THE GEOLOGICAL SOCIETY OF AMERICA

Geoscience Education Division

<http://geosciedu.org/> Winter/Spring 2005

From your Newsletter Editor

I apologize for the lateness of this "winter" newsletter. For many of us, it's already spring! And I'm afraid I may have missed several deadlines related to your news items. Nevertheless, I've included them just so our GED members are aware of the opportunities for future reference.

As always, if you have any news items for the next GED newsletter (Summer 2005), send them to me at <mhafen@cas.usf.edu>. I hope to see many of you in Salt Lake City!

Mark R. Hafen
Department of Geography, University of South Florida

Schultz Promoted at Elmhurst College

After nearly seven years of functioning as an adjunct faculty in the geosciences at several institutions, Richard Schultz has accepted an offer of Assistant Professor in the Department of Geography and Environmental Planning at Elmhurst College in Elmhurst, Illinois. His primary responsibilities will be teaching Weather and Climate (GEO 101), Physical Landscapes (GEO 102) and GIS (GEO 307). Additionally, he will function as co-director of the newly formed GIS Certification Program at Elmhurst College. The Departmental Website is located at <http://www.elmhurst.edu/~geo>.

Rich has recently been teaching several online courses in the geosciences, and presented a paper at the GSA in Denver in November entitled, "A Comparison of Undergraduate Geoscience Course Offerings: Online versus On-Ground."

Rich is interested in corresponding with other educators who have taught online in the geosciences (geology, geography, geochemistry, GIS, etc.) Please consider this as a formal call for individuals who fall into that category. Rich can be reached via e-mail at <richs@elmhurst.edu> or by phone at 630-617-3296, or visit his website at <http://www.therockdoctor.com>.

New York State Earth Science Teachers Conference

Notes From the 1st New York State Earth Science Teachers Conference

Nearly forty teachers gathered for the first NYS Earth Science Teachers Conference at the Lamont-Doherty Earth Observatory of Columbia University in Palisades on August 10 – 12, 2004. Over three days, they had opportunities to learn about cutting-edge research from leading scientists, engage among themselves in discussions to address key issues facing teachers and students, and explore new ways to incorporate field experiences in their courses. Dr. Michael Passow hosted educators from across the State as part of the LDEO "Earth2Class Workshops for Teachers" program, with partial support from the National Science Foundation.

Three leading researchers shared their expertise with the participants. Dr. Wally Broecker, Newberry Professor of Earth and Environmental Science at Columbia and a world leader in the field, gave the teachers new insights about climate change. His discussion about "Putting 'The Day After Tomorrow' Movie in Context" provided intriguing thoughts about how much reality does or does not lie behind the depiction of scientific ideas in popular media. Dr. Broecker's research investigations have been significant components of the LDEO Geochemistry program for several decades <http://www.ldeo.columbia.edu/res/div/gc/>. In addition, he recently participated in a Public Radio Project about global climate warming <http://www.ldeo.columbia.edu/news/2004/08_13_04.htm>.

Dr. David Goldberg illustrated the breadth of investigations conducted in the geosciences with "A Brief Review of Scientific Ocean Drilling and Current Research on Methane Gas Hydrate." He provided a historical picture from the Deep Sea Drilling Project that started in the 1960s through the recently completed Ocean Drilling Program to the recently begun Integrated Ocean Drilling Program <http://iodp.tamu.edu/index.html>. Dr. Goldberg serves as Director of the Borehole Research Group <http://www.ldeo.columbia.edu/BRG/>.

Dr. Klaus Jacob shook up the teachers with his predictions about "Earthquakes in the Eastern US—Is New York at Risk, and What Can We Do about It?" His work on identifying and seeking strategies to mitigate damage from seismic events are now major parts of the Center for Hazards and Risk Research at Columbia University <http://www.ldeo.columbia.edu/chrr/>.

