



THE GEOLOGICAL SOCIETY OF AMERICA

Geoscience Education Division

<http://gsaged.org/>

July 2010

From Your Newsletter Editor

Greetings Division members! Hope those of you in the northern hemisphere are having relaxing and/or productive summers, and those of you in the southern hemisphere are hard at work and weathering your winter season.

Below is our July 2010 newsletter, which is a bit late getting out, but still timely I hope. It includes a column by GED Chair Eric Pyle, the paper ballot form for the election of GED officers for 2010-2011 as well as on-line voting instructions, calls for proposals for upcoming conferences, and much, much more.

If you have items you would like included in the next newsletter, please send them to me at mhafen@usf.edu.

Mark Hafen
University of South Florida

From the GED Chair

A Framework for Science Education Standards: A Coming Chance to be Informed and Heard
Eric J. Pyle, Geoscience Education Division Chairperson 2010

When considering the policy documents which govern our professional lives, it is fruitful to assess their impact on a periodic basis, determining if the policy that the document represents was sound, feasible, and accurate with respect to the body of knowledge of not just science content, but science pedagogy as well. The windows represented by these policy reviews are rare opportunities to collect the input of the scientific community and to evaluate the “state of the art” versus the “state of the policy.” Just such an opportunity has arisen.

Sometime late in 1994 or early in 1995, I had a large volume pass across my desk. Mind you, at the time I was furiously analyzing and writing up the mountain of data I had collected for my dissertation. The thought of reading through this new document was not high on my list. The general instructions that came with the document were to offer any written comments on the document. Being up to my eyebrows in dissertation, I was not able to offer much, but I did read through the volume. It was a worthwhile effort, as I was able to get a first glimpse of what the future of science education policy would look like. The source of the document was the National Research Council, and the document was the draft of the National Science Education Standards, which were published late in 1996. This document set the stage for revisions of state science curricula, assessments, and teacher professional preparation and development. Since its publication, it is hard to minimize the impact that this one document has had.

Late this winter, the National Research Council commissioned the Board on Science Education to begin the process of re-conceptualizing the Standards, in preparation for the development of new standards. This project, called “Conceptual Framework for New Science Education Standards,” has sought to articulate core ideas in the major domains of science content. Draft frameworks have been prepared by working groups within each of these areas, and the leaders of these groups have been working together to produce a complete document for public comment at a later date.

It will be of vital interest to anyone that has an involvement with geoscience education to take the time to review this framework when it is made available for comment. Such an interest need not be limited to those that work directly with precollege students, but also to those engaged in the preparation of the teachers of those students. And lest one believe their involvement to be limited in this regard, such as instructors of general education students, this conceptual framework will impact all of these students as they progress through our classes, having directly influenced the curricula they experience before they get to college.

Thus, the review and comment on the framework, and the subsequent standards, is something of a professional obligation for all of us engaged in geoscience education. The framework will come from the Board on Science Education of the National Academies, which can be found at <http://www7.nationalacademies.org/bose/>. While the framework is not yet available for review, it would be worth your while to explore this site. This is an extra commitment of time, granted, but like my experience with the draft standards as a graduate student, it is worth your while to grasp the direction standards and curricula will take even if you don't feel you can offer substantive comment. I urge you all to look for this opportunity in the future. The Geoscience Education Division of GSA, along with our related organizations (NAGT, NESTA, and AGI), will work to inform you of this chance.

Paleontology Trek

The Cottonwood Gulch Foundation is conducting their inaugural expedition in Vertebrate Paleontology in an ongoing excavation of an *Alamosaurus*, a giant sauropod dinosaur. The trek takes place Sunday July 11th through Sunday July 18th, 2010. Students can earn 4 college credits through Mesalands Community College, course GEOL 118: Paleontology Field Expedition

This trek is conducted in cooperation with the Bureau of Land Management, Albuquerque and Farmington is led by Executive Director Mike Sullivan and two Vertebrate Paleontologists with extensive fieldwork in New Mexico: Dr. Axel Hungerbuehler, Professor of Natural Sciences and Museum Curator, Mesalands Community College and Dinosaur Museum (Tucumcari, NM), and Dr. Robert Sullivan, Senior Curator of Paleontology and Geology, State Museum (Harrisburg, PA).

