of Ultrahigh-Pressure Metamorphism in the Tso Moriri Complex, NW Himalaya

Weber - Lithospheric Coupling At The Caribbean-South America Plate Boundary: Deformation And Exhumation Of Ductile Crust In Oblique Convergence

Ellis and Hancock - Collaborative Proposal: Active Faulting Within the Eastern Tibetan Margin and Western Sichuan Basin, P. R. China

Allmendinger - The Propagation-To-Slip Ratio and the Mechanics of Trishear-Like Fault-Propagation Folds

Karabinos - How Do Orogenies End? A Case Study From the Taconic Orogen

Bickford, McClelland and Valley - Collaborative Research: Crystallization Ages and Thermal Histories of Adirondack Anorthosites and Anatectites: Implications for Anorthosite Emplacement and Thermal Contributions to

Saffer - A Critical Evaluation of Hypotheses for Fluid Overpressure Along the San Andreas Fault, California: Implications for the Stress-Heat Flow Paradox

Faulds - Neogene Development of the Northern Walker Lane, Western Nevada: An Evolving Transform Plate Boundary

Hibbard and Tracy - Collaborative Research: An Early Cambrian Tectonothermal event in the Smith River Allochthon, SW Virginia: Implications for southern Appalachian Tectonics

Geological Society of America Structural Geology and Tectonics Division 2001 Career Contribution Award

Donald U. Wise

*Citation by Arthur W. Snoke and Arthur Goldstein
(read by Arthur Goldstein)*

It is my distinct pleasure and privilege this evening to deliver the citation honoring Professor Donald U. Wise, the recipient of the 2001 Career Contribution Award of the Structural Geology and Tectonics Division of the Geological Society of America. This citation was prepared in collaboration with Art Snoke of the University of Wyoming. Art was an undergraduate student at Franklin and Marshall College (F & M) in Lancaster, Pennsylvania, where Don taught from 1957 through 1968. Don was my M.S. and Ph.D. supervisor at the University of Massachusetts at Amherst (UMass), where he taught for nearly a quarter of century until his "retirement" back to F & M in 1993. As former students of Don Wise, we agree that two words characterize his work as a scientist and educator: creativity and enthusiasm. Don is truly a unique individual; he has made enormous contributions in structural geology and tectonics through his distinctively original research publications, and he has inspired a legion of students to pursue geoscience careers in academia, industry, and government.

Don's interests span a remarkable range of topics, from global to microscopic in scale. He has written papers on the following topics: the origin of the Moon by rotational fission, statistics of crater age dating, tectonics of Mars, structural geology and tectonics of Laramide basement-involved uplifts/arches, Appalachian polyphase deformation, freeboard of continents over time, Mesozoic tectonics of the Appalachians, patterns and significance of topographic lineament swarms, origin of joints and microjoints, paleostress determinations using minor faults and calcite twin lamellae, and the truth behind Creationism propaganda. Don's early contributions to structural geology and tectonics focused on the western North American Cordillera and were stimulated by a long-standing association with the Yellowstone-Bighorn Research Association. His record of publications on the development of the classic Laramide basement-involved uplifts of the eastern Rocky Mountains begins in the early 1960s and continues to this day. His 1963 "Outrageous Hypothesis" paper is a classic, and his 2000 *AAPG Bulletin* paper on the structural evolution of the Beartooth uplift is a major contribution representing over forty years of continuing research. Don was one of the early researchers to investigate the rheological role of basement in the Laramide uplifts/arches. Detailed geologic mapping, structural analysis, and insightful interpretations characterize his papers on Laramide structural features. It was in his early Laramide papers that Don's skill as a geologic illustrator first appeared. His distinctive style ranges from informative geologic maps and cross-sections, to three-dimensional structural models, to cartoon-like diagrams of possible tectonic scenarios. As Don says, if he can't draw it, he really doesn't understand it. Thus on field trips, while others are busily taking photographs of structural features and landscapes, Don is diligently trying to summarize the key points of a geologic or structural hypothesis in one of his informative sketches. His ever-present, oversized field notebook is always filled with such masterpieces.

Don's work in the Appalachians is also noteworthy, and two papers are particularly significant: Freedman, Wise, and Bentley (1964) and Wise (1970). These papers were instrumental in understanding the complex, multiphase structural history of southeastern Pennsylvania and adjoining Maryland. Furthermore, these papers provided useful and innovative techniques for study of polyphase-deformed, metamorphic terranes in general. Don has also extended considerable effort in studying the brittle-fracture history of the Appalachians; this stems from among other things, Don's love of the Mesozoic basins of that region. He has directed numerous graduate theses on this topic and has made significant contributions to our understanding of these important extensional basins. As with all his research, Don's creativity has been applied to this topic, and his contoured dip-domain map of the Connecticut Valley Basin is only one example of his unique way of approaching research. Another long-term research interest of Don Wise is the interpretation of topographic lineaments. In addition to scores of serious contributions on this topic, including his notable synthesis of the fracture domains and lineaments of Italy, he authored an important and humorous paper titled: "Linesmanship and the practice of linear geo-art." This classic is required reading for anyone involved in lineament and regional fracture analysis using remote sensing techniques.

Planetary geology has been one of Don's long-standing passions. His early papers on the origin of the Moon may well have laid the foundation for his appointment to NASA's lunar program. This followed his work at F & M and preceded his move to UMass. Don's papers on lunar and Martian geology and tectonics are truly superb and are at least as broad as his work on terrestrial geology. In addition to his work on the origin of the Moon, Don published on the origin of mascons on the Moon, the fracture pattern around the Martian volcano Alba, crater age time scales for Mars, and the global tectonics of Mars. His planetary work has laid the foundation for an entire generation of planetary geologists, and his hypotheses have stood the test of time.

