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In this Issue: The Ten Commandments of Professional Development
GeoCorps America - Scientists in Parks

GeoSpectrum

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The American Geological Institute is a nonprofit federation of 44 geoscientific and professional associations that represent more than 120,000 geologists, geophysicists and other earth scientists. Founded in 1948, AGI provides information services to geoscientists, serves as a voice of shared interests in our profession, plays a major role in strengthening geoscience education and strives to increase public awareness of the vital role geosciences play in society's use of resources and interaction with the environment.

Contribute news items to

GeoSpectrum

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For more information, contact
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On the Cover: Stephanie Kyriazis participates in the Geological Society of America GeoCorps Program. Kynazis spent her summer at Bryce Canyon National Park in Utah. Read about her and other participants in this very unique program on page 23 of this issue. Image courtesy of Ann Cairns, Geological Society of America.

Editor's Note

Professional development is a career-long journey. It is not just attending meetings and seminars, but it is also developing new skills, embracing new experiences and staying connected to your peers in the Earth sciences. By taking part in the educational opportunities around you, learning of the latest technologies, and by participating within the community you are taking an active role in building your career. Our goal in *GeoSpectrum* is to be an outlet for the news, events, and honors of the geoscience community to keep you connected to and educated about the earth science community.

In this issue are articles that should be of interest to you and your career as a geoscientist. Stephen Testa, Past President of AGI, contributes his thoughts on the “Ten Commandments of Professional Development” and their importance to your career’s success. In addition, you will find articles earth science educational resources and events both in the U.S. and abroad, successful partnerships such as the GeoCorps program, and new technology that will aid in research, and of course the regular fare of postings for college scholarships, book reviews and the calendar of events. No matter where you are in your career, there is an article that will be of use to you.

I hope that this issue of *GeoSpectrum* helps you in your endeavors and keeps you connected to the rest of the community. Remember, you can keep others connected to your Society by submitting news and articles to geospectrum@agiweb.org.

Andrea S. Martin

GeoSpectrum Editor



Society News

FUND ESTABLISHED TO HELP SUSAN LANDON

Susan Landon, a Past President of the American Geological Institute and a Geological Society of America Fellow, suffered a traumatic brain injury while skiing on February 22, 2005. Comatose for several weeks and with little memory of the months after the accident, Susan has struggled to regain her health, both mental and physical. She is wheelchair-bound and dependent on nursing help to turn in bed, eat and exercise. While she is regaining her memory, it is currently erratic. Susan will continue to need physical, occupational and speech therapy for at least a year, possibly for many years. The prognosis seems good that Susan will eventually be able to walk and resume an active life, but it has been slow and will continue to be slow.

Susan is currently at Learning Services, a rehabilitation facility in Lakewood, Colo. She could be there for six months or more depending upon the rate of her recovery. Susan will

continue to require special care and therapy even when she goes to her home or to another temporary home until she can manage well and safely on her own.

It now seems likely that she will have expenses of \$500,000 not covered by insurance over the next five years. Many of her friends have asked how they could assist financially.

A *tax-deductible gift* to help Susan can be made through the National Transplant Assistance Fund (NTAF), a nonprofit organization dedicated to helping people who experienced catastrophic injuries. Ninety-six percent of each check goes to pay Susan's medical and related expenses, either directly or as a reimbursement.

Checks may be made payable to NTAF Midwest/West Brain Injury Fund, with IN HONOR OF SUSAN LANDON in the memo section of the check. Address is:

NTAF
3475 West Chester Pike, Suite 230
Newtown Square, PA 19073

For more information, please go to catastrophicfund.org or call NTAF at 800-642-8399.

- Matt Silverman and Robbie Gries

InBrief

- The Mineralogical Society welcomes Professor Ben Harte as President for the 2006-2007 term.
- The Association of Engineering Geologists has changed its name to reflect the growing importance of environmental geologists. Although using the same acronym, AEG will now be the Association of Environmental and Engineering Geologists.
- The American Institute of Professional Geologists announces the 2006 National Executive Committee, consisting of President Larry C. Weber, President-Elect Kelvin J. Buchanan, Vice President Madhurendu B. Kumar, Past President Robert G. Font, Secretary Mark W. Rogers, Treasurer John L. Bognar, and Editor Ray W. Talkington.
- The Society of Independent Professional Earth Scientists inducted David A. Eyler as this term's President, as well as Vice President Raymond N. Blackhall, Secretary James K. Applegate, Treasurer E. Bernard Brauer, and new members of the SIPES Board of Directors including Lanny O. Butner, Jeanne S.F. Phelps, H. Jack Naumann, Jr., Lee M. Petersen and Clifford A. Walker.



Susan Landon, Past President fo the American Geological Institute, The American Institute of Professional Geologists, Treasurer of the American Association of Petroleum Geologists and a Geological Society of America Fellow. Image Courtesy of Matt Silverman and Robbie Gries.

GLOBAL LEARNING AND OBSERVATIONS

TO BENEFIT THE ENVIRONMENT (GLOBE) - Call for Submissions

A new program solicitation (NSF 06-515) has been released by the National Science Foundation (NSF) inviting proposals related to the GLOBE program.

GLOBE is a hands-on international education and science program that joins students, educators and scientists from around the world in studying Earth Systems Science. The goals of the GLOBE Program are to improve science education, enhance environmental awareness, and increase understanding of the Earth as a System.

GLOBE is an interagency program funded by NASA and NSF, supported by the U.S. Department of State, and implemented through a cooperative agreement between NASA, and the University Corporation for Atmospheric Research in Boulder, Colorado. Since its inception in 1994, GLOBE has grown to include tens of thousands of schools and teachers and over one million students.

The new ten-year GLOBE plan, "The Next Genera-

tion" GLOBE, has identified strengthening connections between the existing GLOBE community and scientists engaged in cutting-edge Earth Systems Science research as a high priority.

In support of this vision, NSF seeks to establish new partnerships between GLOBE program participants and scientists associated with Integrated Earth Systems Science Programs (IESSP), defined as major NSF- or NASA-funded research programs related to Earth systems science. NSF 06-515 solicitation replaces NSF 02-013.

Proposal Deadline: March 8, 2006

Estimated Number of Awards: 3 to 5 anticipated

Anticipated Funding Amount: \$4,000,000. Approximately \$1 million will be available in each of the next four fiscal years pending availability of funds.

For additional information,
contact Ms. Rhonda Spidell

rspidell@nsf.gov;

<mailto:rspidell@nsf.gov>; 703.292.8474

..... **Relevant Web Sites:**

NSF 06-515: http://www.nsf.gov/publications/pub_summ.jsp?ods_key=nsf06515

GLOBE Program: <http://www.globe.gov/>

Next Generation GLOBE Plan: https://globe1.globe.gov/webarchs/all/NGG_WhitePaper_9_291.pdf

Judson Mead Geologic Field Station Strategic Planning Session

A forum entitled "Does need exist for a National Center for Teaching Geoscience in the Field? If so, how do we get there?" will take place at the Judson Mead Geologic Field Station of Indiana University in the Tobacco Root Mountains near Cardwell, Montana on August 22-23, 2006.

Among those expected to participate are leaders of the major geoscience professional societies, representatives from the education divisions of government agencies such as NSF, USGS, etc., nationally known government and industry geoscientists, and executive directors of non-profit foundations with ties to the geoscience community.

For more information on how to apply for participation in the forum contact:

Dr. Lee J. Suttner

Phone: 812-855-4957

Email: suttner@indiana.edu

HONORS AND AWARDS...

...From the *American Institute of Professional Geologists (AIPG)*

- **Ben H. Parker Memorial Medal** - James W. Skehan
- **Martin Van Couvering Memorial Award** - Lawrence M. Austin
- **John T. Galey, Sr. Memorial Public Service Award** - John G. Parrish
- **Honorary Membership** - Rex Monahan, Richard H. Young
- **Outstanding Achievement Award** - Thomas W. Dibblee, Jr.

Gypsum crystal, USGS, Courtesy of Earth Science World Image Bank



AGI invites you to HONOR OUR FELLOW GEOSCIENTISTS!

Give recognition to your mentor, your professor or your colleague and nominate a worthy geoscientist for the following National Science Awards:

- **National Medal of Science** – the Nation’s highest honor, given to individuals deserving special recognition for their outstanding geoscience contributions, presented annually by the President.
- **Vannevar Bush Award** – presented to individuals who, through public service in science and technology, have made extraordinary contributions toward the welfare of mankind and the nation.
- **William T. Pecora Award** – given in recognition of contributions toward the understanding of the Earth by means of remote sensing. Established by the U.S. Geological Survey and NASA.

For more information on the National Science Awards, or to nominate an earth scientist, go to <http://www.agiweb.org/direct/awards.html>.

Recipients of the AIPG PRESIDENTIAL CERTIFICATE OF MERIT

Presented by
**Robert G. Font, 2005
President**



Madhurendu B. Kumar, CPG 3106
— For his outstanding leadership as Chairman of the CPG Practicality Committee.



Richard M. Power, CPG 6765 — For his initiatives and work concerning the Corporate Membership Program and the establishment of the AIPG Finance Committee.



William J. Siok, CPG 4773 — For his continuing excellence as AIPG Executive Director and national and international ambassador of our Institute.

February 2006 • GeoSpectrum

Mineralogical Society 2006 Medals — Call for Nominations

Nominations are being sought from *members* of the Society for the 2006 award of the Mineralogical Society-Schlumberger Medal, given to recognize scientific excellence in mineralogy and its applications by a key worker. Evidence should be in the form of published work by a currently active scientist.

Nominations are also sought from *members* for the 2006 award of the Max Hey Medal, to recognize existing and ongoing research carried out by young scientists (normally under 35 years at the time of the award).

Nominations, with supporting evidence, should be sent to The Mineralogical Society, 41 Queen's Gate, London SW7 5HR, UK to arrive by April 21, 2006. Recipients of the awards need not be members of the Society. Full details of the awards and requirements for nomination can be found on the website: www.minersoc.org under the awards button.

TOP GEOSCIENCE PUBLICATIONS, WEBSITES HONORED AT 2005 AWARDS CEREMONY

Four outstanding earth science publications and websites were honored by the Geoscience Information Society (GSIS) at its October meeting in Salt Lake City.

The *Encyclopedia of Atmospheric Sciences* (Academic Press, 2003), edited by James Holton, John Pyle, and Judith Curry, received the Mary B. Ansari Best Reference Work Award. The six-volume work is an authoritative resource covering all aspects of atmospheric sciences, both theoretical and applied.

George C. Dunne and John Cooper were awarded the Society's Best Guidebook Award for their work on *Geologic Excursions in the California Deserts and Adjacent Transverse Ranges* (Pacific Section, SEPM, 2001). The volume consists of four field trip guides prepared for the April, 2001 joint meeting of the Cordilleran Section of the Geological Society of America and the Pacific Section of the American Association of Petroleum Geologists.

Since 2002 GSIS has annually honored a geoscience website that exemplifies outstanding standards of content, design, organization, and overall effectiveness. This year's Best Website Award was shared by two recipients: *The Paleontology Portal* (www.paleoportal.org), an academic site, and *Volcano World* (volcano.und.edu), a site aimed at the general public.

The Paleontology Portal is produced by the University of California Museum of Paleontology, the Paleontological Society, the Society of Vertebrate Paleontology, and the United States Geological Survey. The site serves as a resource for "anyone interested in paleontology, from the professional in the lab to the interested amateur scouting for fossils to the student in any classroom".

Volcano World provides up-to-date information about volcanoes on the Earth and other planets in an accessible, lively fashion. Highlights include news of current eruptions, photos and movie clips, and projects for teachers and students. The site is sponsored by the Department of Space Studies, University of North Dakota, and the North Dakota NASA Space Grant Consortium.

LIBRARIANS DERKSEN AND NOGA RECEIVE 2005 GSIS AWARDS

Librarians Charlotte R. M. Derksen (emerita) of Stanford University and Michael M. Noga of MIT received professional awards at the 2005 annual meeting of the Geoscience Information Society (GSIS) in Salt Lake City.

Derksen was presented with the Mary B. Ansari Distinguished Service Award, given for the first time this year, which recognizes significant contributions to the geoscience information profession. Derksen's professional leadership, research, and service to users of geoscience information were cited at the ceremony on Oct. 18.

Derksen was head librarian of the Branner Earth Sciences Library and Map Collections at Stanford from 1980 until her retirement in 2004. Derksen was active in GSIS, the Cartographic Users Advisory Council, and the American Geological Institute. She served on advisory committees for GeoRef and *GeoScienceWorld*, and on the Geological Society of America's Publications Committee. Since her retirement from Stanford, she has been working on indexing projects for GeoRef.

Noga was presented with the Society's 2005 Best Paper Award for his publication "Conference Proceedings in Geoscience Journals: What's the Use?" published in volume 34 of the *Geoscience Information Society Proceedings*. The award is given to the best professional paper in the field of geoscience information published during the previous year. Noga's study examined citation frequencies of conference papers published in earth science periodicals and monographic proceedings, and compared their usage to that of research articles.

Noga is Earth and Planetary Sciences Librarian and Collection Manager for Science at MIT. He holds degrees in biology and in library and information science from Case Western Reserve University and a Masters degree in geography from the University of Cincinnati. Before coming to MIT Noga worked in geoscience libraries at Stanford and UCLA. He is active in GSIS and the Western Association of Map Libraries.
-Shaun J. Hardy, GSIS



Claren Kidd (left) presents the Geoscience Information Society's first Mary B. Ansari Distinguished Service Award to Charlotte Derksen.



QUANTITATIVE ENVIRONMENTAL ANALYSIS, LLC SCHOLARSHIP

The Scholarship

QEA, LLC is a national environmental engineering and science consulting firm specializing in the investigation and remediation of pollution problems in natural systems. In an effort to foster the education of future professionals in our field, QEA, LLC has founded a scholarship fund to financially assist graduate students in obtaining their graduate level degree. Scholarship awards ranging from \$500 to \$2,000 will be provided to the recipient's college or university for distribution to the recipient for tuition and/or educational supplies (e.g., books).

How to Apply

Interested students may obtain an application and submission information at www.qeallc.com. Students should submit their applications along with the following:

- Letter(s) of recommendation from professors or employers
- Undergraduate and graduate (if applicable) transcripts
- One page essay describing your educational goals, reasons for selecting your major, future plans, and how this scholarship would help you
- Resume

Who Can Apply?

- Full time graduate students or individuals accepted to a United States graduate school
- Individuals with an undergraduate GPA of B average or higher
- Individuals with a major in: environmental engineering, environmental science, or related majors

Application Deadline

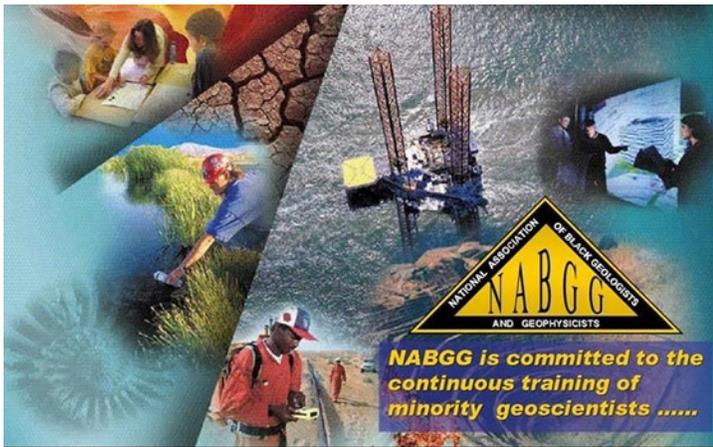
Applications must be received by June 1, 2006. Scholarship will be awarded in Fall 2006.