For more information about the Trek and about Cottonwood Gulch Foundation, contact Mike Sullivan at mike@cottonwoodgulch.org, or visit their web site at <http://www.cottonwoodgulch.org/>.

Mike Sullivan, Executive Director
Cottonwood Gulch Foundation

International Education Conference

The 6th International Conference on Geoscience Education (GeoSciEd VI) will take place in Johannesburg, South Africa 30 Aug – 3 Sept. This is the quadrennial conference of the International Geoscience Education Organization (IGEO). The emphasis of the conference will be on Geoscience Education in the developing world. There will be a suite of exciting field trips to some classic localities in South Africa. The website for the conference is <http://web.wits.ac.za/NewsRoom/Conferences/GeoSciEd>. Or for more information, please contact Mary Dowse at dowsem@wnmu.edu.

Mary Dowse
US Councilor to IGEO
Western New Mexico University

New UK Geoscience Education Initiative

A new specialist group of the Geological Society of London is being set up in order to provide a forum for the discussion of issues related to higher education in the UK geoscience community. The group will arrange meetings and workshops, promote geoscience education research and the link between teaching

and research, support early career professionals and work closely with other related national and international organizations.

The group will be launched at a one-day event entitled "Geoscience Graduates in the 21st Century" to be held at the University of Leeds on Wednesday 19 January 2011. The event will comprise presentations, workshops and discussion on current geoscience education issues. Colleagues from overseas are very welcome to attend.

More information is available at <http://www.gees.ac.uk/events/events.htm>. Or contact Helen King (helen@helenkingconsultancy.co.uk), or Jim Andrews (jra2@noc.soton.ac.uk).

Helen King

<http://www.helenkingconsultancy.co.uk>

AccessData Workshops Go Out with a Bang

The AccessData series of workshops came to an end this year, with the *Impacts* workshop held February 11-12, 2010, on the beautiful campus of Colorado College in Colorado Springs.



Since 2004, this series of workshops has brought together educators, scientists, data and software specialists, and curriculum developers to create exercises and activities using geoscience data for the Earth Explorations Toolkit (EET), available for use by educators at the K-16 levels. Published EET chapters incorporate the use of GIS, climate change models, remote sensing, and digital elevation models for exploring Earth's atmosphere, biosphere, lithosphere, and hydrosphere.

The *Impacts* workshop brought together data representatives, tool specialists, scientists, educational materials developers, and college- and high school-level educators, who have attended previous AccessData workshops, to discuss how the workshops have helped to move forward the use of geoscience data in education, and to develop ideas for evolving the workshops into a sustainable model.

The key conveners of the *Impacts* workshop – Tamara Ledley of the Technical Education Resource Center, and Mike Taber of Colorado College, both AccessData principle investigators – organized participants into three groups. Each group discussed and reported the immediate and long-term impacts of the workshops on its participants, with regard to teaching and curriculum development, as well as use of data and tools/software by professionals that have uses in education. Ideas for long-term sustainability of the AccessData workshop model became the culminating focus of discussion, as participants acknowledged the positive impacts their involvement has had on their professional endeavors and the desire to continue the work that the workshop series has begun.

For more information about the Earth Explorations Toolkit, visit <http://serc.carleton.edu/eet/index.html>. For information on the AccessData workshops, visit <http://serc.carleton.edu/usingdata/accessdata/index.html>.

Mark Hafen

University of South Florida

Participant: AccessData 2008, 2009, and *Impacts* 2010

History, Philosophy, and Sociology of Science Teaching



I would like to welcome you to <http://www.ihpst.org>, the website of the International History & Philosophy of Science Teaching Group. This organization through its biennial meetings and associated journal, *Science & Education*, encourages research informed by the history, philosophy and sociology of science and education to facilitate better teaching, learning and curricula in science. It has a particular interest in bringing these spheres of knowledge into teacher-education programs.