In this brief overview of Don Wise's research contributions we have not tried to document and discuss every aspect of his work. Rather, we have just touched on some of the highlights of Don's research. Our purpose has been to demonstrate a diverse record of important and innovative contributions to structural geology and tectonics. Furthermore, we want to emphasize that Don has consistently been a pioneer in many fields of structural geology and tectonics. He was contemplating the big picture when others were focusing on a single quadrangle. He was applying new techniques to old problems when traditional arguments had lost their meaning, and the problem required new insight for further scientific progress. His work has always been data-rich, and his ideas have always been creative and provocative.

One of Don Wise's major and long-lasting contributions to the discipline of structural geology and tectonics unquestionably is his work as an educator. Don has, literally, launched the careers of a generation of structural geologists and is now the "grandfather" of the succeeding generation. For ten-plus years, Don taught at his alma mater, Franklin and Marshall College. His course in structural geology was famous for, among other things, its field trips, creative problems and projects, and the energy, enthusiasm, humor, and insight of the teacher. At F & M, Don directed the senior thesis projects, which involved detailed geologic mapping and interpretation of a small, typically complex area in Lancaster County that he

had carefully chosen. It was during this experience that many students learned the meaning and techniques of true scientific research. This field-oriented, senior research project was an experience that stayed with these students for the rest of their careers. Don's complete enthusiasm and dedication for this technique of undergraduate instruction characterize his whole approach to teaching. Innovative, inspiring, challenging, timely, and meaningful are just a few words that describe Don's techniques in teaching. At UMass, Don never left his love for work with undergraduates but expanded his sphere of influence to graduate students. He supervised countless M.S. theses and stimulated a cadre of Ph.D. students. It was not uncommon for Don to be directing graduate student research on Appalachian, planetary, and Laramide geology while serving concurrently on graduate committees in geophysics, petrology, and sedimentology. His graduate students will all recall attempting to keep up with Don, physically as well as intellectually. He seemed to be a dervish, spinning off new ideas faster than anyone could assimilate them and flying up mountains in the field, leaving much younger graduate students in his wake. He was, and I hope still is, exceedingly fond of a good prank and has been quoted as saying "As long as it's only people's dignity that's hurt, it's OK." Don continually tried to get graduate students to play pranks on other professors and the results were predictable, the pranks were directed at Don. His office door was bricked up, leaving a small entrance for him to crawl through. His office was filled with helium balloons and an ad was placed in the student newspaper, along with his picture, claiming that the Montana Bureau of Fish and Wildlife wanted him for an investigation. He created logos for the UMass vans, the most famous one depicting Albert the Alligator, of Pogo fame, cracking the Earth open with a rock hammer over the phrase, "UMass Planetary Fracture Research".

Don Wise has also given significant professional service to the geosciences. Don has always been a dependable and eager reviewer of scientific manuscripts and proposals. He served as Chairman of the Department of Geology and Geography at the University of Massachusetts for many years. He was also one of the founders and "guiding lights" in the establishment of the Structural Geology and Tectonic Division of the Geological Society of America. Don served as the Division's first Chair and designed the logo of our Division, a folded Brunton compass and faulted hammer superimposed on a depiction of North America. This logo was printed on T-shirts that were sold at various GSA meetings; the profits from the sales went to the treasury of the fledgling Division.

Finally, we cannot end this citation without at least one "Don Wise story." As many of you know, Don discovered that raised plastic relief maps are, in fact, quite accurate and that one could simulate a SLAR image by illuminating the underside of the maps from the side. The advantage was that one could vary the illumination direction and study the effect of preferential enhancement of topographic lineaments. At one point, Don constructed a turntable on a lab bench in a classroom at UMass by placing a sheet of plywood on a handful of marbles. A camera mounted on a tripod rotated with the maps, and pictures were taken every five degrees. Unfortunately, the marbles tended to migrate toward the edge of the plywood and would periodically fall on the hard tile floor and bounce across the room. This attracted a small crowd of Don's colleagues and some graduate students who always had suspected, but on that day knew for certain, that Don had indeed lost his marbles.

With great pride and fondness, we present to the GSA Structural Geology and Tectonic Division Donald U. Wise, our 2001 recipient of the Career Contribution Award.

Response by Donald Wise

There is a park in Lancaster, Pennsylvania, where an outcrop of the Conestoga Limestone has a synclinal hinge now polished to a glassy surface by the backsides of generations of local kids using it as a sliding board. Some of my earliest memories involve that outcrop and a 'seat of the pants' approach to field work. Later, as a kid roving the local hills, I saw and puzzled over folded beds and veins that seemed to be everywhere and kept wondering, "how, when, why did all this happen?" From then on I was hooked on the discipline.

Basic field methods and approaches were drummed into me at Franklin and Marshall by the likes of Pete Foose and John Moss. Later, Caltech overlaid a much more quantitative methodology through the likes of Dick Jahns, Ian Campbell, and Bob Sharp. Finally at Princeton, Harry Hess, John Maxwell, and Arthur Buddington overprinted a more contemplative and philosophical approach. Then there was the luck of timing and good fortune to be at just the right places for revolutionary changes in structure and tectonics of the second half of the twentieth century. It was a time when almost every idea in our subdiscipline was subject to reconsideration.

Many of the best questions in geology arise from field observations that highlight little inconsistencies and puzzles. These must be teased, tested, and worried by additional lab and field work to yield a number of possible hypotheses. The best of these must answer not only the original field and lab relationships but also make sense on all scales from the microscopic to the regional or even global.

Such a recipe does not always lead to standard explanations and the results are sometimes outrageous but nevertheless possible hypotheses. As a result, I have innumerable fights with reviewers and editors. In fact, at one time I seriously considered getting out of geology because I couldn't get my work and ideas published. Ultimately, these papers were fought through to publication and in retrospect, a few of them may even have been largely correct.

One of the great joys of teaching is to have had some small part in the present success of so many former students. Part of the influence may have been the approaches and educational philosophies already mentioned but there is another aspect. Courtesy of people such as Pete Foose, John Moss, and especially Dick Jahns, I saw innumerable pranks being played on them and upon them. Slowly, I realized that students worked twice as hard and learned far, far more if they were also letting off steam and having fun in this way. I firmly believe that while we must always take our science very seriously, we should never take ourselves too seriously. Within my realm of influence, there were never any repercussions so long as good science was being done, and dignity was the only casualty. This, I believe, can be part of the basis of a happy and productive atmosphere for research and teaching.