Participants glimpsed some of the LDEO facilities during tours of the Deep Sea Sample Repository <http://www.ldeo.columbia.edu/res/fac/CORE_REPOSITORY/RHP1.html>; the Ocean Drilling Program's East Coast Repository <http://iodp.tamu.edu/curation/repositories.html>; and the Ocean Bottom Seismology lab. They also learned about the rapidly developing collections of resources available for students and teachers through the Digital Library for Earth System Education <http://www.dlese.org>. Educational resources created by the American Geological Institute and distributed through It's About Time were provided to participants. Additional samples distributed to participants included McDougal Littell publications, educational CDs from the Integrated Ocean Drilling Program, NASA posters, and eurypterid fossils donated by Lang's Fossils of Ilion.

During several sessions, participants engaged in small and full group discussions about a wide variety of issues facing Earth Science education, under the leadership of Glenn Dolphin, Science Teachers Association of New York State Earth Science Director-at-Large. The four key discussion areas were "Planning/Syllabus/Resources"; "Improving Teacher Content Knowledge, Especially in Key Theme Areas"; "Expanding Opportunities for All Students"; and "Helping Students Develop a Sense of Stewardship." These and other themes will be further considered during follow-up formats over the coming academic year.

The final day of the Conference included two field experiences. Dr. Kim Kastens, LDEO geologist and investigator into how people learn about their environment, led one group in a trip across Rockland County developed around the theme, "Not Just a Backdrop for Show and Tell—Learning from a Field Experience." Steve Kluge took a second group to Bear Mountain State Park and the Hudson Highlands.

Some of the almost forty teachers came from as far away as Rochester and eastern Long Island, staying at nearby St. Thomas Aquinas College. The Conference was partially supported by a National Science Foundation Geoscience Education Division Grant. Most learned about the Conference through the ESPRIT List server <http://external.oneonta.edu/mentor/> and used this venue to share many of their follow-up reactions.

Evaluations of the Conference were highly favorable. Many participants singled out as strengths the excitement of learning directly from the research scientists who developed the theories taught in schools, and opportunities to network with colleagues from across the State, many of who previously were just names on the Earth Science List server. Patti Winn of Fairport was quoted in a Rockland *Journal-News* story about the conference, saying, "Just to get ideas and share the classroom stuff, and to be able to come to a research facility like Lamont to see first-hand scientists in the field—it was fascinating. It gave me ideas of what I can do in the classroom." On a 1–5 (most favorable) scale, the scientist presentations received 4.6. Teacher-to-teacher discussions received 4.7. All other aspects of the Conference received scores between 4 and 5.

2nd New York State Earth Science Teachers Conference

The Second New York State Earth Science Teachers Conference will be held 29-31 July 2005, at the Lamont-Doherty-Earth Observaory of Columbia University, Palisades, NY. The conference will provide opportunities to follow up from the 1st Conference and also the American Geological Institute's "Revolution in Earth Science Education 2." Much of the focus for this 2nd Conference will be to:

- Develop curriculum examples based on the Physical Setting: Earth Science Core Concepts.
- Provide examples of classroom investigations appropriate for curriculum units.
- Demonstrate ways to integrate materials available through the Digital Library for Earth Systems Education <http://www.dlese.org>, the American Geological Institute Education Program <http://www.agiweb.org/education/teachers/curriculum_materials.html>, and other national educational initiatives.

- Enjoy field experiences in the area, which lies within the Newark (Triassic) Lowlands and Palisades Sill, and not far from the Hudson Highlands, Manhattan Prong of the New England Uplands, and, of course, the Hudson River (a great place to kayak!)

Keynote Speaker will be Dr. Michael Purdy, Director of the Lamont-Doherty Earth Observatory.

The Conference will be held at the Lamont-Doherty Earth Observatory of Columbia University, in Palisades, with some activities and housing at a very modest rate at St. Thomas Aquinas College in nearby Sparkill. Partial support for this Conference is provided through a National Science Foundation Geoscience Education Grant to the Earth2Class program. For more information: <www.earth2class.org> or <michael@earth2class.org>.

Michael J. Passow
<Michael@Earth2Class.org>

New York State's First DLESE Ambassadors Trained

Thirteen New York State teachers began a pilot program to serve as NYS "Ambassadors" for the Digital Library for Earth System Education (DLESE) with training at the Lamont-Doherty Earth Observatory of Columbia University in Palisades and St. Thomas Aquinas College in Sparkill. This is a pilot program that DLESE will eventually expand to other states. The educators, selected because of their activity on the NYS Earth Science List-server and other factors, will provide programs to colleagues in their home regions to demonstrate the capabilities of this online resource for teachers and students.