Montvale, New Jersey
Liverpool, New York

QEA
Quantitative Environmental Analysis, LLC
de/da
www.qeallc.com

Glens Falls, New York
Austin, Texas

Expertise and experience focused on producing effective, timely solutions to environmental problems.



NABGG Geosciences - Bridging the Gap

On October 12-15, 2005, the National Association of Black Geologists & Geophysicists (NABGG) annual conference was held in Raleigh, North Carolina. The theme of this conference was “Geosciences - Bridging the Gap”, which encompassed our focus on bringing together the several different aspects of geoscience. The first day of technical presentations was preceded by a panel discussion in which representatives from academia, government, oil and gas industry, and environmental consulting addressed geoscience issues within their realm and the integration of all the different disciplines of geoscience. Individual student and professional presentations followed, including a talk about the affects of Hurricane Katrina on New Orleans. Our scholarship recipients were recognized at an awards banquet. NABGG was happy to welcome members of the American Association of Blacks in Energy and the Digital Library of Earth Science Education who attended the conference and we anticipate an active relationship with these organizations.

Our 2006 Conference will be our biggest and best conference yet, as we celebrate our 25th Anniversary. The conference is scheduled to be held on September 27-30 in Houston, Texas at the Magnolia Hotel. The agenda will include technical presentations from students and professionals, as well as networking and social events, such as a Black & Gold Ball. Conference details will be posted on our website beginning in January (www.nabgg.com). Please consider joining us at our 2006 Conference to help celebrate our foundation and growth over 25 years.



Bruce Molnia, image courtesy of ESWIB

AIPG Annual Meetings

September 23 - 28, 2006

“Sustainability”

Minneapolis/St. Paul, Minnesota

Minnesota Section Website

The Saint Paul Hotel

Michael W. Ruddy - (952) 906-3933/1-800-588-0117

mwruddy@geoaqua.net and

Jane M. Willard - (651) 645-6330

janewillard@enproassessment.com

October 7 - 11, 2007

“Geology: The Foundation for the Environment and Resources”

Traverse City, Michigan

Michigan Section Website

Park Place Hotel

Adam Heft - (517) 887-1100

hefta@fitzhenne.com

September 20 - 25, 2008

“Grandeur of the Grand Canyon”

Flagstaff, Arizona

In conjunction with the

3rd International Professional Geology Conference

Sponsored by

European Federation of Geologists

Canadian Council of Professional Geoscientists

(303) 412-6205, aipg@aipg.org

Mineralogical Society of Great Britain and Ireland Calls for Bursary Applications

A sum of £6,000 is available in 2006 for bursary awards to postgraduate students and qualified research workers to assist them in attending conferences to present their work or to carry out fieldwork. This year an additional sum of £2000 is being made available to help postgraduate students attend conferences abroad to present the results of their research work.

Preference may be given to Members of the Mineralogical Society but membership is not mandatory to receive an award. In the case of students, part of the award will be one year's membership to the Society. Bursaries are awarded up to a maximum of £500 or 50 percent of the total cost of the project whichever is less. Full details on how to apply for a Postgraduate Student or Senior Travel Bursary can be found on the website at: www.minersoc.org/pages/awards/awards.html Applications should be sent to the Executive Secretary, Dr Adrian Lloyd-Lawrence, to arrive by January 20, 2006.

AMERICAN INSTITUTE OF PROFESSIONAL GEOLOGISTS

SCHOLARSHIP PROGRAM

Purpose

To assist students with college education costs and to promote student participation in the American Institute of Professional Geologists (AIPG). Up to four scholarships will be awarded to declared undergraduate geological sciences majors who are at least sophomores.



Scholarship Awards

Scholarship awards in the amount of \$1,000.00 each will be made to eligible students attending a college or university in the U.S. Scholarships are to be used to support tuition and/or room and board.



Eligibility Requirements

Any student who is majoring in geology (or earth science), is at least a sophomore, and is attending a four-year accredited college or university in the U.S. can apply. Also, the student must be either a student member of AIPG or must have applied for student membership at the time the application for the scholarship is submitted.

Each student who is awarded a scholarship agrees, by accepting the scholarship, to prepare a 600 to 800 word article for publication in *The Professional Geologist*. The subject of the article must be related to a timely professional issue.



Application Process



Applicants must submit: a letter of interest with name, mail and e-mail addresses, and telephone number; proof of enrollment in an eligible geological sciences program, transcripts; an original one-page essay on why the applicant wants to become a geologist; and a letter of support from a faculty member familiar with the applicant's academic work. The application packet should be submitted to:

American Institute of Professional Geologists
Attn: Education Committee Chr.
1400 W. 122nd Ave., Suite 250
Westminster, CO 80234

For questions regarding the application process call (303) 412-6205 or e-mail: aipg@aipg.org.

Applications must be received by
FEBRUARY 15th
Awarded the month of
SEPTEMBER

Basis of Awards

Awards will be based on the content and creativity of the essays as judged by the Education Committee.

The decisions of the Education Committee are final.



AIPG 43RD ANNUAL MEETING

"SUSTAINABILITY"

Saint Paul Minnesota

September 23-28, 2006

www.aipg2006.org

CALL FOR PAPERS

We cordially invite geologists/geoscientists from all walks to share your research, experiences, and inspirations related to our theme of "Sustainability." We are not seeking knee-jerk responses to a buzz word, but rather the concerted deliberation that these times and our professional ethics warrant so that we may choose the paths ahead before they choose us. Some likely kernels to be addressed at the meeting include:

- Sustaining the profession and science in general;
- Geologic resources as a foundation for society;
- Disruptive redistributions of geologic materials in the environment;
- Interactions of natural hazards with the human population;
- Education and public policy;
- And the list goes on.

At this stage, we welcome fully-formulated abstracts (up to 250 words) as well as nascent ideas for presentations you wish to undertake. We seek a breadth of material related to different aspects of the topic, whether it is rooted in completed research or informed speculation. This is an opportunity to explore together the different meanings that "sustainability" can hold for professional geology and those who practice it. It is our hope that this collective assessment of the topic will offer AIPG some timely opportunities to incorporate this theme into our future endeavors.

To submit or discuss abstracts, contact

Charlie Tiller, PG, CPG - Technical Program Chair
651-659-1302 OR ctiller@amengtest.com



www.segweb.org

SEG Minerals Conference

Integrating Science, Business, and Education

The bi-annual technical conference of the Society of Economic Geologists (SEG), “Wealth Creation in the Minerals Industry – Integrating Science, Business, and Education,” will be held at the Keystone Resort in Colorado, May 14-16, 2006.

“The SEG 2006 conference occurs during a most interesting time for the minerals industry,” stated John Dow, conference chair. “An extraordinary growth in the demand for global metals has fuelled a resources boom. Miners and explorers are operating in a more demanding social environment.

“Even with record earnings, exploration is struggling to replace reserves,” he noted. “In addition, academic institutions are producing fewer graduates for the mining industry to support these requirements.”

Speakers from throughout industry and academia will address some fundamental questions.

- What are the crucial factors of geology, human insight and business opportunity that drive exploration success?
- How can the mining industry build better social and community competency?
- How can explorers make better use of exploration research, good science and operating best practices to improve efficiency and profitability?
- How will industry develop a more strategic and sustainable approach to education, training, recruitment and human resource planning?

The three day event will include technical and poster sessions, an exhibit hall, evening speakers and events, and the SEG Awards night. Several field trips to nearby geologic sites and seven workshops will be held before and after the conference.

In conjunction with the conference, the SEG will hold the first ever SEG Student Conference on May 13, bringing together earth science students and SEG student leaders from around the world.

“This conference provides a unique opportunity for collaboration between mineral explorers, business leaders, earth scientists, researchers, students and investors on issues which will shape the minerals industry for years to come,” asserted Murray Hitzman, current president of SEG.

Further information is available at the conference website: www.seg2006.org

Student Research Support from the Tobacco Root Geological Society

The Tobacco Root Geological Society (TRGS) will be conducting its 31st annual field conference in Libby, Montana this up coming year.

We’ve been fortunate to have strong support from the geological community, and thanks to generous financial donations by Rob Foster, the late Jack Harrison, and many others, the TRGS has been able for some years to offer three \$500 scholarships to students working on geological projects in the Northern Rockies.

We hope to make the wider public aware of this potential student research support. The three different scholarships focus on field-oriented, Precambrian, and economic geology research.

Full descriptions are available on our web site, www.trgs.org/scholar.htm

Deadline for applications is February 1 and checks are usually provided in time for the summer field season.

Two-page applications or inquiries should be sent electronically to TRGS President, Larry Smith, at lsmith@mtech.edu.

- *Submitted by Larry Smith, TRGS President and Associate Research Geologist, Montana Bureau of Mines and Geology*



Recap of the 2005 TSOP Meeting, Louisville, Kentucky...

More than 60 papers from a wide range of international authors were presented as oral or poster presentations at the 22nd Annual Meeting of The Society for Organic Petrology (TSOP), held in Louisville, Kentucky, on September 11 - 14, 2005. A pre-meeting workshop on CO₂ sequestration, pre- and post-meeting field trips, and a special student function were also included in the program. During the meeting, Aureal Cross (2005 award) and Jack Burgess (2004 award) were presented the John Castaño Honorary Membership Award; and MaryAnn Malinconico, Jim Hower, and Renee Klinger were presented the TSOP Distinguished Service Award. Saikat Mazumder was selected for the Best Student Oral Presentation Award, and Sarah de la Rue won the Best Student Poster Award. At the close of the annual business meeting, the new TSOP officers assumed their duties. The officers are as follows: Peter Warwick — President; Wolfgang Kalkreuth — Vice President; Jeff Quick — President-Elect; Mike Avery — Secretary-Treasurer; David Glick — Editor; and Tim Pratt and Joe Curiale — Councilors.

2006 TSOP Meeting, Beijing, China, September 15 – 22

The 23rd Annual Meeting of TSOP will be held at the Xijiao Hotel, in the western part of Beijing. It is adjacent to many universities, including China University of Mining and Technology (Beijing) (CUMT), which will be the host organization and sponsor the meeting. For additional information, see the Beijing meeting web site: <http://www.cumt.edu.cn/frameset/tsop/index.htm>, which may also be accessed from the TSOP web site: <http://www.tsop.org>

Key Conference Themes

1. Organic petrology and geochemistry of non-marine source rocks;
2. Coal-derived hydrocarbons (coal-derived oil, unconventional natural gas and coalbed methane) exploration and development;
3. Coal petrology, coal-measure sedimentology, and hazardous elements in coal related to the environment and human health;
4. Organic petrology in coal mine safety and coal utilization: mine fires, coal-gas outbursts, coal slurry, and other less-conventional utilization technologies;
5. New techniques in organic petrology/geochemistry.

Short course: Petrology and geochemistry of coal and non-marine source rocks.

Pre-meeting field trip: Geology of Western Beijing Jurassic and Permo-Carboniferous Coal Basin.

Post-meeting field trip: Shanxi area: Datong natural and historic sites and the Permo-Carboniferous Antaibao surface coal mine.

Call for Papers

Abstracts should be submitted by April 30, 2006. See the meeting web site: <http://www.cumt.edu.cn/frameset/tsop/index.htm> for details.

2007 ICCP-TSOP-CSCOP Meeting, Victoria, B.C., August 19 - 25, 2007

TSOP looks forward to the joint International Committee for Coal and Organic Petrology-TSOP-Canadian Society for Coal Science and Organic Petrology (ICCP-TSOP-CSCOP) meeting which will be held in Canada in 2007. This will provide a great forum for the three organizations to share ideas and to work together to expand the horizons of organic petrology.

Interaction with the Energy Mineral Division of the American Association of Petroleum Geologists

In collaboration with the Energy Minerals Division (EMD) of the American Association of Petroleum Geologists (AAPG), Linda Stalker and Malcolm Bocking are organizing a *Coalbed Gas* technical session for the next International AAPG meeting, which will be held in Perth, Australia, November 5-8, 2006. Colin Ward (representing TSOP) has agreed to help organize this session. For more information about the proposed *Coalbed Gas* session, please contact the meeting organizers at: Linda.Stalker@csiro.au, malcolm.bocking@bacbm.com, or c.ward@unsw.edu.au, or go to the Perth meeting website (given below). In addition, Richard Sykes, Chris Boreham, and Simon George are organizing a technical session called *Oil from Coal* at the Perth meeting. More information on this proposed session can be found on the EMD website at: http://emd.aapg.org/Callforabstracts_OilfromCoalv2.pdf. The deadline for abstract submission is January 18, 2006. Information about the Perth meeting can be found at the following web address: <http://www.aapg.org/perth/index.cfm>

Changes to the TSOP Bylaws

The TSOP Council is proposing to extend the term of office for the President and Vice President to two years (they currently hold one-year terms of office). The proposed revisions to the Bylaws are available on the Society's website: www.tsop.org. Membership approval will be by ballot which will be included in the March Newsletter.

CBM working Group

At the Canadian Society of Petroleum Geologists Gussow coalbed methane (CBM) conference held in Canmore, Alberta, in March 2005, a group met to discuss the possibility of writing an ASTM International Practice for coalbed gas field desorption methods. At present, a working group consisting of Charles Barker, Jeff Levine, Maria Mastalerz, Tim Moore, Charles Nelson, and Peter Warwick are preparing a draft ASTM CBM Practice. If you have any comments or suggestions, or would like to review the text for the ASTM Practice, please contact Peter Warwick at pwarwick@usgs.gov or call +1 703-648-6469.

Frontiers 2007

Following agreement between the Councils of the three societies, the first ever joint meeting of the Mineralogical Society of Great Britain and Ireland, the Mineralogical Society of America, and the Mineralogical Association of Canada will be held in Fitzwilliam College Cambridge in June 2007. The scientific focus of the meeting will be on recent advances in research in to the properties and behaviour of minerals together with their geological contexts in rocks and biosystems, under the overall theme of "Frontiers in Mineral Sciences."



Fitzwilliam College, Cambridge

A list of plenary lectures and symposia is currently under consideration by the conference convenor Michael Carpenter and the Organising Committee. Suggested sessions already received (as of September 2005) include topics such as Interactions between minerals and organic molecules; Diagenesis and contaminated environments; Structural topology of minerals; Adsorption processes on mineral surfaces; Simulations of minerals: advances and limitations; Structural and microstructural origins of remanent magnetism etc. It is hoped that a decision on the main session topics will be reached by the end of 2005 so that people have plenty of time to focus on these and prepare their contributions to one or more of the sessions. As usual there will be an opportunity for oral and poster presentations. A list of the proposed main session topics will be published on the web site at: www.minersoc.org/Frontiers2007.html as soon as they become available.