My sincere thanks to the Structural Geology and Tectonics Division for this recognition, to my many students, friends and colleagues who secretly made it possible, and finally to the Arts – Snoke and Goldstein – for all the kind words as well as for what they did not say in the interest of good taste. And last, beware ! There are still a few more outrageous ideas remaining in the career pipeline! Thank you, one and all.

Geological Society of America Structural Geology and Tectonics Division 2001 Best Paper Award

W.J. Dunlap, G. Hirth, and C. Teyssier

Citation by Michael L. Williams

On behalf of the Best Paper Committee of the Structural Geology and Tectonics Division, it is my pleasure to present the Best Paper for 2001. This year the Best-Paper Award goes to Jim Dunlap, Greg Hirth, and Christian Teyssier for their paper, "Thermomechanical Evolution of a Ductile Duplex" (Tectonics v. 16/6, p. 983-1000). The paper was originally nominated by Joann Stock, who could not be here tonight, and it was strongly supported by other nominators and the committee. What impressed all of us about this paper was the way that it integrates a diverse array of methodologies and data types to illuminate the evolution of a complex middle crustal structure.

This paper is really five or six papers in one. It is a summary of the macro- and microstructural geology of the Ruby Gap brittle-ductile duplex. It is an application of the classic quartzite deformation experiments of Hirth and Tullis to a natural deformation setting and a test of these models using grain size piezometry. It presents a classic attempt to date the progression of deformation across a field area and the enrichment of these results through thermal modeling and temperature-time analysis. It is a strain study, a strain rate study, and a study of stress-strain relationships, any one of which would be a noteworthy accomplishment. Although aspects of these studies have been published on their own, this paper, through its clear and complete writing style, is a lesson and a type study in each topic area. The assumptions and the limitations of each component study are presented and evaluated, and the strength of the constraints on the overall process can be easily assessed. What makes each of the studies so interesting and illuminating is the element of time that enters into each one. Each method of study and each type of data is compared across the three major thrust sheets in the duplex. The variations paint a picture of the evolving structure and of the evolving P-T conditions during the progressive deformation.

But this paper is much more than the sum of its parts. Its real strength and its elegance come from the integration of each of its component studies into a single model for the evolution of the duplex as a whole. We see an illustration of the diachronous progression of temperature and microstructure, and the many lines of interaction between the two. For more than a decade, petrologists have sought to constrain the P-T-t paths of metamorphic rocks, but in this paper we see the next major step, the integration of deformation into the path and the illumination of some of the feedback relationships that are involved. But the paper doesn't stop with the mere (and impressive) illumination of the overall process, it moves immediately toward using the new model to constrain parameters such as strain magnitude and strain rate that could not otherwise be evaluated. The concept of an evolving set of DCRTs (dislocation creep regime transition) that moves through the duplex even as the individual thrust sheets are moving through the DCRTs is particularly interesting. They (DCRTs) provide a new means of comparing the brittle and ductile components of the overall deformation, and markers for assessing the late stage (post microstructural freezing) brittle strain that is partitioned into discrete structures. In the end, the paper provides a superb type example of the complex evolution of a brittle-ductile structure. The result is a better understanding of brittle/ductile processes and mid-crustal deformation in general and the development and refinement of new tools to apply to other such exposures.

The study is also an illustration of collaborative study at its best. It is easy to see the special contribution of the three authors, each of whom has made, and is making, major individual contributions to the field of structural geology. Together they form a team almost perfectly suited to the task at hand. This is an example of the kind of collaboration that allows conclusions to go well beyond the component parts and expands the potential of already capable researchers.

Many workers have noted that a clear future direction for the fields of Structural Geology and Tectonics involves integration of the disparate fields of solid earth geology (macro-structural geology, microstructural geology, experimental structural geology, petrology, thermal modeling, geochronology and others), in order to build broader models for tectonic systems. This paper is a giant step into the future. It is "earth system science" in its most impressive form. I am honored to present Jim Dunlap, Greg Hirth, and Christian Teyssier and their excellent paper, "Thermomechanical Evolution of a Ductile Duplex" as the best paper of 2001.

Response by W.J. Dunlap

Thanks Mike for those kind words, and thanks also to the Society and the Division for recognizing this work.

Our work on the evolution of thrust systems over the last two decades has focussed on ductile deformation processes. Integrating the fields of structural geology, geochronology, and mineral physics has allowed us to solve a structural puzzle called the Ruby Gap duplex. The success we have had with our paper "Thermomechanical evolution of a ductile duplex" is the result of a love affair that was started in 1983 at Carleton College when I (Dunlap) was an undergraduate. I was intrigued by the early work on the ductile deformation of quartz, and by the reports of fantastic amounts of movement on the Moine thrust zone in Scotland. I decided to write my term paper on thrust tectonics, and if there is a lesson to be learned it would be that students are extremely impressionable, so much so in my case that my fate was sealed when I read my very first journal article.

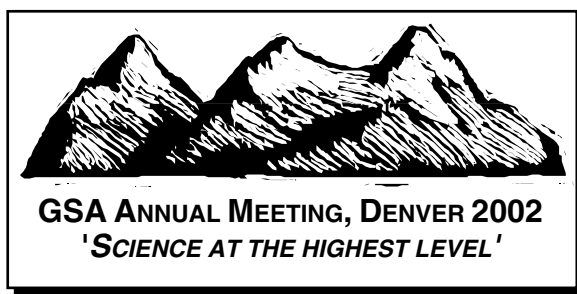
In 1986 I met Christian Teyssier in Minnesota and we started to discuss how the newly developed tools for the study of the kinematics of ductilely deformed rocks could be applied to the evolution of thrust systems, particularly in central Australia. Within a year I was in central Australia taking measurements in the Ruby Gap duplex, a thrust system delineated by the unmistakable Heavitree quartzite, a thrust system so completely exposed that nearly every contact could be followed in its entirety.