Through its activities and journal, the group promotes:

- The utilization of historical, philosophical and sociological scholarship to clarify and deal with the many curricula, pedagogical and theoretical issues facing contemporary science education.
- Collaboration between the communities of scientists, mathematicians, historians, philosophers, cognitive psychologists, sociologists, and science educators, and school and college teachers.
- The inclusion of appropriate history, philosophy, and sociology of science courses in science teacher-education programs.
- The dissemination of accounts of lessons, units of work, and programs in science, at all levels, that have successfully utilized history, philosophy, and sociology.
- Discussion of the philosophy and purposes of science education, and their place in, and contribution to, the intellectual and ethical development of individuals and cultures.

The group would like to build up its base of professors and graduate students within the Geosciences, and would like to encourage you to view the website, and read articles from the journal to see what the group has to offer.

For doctoral students, the group is creating a special presentation forum at the biennial conference (July 2011, Thessaloniki, Greece). This session will be held during a time outside of the regular sessions to encourage professors to hear what graduate students are researching and to enable graduate students to converse amongst themselves about their own research.

If you have any questions, or need any further information, please contact Glenn Dolphin (grdolphi@syr.edu), the graduate student representative to the IHPST executive council.

Glenn Dolphin
Syracuse University

Get Out in the Field with NAGT Far West Section

If you have ever wanted to get out and see some of the great geological sites in California, and wished you had a knowledgeable guide and mentor to explain what you are seeing, check out this wonderful opportunity: **The Field Conference of the Far Western Section of the National Association of Geoscience Teachers**, sponsored by California State University, Fresno (<http://nagt-fws.org/conferences.html>), to be held October 8-10, 2010. You don't have to be a teacher or a member to attend, and students of the Earth sciences are especially encouraged to join us. Some of the field trips that are lined up:



Saturday Field Trips:

- *Topographic Evolution of the Kings River Canyon: Fluvial, glacial and Hillslope Erosion in Response to Late Cenozoic Uplift and Climate Change* (Greg Stock, Park Geologist, Yosemite National Park)
- *Coeval mafic-felsic magmatism in the intrusive suite of Yosemite Valley* (Kent Ratajeski, University of Kentucky)
- *Emplacement of oceanic lithosphere into the western Sierra Nevada and its welding into continental basement by batholithic emplacement* (Jason and Zorka Saleeby, Cal Tech)
- *Growth and internal evolution of Jurassic and Cretaceous magmatic plumbing systems: an examination of the tilted Jurassic Guadalupe Igneous Complex and comparison to the Cretaceous Tuolumne Batholith* (Scott Patterson, USC, and Keith Putirka, CSU Fresno)
- *Southern Diablo Range geology: Recorder of past subduction and current active tectonics* (John Wakabayashi, CSU Fresno)

Sunday Field Trips:

- *Anomalous subsidence and uplift along the southwestern Sierra Nevada in relation to underlying mantle dynamics* (Jason and Zorka Saleeby, Cal Tech)
- *Ice Age (Middle Pleistocene) Fossils at the Fairmead Landfill, a Visit to the Madera County Fossil Discovery Center* (Bob Dundas, CSU Fresno)
- *Geology and Natural History of the McKenzie Table Mountain Preserve* (Craig Poole, Fresno City College, and Chris Pluhar, CSU Fresno)

Friday and Saturday Trip:

- The San Andreas fault in Central California (Ramon Arrowsmith, Arizona State University)

Friday Evening Presenter:

- Chris Pluhar (CSU Fresno), ***Table Mountains and Tectonics, What Canyon-Filling Lavas of the sierra Nevada Reveal About Miocene California***

Saturday Evening Presenter:

- Jason Saleeby (Cal Tech), ***Sierra Nevada Geology from the 225 km Mantle Seismic Discontinuity to Mt. Whitney Summit Elevations***

Check out the Far West Section NAGT Website (<http://nagt-fws.org/>), or contact Paul Troop (paul.troop@sbcglobal.net) for more details (registration information will be posted soon).