Winter Meeting, January 5-6 2006

Bath Spa University, UK

*Micro-to Nano-geosciences:
Developments and Applications*

The focus of the 2006 winter meeting is on the applications of techniques for imaging and chemical, isotopic and microstructural analysis of Earth and planetary materials at micrometer to nanometer scales. There will be an accompanying commercial exhibition provided by instrument manufacturers, including Gatan, Hitachi, ISS Group, Carl Zeiss and Edax UK.

The meeting will highlight applications of these techniques through four complementary scientific themes: Organic-mineral interfaces, biomineralization and mineral surfaces; High spatial resolution isotope techniques; Mineralogy, microstruc-

**Engineering and Environmental
Geology Factors and the
Rebuilding of New Orleans**

In the aftermath of the catastrophic natural disaster resulting from Hurricane Katrina and the ensuing destruction of the city of New Orleans and the Gulf Coastal Region, the American Institute of Professional Geologists (AIPG) invites its members and members of its sister societies and of the geological community at large, to submit articles to be published on the above-referenced title. In specific:

1. What needs to be done to rebuild the City, surrounding communities, and Gulf Coastal Region to provide a safer environment?
2. Ideas for a General Redevelopment Plan to address geologic hazards?
3. What options are available?
4. How do we effectively communicate this information to the proper authorities?
5. What can we do to ensure that the best and recommended practices are implemented?

The AIPG urges its members and affiliates to address this critical topic and to do whatever is possible to reduce or eliminate the impacts of a natural disaster of this magnitude to ever recur in the affected area. Geologic hazards are natural geological processes, but they do not necessarily need to become a human disaster! Let us unite and use our special training and knowledge to prevent a future tragedy like the one we have witnessed in recent days.

Robert Font
AIPG 2005 President

Carroll Glacier snowfield, copyright Bruce Molnia, courtesy of ESWIB.



ture and chemistry of finely crystalline materials; Extraterrestrial mineralogy and astrobiology.

Invited speakers include Conel Alexander (Smithsonian Institute), who will be giving the Hallimond Lecture, Alain Manceau (Grenoble), who will be giving the George Brown Lecture and Laurence Garvie (Arizona State).

In addition, the Mineralogical Society-Schlumberger and Max Hey medals will be presented. For full details of the programme and venue, see the web site at: <http://www.minersoc.org/pages/meetings/Bath2006.html>.



April 3-7, 2006 • Mendoza, Argentina

The beautiful wine-producing region of the Andean foothills in west central Argentina is the setting for an upcoming meeting co-convened by the Geological Society of America and Asociación Geológica Argentina. *Backbone of the Americas: Patagonia to Alaska* takes place April 3-7, 2006, in Mendoza, Argentina. Also collaborating in the meeting is the Sociedad Geológica de Chile; ExxonMobil and the National Science Foundation (U.S.) are serving as sponsors.

Scientific themes of the meeting focus on the western margins of the Americas. They include ridge collisions (triple junctions), shallowing and steepening subduction zones, and plateau uplift. Taken together, these themes emphasize comparisons of tectonic and magnetic processes spanning Mesozoic to Tertiary time scales.

The meeting includes a mid-week field trip to the Andean Cordillera. Exciting optional pre- and post-meeting field trips to southern and northern Patagonia, the Chilean shallow-subduction zone, and the Central Andean Puna plateau are also planned.

To sign up for additional e-mail updates on the meeting, or to get details on housing and other meeting information, visit the BOA homepage on the GSA Web site:

<http://www.geosociety.org/meetings/06boa/>

Questions about the technical program may be directed to Suzanne Mahlburg Kay, Cornell University, at smk@cornell.edu. Questions about logistics, financial aid, etc., may be addressed to:

Deborah Nelson at GSA headquarters,
dnelson@geosociety.org or
 1-303-357-1014

Hot Links

Technical Program:

<http://www.geosociety.org/meetings/06boa/prog.htm>

Field Trips: <http://www.geosociety.org/meetings/06boa/FieldTrips.htm>

Registration: <http://www.geosociety.org/meetings/06boa/reg.htm>

Financial Aid: <http://www.geosociety.org/meetings/06boa/financialAid.htm>

Lodging: <http://www.geosociety.org/meetings/06boa/lodging.htm>

Travel Tips: <http://www.geosociety.org/meetings/06boa/travel.htm>

More on Mendoza: <http://www.geosociety.org/meetings/06boa/venue.htm>

Sign-Up for E-Mail Updates: (scroll to bottom of page)
<http://www.geosociety.org/meetings/06boa/>



A view of the high valley in Mendoza, Argentina. Image courtesy of Ann Cairns, GSA.

Backbone of the Americas: Patagonia to Alaska

Economical and an Excellent Value

* Lodging, restaurant, and transportation costs within Argentina are low by U.S. standards and reasonable airfares are available. <http://www.geosociety.org/meetings/06boa/lodging.htm>

* Registration includes:

- a mid-week field trip to the Andean Cordillera
- all lunches and breaks
- a farewell dinner featuring Argentine beef at a Mendoza winery on Friday night
- a chance to mingle with your international colleagues
- the gracious hospitality of the City of Mendoza.

Standard registration rates available through

February 19, 2006

Pre-register via the GSA Web site through

March 29, 2006

Onsite registration begins April 3, 2006

<http://www.geosociety.org/meetings/06boa/reg.htm>

*Financial aid is available for eligible North American students and early-career professionals, and for all eligible South American registrants. <http://www.geosociety.org/meetings/06boa/financialAid.htm>



Villa Vincencio Chapel in Mendoza, Argentina. Image courtesy of Ann Cairns, GSA.

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Partial List of Additional Speakers:

- * Antenor Aleman, Peru
- * Steven Cande, Scripps Institution of Oceanography, US
- * George Davis, University of Arizona, US
- * William Dickinson, University of Arizona, US
- * Stephen Grand, University of Texas at Austin, US
- * Tim Henstock, University of Southampton, UK
- * Roland Von Huene, University of California—Davis, US
- * Gene Humphries, University of Oregon, US
- * Stephen Kirby, US Geological Survey
- * Peter Lonsdale, Scripps Institution of Oceanography, US
- * Alan Lopez, Center for International Education, Costa Rica
- * Onno Oncken, GeoForschung-Zentrum—Potsdam, Germany
- * Mario Pardo, University of Chile



Hot Springs in Mendoza, Argentina. Image courtesy of Ann Cairns, GSA.

Backbone of the Americas: Patagonia to Alaska

Meeting Organizers and Partial List of Speakers

Technical Program Co-Chairs:

- * Suzanne Mahlburg Kay, Cornell University, US
- * Victor Ramos, Universidad de Buenos Aires, Argentina

Representing the Geological Society of America (GSA):

- * Tanya Atwater, University of California, US
- * Mark Cloos, University of Texas at Austin, US
- * Mihai Ducea, University of Arizona, US
- * Eric Erslev, Colorado State University, US
- * Luca Ferrari, Universidad Nacional Autónoma de México
- * Brian Horton, University of California, US
- * David Lageson, Montana State University, US
- * Alan Levander, Rice University, US

Representing the Asociación Geológica Argentina (AGA):

- * Miguel Haller, Universidad Nacional de la Patagonia, President of AGA, Argentina
- * Beatriz Coira, Universidad Nacional de Jujuy, Argentina
- * Francisco Nullo, Universidad de Buenos Aires, Argentina
- * Laura Giambiagi, Consejo Nacional de Investigaciones Científicas y Técnicas, Argentina

Representing the Sociedad Geológica de Chile (SGCH):

- * Constantino Mpodozis, SIPETROL, S.A., Chile
- * Francisco Hervé, Universidad de Chile, Chile

Local Committee:

- * Laura Giambiagi, Consejo Nacional de Investigaciones Científicas y Técnicas, Argentina
- * Florencia Bechis, Consejo Nacional de Investigaciones Científicas y Técnicas, Argentina
- * Sergio Orts, Rio Tinto Mining, Argentina

Partial List of Additional Speakers (continued):

- * José Perelló, Chile
- * James Pindell, TectonicAnalysis Ltd., UK
- * Richard Sillitoe, London
- * Joann Stock, California Institute of Technology
- * Anthony Tankard, Tankard Enterprises, Calgary, Canada



Approximately 5900 geoscientists from around the world attended the 2005 GSA Annual Meeting and Exhibition.

The scientific program addressed topics ranging from hazards to hydrogeology, from petrology to planetary geoscience. Others focused on the relationship of science to politics and public policy, such as strengthening the teaching of evolution.



Approximately 5900 attended the 117th Annual Meeting and Exposition of the Geological Society of America in Salt Lake City, 16-19 October 2005. All images courtesy of Ann Cairns.

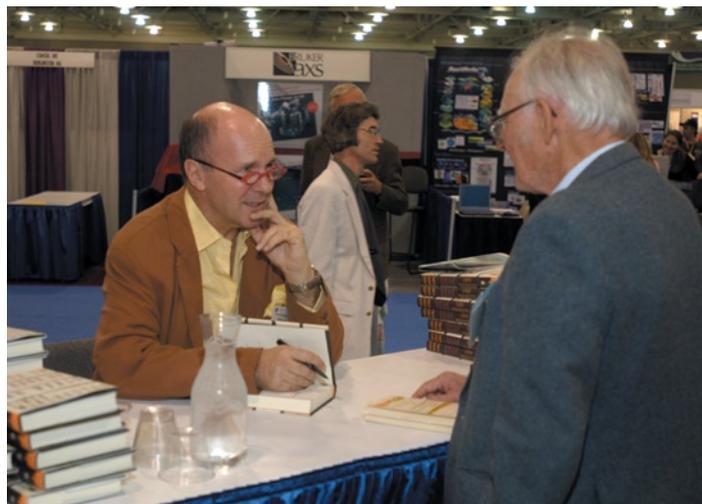


Standing-room-only at the Late-Breaking Science session, "An Eye On Katrina: Geoscience Perspectives on a Catastrophic Hurricane."

Eight Pardee Keynote Symposia, interdisciplinary sessions featuring invited speakers, complemented 257 topical and discipline sessions in oral and poster formats. Attendees also took advantage of 23 field trips, and 33 employers interviewed over 300 job-seekers.



Up-and-coming geoscientists are enthusiastically welcomed at GSA. Society leaders wait tables at the annual President's Student Breakfast, sponsored by ExxonMobil.



Simon Winchester signs copies of *A Crack in the Edge of the World: America and the Great California Earthquake of 1906* at the Welcoming Party. Eight authors held signings at the meeting.

Organizations Cosponsoring Sessions at GSA Annual Meeting

American Geological Institute
 American Geophysical Union
 American Institute of Hydrology
 Association for Women Geoscientists
 Association of American State Geologists
 Association of Earth Science Editors
 Bureau of Land Management
 Committee on Minorities and Women in the Geosciences
 Consortium for Materials Properties Research in Earth Sciences
 Council on Undergraduate Research
 Critical Issues Caucus
 Cushman Foundation
 Friends of the Great Salt Lake
 Geochemical Society
 Geology and Public Policy Committee
 Geophysical Laboratory of the Carnegie Institution of Washington and COMPRES
 Geoscience Information Society
 History of Earth Sciences Society
 Integrated Solid Earth Sciences
 International Association of Geochemistry
 International Association of Hydrogeologists
 International Lithosphere Program
 International Quaternary Union
 International Union of Quaternary Research
 Karst Waters Institute
 Mineralogical Society of America
 Minnesota Ground Water Association
 Mountain Glacier Working Group
 National Association of Geoscience Teachers
 National Ground Water Association
 National Park Service
 National Science Foundation
 On the Cutting Edge
 Paleontological Society
 Sigma Gamma Epsilon
 Society of Sedimentary Geology
 Society of Economic Geologists
 Society of Vertebrate Paleontology
 U.S. Geological Survey
 U.S. Geological Survey Science Impact Program



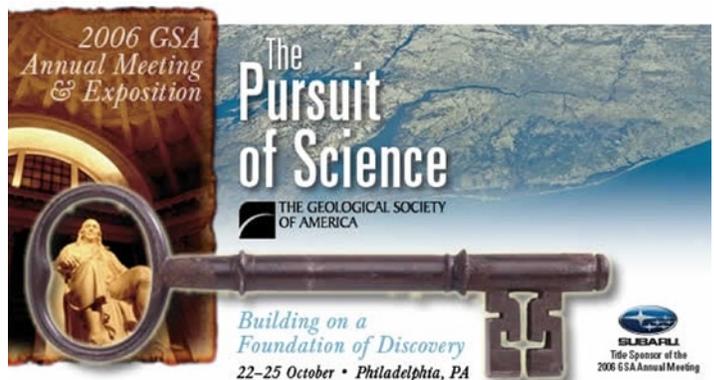
Eight Pardee Keynote Symposia and 257 technical sessions (oral and poster) constituted the scientific heart of the meeting.

Societies Holding Annual, Business, and/or Educational Meetings at GSA

American Geological Institute
 American Quaternary Association
 Association for Women Geoscientists
 Association of American State Geologists
 British Petroleum and ExxonMobil
 CHRONOS
 Council on Undergraduate Research
 Cushman Foundation
 Geochemical Society
 Geoscience Information Society
 GeoScience World
 Mineralogical Society of America
 National Academy of Sciences
 National Association of Geoscience Teachers
 National Cave and Karst Research Institute
 National Science Foundation
 North American Commission on Stratigraphic Nomenclature
 Paleontological Research Institution
 Paleontological Society
 Society for Sedimentary Geology
 Society of Economic Geologists



Approximately 650 science enthusiasts of all ages attended GSA's third Public Forum, "Saturn and its Moons: A Ring-Side View from Cassini-Huygens," hosted by GSA's Planetary Division.



If you're not a GSA member, sign up for 2006 meeting updates via our ***E-News List***.

<http://rock.geosociety.org/Enews/>

AIPG BOOTH AT GSA 2005

AIPG signed up over one hundred students at the GSA Annual Convention in Salt Lake City, Utah on October 16-19, 2005. We would like to thank all the AIPG volunteers who helped staff the booth as well as the AIPG Members who sponsored the students. AIPG held a raffle that included a tourmaline crystal won by Glenn Stracher from East Georgia College. The other winners included Sean Fletcher, McMaster University (polo shirt); Mathew Chandler, Brigham Young University (hat); John Maclachlan, McMaster University (polo shirt); and Janet Stracher, East Georgia College (sweatshirt).




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Cost Benefits: Posting your ad with us comes at a fraction of the cost of posting it with newspapers or the large online job boards.

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- Associated/Sister Societies & Members: \$10.00 - 90 Days
- AIPG Corporate Members: \$10.00 - 180 Days
- Other Organizations: \$50.00 - 90 Days
- Other Organizations: \$75.00 - 180 Days

A service provided by AIPG
Go to the AIPG National web site www.aipg.org

In Memoriam...

Victor Oppenheim (October 31, 1906 – October 30, 2005) died on Sunday, one day before his 99th birthday.