DLESE <www.dlese.org> is a continuously developing component of the National Science Digital Library <www.nsdl.org>, a major undertaking of the National Science Foundation to provide access to quality electronic resources. DLESE is a community effort involving educators, students, and scientists working together to improve the quality, quantity, and efficiency of teaching and learning about the Earth system at all levels. DLESE resources include electronic materials for both teachers and learners, such as lesson plans, maps, images, data sets, visualizations, assessment activities, curriculum, online courses, and much more.

The first NYS DLESE Ambassadors include Glenn Dolphin (Union-Endicott and STANY Earth Science SAR); Steve Kluge and Drew Patrick (Fox Lane HS); David Robison (Wilson HS); Julie Ann Hugick (Eastchester MS); Cheryl Dodes (Weber MS, Port Washington); Robert Meyer (Schreiber HS, Port Washington); Joyce Kruger-Kneupfer (Seton Catholic HS, Binghamton); Myriam Ibarra (Nottingham HS, Syracuse); Greg Hofer (Theatre Arts Production Co. School, Bronx); Rose Sanders (Ramapo HS, Spring Valley); and mentor-teachers Marion Weaver (Alfred) and Alice Kastens (Great Neck.) During the next year, the DLESE Ambassadors will provide workshops through STANYS and other professional conferences, regional and local staff development programs, and other venues.

Bryan Aivazian, DLESE's National Coordinator for the K-12 Ambassador Program, and Neil Holzman of LDEO conducted the training of the "NYS Ambassadors," assisted by Michael Passow. Dr. Kim Kastens of LDEO and member of the DLESE Governing Board, provided a special presentation about the DLESE Community Review System, a unique feature of DLESE that allows teachers to provide feedback, such as "teaching tips" and descriptions of how use of the system worked with students under actual conditions.

Less than five years old, DLESE already allows students and teachers to search a user-friendly format to identify and then connect with web sites that have been selected through well-defined rubrics for quality and usefulness. DLESE is rapidly becoming the most efficient way to locate curriculum, field trip, lab investigation, and other digital resources at appropriate grade levels from elementary through graduate school, as well as for geoscience research.

Anyone may use DLESE. Most users will type in a key word or phrase in the search box on the home page, then refine the search by selecting from grade level and resource type menus. More elaborate searches are possible by selecting from specified collections or National Science Education Standards. DLESE has sponsored national conferences for the past five summers. These have helped build the DLESE community of users and contributors. They provide one mechanism to obtain feedback on community needs for library services. In addition, the meetings have provided opportunities for interaction, collaboration, and networking among library resource and curriculum developers, collections builders, educators at all levels in both formal and informal education, technology experts, and others interested in using the Digital Library for Earth System Education. The 2004 meeting was held at the University of Wisconsin July 11 – 13. For more information, see <http://www.dlese.org/annualmtg/2004/index.html>.

(continued on p. 4)

Whether or not you have a DLESE Ambassador near you, now is the time for all Earth Science teachers to begin exploring what DLESE can provide for you and your students.

Michael J. Passow
<Michael@Earth2Class.org>

Skehan Reflects and Illustrates

Jim Skehan, Emeritus Prof. Boston College presented an invited reflection in Battell Chapel on the life and contributions to geology of Professor Emeritus John Rodgers of Yale University. John, age 89, was a member of the National Academy of Sciences, Editor of the *American Journal of Science* (1954 to 1995), and an expert on "fold and thrust" mountains world-wide; his signature achievements were the Tectonics of the Appalachians, 1970, as well as the compilation of the Bedrock Geologic Map of Connecticut in 1985.

Jim also presented an invited illustrated lecture, "Introduction to Plate Tectonic Evolution of the Northern Appalachians," to the 41st Annual National Meeting of the American Institute of Professional Geologists (AIPG) in the Gideon Putnam Hotel and Convention Center, Saratoga Springs, N.Y. This lecture traced an interpreted assembly and breakup of three supercontinents, parts of which are part of the evolving development of the orogen over the past one billion years.