Christian's chance meeting in 1989 with Ian McDougall allowed the geochronologic piece of the puzzle to fall into place. Ian agreed to host me in his $^{40}\text{Ar}/^{39}\text{Ar}$ laboratory at The Australian National University to study the thermochronology of the Ruby Gap duplex, and to explore the regional significance of the Alice Springs orogeny. In addition to proving our main hypotheses, the consistency of the $^{40}\text{Ar}/^{39}\text{Ar}$ data, specifically that for micaceous Heavitree quartzite mylonites, convinced us that we had dated deformation instead of cooling. This in turn led to an exciting and fruitful interaction with Mark Harrison and his gang at UCLA, where $^{40}\text{Ar}/^{39}\text{Ar}$ work on K-feldspar allowed a more detailed temperature history for the thrust sheets to be constrained.

In 1991 the mineral physics piece of the puzzle fell into place when Greg Hirth arrived at the University of Minnesota in Minneapolis. Greg had been doing experimental deformation studies of the Heavitree quartzite with Jan Tullis at Brown University during his Ph.D. Christian, Greg and I were delighted by the fact that Greg's experimental charges exhibited textures nearly identical to the quartz-rich mylonites at Ruby Gap. More importantly, the deformation mechanisms exhibited by Greg's experimental samples, which were developed in specific regimes controlled mainly by temperature, differential stress and strain rate, were found to be systematically distributed within the quartzite of the Ruby Gap duplex.

Finally the loop was closed and we proceeded to evaluate the evolution of the duplex using structure, temperature, time and rheology. Our starting point was the hypothesis that the duplex formed in the brittle-ductile transition zone, and that by mapping and dating the microstructures we could reconstruct the duplex in time. Simple retrodeformation of the duplex confirmed the theory that transitions in deformation mechanism should be smoothly distributed along individual thrust sheets, and that freezing of the microstructures was the result of partitioning of deformation onto the thrust faults as the rock was thrust upward through the dislocation creep regime transitions. The microstructures record the transition from pervasive ductile deformation and sliding (stretching faults) to a regime where shortening was accomplished primarily by brittle sliding on thrust faults. Moreover, the data showed that the dislocation creep regime transitions had migrated in time, indicating that heat was advected during thrusting. Our goal to understand the kinematics of duplex formation was realized when we demonstrated that only a forward sequence of imbrication is consistent with the data, something that had been theorized but never proven in ductile midcrustal rocks.

We are so honored to receive this award. We truly enjoyed solving the puzzle of the Ruby Gap duplex and we are now very happy to see that a number of recent studies of ductile systems use a similar approach. We would like to emphasize that our success was born out of integrative research. Jan Tullis, Mark Harrison and Ian McDougall played pivotal roles in this research. A host of other colleagues, at the University of Minnesota and elsewhere, have kept us honest and inspired. They are David Kirschner, Peter Hudleston, David Kohlstedt, Bruce Hobbs, Basil Tikoff, Haakon Fossen, Paul Umhoefer, Marty Grove, and Oscar Lovera. Thank you all.



The **2002 GSA Annual Meeting** ('Science at the Highest Level' – Denver 2002) will be held October 27-30 in Denver, Colorado. At the time of publication, GSA had not yet listed all approved field trips, theme sessions or symposia. Below is a list of special sessions and one field trip that might be of interest. Watch *GSA Today* for the call for abstracts in the April edition, and check the GSA web site for up-to-date information. Preregistration for field trips and the meeting begins in June.

Abstract deadline:

July 16, 2002

see-

<http://www.geosociety.org/meetings/index.htm>

Annual meeting field trip -

"Structure and Stratigraphy of the Southern Colorado Front Range/Cañon City Syncline, Colorado"

Dates: Pre-meeting (2 days)

Senior Leader: Paul R. Krutak; P. Krutak Geoservices International; PO Box 369; 2118 Main Street; Rye, Colorado 81069-0369; USA; Ph & Fax: 719-489-2282; email: pkrutakgeos@hotmail.com

Co-Leader: Eric Erslev; Dept. of Earth Resources, Colorado State University, Fort Collins, Colorado 80523; email: erslev@cnr.colostate.edu

Trip Description: The first day of the field conference involves study of the Cheyenne Mountain Fault Zone (thrust?) which has locally overturned both Paleozoic and Mesozoic strata south of NORAD (North American Aerospace Defense Command). It ends at the Garden of the Gods where spectacular high angle reverse faults offset Fountain and Lyons rocks. The second day includes a visit to Four Mile Creek (Cope/Marsh Dinosaur quarries; second oil well drilled in the U.S.) as well as impressive views of the Royal Gorge of the Arkansas. We will end this day in Florence (near the site of the Florence Oil Field that produces from fractured Pierre shales).

Estimate of Costs: ~\$170 including lodging (one night), breakfasts and field lunches for two days and transportation to Cañon City and back to Denver.

Approved technical sessions of interest to SG & T members (shown with sponsor names)-

Kinematics of the Himalayan-Tibetan Orogen—Comparing the Present with the Past [*GSA Structural Geology and Tectonics Division*]

Lithospheric Structure and Evolution of Rocky Mountain Region, from Deep Mantle to Mountain Tops [*GSA Structural Geology and Tectonics Division*]

Detrital Thermochronology—Dating of Exhumation and Landscape Evolution in Mountain Belts [*GSA Structural Geology and Tectonics Division*]

EarthScope Town Hall Meeting [*GSA Structural Geology and Tectonics Division, GSA Geophysics Division, Mineralogical Society of America, Geochemical Society*]

Extensional Tectonics in the Southern Basins and Ranges, United States, and in Western Turkey [*GSA Structural Geology and Tectonics Division*]

Forward Modeling in Tectonics and Structural Geology [*GSA Structural Geology and Tectonics Division, GSA Sedimentary Geology Division*]