Meetings of the Far West Section are economical ways to see a lot of California, Nevada and Hawai'i, usually less than \$150, and lodging in the Fresno area is economical. Our invitation extends to anyone who is interested in learning more about California geology. These conferences are wonderful ways to get familiar with the geology of a fascinating region, the western coast of the United States.

Garry Hayes, Conference Coordinator

National Association of Geoscience Teachers, Far West Section

<http://nagt-fws.blogspot.com/2010/06/field-trips-at-october-8-10-fresno.html>

GED Student Travel Grants



Students in geoscience education: are you presenting at GSA this fall? The Geoscience Education Division will offer several travel grants up to \$250 to student members who are presenting work at the 2010 GSA Annual Meeting in Denver. Grants will be awarded based on merit and financial need.

To be eligible for an award, you must be:

- A student member of GSA and the Geoscience Education Division in good standing – to join contact GSA Sales and Services at gsaservice@geosociety.org.
- Presenting a poster or talk at the 2010 Annual Meeting in a geoscience education topical or discipline session.

To apply for the award, please send the following (as a single email attachment):

- 1) Confirmation of your standing as a student member of the GED (member number).
- 2) A copy of your accepted abstract.
- 3) A current CV, limited to 2 pages.
- 4) A brief itemized budget and statement of your financial needs, including all other sources of funding.

Applications should be sent to Steven Schimmrich at schimmrs@sunyulster.edu, and must be received by August 1, 2010 for consideration. Notification of grant status will be made prior to the registration deadline, and awards will be made following confirmation of attendance at the annual meeting.

Faculty, please direct your students' attention to this opportunity!

Steven Schimmrich, GED 2nd Vice Chair
SUNY Ulster

New at Falls of the Ohio State Park



Falls of the Ohio State Park
Clarksville, Indiana

Alan Goldstein, from Falls of the Ohio State Park in Clarksville, Indiana, has put together an on-line guide to help people identify rocks that look like fossils, but are not: <http://www.falloftheohio.org/Pseudofossils.html>.

If you have photos of pseudofossils – or fossils that are regularly misidentified by the public – send them to Alan (with a little basic data) and he will add them to the site.

Also, new to the Falls of the Ohio's web site is a guide to the Devonian corals at the Falls of the Ohio and surrounding areas: <http://www.falloftheohio.org/DevonianCorals.html>. Alan will be adding additional photos of specimens as time allows. The long-term goal is to provide similar guides to the multitude of Silurian and Devonian fossils of the area.

Alan Goldstein, Certified Interpretive Planner
Interpretive Naturalist / Park Paleontologist
Falls of the Ohio State Park
www.falloftheohio.org
www.facebook.com/falloftheohio

Cochise is a Rock Star!

The Cochise Geology Home Page and the Virtual Geology Museum are both alive and doing well! The number of first-time visitors is rapidly approaching the 1.5 million mark. Cochise College recently moved these two websites to a new server in order to better handle the large number of web pages (nearly 12,000). In the process, the URL changed and the listing of these two sites temporarily disappeared from Google listings.

The Virtual Geology Museum can still be found at <http://skywalker.cochise.edu/wellerr/VGM/intro.htm>, and the Cochise College Geology Home Page is at <http://skywalker.cochise.edu/wellerr/aawellerweb.htm>.



Cochise College is planning to expand and improve these educational websites over the next year. Watch for new additions to these useful educational tools.