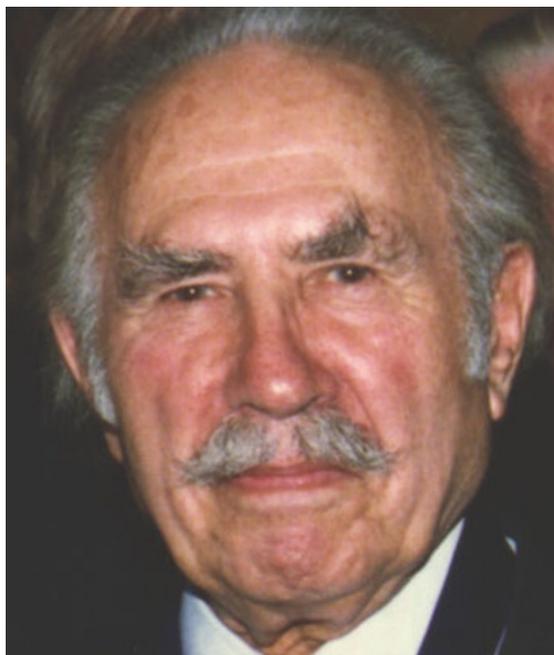
He was born in Riga, Latvia, the son of a civil engineer who was murdered by brigands while on assignment for the railroad in the North China city of Harbin.

Returning to Europe with his French mother, Victor attended the University of Caen. After completion of his studies, he went to work for the mining and engineering consulting firm of Ludovick Barreau in Paris, who promptly sent him to Argentina. From 1929 through the mid-1940s Victor was employed to search for oil and mineral wealth in all of the major countries of South America. In the process he made a geologic map of each country, by foot, in canoe, on horseback, or astride a mule. His composite map of South America was published in 1944, making him the only 20th Century geologist to have single-handedly mapped an entire continent.

In those days, before continental drift was widely accepted, he studied Gondwana rocks of Brazil and published the important monograph *Rochas Gondwanicas* (in Portuguese), which was extracted as “Petroleum Geology of Gondwana Rocks of Southern Brazil” for the American Association of Petroleum Geologists Bulletin in 1935. He explained the politically charged conclusion that petroleum would not be found in Gondwana rocks and thus steered exploration in Brazil in the right direction. In Columbia he discovered the El Cerrejon coal deposit with over 40 billion tons of reserves.

However, Victor was interested in more than just economic geology. He discovered fossils and artifacts, melding his interests in the history of Earth, of life, and of people. He wrote an ethnography of the indigenous people of remote Peru. He was fluent in seven languages and published scientific papers in most of them. He published a study of the Tunebo language of Columbia. His 1958 book, *Explorations East of the High Andes*, recounts some of his adventures, but it is particularly notable in its empathy and understanding of the people of remote South America with whom he spent so many years.

In his later years before retirement he turned his atten-



Victor Oppenheim, a well-known economic geologist, died October 30, 2005. Image courtesy of Richard Himmel.

tion to the economic geology of North America and Africa. Victor was the member of many societies and the recipient of numerous awards. He seemed most proud of his 1988 AAPG Human Needs Award, his 1991 Outstanding Geologist Award from the American Institute of Professional Geologists, and his affiliation with the Explorers Club headquartered in New York. His notes and records are archived at the University of North Texas, which maintains a website of his accomplishments (www.library.unt.edu/archives/oppenheim/default/htm).

Victor Oppenheim was predeceased by his wife, Dorothy. They had no children. A memorial celebration was held Saturday, November 5th, at the home of his friend, May Brady. Memorial donations for student support in geological and archeological sciences in honor of Victor Oppenheim can be made to the Institute for the Study of Earth and Man at Southern Methodist University, Dallas, Texas, 75275.

— Submitted by Louis Jacobs

Ten Commandments of Professional Development

By Stephen M. Testa
AGI Past President

I remember clearly when I first embarked on my professional career immediately after completing my graduate studies. I was excited by the fact that I was actually being paid to geologize. Who cared where the money came from, I was doing geology and getting paid for it.

At this time, I was involved primarily in studies related to the suitability and feasibility of constructing nuclear power plants in various parts of the country and overseas. The multi-faceted nature of these studies involved many technical challenges, introduced me to issues revolving around public policy and political awareness, which I found exciting and rewarding. It was with this participation in the workplace that I was also introduced by co-workers and colleagues to certain professional groups that met on a periodic basis.

In scanning the participants of these meetings there were always, as there are now, certain individuals who stood out from the pack. They were well regarded and respected for their personal attributes, their understanding and comprehension of the specifics of some technical issue, as well as for their resourcefulness in addressing a specific problem. It seemed that they knew everybody and everybody knew them. Such reverence was not simply restricted to their technical expertise, but seemed to overflow into other areas as well, including legislative activities and business savvy.

Of course, wanting to eventually be successful in my chosen field, I needed a plan {emdash} a strategy. It has been said by some that one needs a plan, and even a bad plan is better than no plan at all. As part of my plan, I considered what the major components were that comprised my concept of a professional. We commonly view professional development as attaining education credits, attending technical workshops and professional meetings, and so on. Also, being part of the consulting and business side of geology, I had to consider what it took to become a successful consultant.

The way I chose to address these questions was to take

a closer look at these respected individuals, and to compose a list of traits and characteristics common to all, with the ultimate objective being to develop these professional traits to the best of my abilities, thus insuring my best chances for success. Hey, it was a plan.

I noted ten significant characteristics (or commandments with a little rewording and some assistance from a hard-rock geologist who can type) common to all the individuals that I had on my list.

First: They all earned a living either part- or full-time in applied geology of one form or another. Even the professor who taught more esoteric subjects such as igneous and metamorphic petrology used his knowledge to work out stratigraphic problems that in turn were used to address seismic issues associated with a particular site.

Second: Although they all had a broad understanding of geology and could discuss at length varied aspects of our science, they were considered experts in one or several specific areas of geology.

Third: They were interested and concerned about how our profession was perceived by the public and those in government. They were active in legislative and regulatory events of the day, and valued the perception of geologists and the geological profession by the public and regulatory community.

Fourth: They served as instructors conducting workshops and teaching classes at local universities and colleges, and for certain professional groups, whenever asked to do so.

Fifth: They published often, and were often observed participating in symposiums and technical sessions put on by many of the geological and even non-geological groups and societies. Even when the work they performed was a contradiction to what they previously had published.

Sixth: They participated in the activities and growth of several geological groups and organizations (certainly many of the more visible ones such as GSA, AAPG, AEG, AIPG, etc.), often serving on committees and as officers. They never mentioned the cost or time of being associated with the organizations they belonged to. If it was geology related, and if they thought they could learn or add something to the program, they were involved.

Seventh: They appeared to be relatively astute in the business aspects of our profession, and in various aspects of business development, marketing and client relations, and understood fully that geology is a business.

Eighth: Many were so highly regarded for their expertise and personal skills that they were commonly asked to serve as expert witnesses or provide technical assistance to the legal profession.

Ninth: They appeared to get along amicably with other professionals such as engineers, and recognized the importance and benefit of being a team player in solving difficult technical problems. They did not hesitate to express the limitations of their knowledge and were reluctant to practice beyond their expertise.

Tenth: Although not all of these individuals performed well in all these categories, without question they all were involved.

Professional development takes a variety of forms; however, one cannot overstate the importance of setting an example by one's actions. Indirectly and unknowingly through their actions and professional involvement, they in many cases unknowingly provided many young geologists the guidance needed to pursue their own professional goals. I have many people to directly thank during my pursuit of a successful career in geology, but much credit must also go to all of those individuals that unknowingly serve as mentors to us all, notably in the early years of professional development.



STUDENTS INVITED TO APPLY FOR DAM SAFETY SCHOLARSHIPS

Applications are due March 31, 2006 for the 2006-2007 Association of State Dam Safety Officials (ASDSO) Undergraduate Scholarship.

ASDSO will award up to \$5,000 to one or more senior undergraduates for continuing education toward careers related to the design, construction and operation of dams.

Eligible candidates for the ASDSO scholarship are:

- U.S. citizens;
- Full-time students in an accredited civil engineering program, or in a related field as determined by ASDSO;
- Senior undergraduates during the 2006-2007 school year, with an expected graduation date of May or December 2007; and
- Future professionals in hydraulics, hydrology or geotechnical disciplines, or in another discipline related to the design, construction and operation of dams.

Scholarship details, including application forms, are available for download at www.damsafety.org or by contacting ASDSO:

Association of State Dam Safety Officials
450 Old Vine St., 2nd Floor
Lexington, Kentucky 40507
Tel: (859) 257-5140
info@damsafety.org

www.damsafety.org



GeoCorps America™

Geoscientists Working for Public Land Management and Protection

A Geological Society of America Program

About the GeoCorps Program

In partnership with the National Park Service, US Forest Service, and Bureau of Land Management (BLM), the Geological Society of America (GSA) places all levels of geoscientists — university students, professionals, and retirees — in temporary summer positions on National Park, National Forest, and BLM lands around the United States.

Since the program's inception in 1997, over 200 geoscientists have contributed their expertise in more than 68 of the nation's most beautiful public lands. Locations range from Denali National Park and Preserve to Assateague Island National Seashore, and from Zion National Park to Sleeping Bear Dunes National Lakeshore.

Who Benefits?

The need for geoscience expertise on America's public lands is great. Geoscience is not adequately addressed in visitor education, resource management, site protection, geological hazards mitigation or research.

For example, the National Park Service manages 80.7 million acres of land but has only 25 geologists on permanent staff. The Park Service also has more than 1000 educational interpreters on staff in the park system, but fewer than five have backgrounds in geology.

GeoCorps participants personally benefit from this career-enhancing, on-the-ground experience. Working side-by-side with Park Service and Forest Service field staff, they receive invaluable training and work experience on active public land projects. In turn, they become valuable resources to the land management agency by providing up-to-date geoscience information.

How the Program Works

Federal land managers select projects in research, resource management and educational interpretation that require expertise in the geosciences. GSA then actively

recruits applicants for these positions within its membership in order to place the most qualified applicants in the positions. Selected participants receive a \$2500 stipend and housing (or housing allowance) for the 12-week summer position.

A Sampling of GeoCorps America Projects

- Excavating and preparing fossil specimens
- Presenting geology educational tours to park visitors
- Erosion surveys after a forest fire
- Glacial movement monitoring
- Paleontology research and database development
- Landslide mapping and hazards assessments



Stephanie Kyriazis
Bryce Canyon National Park, Utah

"My summer at Bryce Canyon National Park has refined my ability to communicate scientific concepts to the public in an engaging manner and improved my skills as a research scientist. I was given the opportunity to independently coordinate education and research projects, and to engage in dialogue and work with local research geologists."



Nicole Moore (above)
Mesa Verde National Park, Colorado

"This summer I worked at Mesa Verde National Park as Park Educator and Interpreter. My objective was to integrate geology into the educational programs provided at the park. I felt quite a responsibility in this task, since the focus at Mesa Verde for the past 100 years has been the cultural aspects of the park, rather than the natural resources. I developed a web page on the geology of the area, as well as a geology brochure for park visitors. This entailed extensive research on my part, as well as strenuous hikes throughout the park to capture photographs of the geologic features and formations in the area. I have been able to further develop my skills as a geologist, in particular by communicating complex geologic concepts to those without a scientific background, a valuable resource since I wish to become a professor."



Seth Ames (below)
Sierra National Forest, California

"This summer I worked as a geologist on the Sierra National Forest. I worked on three primary projects: a soil compaction assessment, a cave inventory, and a water quality monitoring project. I am grateful that I had the opportunity to help protect some of our nation's most valuable natural resources. The experience and knowledge I gained as a GeoCorps America participant will be indispensable as I start my career in the geosciences."



Travis Kelly (left)
Rogue River Siskiyou National Forest, Oregon

"Over the course of the summer, I was exposed to many aspects of what it takes to be a geologist at a National Forest, as well as what it means to be a public resource manager. The primary goal of my project was to update the rock quarry inventory and enter the information into the Geopoint database (computerized database of all the rock quarry information.) By updating the quarry inventories, I was able to increase my rock identification skills, as well as learn about the processes involved in rock extraction. Throughout the summer, I gained valuable experience in a number of applied fields of geoscience. This opportunity has given me insight into what I want to pursue as a professional."

Education Reform by Listserv: NY-ESPRIT

Dr. James Ebert, SUNY Oneonta
Thomas McGuire, Earth Science Author



Most reform initiatives in secondary Earth science education begin at the college or administrative level with seed funding. But New York's E.S.P.R.I.T. (Earth Science Resource Program Innovation Team) group was initiated by teachers in 1993 when the New York State Education Department (NYSED) abandoned the then-current syllabus project. ESPRIT organized independent of support from the State Education Department and devised a syllabus that broke new ground as it anticipated standards-based reforms. It also helped teachers make the transition to the current New York Core Curriculum. ESPRIT has no source of funding, no fees and no budget.

The group has met informally and yearly at the state science teachers' conference, but the most important functions of ESPRIT take place in our cyberspace venue on our listserv (go to <http://external.oneonta.edu/mentor/listserv.html> to subscribe). Jack Higham, formerly of NYSED, started a primitive Earth science listserv in cooperation with the State University of New York (SUNY) College at Oneonta about 1990. This listserv continues to operate to provide information and resources to subscribers.

The listserv has become our mentor network's most important means of communication, but as an open listserv, it became far more. Although a separate closed listserv was established for the mentor core group, very few of our communications needed to be private. As more people joined the listserv, it quickly became an avenue of sharing information, resources, instructional ideas and discussions of external factors that affect Earth science education (e.g., "intelligent design"). In addition, the listserv has become an effective recruiting vehicle for many school districts.

Today, the listserv has more than 1100 participants. Some of the communication is dedicated to the New York State Regents course, which services more than 150,000 students in New York State, but most of the traffic is applicable to Earth science teachers anywhere. As a result, we have a significant and growing percentage of out-of-state participants.



ESPRIT group at SUNY Oneonta

Although ESPRIT and the listserv have no formal officers, the listserv does take some maintenance. The small technical needs are provided by the computer center at Oneonta. Dr. James Ebert, moderator of the listserv, interfaces between managing the technical aspects of the listserv and moderating the online community. However, most of the on-line moderation of discussions is done by subscriber-volunteers who are simply committed to keeping the listserv conversations on topic, civil and relevant. The listserv has no formal rules and all on-line conversations are open to everyone. A common commitment to Earth science education is both the uniting force and our major guideline. As with the formation of ESPRIT, we have a fluid and adaptable consensus of mission.

Regular contributors to the listserv include secondary teachers from a diverse array of schools (rural, suburban, urban, public and private), professors and researchers as well as others who are interested in our content and educational issues. When sophisticated academic issues come up, or when important information can be added on NYSED policies, NYSED professionals join the discussion. However, a remarkable amount of the more academic analysis comes from teachers who have exceptional professional interests and backgrounds. At the other end of the spectrum are a large number of subscribers who read postings to gather instructional ideas and listen for policy insights. A growing percentage of our subscribers are pre-service teachers who benefit significantly from participation in the ESPRIT professional community.