Relocated Website for all Things Geological

Many of you may remember that Roger Weller of Cochise College had provided us with a link to his all-encompassing website of geologic photos, maps, and other instructional materials. Due to security issues, the site has been moved to <http://skywalker.cochise.edu/wellerr/aawellerweb.htm>. Check out this incredibly comprehensive site!

The entire website has been recreated and is extensively hyperlinked. There are now more than 3080 illustrations of minerals, rocks, fossils, gems, meteorites, lunar features, maps, and virtual geology field trips. All of these photos are copyright free for non-commercial educational uses. The website was created to serve the needs of geology and earth science instructors as well as the general public. In addition, these are more than 9500 organized links in geology. One especially interesting web collection is "U.S. Geology Links" in which geology links for every state have been assembled. Another included website is an illustrated lecture on how to prepare thin sections that was created by a Cochise College student. Other mini-lectures in geology created by students will be added to the website.

Questions or comments? Roger can be reached at <wellerr@cochise.edu>.

Rock Solid Opinions

GSA and GED member Robert M. Thorson is now a weekly op-ed columnist for the *Hartford Courant*, America's oldest continuously published newspaper (circulation ca. 245,000). Most of his columns deal with earthly matters, such as climate change, hurricanes, land subsidence, watershed processes, land conversion, and satellite imaging. For a list of columns, follow the links to his curriculum vitae from <http://stonewall.uconn.edu>. Should any GSA members be interested in discussing op-ed geoscience, he would be pleased to make contact. His e-mail is <robert.thorson@uconn.edu>.

GSA Topical Session: GIS and Interdisciplinary Education

Your interest is solicited for a Topical Session 101 for the 2005 GSA Meeting to be held in Salt Lake City, Utah on 16-19 October. The proposed session is entitled, "Interdisciplinary education: Applications of GIS and the infusion of spatial concepts across the curriculum." The co-conveners are seeking your abstracts for an oral or poster presentation. From the interest expressed in your e-mails, invited speakers will be selected as part of the proposed oral and poster topical sessions. The co-conveners of the session will be Richard B. Schultz, Elmhurst College <richs@elmhurst.edu>, Mark R. Hafen, University of South Florida <mhafen@cas.usf.edu>, and J. Christopher Haley of Virginia Wesleyan College <jchaley@vwc.edu>.

This interdisciplinary session, emphasizing the diverse and unique applications of GIS and education of spatial concepts, showcases global applications for GIS and creates an awareness for the infusion of spatial concepts across the educational curriculum. While the session is most certainly open to anyone wishing to submit an abstract, the predominant focus will

be geoscience education and spatial concepts "across the curriculum." The session is expected to create a sharing of cross discipline techniques for spatial concept education. There will be both an oral session and accompanying poster session to allow for interactive discussions.

The electronic abstracts submission form will be “live” around April 1. This form can be found on GSA’s website at <www.geosociety.org>. Submitters are encouraged to use this form. Abstracts deadline is midnight, Pacific Time, July 12, 2005.

Richard Schultz, Elmhurst College
Mark Hafen, University of South Florida
Christopher Haley, Virginia Wesleyan College

GED Member Receives Research Award

Congratulations are in order for Abani Samal, Southern Illinois University-Carbondale, who will receive the 2004 Student Research Grant award from the International Association for Mathematical Geology. Abani can be reached at <arsamal@yahoo.com>.

Can Science and Religion Get Along?

> Professor Emeritus Gordon Winder, University of Western Ontario, Department of Earth Sciences, London, Canada, was recently invited to tackle the thorny issue of whether science and religion can co-habitate. And to keep it short! Below is the text of his op-ed piece in the UWO News, which can also be viewed at <http://communications.uwo.ca/western_news/opinion.html?listing_id=16831>.

The UWO News editor invited me to write a 600 word essay on religion and science as I have explored this argument in fact for almost 30 years. A friend of his was griping that religion seems to be getting crowded out (reason-wise) by science; is there a way he could have both? YES!! This argument has raged for over 140 years, manifest by a mountain of literature; in my office two metres plus of publications have a small sign - R.I.P.! Consider some new ideas.