Roger Weller
Cochise (AZ) College

Call for Proposals: Earth Science Education Sessions

The GSA Cordilleran/Rocky Mountain Section annual meeting will be held in Logan, Utah, May 18-20, 2011. The Technical Program Committee is soliciting proposals for theme sessions for the meeting. We are looking forward to a diverse meeting that includes special sessions relevant to the geology of western North

America as well as other topics of broad and current interest in the geosciences. We are particularly interested in proposals for Earth Science Education sessions in the program.

If you would like to organize and convene a theme session, please contact the Technical Program Chairs, Lisa Ely (ely@cwu.edu), and Susanne Janecke (susanne.janecke@usu.edu), with your initial session ideas as soon as possible. Full proposals including (1) name, address and e-mail of convener(s); (2) theme session title; and (3) 1-paragraph description of session are due by e-mail to the Technical Program Chairs by August 1, 2010.

Cordilleran Section: Lisa Ely, Central Washington University,
Rocky Mountain Section: Susanne Janecke, Utah State University

GLOBE Centered on Calgary

The GLOBE Program (<http://www.globe.gov>) invites teachers and science and education community members to join GLOBE Partners and Country Coordinators in the 14th GLOBE Annual Partner Meeting and Professional Development Workshop, taking place 29 July – 3 August 2010, in Calgary, Alberta, Canada.



Professional Development activities, in support of the conference theme, *Exploring Climate Through GLOBE Student Research*, include how to guide students from observations of weather and the environment to an informed understanding of climate and how to look at climate as a part of the entire Earth system. There will also be a full day of training focusing on GLOBE's Earth System Science Projects (ESSP) Carbon Cycle, CloudSat, From Local to Extreme Environments, Seasons and Biomes, or Watershed Dynamics.

For more information including the conference agenda, a full description of the professional development workshop activities and field study sites, links to register and to submit poster presentation abstracts, and information about optional post-meeting tours to Lake Louise and Banff National Park visit: http://www.globe.gov/whats_new/events/2010/annual.

Jan Heiderer, Communications Coordinator
The GLOBE Program (University Corporation for Atmospheric Research)

Your 2009-2010 GED Officers and Key Contacts

Chair:	Eric J. Pyle, James Madison University, pyleej@jmu.edu
First Vice-Chair:	Paul E. Baldauf, Nova Southeastern University, pb501@nova.edu
Second Vice-Chair:	Steven H. Schimmrich, SUNY Ulster County Comm. Coll., schimmrs@sunyulster.edu
Sec.-Treasurer:	Christopher L. Atchison, Ohio State University, atchison.6@osu.edu
Past Chair:	Elizabeth Nagy-Shadman, Pasadena City College, eanagy-shadman@pasadena.edu
Newsletter Editor:	Mark R. Hafen, University of South Florida, mhafen@usf.edu
Webmaster:	Hugh Rance, Queensborough Community College/CUNY, hughrance@rcn.com
GSA Council Liaison:	Lisa D. White, San Francisco State University, lwhite@sfsu.edu
GED Web Site:	http://gsaged.org/
GED on Facebook:	http://www.facebook.com/#!/group.php?gid=386803165827



MEMBERS OF GSA GED DIVISION

Ballot for 2010 - 2011 Officers Geoscience Education Division (GED)

Please vote by completing the section at the bottom and mailing it to GSA postmarked no later than July 30, 2010. Biographical information on the candidates is on the following page. You may vote online by July 30 at: <https://rock.geosociety.org/ballot/vote.asp?Name=ged>

Access the online ballot by using either your GSA member number or your e-mail address that is in your GSA member records – but not both forms of ID. For membership assistance, please contact GSA at: gsaservice@geosociety.org or (303) 357-1000 or call toll-free in the U.S. at (888) 443-4472. You may also submit your completed ballot by Fax by July 30, 2010, at FX (303) 357-1074.

Division Chair (one-year term; please vote for one candidate):

Paul E. Baldauf

Write-in _____

First Vice-Chair (one-year term; please vote for one candidate):

Steven H. Schimmrich

Write-in _____

Second Vice-Chair (one-year term; please vote for one candidate):

Moosavi, Sadredin (Dean) C

Write-in _____

Division Bylaws Amendment:

The Division Management Board is proposing to add the following statement to the current Bylaws Article IV. A copy of the full Bylaws can be found on the Division website.