Recent threads of communication include the 2005 hurricane season, how to give students an idea of the vast expanse of the universe, constructing a functioning Foucault pendulum, the resources of Google Earth, grade levels at which to teach full courses in Earth science, useful web sites, when to use hands-on labs versus when virtual labs are preferable, and how to manage natural resources. We often hear about global events such as earthquakes on the listserv before they come through our news media.

Many teachers freely share labs and other instructional materials as attachments to listserv messages. We encourage those who post images or attachments to keep them relatively small, ideally around 100k, but certainly less than a megabyte. Those that wish to share larger files suggest that people contact them individually off the listserv or they post website links to the activities.

Perhaps our greatest problem of the ESPRIT listserv is a measure of our success. The traffic on the listserv is considerable. The number of messages can be on the order of 30-40 messages per day, sometimes considerably more. Most participants learn to

simply delete messages of subjects they find unnecessary or to select messages from people they recognize.

There have been some significant spin-offs from the listserv. David Robison has constructed a web site of Earth science labs and similar resources to which teachers can post their materials. The URL for this site is www.regentearthscience.com/webshare. The listserv was also the primary venue from which teachers were recruited to develop the first state-based collection within DLESE, the Digital Library of Earth System Education. Teachers that have contributed exemplary instructional materials or who possess considerable technical expertise were invited to SUNY Oneonta to compile and review the New York DLESE collection, which will soon be available.

Our listserv clearly augments participation in professional meetings. But perhaps most important, individual teachers in individual schools are engaged in the kind of communications and collegiality that college professors and researchers have had for many decades. This has been especially important in small rural districts where the Earth science teacher may be the only science teacher in the school. The ESPRIT listserv has been remarkably effective in reducing teachers' feelings of isolation and in providing high quality, sustained professional development via peer-to-peer interactions. As one Virginia teacher posted: *"Joining this list has been the single best professional development I've ever done. I've learned more from the folks on this list than I have at all the professional development sessions that I've attended in the past 10 years."* Collectively, the ESPRIT community is improving Earth science education one teacher at a time.

Dr. James Ebert is a professor of Geology in the Earth Sciences Department at the State University of New York College at Oneonta. In addition to his research in sedimentary geology and Earth science education, he is a frequent consultant to the New York State Education Department.

Thomas McGuire is a textbook author, NY Education Department consultant, and retired science coordinator at Briarcliff High School in suburban New York. He now lives in Cave Creek, Arizona where he continues his professional support of Earth science education.

Relevant Websites

Oneonta Listservs Subscribe/Unsubscribe:
<http://external.oneonta.edu/mentor/listserv.html>

ESPRIT Home Page:
<http://external.oneonta.edu/mentor/esprit.html>

History of ESPRIT
<http://home.computer.net/%7Etmcguire/esprit.html>

DLESE Earth Science Listservs Page:
<http://serc.carleton.edu/k12/listservs>

DLESE Listservs for Beginners Page:
<http://serc.carleton.edu/k12/listservs/etiquette.html>

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- The program is available only to students currently enrolled in college geoscience programs (i.e., high school students applying to college for the 2005-2006 academic year are not eligible).

If you are enrolled in an Earth science education or geoscience degree program and would like to apply for a scholarship for the 2006-2007 school year, please download the application which can be found at www.agiweb.org/mpp. All application materials must be received by March 1, 2006. Late applications cannot be accepted.

Policy

Small Increases in Funding for the Geosciences for Fiscal Year 2006

President Bush brought an end to the fiscal year (FY) 2006 appropriations process when he signed the last two appropriations bills into law on December 30, 2005. Congress inserted a 1 percent across-the-board cut to discretionary spending, which includes nearly all federal science funding, in the last bill they passed for Defense appropriations. The American Association for the Advancement of Science (AAAS) reported that the federal investment for research and development (R&D) programs collectively will fall nearly 2 percent in FY2006 once the enacted appropriations are adjusted for inflation.

The U.S. Geological Survey gained a small increase compared to FY2005 funding for an overall budget of \$966.2 million. This amount includes the 1% across-the-board cut but does not include supplemental funding that the agency got last year related to Hurricane Katrina. Within the USGS, the Geological Programs received \$235.1 million, a 2 % increase primarily for hazards programs compared to FY2005. Also receiving funding increases were the Earthquake Hazards program, an 8% increase to total \$50.8, and the Global Seismographic Network, a 21% increase to \$3.9 million. The Mineral Resource Assessments program received a 7% cut from last year's funding to total \$49.9 million. Funding for the National Cooperative Geologic Mapping program remained the same as FY2005 at \$25.2 million. Rounding out the USGS allocations: Mapping programs received \$129.9 million (a 9% increase), Water Resource programs received \$212.9 million (a 1% increase), and Biological Resources programs received \$175.5 million (a 2% increase).

The National Science Foundation is reporting a FY2006 total of \$5.58 billion, which is a 2% increase from last year's funding level. Funding for the Research and Related Activities account, which includes the discipline-based directorates, increased 2% to total \$4.33 billion. The Major Research Equipment and Facilities Construction (MREFC) account is up nearly 16% from FY2005 levels.

Earthscope will receive almost \$50 million of the MREFC account's \$190.9 million.

Fiscal year 2006 budgeting was completed about 3 months late, but without any omnibus bills as Congress worked overtime in November and December to complete the last few bills amid heated debates on drilling in Alaska and the U.S. Patriot Act. The President will release his FY2007 budget request on February 6th, and the White House has already signaled a desire to reduce discretionary spending even more. Congress also favors conservative spending, meaning that the geosciences will be facing another tough battle to keep ahead of inflation.

Other highlights of geoscience funding in FY2006 can be found at AGI's Government Affairs Program website <http://www.agiweb.org/gap>.

Encourage Members to Join the Congressional Hazards Caucus: The Congressional Hazards Caucus, a bicameral caucus of congressional members concerned about natural and man-made hazards has sent letters to their colleagues in the House and Senate inviting more members to join the caucus. Please write letters (sent by fax or email) or call members of your congressional delegation and encourage them to join the caucus if they are not already members. A list of the current members is available on the Hazards Caucus Alliance web site at www.hazardscaucus.org. AGI's Government Affairs Program has also sent out an action alert with sample letters to send to members and more details about the caucus. For more information, please see: www.agiweb.org/gap/legis109/hazardscaucus_alert.html.



Education

Celebrating Australia's Earth Science Week 2005

This year's international Earth Science Week celebrations reached every state and territory in Australia.

The theme for this year's event was "Geoscientists Explore our Earth" which aimed to promote and explain the role of geoscientists and how their work contributes to the wellbeing of society.

To celebrate the week in Canberra, Geoscience Australia ran a local high schools' competition where children were asked to design and build a simple, working model seismometer.

Parliamentary Secretary to the Minister for Industry, Tourism and Resources, Warren Entsch MP joined ACT Liberal Senator Gary Humphries in presenting prizes to the winners.

Entries were judged by the Project Leader of Geoscience Australia's Earth Monitoring and Geophysical Networks Group, Mr. Bill Greenwood. Mr Greenwood was impressed by the standard of entries which, he says, "demonstrated a good understanding of how earthquakes happened."

First place in the Individual category went to Clementine Pickwick, a Year 8 student from Telopea High School. Clementine's "Clock Seismometer" used a tube filled with liquid that acted as a spirit level, ensuring that the seismometer was on a level surface. Clementine then placed small ball bearings evenly on the periphery of the platform. When subjected to shaking the bearings fell off the platform — the more balls that fell, the more intense the shaking or earthquake. The clock on the seismometer stopped ticking when the ball bearings shifted, indicating an earthquake was happening.

"I studied all sorts of seismometer designs on the internet and came up with the idea for the clock," says Clementine.

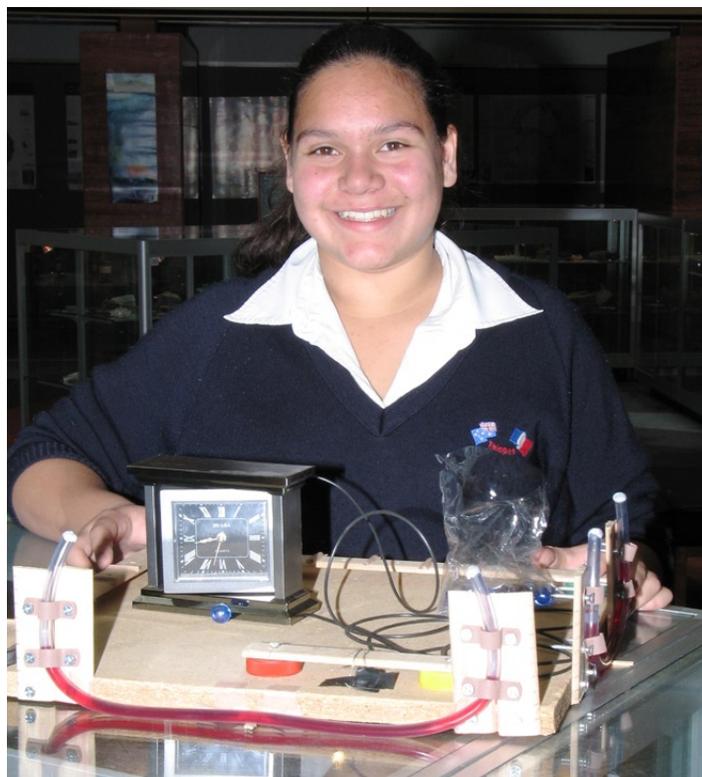
Head of Science at Telopea High, Annie Termaat, says "the competition came at a good time as the students were learning how human technology could impact human welfare and life on Earth."

Four students from Burgmann Anglican School won first place for the Group category. Their entry "Flotsam and Jetsam" was made using wood, wire, nails, machine roll pa-

per, a coffee tin (for the paper to roll on to) and a weight to increase sensitivity of the seismometers arm to vibrations. When shaken the horizontal arm holding the pen sways from side to side and records a seismogram.

All winning seismometers were put on display in the foyer at Geoscience Australia from Earth Science Week right through until the end of October. The display generated a lot of interest from visitors and school groups participating in Education Centre activities, as well as the media.

Australia's National Geographic Channel kicked off the week in dramatic fashion with an epic collection of documentaries showcasing *Savage Earth Week*. The documentaries took a closer look at the effectiveness of modern science in averting natural disasters. With millions living on the edge of disaster in earthquake zones, and near active volcanoes or on coastlines vulnerable to hurricanes and tsunamis the stories focussed on recent, major natural disasters.



Clementine Pickwick from Telopea High School shows off her "Clock Seismometer," a device used to determine that an earthquake is occurring. Image courtesy of Jeanette Holland, Geoscience Australia.



Four students from Burgmann Anglican School and their winning seismometer "Flotsam and Jetsam," which records an earthquake's vibrations. Image courtesy of Jeanette Holland.

In Sydney, the IMAX theatre thrilled packed audiences with its' new 3-D shows *Wild Safari* and *Walking on the Moon*, and had to extend its program schedule to include an extra night.

In the Northern Territory the Geological Survey promoted its new scholarship to encourage young Territorians to undertake university study in the earth sciences.

In Canberra, the National Museum of Australia entertained 11,540 visitors with over 39 performances of the show "Gondwana" which featured a journey through time to explore Australia's amazing prehistory, brought to life through

large-scale inflatable plants, spectacular full body puppets, huge projections and a moody, atmospheric musical score. Audiences were inspired by an understanding of our continent's origins and the creation of Australia's unique and awe inspiring prehistoric landscape, populated by dinosaurs, giant beasts and indigenous flora. Due to popular demand an extra five shows were added.

Once again, Geoscience Australia designed and produced a dramatic Earth Science Week poster. The design used a composite of several areas of current geoscience research. A wave on the cusp of breaking depicted the threat of tsunamis. Satellite imagery, seabed mapping and characterisation highlighted the importance of science in the detection of natural hazards. The design also depicted the use of high-resolution bathymetry in important recent marine research in Torres Strait and the southern Gulf of Carpentaria.

The posters were distributed nationwide to scientific, educational and cultural institutions around the country where they were used as part of the Earth Science Week celebrations. The national Earth Science Week website also attracted a growth of interest and activities this year.

Earth Science Week has been celebrated worldwide since 1998, with Geoscience Australia coordinating the Australian celebrations since October 1999. To see the variety of Earth Science Week activities held around Australia please visit www.ga.gov.au/about/event/index.jsp.

Association of Earth Science Editors



The Association of Earth Science Editors (AESE) is an organization of editors, journal managers, and others concerned with publishing in the earth sciences. Members include the editors of most of the North American earth science journals, editing and publishing personnel with state/provincial and federal geological surveys and with commercial firms, and freelance editors.

The goals of AESE are to strengthen the profession of earth science editing, foster education, promote the exchange of ideas, and solve problems relating to selection, editing, and publishing of books and articles in the earth sciences.

AESE is an associated society of the Geological Society of America and also maintains liaison with the Council of Science Editors and the European Association of Science Editors. We meet in the fall for two to three days at various locations in the United States and Canada, and occasionally meet jointly with other earth science organizations.

AESE has about 250 members, most residing in the United States and Canada, but the association also has representation in Africa, Australia, Europe, and South America. Many of our members are available for freelance work, and their names and credentials are available through our Web site.

www.aese.org



Image courtesy of Geoscience Australia

New Edition!

Klaus K.E. Neuendorf, James P. Mehl, Jr., and
Julia A. Jackson, editors

The fifth edition of the *Glossary of Geology* contains 3600 new terms and nearly 13,000 entries with revised definitions, reflecting both advances in scientific thought and changes in usage, making this hardbound reference tool indispensable. Many entries include aids to syllabication and background information. The *Glossary* draws its authority from the expertise of the more than 100 geoscientists in many specialties.

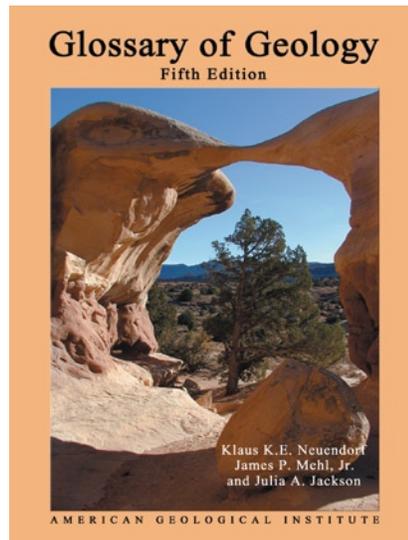
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Geoscience Australia is the national coordinator
of Earth Science Week in Australia.

To learn more about Geoscience Australia or to read their quarterly publication *AUSGEO News* covering geoscience-related features, brief articles about Geoscience Australia's research and initiatives, news about geoscience products and spatial data and a calendar of coming seminars and conferences, go to:

<http://www.ga.gov.au/ausgeonews/ausgeonews200509/>



CHRONOS's PSICAT: a graphical core-logging tool for the 21st century

Joshua A. Reed, Cinzia Cervato, and Doug Fils, Department of Geological and Atmospheric Sciences, Iowa State University; Ames, Iowa 50011, jareed@iastate.edu, cinzia@iastate.edu, fils@chronos.org.