Geometry, Kinematics, and Vorticity of High-Strain Zones [*GSA Structural Geology and Tectonics Division*]

New Constraints on Mesoproterozoic – Early Neoproterozoic Supercontinent Assembly and Dispersal [*GSA Structural Geology and Tectonics Division*]

Nonconventional Fold-Thrust Belts: Assessing the Spectrum of Variation in a Structural Style [*GSA Structural Geology and Tectonics Division, Ocean Energy, Inc*]

Structure and Tectonics of the Midcontinent, North America [*GSA Structural Geology and Tectonics Division*]

Tackling Transpression and Transtension in Orogenesis: Tools of Structural Geology from Microfabric to Tectonic Reconstruction [*GSA Structural Geology and Tectonics Division*]

Tectonic Evolution of the Middle East and Adjacent Regions: The Confluence of the Alpine and Himalayan Orogenic Systems and a Window into Processes of Continental Dynamics [*GSA Structural Geology and Tectonics Division*]

The Anisotropy of Magnetic Susceptibility of Granitic Rocks: New Methodological Developments, Interpretations, and Challenges [*GSA Structural Geology and Tectonics Division*]

Thermal and Mechanical Significance of Gneiss Domes in the Evolution of Orogens [*GSA Structural Geology and Tectonics Division, Mineralogical Society of America*]

Thrust Belt Curvature: Integrating Paleomagnetic and Structural Analyses [*GSA Structural Geology and Tectonics Division*]

Annual meeting - special session

"The Anisotropy of Magnetic Susceptibility of Granitic Rocks: New Methodological Developments, Interpretations and Challenges"

Eric Ferre (Wisconsin-Madison), Michel de Saint-Blanquat (Toulouse, France), and Rick Law (Virginia Tech)

The Anisotropy of Magnetic Susceptibility (AMS) technique was utilized as a structural tool for the study of granites in the 1980's. This new technique has significantly contributed to a revolution in structural studies of granitic rocks and in understanding the relationship between magmatism and tectonics. The application of the AMS to granites is simple, fast and yields significant magnetic fabrics in the vast majority of granite types. Technological developments of instrumentation has increased the reliability and reproducibility of routine measurements.

However, the interpretation of AMS data is often simplistic and this may lead to erroneous conclusions as problems are known to arise from complex magnetic mineralogy and from competition between different magnetic phases. A wide variety of topics will be presented and include: 1) the currently known limits of the AMS method; 2) new avenues for future development; 3) the significance of weak magnetic anisotropies; 4) the relationship between low-field AMS and other magnetic anisotropies; 5) the dependence of AMS results on deformation mechanisms and deformation regimes and 6) experimental results.

International Geological Congress

August 20-28, 2004
Florence Italy

We have organized a multi-part Symposium entitled: Exhumation of Orogenic Belts. Topics include the crustal response to tectonism and exhumation, erosion and sedimentation in flanking basins, thermochronology in orogenic belts, and the long- and short-term rates of uplift and exhumation. The symposium has two theme sessions:

Session 1: The sedimentary record of orogenic exhumation -

This session addresses the sedimentary record of orogenic development. Includes the provenance, stratigraphy, and sedimentary systems that record exhumation, including isotopic tracers in the sedimentary system. Conveners of session 1: Dr. John I. Garver (Union) and Dr. Massimiliano Zattin (U. Bologna, Italy).

Session 2: Orogenic Exhumation Processes -

This session includes the rates and mechanisms that drive tectonic and erosional exhumation in orogenic belts. Topics would also include forcing mechanisms and the interaction of tectonic mechanisms on uplift and topographic development. Conveners of session 2: Dr. Mark T. Brandon (Yale) and Dr. Sean Willet (U. Washington).

For more information on the symposium contact:

John I. Garver, Union College, Schenectady NY 12308
(garverj@union.edu)



Resource Bin

Rick Allmendinger announces the availability of the following programs -

** Stereonet 6.1 is a "Carbon" application which will run natively under MacOS X, the new UNIX based operating system for Macintosh computers. This version also runs under MacOS 9 as long as the Apple's "CarbonLib" is installed. Version 6.1 corrects a potentially serious bug displaying some planes when the view direction was set to something other than the default value. It also allows setting colors and symbols for all of the graphic elements in the program individually. Be sure to read the user notes accompanying this version.

** StereoWin is a port of the above Stereonet program to the Windows PC operating system. Scientific functionality and basic interface is virtually the same as Stereonet for Macintosh and high quality vector output is available via an export DXF function.

** FaultKin 4.0.1 is also a "Carbon" application, a major revision the pre-PowerPC FaultKin 3.9.6. The new version shares Stereonet's v. 6.x's new interface, including the ability to set the view direction, etc.

** FaultKinWin 1.1.1 is a port of the above Fault Kinematics program to the Windows PC operating system. Like StereoWin, it is functionally equivalent to its Macintosh counterpart.

(these may be freely downloaded for NON-COMMERCIAL use from Cornell's FTP site: <ftp://www.geo.cornell.edu/pub/rwa>)

FUTURE MEETINGS, CONFERENCES, AND COURSES

[Notices of future events of interest to Division members are welcomed by the editors]

2002

March 25-29, Tracts, Plays and Fairways Along the Tethyan Margin, Kingston, Surrey, United Kingdom. Information: dickmoody@compuserve.com.

March 25-27, GSA Northeastern Section Meeting, Springfield, Massachusetts. Information: Sheila Seaman, U Mass, Amherst

April 3-5, GSA Southeastern and North-Central Sections Joint Meeting, Lexington, Kentucky. Information: Jim Cobb and John Kiefer, Kentucky Geological Survey, (859) 257-5500.

April 10-11, Petroleum Geology of the Caspian Sea Basins, London, England. Information: Conference Manager, Geological Society of London, fax +44 (0)20 7494 0579.

April 11-12, GSA South-Central Section Meeting, Alpine, Texas. Information: Kevin Urbanczyk, (915) 837-8110.