Proposed Statement to Add to Current Bylaws:

Vacancies. Any vacancy occurring during the term of any elected officer of the division shall be filled by appointment of the management board, and such appointee shall serve until the next annual business meeting of the division.

_____ Yes to Adopt Statement

_____ No to Reject Statement

Mail Ballot To: Division Office, Geological Society of America
PO Box 9140, Boulder, CO, 80301-9140

You must complete the following section to validate your ballot:

Your Name (printed) _____

Your Signature (required) _____

Your GSA Member Number * (required) _____

* Your 7 digit GSA member number is on the top right corner on the external mailing label. If you need assistance with your member number, call: (888) 443-4472

Biographies of Candidates for 2010 - 2011 Officers Geoscience Education Division

Division Chair 2010 – 2011 (1 year term)

Paul E. Baldauf. Tectonics; science educ. Educ: BA Geol, U Tennessee; MS, PhD Geol, George Washington U. Prof Exp: CDM Fed Progs, Proj Geol 88-89; Heidelberg Coll, Asst Prof Geol 98; Union Inst & Univ, Prof/Fac Advsr 98-present. Conc't Pos: Univ at Buffalo, Lect 03-present. Prof Affil: GSA mbr since 88; NAGT, CUR. Rsrch Int: Andean tectonics, elementary & secondary science education.

Statement of Interest: For the past nine years, I have worked for a nontraditional university in Florida called Union Institute & University. Our undergraduate students are mostly first generation college students and come to our university with weak skills in science. Most of our students are education majors and will become teachers in Dade and Broward Counties, the 4th and 5th largest school districts in the country. I've been a leader within my institution in research and policy issues in science education, pedagogy, and underserved students. I would like to bring my knowledge of these issues to the GED management board and learn more about what my colleagues are doing around these issues.

First Vice-Chair 2010 – 2011 (1 year term)

Steven H. Schimmrich. Structural geology; Earth science education. Educ: AA Earth Science, SUNY Ulster; BA Geol, SUNY New Paltz; MS Geol, SUNY Albany. Prof Exp: Kutztown Univ, Instructor 97-98; Calvin College, Asst Prof 98-99; SUNY Ulster, Assoc Prof 99-present. Prof Affil: GSA since 92; NAGT. Honors/Awards: SUNY Chancellor's Award for Excellence in Teaching 07. Rsrch Int: Hudson Valley geology; geological education.

Statement of Interest: Strong believer in the unique educational mission of community colleges and the importance of representation in the GED by CC faculty.

Second Vice-Chair 2010 – 2011 (1 year term)

Moosavi, Sadredin (Dean) C. Geoscience Education; biogeochemistry. Educ: AS Science, Community College of the Finger Lakes; BS Environmental Chemistry, SUNY Environmental Science & Forestry; MS Earth Science,; PhD Earth Science, University of New Hampshire Prof Exp: Oyster River High School, Science Teacher, Durham, NH 98-00; Minnesota State University-Mankato, Dept. of Chem. & Geol. Asst. Prof 00-05; Walden University, M.S. in Education Full Time Faculty 05-06; Tulane University, Dept. of Earth & Env. Sci., Professor of Practice 07-09; University of Massachusetts-Dartmouth, Assistant Professor, 09-Present. Prof Affil: GSA since 00; AGU, NAGT, NSTA, AAUP. Honors/Awards: Invited AGU Presenter NSTA 3/09. Rsrch Int: Geoscience education, place -based teaching, service learning, arctic/boreal biogeochemical cycling, climate change.

Statement of Interest: I wish to build bridges between the academic and K-12 wings of geoscience education by facilitating communication across the institutional divides which inhibit implementation of best practices and quality content instruction across the geosciences.