The split core is laid out on a table in front of Chris at Mc Murdo Station in Antarctica. An experienced sedimentologist, she is going to describe the various lithologies, sedimentary structures, fossil occurrences, grain size, bedding, color etc. before the core is moved to the sampling lab where bio- and magnetostratigraphers are going to attack the smooth surface and take samples that they will use to determine the stratigraphic position of this core. The cores are transferred to McMurdo at a rate of 30-40 m per day and she does not have much time to perform this critical task – the complete and detailed description of this still intact split core. She picks up her tablet PC, fires up PSICAT, creates a new file for this core, and starts recording the information systematically using the simple graphical user interface. The information she enters will be automatically sent to the ANDRILL database at CHRONOS at the end of the day. Colleagues involved in the project both on- and off-ice will be able to graphically reproduce the information she is capturing almost instantaneously. She smiles thinking of all the time that was spent during the Cape Roberts Project drafting stratigraphic columns from the data she had entered in her field book – PSICAT is saving ANDRILL thousands of man-hours!

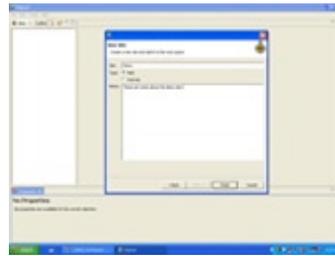


PSICAT (Paleontological Stratigraphic Interval Construction and Analysis Tool) is a Java-based graphical editing tool for creating and viewing stratigraphic column diagrams from drill cores and outcrops. It is customized to the task of working with stratigraphic columns and captures data digitally as you draw and edit the diagram. The data and diagrams are captured in open formats, and integration with CHRONOS (www.chronos.org) will allow the user to easily

upload their data and diagrams into hosted databases. Because the data and diagrams are stored in CHRONOS, they will be accessible to anyone, anywhere, at any time. PSICAT is designed with a modular, plug-in-based architecture that will allow it to support a wide variety of functionality, tasks, and geoscientific communities.

PSICAT is currently being developed by Josh Reed, a graduate student in human computer interactions at Iowa State University, for use by the ANDRILL project (www.andrill.org) on their upcoming drilling expeditions in Antarctica. Since it is currently under active development, there is no official download. However, a demo version can be downloaded and played around with on the Website [http://portal.chronos.org/grid-](http://portal.chronos.org/grid-33)

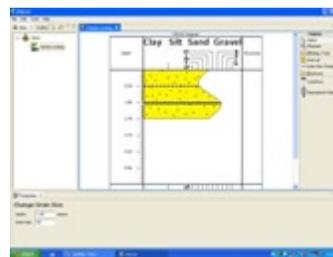
33sphere/gridsphere?cid=tools_psicat. Saving, uploading data into a database, and exporting the data as an image has been disabled in the demo until testing is completed. For ANDRILL, PSICAT will allow unprecedented communication between Antarctica-based scientists and shore-based scientists, potentially allowing shore-based scientists to interact in almost real time with on-ice operations and data collection.



Creating a new site in PISCAT

PSICAT is one example of how the CHRONOS system is working to meet the challenges facing cyberinfrastructure in general - managing complex data sets, establishing interoperability among federated databases, nurturing

collaboration between Information Technology (IT) developers and domain scientists, and working with the community of users to learn their needs while educating them in the power of geoinformatics. The most fundamental point for CHRONOS and all of geoinformatics, is that it must be a “bottom-up” community-driven effort. The funding and construction of the geoinformatics system must be driven by the needs and perspectives of the domain science, and constructed in collaboration with computer scientists.



Adding grain size changes

CHRONOS is an IT system that includes a core facility and hosted databases, an international network of federated databases, tools, targeted development projects, and education-outreach activities. Data currently include mainly biostratigraphic, taxonomic, and geochemical data, but we

are working to expand to include lithostratigraphic, cyclostratigraphic, geochronologic, and other data and metadata relevant to sedimentary geology, paleobiology, and associated research. For other databases with closely related information (e.g., JANUS, SedDB, PaleoStrat, and the Paleobiology database), we add value by providing simultaneous, seamless integration. The CHRONOS data and tools support a broad array of integrative research projects that need to combine data in a framework of geologic age and stratigraphic succession. Topics include, but are not limited to, the evolution and diversity of life, climate change, geochemical cycles, and paleoceanography. We also facilitate the merging of this deep-time record with the modern record to allow

researchers to develop a more complete understanding of how our ecological and climate systems operate. In summary, *CHRONOS* and its partners cooperate to: 1) link existing databases into an interoperable network, 2) provide primary databases to capture relevant data types, 3) offer tool sets for data analysis, and 4) create working groups and organize workshops to ensure that the needs of the community are met.

CHRONOS has already catalyzed new collaborations between generators of data and developers of software tools, established active partnerships with numerous national and international science and cyberinfrastructure groups, and helped found the International Coalition for Geoinformatics (*iGeoInfo* - www.igeoinfo.org, Klump et al., 2005), a new European-based organization, and organized an international workshop on paleogeography at the 2005 European Geosciences Union meeting in Vienna.



Side by side comparison of two diagrams.

Will geoinformatics inspire new, creative thinking about science? Absolutely! *CHRONOS* has already enabled the time sequencing modeling of large geologic event data sets, an approach that has been previously possible only through intimidating data-compilation and programming tasks. Active

partnerships with science initiatives are being formed, such as with ANDRILL (a multinational initiative to investigate Antarctic's role in Cenozoic to Recent global environmental change through stratigraphic drilling, www.andrill.org), EARTHTIME (high-precision geochronology and intercalibration of at least the last 800 million years of Earth history, www.earth-time.org), and GeoSystems (deep-time paleoclimatology, www.geosystems.org). These science partnerships will ensure the injection of data into *CHRONOS*'s data engines and the development of specialized data acquisition tools, data queries, and analytical tools.

For more information on *CHRONOS* and other related geoinformatics projects, please visit www.chronos.org.

Acknowledgments

Funding for *CHRONOS* is provided by the National Science Foundation through awards EAR 0315216 and 0524285. We wish to thank Chris Fielding and Walt Snyder for their contribution to the early development of PSICAT.

Reference

Klump, J., Huber, R., Cervato, C., and Snyder, W.S., 2005. Workshop launches International Coalition for GeoInformatics, EOS, v. 86, 3, 18 January 2005.



Images courtesy of the ESWIB. Michael Collier photographer.



CHRONOS.org
an interactive network of federated data and tools for sedimentary geology and paleobiology

Literature

An Examination of Professional Judgment and Degree-of-Belief Probability

a review of

Degrees of Belief – subjective probability and engineering judgment

Originally Published in *The Professional Geologist*

David M. Abbott, Jr., CPG-04570

As readers of the *TPG* know, I am an advocate for the use of professional judgment in determining the applicability of standard and “best” practices when performing our professional work.¹ I was therefore very interested when I learned of *Degrees of Belief—subjective probability and engineering judgment*, by Steven G. Vick, 2002, American Society of Civil Engineers, ASCE Press, 455 p., ISBN 0-7844-0598-0. Vick begins his book with the statement, “Most books are about things that we know. This book is about all the rest. ... It tells a story of probability, a story of judgment, and of how the two are so closely intertwined.” Our clients expect us to provide them with quantified, factual, and precise answers to questions such as “What is the probability that a particular structure, for example, a dam, will fail?” or, perhaps more likely, “What is the safety factor that the structure will not fail?” Or “What is the probability that a proposed exploration venture will be profitable?” or “What is the probability of success?”

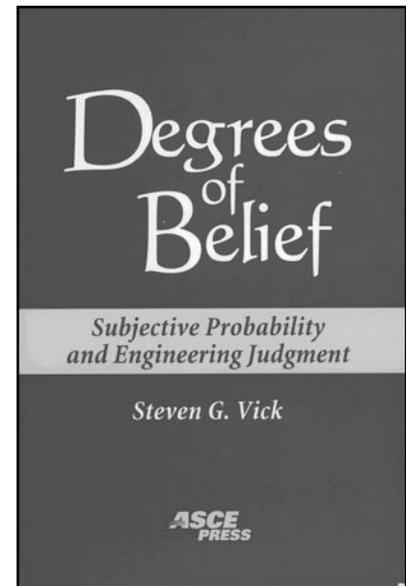
People are always seeking certainty, or, if certainty is not achievable, the probability of certainty. As Vick points out, the word *probability* itself is a major part of the problem because there is the well-developed mathematics of frequency probability derived from analysis of a very large population of statistically homogeneous samples that is very different from the judgmental and subjectively derived degree-of-belief probability related to a single mineral or petroleum deposit or dam or building site.

What Vick terms “degree-of-belief” probability is based on concepts developed far from science, engineering, or statistical mathematics. The concepts are discussed in the far-flung regions of cognitive and experimental psychology and in business and management stud-

ies, regions of professional literature scientists, geologists, and engineers seldom, if ever, visit. But degree-of-belief probability is something that geologists deal with regularly under the rubric of professional judgment. Vick notes that although professional judgment has a long history in geology and engineering, its lack of mathematically rigorous precision has been supplanted by the altar of computational methods. But when deductive computational methods fail, as they frequently do in many areas, degree-of-belief probability and the inductive reasoning beneath it is required.

Vick's book is based in geotechnical engineering, “not for any lack of relevance to other engineering specialties—and science too, for that matter—but for the deep inductive roots of geology found there. As for probability, this book picks up where most texts leave off, though in many ways it really should precede them. ... This book is about how to use probability and use it sensibly with appreciation of what it can and cannot do. ... For ultimately this book is about thinking, something engineers are not taught. ... But thinking is more than analysis. Defining the problem precedes its solution, and interpretation is what follows. This is where diagnosis, judgment, and all of the other things that distinguish thinking from problem solving, that separate engineers [and geologists] from technicians, come into play. ... There is no cookbook to instruct thinking, and those looking for it will not find it here.”

Vick delves into the deep divisions between the inductive and deductive reasoning required for problem solving and points out that inductive reasoning frequently underlies the collection of the data that is deductively analyzed



with theoretically mathematical rigor. The mantra of a course I took in geologic data analysis was, “It depends,” a short-hand for “Does the answer make geologic sense independently of its mathematical correctness.” Vick notes that geotechnical and other forms of geologic studies depend on the “drill-test-analyze” paradigm. We collect and analyze samples in order to determine frequency distributions and related statistics. But underlying sample collection is the professional judgment used to determine what types of samples to collect, what types of tests and analysis to perform on those samples, and the thinking underlying the interpretations we make of the results.

Homogeneity is a real problem in geology. I recall the petroleum engineer's lecture in which the existence of exponential production decline was mathematically proved. The beginning assumptions were that the reservoir is infinitely homogeneous in the X and Y directions and had a constant thickness (Z direction). Geologists immediately recognize the stratigraphic invalidity of these assumptions. Nevertheless, exponential decline is frequently a reasonably good predictor of production decline. The best discussion of statistical homogeneity in rocks and its dependence on the scale of observation I have ever encountered is in chapter 2 of Turner and Weiss, 1963, *Structural Analysis of Metamorphic Tectonites*, McGraw-Hill Book Company. Every geologist should read this chapter because of the importance of the scale of observation in our work.

BOOK REVIEW (continued)

Similar problems occur in attempting to predict flooding events, hurricanes, dam failures, earthquakes, and other types of events. The problem with collecting frequency data on such events is that no two events are exactly similar, no two sites are exactly the same, and we cannot subject a particular site to repeated trials of identical events. Often, such frequency data is presented in terms like the 100-year flood or 100-year storm, terminology the public interprets as happening only once every hundred years and, as a result, the public is upset and confused when two such events occur within a short period of time. Vick points out that with such data, A quite remarkable conceptual transformation takes place behind the Wizard's curtain, whereby repeated trials are converted into single-event occurrence, and the frequency interpretation becomes that of belief.

Vick notes that the subjective, degree-of-belief approach holds that the probability of an uncertain event is a scaled numerical measure of one's belief about its occurrence. Because such a probability is a function of one's state of knowledge, it is not an invariant quantity nor is it unique. The nature and amount of underlying information, observations, and data may change from time to time. Technology changes, and with it, the understanding of process and mechanisms. Unlike the relative frequency approach in which a very large number of repeated trials will converge on a single, constant value, a degree-of-belief probability is not a property of the event but rather of the observer, whose beliefs may change over time; there is no uniquely "true" prob-

ability, only one's true beliefs.

And so professional judgment becomes critical. Knowledge is the context that makes information meaningful, for without context information cannot be interpreted.

Archbishop James Ussher's scholarship regarding the age of Earth can only be appreciated within the context of the scholarly tradition Ussher used.² When we change the context from the study Biblical and historical texts to isotopic dating, our context changes and thus our interpretations. Judgment provides the missing ingredient. If knowledge is information in context, then this demands the synthesis and integration of information as a unified whole, with judgment as the vehicle that brings it about. Judgment is the means by which evidence is recognized, supporting evidence compiled, conflicting evidence reconciled, and evidence of all kinds weighed according to its perceived significance.

Vick reviews the development of theories of both degree-of-belief and frequency probability. He also presents numerous geotechnical case histories demonstrating both use of both inductive reasoning and judgment and deductive analysis and the strengths and weaknesses of these approaches. He then delves into the details of subjective or degree-of-belief probabilities pointing out common pitfalls in its application and how, by understanding the pitfalls, their influence can be reduced.

He presents a detailed discussion of experts and expertise and describes how experts may develop their expertise. He concludes with a chapter on Judgment, Probability,

and Thinking and how they come together. He notes that subjective knowledge and experience lead to judgment, the ability to distinguish what is important and to interpret meaning and context. This leads to expressions of degree-of-belief probability, a quantified expression of judgment relating to uncertainty. But thinking is the mortar that cements all this together. Thinking is the most highly personal of all human activities, engaged in by people - not algorithms or machines (at least as far as we know). Thus thinking is inherently subjective.

Allen W. Hatheway, CPG, commented to me that in his view this book justified Vick's election to the National Academy of Sciences. Clearly, Degrees of Belief should be well-thumbed and on every geotechnical engineer's shelf. I am not an engineering geologist, nevertheless, I recognize the importance of professional judgment and believe all geologists should read and re-read Vick's book when analyzing and interpreting the data we collect. Vick has not provided a cookbook, but he has provided a fundamental discussion of the use and misuse of both inductive and deductive reasoning and its quantification we all should know and use in our professional work.

1. See Are Scientific Honesty and Best Practices in Conflict?, The Professional Geologist, July/August 2005, p. 46-51
2. Archbishop Ussher's scholarship not only determined that the Earth was created on Sunday, October 23, 4004 BC, but also is important for linking the dates in Julian, Chaldean, and Jewish calendars, work still recognized and used today.

Check out the Earth Science World Book Center

Maintained by the American Geological Institute,
in association with Amazon.com.



The Earth Science World Book Center is an effort to provide the earth science community and the general public a central location to find books related to the earth sciences.

Go to <http://www.earthscienceworld.org/books/index.html>
for more information.

The Poetic Earth — A Review of *Earth: A Narrative in Verse*



*Future buries past
Time defers to none
Unless, until, at last
The universe is done.*

So begins John Dickey's *Earth: A Narrative in Verse*. Beginning with the cosmic soup prelude to the Big Bang, Dickey takes us on a poetic journey through geologic time, ending with a look at the future through Dickey's eyes.