April 14-16, Society of Economic Geologists, Global Exploration 2002 — Integrated Methods for Discovery, Denver, Colorado. Information: SEG2002@segweb.org.

April 16-21, Kinematics and Vorticity of High-Strain Zones Virginia Blue Ridge and Piedmont. Information: <http://www.wm.edu/CAS/GEOLOGY/faculty/bailey/GSA/fieldforum/>

April 29-May 2, GPR 2002, Ninth International Conference on Ground Penetrating Radar, Santa Barbara, California. Information: Steven Koppenjan, Dept. ECE, GPR 2002 Conference; University of California, Santa Barbara, CA 93106, USA, fax 805-893-3262.

May 7-8, GSA Rocky Mountain Section Meeting, Cedar City, Utah. Information: Robert L. Eves, (435) 586-1934.

May 13-15, GSA Cordilleran Section Meeting, Corvallis, Oregon. Information: terra.geo.orst.edu/users/gsa2002.

May 26-29, Saskatoon 2002 — The Making of a Continent's Interior, Geological Association of Canada and Mineralogical Association of Canada Annual Meeting, University of Saskatchewan, Saskatoon, Saskatchewan: mel.stauffer@usask.ca.

May 28-31, AGU Spring Meeting Washington, DC : www.agu.org/meetings.

June 3-7, Canadian Society of Petroleum Geologists Diamond Jubilee Convention, Calgary, Alberta, Canada. Information: Lori Humphrey-Clements, (403) 264-5610.

June 19-22, Undergraduate Research for All, Council on Undergraduate Research National Conference, Connecticut College, Connecticut: www.cur.org/conferences.html.

July 9-12, Western Pacific Geophysics (AGU) Meeting, Wellington, NEW ZEALAND: www.agu.org/meetings

August 18-23, Goldschmidt 2002 - 12th Annual VM Goldschmidt Conference, incorporating ICOG X, Davos, Switzerland. <http://www.goldschmidt-conference.com/2002/gold2002/>

August 18 - 24, GSA Penrose Conference - "Three-dimensional flow, fabric development and strain in deformed rocks and the significance for mountain building processes: new approaches", Ascona, Switzerland (see page 13 for more information)

August 25-30, Gondwana 11: Correlations and Connections, Gateway Antarctica, Christchurch, New Zealand: s.hawtin@anta.canterbury.ac.nz.

August 26-Sept. 3, 4th International Workshop on Orogenic Lherzolites and Mantle Processes, Hokkaido, Japan. <http://earth.s.kanazawa-u.ac.jp/LherzoliteWorkshop2002/>.

September 8-11, American Association of Petroleum Geologists 2002 Rocky Mountain Section Meeting, Laramie, Wyoming. Information: Randi S. Martinsen, (307) 766-4858.

September 23-25, Workshop on the Tectonics of Eastern Turkey and Northern Arabian Plate Erzurum (Eastern Turkey): Information: Prof. Niyazi Turkelli (Bogazici University); e-mail: turkelli@boun.edu.tr.

October 27-30, GSA 2002 Annual Meeting and Exhibition - Science at the Highest Level, Denver, Colorado, Information: GSA Meetings, (303) 447-2020, fax 303-357-1070.

December 6-10, AGU Fall Meeting, San Francisco, California. Information: www.agu.org/meetings

2003

April 7-11, EGS - AGU - EUG Joint Assembly, Nice, FRANCE: Information: www.copernicus.org/EGS.



**FUTURE MEETINGS,
CONFERENCES, &
COURSES**

Geological Society of America Penrose Conference

"Three-dimensional flow, fabric development and strain in deformed rocks and the significance for mountain building processes: new approaches."

August 18 - 24, 2002
Ascona, Switzerland

The major goal of the conference is to discuss new approaches to tectonics that address the spatial and temporal complexities of three-dimensional deformation processes. The topics which will be covered include a broad range of subjects and methodologies, from large-scale views of lithospheric processes to the micro-mechanics at the grain scale of deformation. The conference will focus on specific and sometimes controversial topics, which should stimulate future discussions in structural geology.

The Conference topics will include:

- the nature of heterogeneous strain fields in repeatedly deformed rocks as a result of superposed folds or reactivated shear zones. How do strains accumulate in such systems and how does the state of finite strain correlate with the development of structures and fabrics in these rocks?
- the significance of final structures and fabrics for the analysis of complex deformation. Can rock structures and rock fabrics be used to track the deformation path?
- the relationship between rock fabrics and finite or incremental strain. How do fabrics and textures behave under non-steady deformation and is fabric development cumulative, cyclic or does it reflect certain segments of the deformation path.
- the scale dependency of structural analysis. Can we use outcrop-scale information to interpret the regional kinematics and are macroscopic structures controlled by local strain or by the regional background deformation?
- three-dimensional forward modeling of deformation systems.

How can we approach the complexity of deformation paths arising from non-steady state conditions and/or three-dimensional displacement fields? Which models are appropriate?

The conference is to be held at Monte Verita, a small ETH conference center above Ascona, on the shores of Lago Maggiore (<http://www.csf-mv.ethz.ch/>), where nearby spectacular rock exposures can be studied in order to integrate direct observations into our discussions. The Alps are an ideal environment for this conference as these mountains represent one of the best documented geological archives of a complex tectonic history which perfectly exemplifies the conference topics. Three of the six conference days are reserved for field trips to different areas of the Alps relevant to the conference topics. The other three days are covered by lectures, poster presentations and discussions. The Conference is being co-sponsored by the Swiss Geological Society and the Tectonic Studies Group of the Geological Society.

The conference is limited to 80 participants. We encourage interested graduate students to apply and some partial student subsidies will be available. The registration fee, which will cover lodging, meals, field trips, and all other conference costs, except personal incidentals, is not expected to exceed \$950. Participants will be responsible for transportation to and from the conference. Further information on travel will be provided in the letter of invitation but is also available at: <http://www.csf-mv.ethz.ch/official/travelinfo/travelinfo.htm>

All participants will be encouraged to present posters and short notes on their current research related to the topics of the meeting and significant time will be given to view and discuss these.