Crafting compelling prose from geologic jargon and chemical formulas, Dickey describes each eon and era in the time scale, titling each section Archean, Proterozoic, Paleozoic and so forth, following the billions of years of Earth's history. Each section or chapter in this book of poetry published by Authorhouse, includes poems that reiterate some of the greatest discoveries and theories proposed by geologists. For instance, Dickey discusses the snowball Earth, Gondwana, and the extinction of the dinosaurs. *Earth* also credits some of the great geologists of our time, most markedly with Dickey's poem, "Ode to Alfred Wegener."

The 210-page book takes the reader through continental drift, through the first glimpse of life and into the Earth we know today. But Dickey then takes us into the future as well, providing us with his foreboding outlook of the next six billion years. The culmination of the poems ends in global warming to the point that only extremophiles can survive, and finally, the extinction of all life.

Earth is appended by a short glossary of geologic terms, a useful tool as Dickey does tend to use quite a bit of technical jargon for a book of poetry. He also provides a list of references. Dickey's creative language use, however, makeup for any misgivings of the technical terminology or chemical abbreviations, such as in the last four stanzas of "The Ballad of Ediacara."



NEW BOOK ANNOUNCEMENT

Seismic Prevention of Damage: A Case Study in a Mediterranean City

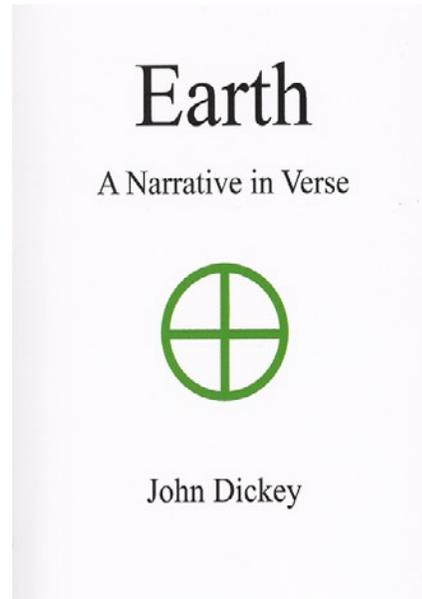
This book summarizes the results of a multidisciplinary project concerned with the analysis and mitigation of seismic risk in a Mediterranean city (Catania, Italy) subjected to medium to high earthquakes. The areas involved are geology, geophysics, geotechnical engineering, structural engineering, transportation engineering, and urban planning. The research was financed by the Italian Department of Civil Defence.

Chapters are devoted to topics such as: The Earthquake-Source Characterisation and Seismic Action Evaluation at the Bedrock for the Scenario Earthquakes; The Vulnerability Analysis of Physical Environment for Evaluating the Risk Related to Cavities, Landslides and Liquefaction; The Seismic Structural Improvement

of R.C. Buildings; The Early Alarm System and the Vulnerability Analysis of Road Infrastructures, Lifelines and Urban System. The material included will be valuable to many specialists, including environmental, civil, earthquake and civil defence engineers, geologists, geophysicists, and town planners.

Seismic Prevention of Damage: A Case Study in a Mediterranean City is Volume 14 in WIT Press's Advances in Earthquake Engineering book series. Full contents details can be found at <http://www.witpressusa.com/acatalog/0047.html>.

Dee Halzack - WIT Press North American Marketing Manager,
Phone: (978) 667-5841, Fax: +(978) 667-7582,
Email: dhalzack@witpress.com



*But predators were few and far
Between, or so it seems;
Voluptuaries on the sand
Uninterrupted dreams*

*Enjoyed until rapacious worms
Came craving seafood fresh
Traversed the seabed smorgasbord
Devouring naked flesh.*

*Intoxicated by the glut
Of rapine without cease
Relentless blitzkrieg predators
Annihilated peace.*

*Sic transit Ediacara
From paradise to hell,
Yet Life survived and reappeared
Protected by a shell.*

New at the Book Center

...from the Geological Society of London

- *The Neuquén Basin, Argentina: A Case Study in Sequence Stratigraphy and Basin Dynamics*. Edited by G. D. Veiga, L. A. Spalletti, J. A. Howell and E. Schwarz. GSL Special Publications, 2005. ISBN 1-8623-9190-4.

The Neuquén Basin of northern Patagonia provides an excellent case study in basin analysis and sequence stratigraphy. The basin is one of the largest petroleum provinces in South America and includes a dramatic record of relative sea level changes as well as a unique and globally important palaeontological record. Understanding this region is also central to unravelling the history of the Andes. The latest developments in the study have been combined in this volume to give an integrated series of case studies that document the structural, igneous, sedimentological and palaeontological history of the region from the Triassic to the Recent.

- *Early-Middle Pleistocene Transitions: The Land-Ocean Evidence*. Edited by M. J. Head and P. L. Gibbard. GSL Special Publications, 2006. ISBN 1-8623-9181-5.

The Early-Middle Pleistocene transition (around 1.2 to 0.5 Ma) marks a profound shift in Earth's climate state. Low-amplitude 41 ka climate cycles, dominating the earlier part of the Pleistocene, gave way progressively to a 100 ka rhythm of increased amplitude that characterizes our present glacial-interglacial world. This volume assesses the biotic and physical response to this transition both on land and in the oceans.

- *Mineral Deposits and Earth Evolution*. Edited by I. McDonald, A. J. Boyce, I. B. Butler, R. J. Herrington and D. A. Polya. GSL Special Publications, 2005. ISBN 1-8623-9182-3.

This volume covers research on mineral deposits generated by magmatic, hydrothermal and sedimentary processes in settings that range from molten sulphides in impact craters to the sorting of gravel and diamonds on SW African beaches. It is aimed both at understanding mineral deposits and at using mineral deposits as tools to explore long-term Earth processes.

- *Recent Developments in Applied Biostratigraphy*. Edited by A. J. Powell and J. B. Riding. GSL Special Publications, 2005. ISBN 1-8623-9187-4.

The application of biostratigraphy to hydrocarbon exploration and development has become increasingly important both scientifically and economically. The demand for higher stratigraphic resolution in field development studies has resulted in the utilization of new approaches. The aim of this volume is to encourage an exchange of ideas and to seed new research initiatives particularly within integrated multidisciplinary teams. The papers are divided into four main themes which cover a broad range of modern applications of biostratigraphy. The first three themes are: UK North Sea field development; outcrop analogues; and international exploration and development. The final section discusses new methodologies, such as the application of correspondence analysis and multivariate correlation of wells, and palynological processing techniques applicable to the wellsite.

...from the American Geological Institute

- *Glossary of Geology, 5th Edition*. Klaus K.E. Neuendorf, James P. Mehl, Jr., and Julia A. Jackson, editors. ISBN 0-922152-76-4.

The fifth edition of the Glossary of Geology contains nearly 40,000 entries including 3,600 new terms and nearly 13,000 entries with revised definitions from the previous edition. Additions and changes reflect both advances in scientific thought and changes in usage making this 800+ page hardbound reference tool indispensable to professional earth scientists and students. Many entries also include aids to syllabication and background information.

- *Soils, Society, and the Environment*. Thomas E. Loynachan, Kirk W. Brown, Terence H. Cooper, John M. Kimble, Murray H. Milford, David B. Smith. ISBN 0-9221-5274-8.

How societies manage their soils can directly impact their environments and may even be a determining factor in a society's long-term success or failure. Produced in cooperation with the Soil Science Society of America, the USDA Natural Resources Service and the U.S. Geological Survey, the booklet focuses mainly on soil as society's primary source of food and fiber.

Special Environmental Issue of *Mineralogical Magazine*

The October 2005 issue of *Mineralogical Magazine* (vol. 69, #5), a special issue of the journal, is the 5th in a loosely defined series of special thematic issues, derived from conferences organized by the Mineralogical Society. The allied conferences in this case were 'Speciation and Toxicity' held in London in September 2004 and 'Environmental Mineralogy, Geochemistry and Human Health' which took place in January 2005, in Bath, UK. A common thread to all these Mineralogical Society conferences has been the role of mineralogy in applied science and technology and particularly in environmental science, focusing on the multidisciplinary of modern mineralogy; the conferences (and special issues) have been particularly successful in bringing along scientists from outside traditional mineralogy/earth sciences. A primary ambition for the series is to demonstrate mineralogy's extensive outreach and has succeeded in giving the scientific community a sense of the wider role mineralogists can play. The thematic issues seek to enforce the conference series objectives, by recording for posterity key papers presented in each conference in a published peer-reviewed form. An overriding objective of all issues is to solicit papers of the highest quality, with a focus, and sometimes a foresight for novel non-traditional areas of mineralogy.

The guest editors of this special issue were determined that the papers be published as soon as possible after the meeting, and we are very pleased to see the papers appearing in print in the October issue, within 13 months of the meetings.

This thematic issue contains 28 papers, including that documenting the Hallimond Lecture of the Mineralogical Society, delivered this year by Professor Catherine Skinner. She gives an authoritative and passionate account of biominerals emphasizing their importance within the mineral kingdom, the unique features that set them apart from minerals formed abiotically and their role in life and evolution. From the diverse range of known biominerals, which represent many of the 78 mineral classes, she chooses to present three examples, iron oxyhydroxides, calcium carbon-

ates and calcium phosphates, offering a representative flavour of biomineralization processes, at both the uni- and multicellular scale. Skinner predicts that the studies of biominerals will provide natural inspirations to current and future technological problems – a bright future for mineralogists!

The issue also contains papers on a number of subjects including several papers on arsenic. In the Bengal Basin (Bangladesh and West Bengal), millions of people are at risk from drinking arsenic-contaminated groundwater. The humanitarian crisis that this has resulted in has prompted enormous interest amongst the mineralogical and geochemical community over the last decade or so, and studies of the (bio)(geo)chemistry of arsenic both in Bengal and elsewhere in the world have been a major focus of this meeting — indeed we hope that this collection of papers related to arsenic biogeochemistry not only highlight some of the analytical techniques and conceptual advances that might be of practical benefit in dealing with the arsenic crisis in Bengal; but also emphasize that arsenic-related health-risks need to be evaluated also in other regions of the world, including the European Community and associated states.

The special issue is dedicated to the memory of Robin Clayton, a contributor to the issue and an excellent isotope geochemist, who died suddenly during the final stages of preparation. Robin's quiet dedication to the geosciences will be sincerely missed by all who had the privilege to know and work with him.

A complete list of contents of this issue is available from the Society website www.minersoc.org and copies of the special issue (352 pp) will be available to non-subscribers for £50.00 including postage and packing. Visit <http://www.ingentaconnect.com/content/minsoc/mag> or <http://gsminmag.highwire.org/> for a list of contents.

— Eva Valsami-Jones,
David Polya and
Karen Hudson-Edwards



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Calendar

Jan 30-31 E&P Knowledge And Data Management, One Whitehall Place, London, UK, by the Oil & Gas IQ. (Gareth Owens, Anchor House, Britten St, London, SW3 3QL, Phone: +44 (0)20 7368 9300 FAX: +44 (0)20 7368 9303 EMail: gareth.owens@iqpc.co.uk Web: <http://www.oilandgasIQ.com/GB-2561/ediary>)

Jan 31-Feb 02 Technical Strategies for Marginal and Mature Fields, Hotel Derek, Houston, TX, United States, by the Oil and Gas IQ. (Tony Yauch, 535 Fifth Ave, Phone: 800.882.8684 FAX: 973.256.0211 EMail: info@iqpc.com Web: <http://www.iqpc.com/na-2388-01>)

Feb 08-09 Oil and Gas Habitats of Russia and Surrounding Regions, Burlington House, The Geological Society, London, by the The Geological Society of London. (Lucy Kimber, The Geological Society, Burlington House, Piccadilly, London, W1J OBJ, Phone: +44 (0)20 7434 9944 FAX: +44 (0)20 7494 0579 EMail: lucy.kimber@geolsoc.org.uk Web: http://www.geolsoc.org.uk/template.cfm?name=Oil_and_Gas_Habitats_in_Russia)

Feb 14-15 Drilling Fluids & Cuttings Management 2006, Bangkok, Thailand, Bangkok, Thailand, by the Oil & Gas IQ - a division of IQPC Worldwide Pte Ltd. (Nazya Ayaz, 1 Shenton Way #13-07 Singapore 068803, Phone: 65 6722 9388 FAX: 65 6720 3804 EMail: enquiry@iqpc.com.sg Web: <http://www.oilandgasiq.com/AS-3123/web>)

Feb 20-24 2006 Ocean Sciences Meeting, Hawaii Convention Center, Honolulu, HI, by the AGU, ASLO, TOS and ERG. (Meetings Manager, 2000 Florida Avenue, NW, Washington, DC 20009, Phone: 202-777-7330 FAX: 202-328-0566 EMail: os-help@agu.org Web: <http://www.agu.org/meetings/os06/>)

Mar 07-11 2006 AAG Annual Meeting, Palmer House Hilton, Chicago, IL, by the Association of American Geographers. (Oscar Larson, 1710 16th Street, NW, Washington, DC 20009, Tel: 202-234-1450 FAX: 202-234-2744 EMail: meetings@aag.org Web: <http://www.aag.org>)

Mar 27-29 External Controls on deep water depositional systems: climate, sea-level and sediment flux, Burlington House - (home of The Geological Society of London, London, United Kingdom), by the The Geological Society of London and SEPM-Society for Sedimentary Geology. (Lydia Dumont, Conference Office, The Geological Society, Burlington House, Piccadilly, London W1J 0BG, Phone: +44 (0)20 7434 9944 FAX: +44 (0)20 7494 0579 EMail: lydia.dumont@geolsoc.org.uk Web: http://www.geolsoc.org.uk/template.cfm?name=Deep_Water)

Apr 02-07 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 EMail: egu.meetings@copernicus.org Web: <http://meetings.copernicus.org/egu2006/>)

Apr 02-06 SAGEEP (Symposium on the Application of Geophysics to Engineering and Environmental Problems), Double Tree Hotel, Seattle, WA, USA, by the EEGS (Environmental & Engineering Society). (Kathie Barstnar, 1720 South Bellaire, Suite 110, Denver, CO, Phone: 303.531.7517 FAX: 303.820.3844 EMail: staff@eegs.org Web: <http://www.eegs.org/sageep/index.html>)

Apr 02-06 Joint 3rd Federal Hydrologic Modeling and 7th Sedimentation Conference, Silver Legacy Hotel, Reno, NV, USA, by the Subcommittees on Sedimentation and Hydrology. (G. Douglas Glysson, U.S. Geological Survey, 412 National Center, Reston VA 20192, Phone: 703-648-5019 FAX: 703-648-5722 EMail: gglysson@usgs.gov Web: <http://www.jfic.org/>)

Apr 03-07 Backbone of the Americas — Patagonia to Alaska, Congress & Exhibition Center, Mendoza, Argentina, by the Geological Society of America, Asociación Geológica Argentina. (Deborah Nelson, P.O. Box 9140, Boulder, CO 80301-9140, Phone: 303-357-1014 FAX: 303-357-1074 EMail: dnelson@geosociety.org Web: <http://www.geosociety.org/meetings/06boa>)