Co-conveners are:

Hermann Lebit and Catalina Lüneburg, Department of Geoscience, State University of West Georgia, Carrollton, GA. 30118, (770) 838-3203, fax (770) 836 4373, e-mail: hlebit@westga.edu or clunebur@westga.edu
Peter Hudleston, Department of Geology and Geophysics, University of Minnesota, 310 Pillsbury Drive SE, Minneapolis, MN 55455, (612) 625.0046, fax (612) 625.3819, e-mail: hudlesto@mailbox.mail.umn.edu
John Ramsay, Cratoule-Issirac, F-30760 St. Julien de Peyrolas, France, e-mail: Ramsay-Dietrich@wanadoo.fr

Application deadline is March 15th, 2002. Invitations will be mailed to participants by early April 2002. Potential participants should send a letter of application to Hermann Lebit (address above), including a brief statement of interests, the relevance of the applicant's recent work to themes of the meeting and the subject of any proposed presentation.

Potential participants should also indicate their interest in an optional, low cost (~\$500), pre-conference field trip. This one-week to 10 day excursion will transect the major domains of the Alps exposed in Switzerland and Italy.

Workshop on the Tectonics of Eastern Turkey and Northern Arabian Plate

September 23-25, 2002
Erzurum (Eastern Turkey)

In order to better understand the mechanism for continent-continent collision we are convening a focused international workshop that would allow earth scientists with a wide variety of expertise to address some of the key geodynamic questions concerning the collision of the Arabian and Eurasian plates. Continent-continent collision processes play a critical role in the development and growth of the continents and interdisciplinary collaboration is needed to elucidate the processes involved in the evolution of the Anatolian Plateau in Eastern Turkey. In particular, results will be reported on the structure of the crust, lithosphere, and upper mantle based on the two-year PASSCAL Eastern Turkey Seismic Experiment (ETSE). ETSE is a joint collaborative effort of scientists from Bogazici (Istanbul) and Cornell Universities.

Scientific results will be presented by several invited speakers as well as by contributed oral and poster papers. Enough time will also be spent in a workshop format discussion.

The registration and abstract submission deadline is June 1, 2002. Requests for information should be directed to Prof. Niyazi Turkelli (Bogazici University); e-mail: turkelli@boun.edu.tr; fax: (90) (216) 332-2681; tel: (90) (216) 308-2711 (office) or (90) (532) 440-8185 (cell), or you may contact Prof. Muawia Barazangi at Cornell University.



Greetings once again from the High Plains. I write while surrounded by inches of snow outside, and a similar sized pile of GSA Research Grant applications on the table. Ninety-eight of the total 557 proposals are in structure and tectonics, in addition to another 78 being in Quaternary geology and geomorphology (encompassing active tectonics). Our Division clearly dominates in terms of active research! And speaking of research, a note to reiterate is that of Art Goldstein's (NSF - Interim Program Director, Tectonics) asking for interested parties to consider becoming the new Program Director (see p. 2 and 4). This is a permanent position with NSF and clearly influences many of us.

Our new SG&T webmaster **Kevin Smart** (kjsmart@ou.edu) has updated and streamlined the Division web page (many thanks to both Kevin and outgoing webmaster Steve Hurst). The page has been moved to the GSA site; check it out at: <http://rock.geosociety.org/sgt/index.html>.

Please continue to send all your news and information to Barb or myself to share with the rest of the Division, as this is a good way to communicate with a large group of interested people.

Steve Reynolds (Arizona State University, Geological Sciences), **Michael Piburn** (ASU, Education), and **Barbara Tewksbury** (Hamilton College, Geology) are finishing up the NSF-funded **Hidden Earth Project**, which has generated some striking, visual resources that structural geologists should find very useful. Most of the materials are QuickTime Virtual Reality (QTVR) movies, accessed via the Internet, that users can rotate, tilt, and view on their monitors. One module, called **Visualizing Topography**, teaches students how to read contour maps and visualize topography, by interacting with movies of contour maps draped over topography. Another module has **Interactive 3D geologic blocks** containing layers, folds, and faults, which students can rotate, make the blocks transparent to see the internal structures, move and erode fault blocks, etc. Other materials illustrate stereonet and how layers interact with topography, and have QTVR movies of geologic maps draped over digital topography. Steve, Barb, and other structural geologists have used these materials in their structural geology and introductory geology courses, with great success. Steve has just been funded by NSF on a larger scale to continue developing and assessing similar materials, so stay tuned! All the materials are available at <http://reynolds.asu.edu/>.

Awards and teaching: **William R. Muehlberger** received the AAPG Distinguished Teacher Award. He claims 'if you outlast all your contemporaries, you end up collecting

awards!' Based on what we know this can't be the case.

Congratulations, Bill. **Jane Selverstone** just received a Gunter Starkey Award for Excellence in Teaching at University of New Mexico. The awards "recognize individuals who make significant contributions to the college's teaching mission through the quality, breadth, and impact of their teaching". Jane was pleased to know that someone cares about teaching as well as research. So do we !!!!

Zoe Shipton is the 2002 recipient of the *Ramsay Medal* awarded by the Tectonic Studies Group of the Geological Society of London. This award is made annually to the postgraduate or recent postgraduate who has been judged to have produced the best publication arising directly from a PhD project in the field of tectonics and structural geology during the previous year. Her paper, entitled 'Damage zone and slip-surface evolution over micro- to kilometer scales in the high-porosity Navajo Sandstone, Utah', was published in the *Journal of Structural Geology* (v. 23, 1825-1844, 2001). Zoe completed her PhD in 1999 with Patience Cowie, in the Department of Geology and Geophysics at Edinburgh University, and now has a Lectureship at Trinity College Dublin. Congratulations!