May 07-13 42nd Forum on the Geology of Industrial Minerals, Crown Plaza Resort, Asheville, North Carolina, USA, by the North Carolina Geological Survey and others. (Jeffrey C. Reid, North Carolina Geological Survey, 1612 Mail Service Center, Raleigh, NC 27699-1612, Phone: 919.733.2423 x403 FAX: 919.733.0900 EMail: jeff.reid@ncmail.net Web: <http://www.geology.enr.state.nc.us/NCIndustrialMineralsForum/index.htm>)

May 08-12 First International Conference on Impact Cratering in the Solar System, ESA/ESTEC, Noordwijk, The Netherlands, by the European Space Agency. (Agustin Chicarro, ESA/ESTEC, Postbus 299, 2200 AG, Noordwijk, The Netherlands, Phone: +31-71-5653613 FAX: +31-71-5654697 EMail: Agustin.Chicarro@esa.int Web: <http://www.rssd.esa.int/cratconf06/>)

May 14-16 SEG 2006 Conference - Wealth Creation in the Minerals Industry, Keystone Resort & Conference Center, Keystone, Colorado, U.S.A., by the Society of Economic Geologists. (SEG., 7811 Shaffer Parkway, Littleton, CO 80127-3732, Phone: (720) 981-7882, ext. 210 FAX: (720) 981-7874 EMail: seg2006@segweb.org Web: <http://www.seg2006.org>)

May 23-26 Joint Assembly, Baltimore Convention Center, Baltimore, Maryland, by the AGU, Geochemical Society, Microbeam Analysis Society, Mineralogical Society of America, Society of Exploration Geophysicists. (Meetings Manager, 2000 Florida Avenue, NW, Washington, DC 20009, Phone: 202-777-7330 FAX: 202-328-0566 EMail: ja-help@agu.org Web: <http://www.agu.org/meetings/ja06/>)

Jun 08-14 Impact craters as indicators for planetary environmental evolution and astrobiology, Mitthögskolan, City of Ostersund (Near the Lockne impact crater), Ostersund, Sweden, by the Swedish National Space Board, Royal Swedish Academy of Science, Swedish Research Council, Centro de Astrobiología (INTA/CSIC), Spain, City of Östersund. (Jens Ormo, Centro de Astrobiología (INTA/CSIC), 28850 Torrejon de Ardoz, Spain, Phone: +34 91 5201936 FAX: +34 91 5201074 EMail: ormo@inta.es Web: <http://www.geo.su.se/Lockne2006>)

Calendar continued...

Jun 12-15 HOLIVAR2006 Open Science Meeting: Natural Climate Variability and Global Warming, University College London, London, UK, by the Environmental Change Research Centre (ECRC). (HOLIVAR2006 Local Organising Committee, EMail: info@holivar2006.org Web: <http://www.holivar2006.org>)

Jun 17-21 International Palaeontological Congress (2nd), Beijing, China (Executive Committee of IPC2006, Nanjing Institute of Geology & Palaeontology, Chinese Academy of Sciences, 39 East Beijing Road, Nanjing 210008, People's Republic of China, Phone: +86-25-83282221 FAX: +86-25-83357026 EMail: IPC2006@nigpas.ac.cn Web: <http://www.ipc2006.ac.cn>)

Jul 11-13 The Application of Earth System Modelling to Exploration, Snowbird, Utah, USA, by the SEPM (Society for Sedimentary Geology) & The Geological Society of London. (Howard Harper, 6128 E. 38th St., Tulsa, OK 74135, Phone: 918-610-3361 x24 EMail: hharper@sepm.org)

Sep 18-22 3rd Mid-European Clay Conference MECC'06, Grand Hotel Adriatic Convention Centre, Opatija, Croatia, by the Clay Group of Croatian Geological Society and National Clay Groups of Hungary, Poland and Slovakia. (Mr. Vanja Bi'evac, Mineralosko petrografski zavod PMF-a, Horvatovac bb, HR-10000 Zagreb, Croatia, Phone: +385 1 4605 974 FAX: +385 1 4605 998 EMail: mecc06@gfz.hr Web: <http://mecc06.gfz.hr/>)

Sep 24-27 2006 SPE Annual Technical Conference and Exhibition, San Antonio, TX, USA, by the Society of Petroleum Engineers. (Debbie Weaver, P.O. Box 833836, Richardson, TX 75083-3836, FAX: 972-952-9435 EMail: dweaver@spe.org Web: <http://www.spe.org>)

Oct 08-11 AAPG Eastern Section 2006 Buffalo, Adam's Mark, Buffalo, NY, USA, by the AAPG + NYSGA + UB. (Robert Jacobi, Geology, 876 NSC, University at Buffalo, Buffalo, NY 14260, Phone: 716 645 6800 x2468 FAX: 716 645 3999 EMail: rdjacobi@geology.buffalo.edu Web: http://www.ubevents.org/regen-gine/event_page.php)

COMMISSION FOR THE MANAGEMENT AND APPLICATION OF GEOSCIENCE INFORMATION (CGI)

<http://www.cgi-iugs.org>

http://www.bgs.ac.uk/cgi_web/welcome.html

1. *Mission and Aims*

CGI's mission is to enable the global exchange of knowledge about geoscience information and systems. We aim to provide a means for transferring such knowledge and stimulate international dissemination of best practice in geoscience information management and delivery. In particular we wish to initiate and support work which is developing standards. We aspire to occupy an established position in the international geoscience information community and represent IUGS on geoscience information matters.

2. *Contact Addresses:*

Chair: Dr Kristine Asch: k.asch@bgr.de

Secretary General: Dr. Ian Jackson: ij@bgs.ac.uk

3. *Upcoming Meetings for 2006-2007:*

September 3-8 2006: Council and Open Meetings in association with the next Annual Meeting/Conference of the International Association of Mathematical Geologists in Liege, Belgium: <http://www.geomac.ulg.ac.be/iamg06>

General topic: "Quantitative Geology from Multiple Sources".

Later meetings are planned but dates not yet decided: Please contact the CGI Chair or Secretary General for further information

THE INTERNATIONAL COMMISSION ON THE HISTORY OF GEOLOGICAL SCIENCES (INHIGEO)

<http://www.iugs.org/iugs/drectory/scicom.htm#cs>

1. *Mission and Aims*

The primary objective of the Commission on the History of Geological Sciences (INHIGEO) involves promoting studies in the history of geological disciplines. In so doing, the Commission endeavors to stimulate and coordinate the activities of regional, national, and international organizations having shared purposes. The Commission also works to foster the publication of individual and collective works that illuminate the history of the geological sciences.

2. *Contact Addresses:*

President: Prof. Philippe R. Taquet: taquet@cimrs1.mnhn.fr

Secretary General: Prof. Kennard B. Bork: bork@denison.edu

3. *Upcoming Meetings 2006-2007*

July 28 – August 4, 2006: "The History of Geomorphology and Quaternary Geology", Vilnius, Lithuania

Contact: Professor Algimanta Grigelis: grigelis@geo.lt

Late August-Early September 2007: "The Historical Relationship of Geology and Religion" Eichstätt, Bavaria, Germany

Contact: Dr. Martina Kölbl-Ebert: koelbl-ebert@jura-museum.de

Link to WEBPAGE re the meetings (Germany 2007 is not yet added; awaiting exact dates): <http://www.iugs.org/THEN> clicking on "Calendar" OR: <http://www.iugs.org/iugs/calendar/ca107.htm>



The National Association of Geoscience Teachers



We are pleased to announce the following *On the Cutting Edge* workshops sponsored by NAGT:

Teaching Public Policy in the Earth Sciences

co-conveners: David Mogk and Cathy O'Riordan
co-sponsored by the American Geophysical Union
April 20-23, 2006, AGU, Washington, DC,
application deadline: February 1

Discoveries from Mars: Using a Planetary Perspective to Enhance Undergraduate Geoscience Courses

co-conveners: Barbara Tewksbury, Philip Christensen,
Ronald Greeley, Tracy Gregg, and Eric Grosfils
April 27-30, 2006, Arizona State University, Phoenix, AZ
application deadline: February 1

Designing Effective and Innovative Courses in the Geosciences

co-conveners: Barbara Tewksbury and William Hirt
virtual workshop: July 31-August 4, 2006 on line
face-to-face workshop: May 31-June 4, 2006,
College of the Siskiyous, Weed, CA
application deadline for both: March 31

Early Career Faculty Workshop: Teaching, Research, and Managing Your Career

co-conveners: Heather Macdonald, Richelle Allen-King, and Richard Yuretich
June 7-12, 2006, College of William and Mary, Williamsburg, VA
application deadline: March 17

Teaching Sedimentary Geology in the 21st Century

co-conveners: Heather Macdonald, Kathleen Benison,
Marjorie Chan, Thomas Hickson, and Christopher Paola
July 14-19, 2006, University of Utah, Salt Lake City, UT
application deadline: January 16

Preparing for an Academic Career in the Geosciences

co-conveners: Cathryn Manduca and Robyn Wright Dunbar
July 27-30, 2006, Stanford University, Stanford, CA
application deadline: March 17

Teaching Climate Change: Lessons from the Past

co-conveners: David Mogk, Allan Ashworth, Sheri Fritz, and Cathy Whitlock
co-sponsored by AMQUA and USNC/INQUA
August 14-15, 2006 in conjunction with the 2006 AMQUA meeting
Montana State University, Bozeman, MT

**More information, on-line applications,
and resources for geoscience faculty can be found at**

<http://serc.carleton.edu/NAGTWorkshops/>



THE SOCIETY FOR ORGANIC PETROLOGY



2006 TSOP Meeting, Beijing, China September 15 - 22

The 23rd Annual Meeting of TSOP will be held at the Xijiao Hotel, in the western part of Beijing. It is adjacent to many universities, including China University of Mining and Technology (Beijing) (CUMT), which will be the host organization and sponsor the meeting.

Key Conference Themes:

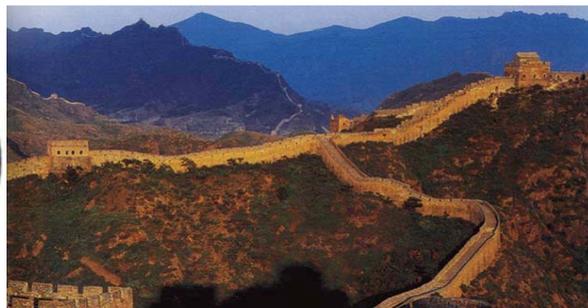
1. Organic petrology and geochemistry of non-marine source rocks;
2. Coal-derived hydrocarbons (coal-derived oil, unconventional natural gas and coalbed methane) exploration and development;
3. Coal petrology, coal-measure sedimentology and hazardous elements in coal related to the environment and human health;
4. Organic petrology in coal mine safety and coal utilization: mine fires, coal-gas outbursts, coal slurry and other less-conventional utilization technologies;
5. New techniques in organic petrology/geochemistry.

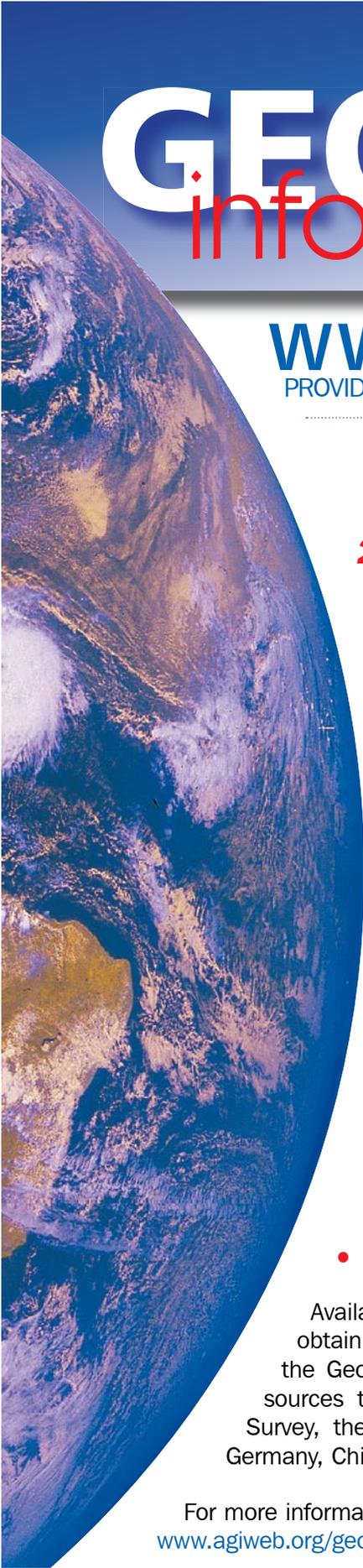
Short course: Petrology and geochemistry of coal and non-marine source rocks.

Pre-meeting field trip: Geology of Western Beijing Jurassic and Permo-Carboniferous Coal Basin.

Post-meeting field trip: Shanxi field trip: Datong natural and historic sites, and the Permo-Carboniferous Antaibao Surface Mine.

See the TSOP website for updates and registration details
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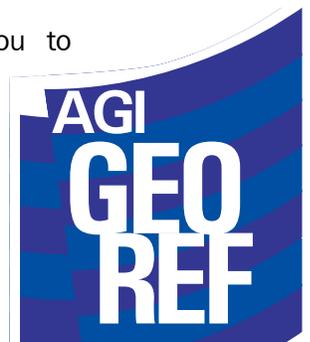
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The screenshot shows the GeoScienceWorld website interface. At the top, the logo features 'GSW' in large gold letters, a globe icon, and the tagline 'Explore deeper, faster' in a script font, with 'GeoScienceWorld' in a smaller font below. A navigation bar contains links for 'GSW Home', 'GeoRef Home', 'My GSW Alerts', 'Contact GSW', and 'About GSW'. On the left, a vertical menu lists 'About GSW', 'News', 'Journals', 'Sponsors', 'Publish in GSW', 'Subscribe to GSW', 'Manage Subscription', 'Contact Us', and 'User Help'. Below this is a 'GSW Sponsors' section listing 'Major Sponsor: AGI Foundation' and 'Continuing & Founding Sponsors: ExxonMobil Exploration'. The main content area includes a 'Quick Search' section with input fields for 'Keywords' and 'Author' (with an example 'e.g., Smith, JS' and a 'GO' button), and radio buttons for 'In: My Favorite Journals', 'All GSW journals', and 'All GSW journals + GeoRef'. Below the search is a 'Browse by topic' section with radio buttons for 'Subject', 'Time', and 'Geography', and a link to 'Browse using TopicMap, a graphical viewer (what's this?)'. The 'Browse GSW-hosted journals' section offers browsing by 'alphabet' or 'publisher' with a list of letters: 'A B C D E E G H I J L M N O P Q R S T U V W Y all'. A 'Highlights' section at the bottom features a blue header and a bullet point: 'New 2006 Pricing: The prices for GSW itself will not increase in 2006 and the GSW prices for GeoRef will increase only slightly. Please contact one of our sales agencies, listed on our Subscription Information page, for more information.'

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