Jon Olson (PhD, Stanford University, with Dave Pollard), was granted tenure in the Petroleum and Geosystems Engineering Department at The University of Texas at Austin this past December 2001. He continues to work on the mechanical analysis of natural fracture pattern development as well as the more typical engineering topics of hydraulic fracturing and reservoir mechanics. **David Greene** has been granted tenure in the Geology and Geography Dept at Denison University (Granville, Ohio). Elsewhere in the mid-west, **Mark P. Fischer** was awarded tenure at Northern Illinois University. In the southern hemisphere, **Tom Blenkinsop** moved in early March to the School of Earth Sciences, James Cook University, Townsville, Australia.

The March newsletter is usually too early to contain much information about new academic hires, but I've learned of a few. **Michael Harrison** is completing his Ph.D. in structural geology with Steve Marshak (University of Illinois), and he has started as Assistant Professor of Structural Geology at Tennessee Tech. **Steve Allard**, finishing his PhD with Art Snoke (University of Wyoming), will be heading to Winona Minnesota to begin a faculty position there in August. Scott Paterson (USC) notes that **Keegan Schmidt**, has moved to Lewis and Clark College in Idaho. **Jerome Onezime** (University de Orleans, France) has joined Scott as a postdoc for a year. **Paul Kapp**, structural geologist and a recent graduate from UCLA (PhD, 2001) under An Yin, Mark Harrison, and Craig Manning began an assistant professorship at University of Arizona in January. **Eric Kirby** notes that after a year of a postdoctoral fellowship with Doug Burbank at UC Santa Barbara, he will join the faculty at Penn State this summer. **Jens Becker**, who completed his PhD at U of Goettingen with Siegfried Siegesmund on the structure of the Chimanora batholith in Zimbabwe, is doing a post-doc at U of Ottawa with Keith Benn. He is studying the emplacement of an Archean tonalite batholith in the Abitibi greenstone belt. He is funded by a 2-year fellowship from the German Research Foundation. **Rebecca Ghent**, a graduate student working with Vicki Hansen at SMU (and soon to be Ph.D SMU), moved to the Smithsonian Institution for a post doc in the Center for Earth & Planetary Studies in January 2001. After several years with Chevron, **Erin Campbell-Stone** (PhD, University of Wyoming) returned to academics as a lecturer at the University of Wyoming. In addition to research and teaching during the

academic year, she directs the long running UW Geology and Geophysics field camp. A little history indicates that the camp has run continuously since 1923, and was one of the only science field camps to admit women at that time !

From our European colleagues, we learn that in Freiberg (not Freiburg!), Germany, **Eva Enkelmann** is starting a PhD with **Lothar Ratschbacher** on the structure and low temperature exhumation of the Dabie Shan in China. **Raymond Jonckheere** is also moving to Freiberg on a DFG research fellowship to conduct annealing experiments on apatite, titanite and sphene in the new fission track unit there. **Isabelle Coutand**, former Denis Gapais (Rennes) PhD student, and **Manfred Strecker** (Potsdam) postdoc is moving to a teaching position in Lille, France.

Perhaps due to all the mergers and acquisitions, there seems to be more news from industry than usual. **Russell Davies** left the ARCO structure research group following the company's acquisition in 2000, and joined Rock Deformation Research (RDR) as their US representative from Dallas, TX. RDR is a structural geology consulting group based at the University of Leeds and directed by Rob Knipe. **Jim Tucker** is now the Chief Geologist of Computational Geology in Houston. **Ronald A. Nelson** retired from BP in August, 2001. After receiving a PhD from the Center for Tectonophysics (Texas A&M University), Ron worked in the oil industry for over 26 years as a structural geologist and fractured reservoir specialist. Most of that time was spent with Amoco Corporation. Ron was and continues to be very active in geoscience professional societies. He is a past president of the Houston Geological Society, was twice an AAPG Distinguished Lecturer, and recently completed a term as AAPG Vice President. Ron is currently the principal investigator for Broken N Consulting, Inc.

Mark Legg has been awarded a FEMA/EERI NEHRP Professional Fellowship to work with Costas Synolakis (USC) to study the local tsunami potential for southern California urban areas. Yes, you read this correctly, not only does S. California suffer from earthquakes, floods, landslides and fires, but there is a potential for tsunamis. The focus of the project is on the Santa Catalina Island. A large oblique-slip earthquake creating significant uplift of the island platform poses an obvious local tsunami threat to places like the Port of Los Angeles and Long Beach, where about 25% of the nation's imports pass every year.

And finally, **Jaime Barnes**, working with Jane Selverstone (UNM), was awarded an NSF Graduate Fellowship to work on fluid-rock interactions during deformation in shear zones in the Alps.

Keep us posted with all your news. Remember the newsletter is going electronic next September, and that we publish twice a year in March and September; submit things in a timely manner for up-to-the-minute coverage.

Thanks.

- Barbara John

Structural Geology and Tectonic Division

BEST PAPER AWARD NOMINATION

(deadline for nominations - May 1, 2002)

This award is given annually for a published work (paper, book, or map) of exceptional distinction that clearly advances the science of structural geology or tectonics. Papers eligible for the award must have been published within five years prior to the year of the award. Hence, papers published during the years 1997-2001 are eligible for the 2002 award. The Best Paper Award is not limited to members of the Division or the Society, and awardees may be single or multiple authors, with no restrictions as to nationality, citizenship, publisher or publishing agency. A list of past winners can be accessed at the GSA SG&T website:

<http://rock.geosociety.org/sgt/index.html>

The award committee depends on participation by the membership of GSA and the Division to make this a successful award, so please take a few minutes to give your favorite papers some thought and nominate one that you think is outstanding. Nominations remaining from previous years will be reconsidered by the committee on a yearly basis until they are older than the allowable publication date.

Nominations should include the following information:

- o A full citation: author[s], title, date, journal or book (with publisher), volume number, and page numbers.
- o Statement in support of nomination (particularly comment on the exceptional achievement or significance of the publication; additional supporting material such as letters, published discussions, or reviews may be included).
- o Name and address of nominator.

Mail, e-mail, or FAX nominations (or questions) to:

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