Firstly a prediction - sometime in this 21st century, this argument will be identified as the MOST foolish, and ridiculous, and confusing debate of the 20th century. PERIOD! Present activity is subdued compared to twenty years ago! May it follow geocentricity into oblivion.

Examples of this confusion - the friend specifies 'religion'. Actually, not 'religion'. Only Christianity! No other religion!

The friend specifies 'science'. No problem about the periodic table of chemical elements, heliocentricity, the laws and theories of Newton, Charles, Boyle and many others.

The argument is about Darwin's evolution and the age of the earth – young or old? Defining basic terms is essential - creation (something coming into existence out of nothing - metaphysical); evolution (change with continuity - physical). Commonly the terms are used interchangeably. Confusion and obfuscation are one means of perpetuating the argument.

Darwin's evolution is considered as one of the ten most important theories of all science. In simplest terms, one species originates from a previous species. Many years ago I was asked by a conservative Christian if I had ever read the Bible. No! - even though I have been a life-long church member. So I did! Before I got to the end of Genesis 1, I realized this is a super-brief but reasonably accurate account of earth's history. But more remarkable, speciation, the basic principle of Darwin's evolution, can be understood therein.

Scriptural literalists argue if it's in Genesis, then it's truth!! Darwin's basic speciation is there so it must be true, isn't it? Do you think literalists accept my analysis? As a student at a Christian college proclaimed “Yes, I understand it, but I still don't believe it!” Ho-hum!! Lithified minds are commonplace. [By the way, my 700+ word explanatory essay with two pictograms, is available by e-mail at <cwinder@uwo.ca>.]

The age of the earth - scriptural literalists insist those Genesis 'days' are '24 hours'. Sir Issac Newton, a Biblical scholar, explained they can't be 24 hours, and therefore can be very long periods of time, thus an old earth. [My analysis on the age of the earth, mostly the scientific evidence, and Newton's explanation, is available by e-mail.]

The origin of life - Charles Darwin espoused that evolution applies to the succession of organisms through geological time and the vast array of presently living forms - but not the origin of life. Explaining the origin of life requires a definition of 'life'. What happened when 'life' started? [My definition of 'life' is available by e-mail, too.]

Scientific creationism - Does the literature and rhetoric address the evidence for 'creation'? No. The objective is question the evidence for 'evolution' by resorting to endless debating, obfuscation, changing the subject, and similar confusing tactics. The words 'no', 'not', 'never' and other negatives are manifest in the literature. This is the methodology of the opposition in government! Thus 'scientific creationism' is not scientific; it is political - and fraudulent!! [My commentary on 'scientific creationism' (ugh!), is available by e-mail.]

So what should the Western News editor's friend do? You can't lick 'em, so join 'em!!

Accept the determinations of evolutionists and 'old'sters. Once confidence has been established, explain that their conclusions are compatible with your convictions based on another Source, within which the basic evidence for Darwin's evolution and an 'old earth' can be understood.

When the pervasive understanding is that science and religion have a positive and compatible relationship, then the benefits for society will be greater than the simple sum of the two.

Gordon Winder
University of Western Ontario

Educating Students in the Middle East

The Petroleum Institute announces the first annual Middle East Teachers of Science, Mathematics and Computing conference that will be held in Abu Dhabi, United Arab Emirates on 26-28 April 2005. The theme of the conference is "Strategies for Effective Learning in the Middle East" and there will be a number of regional and international invited speakers. There will be presentations on most of the sciences, including the geosciences, as well as a General Session on teaching techniques and curriculum development. While the emphasis is on educating students in the Middle East, the conference is open to all teachers from secondary through tertiary levels worldwide.

For more information, please visit the Petroleum Institute website <www.pi.ac.ae> and watch for updates. Persons interested in attending may register through the conference website at <http://www.pi.ac.ae/metsmac/index.htm> by 1 March 2005. [Note: Apologies from your editor for not getting this newsletter out prior to the registration deadline!]

Jim Leanderson
Petroleum Institute
Abu Dhabi, UAE

Geoscience Education Program at Kent State

GK-12: Inquiry-Based Approaches to Earth System Science: A Unique Opportunity to Expand Your Horizons in Earth and Atmospheric Sciences

The Departments of Geography and Geology at Kent State University seek nine highly motivated students interested in combining their research interests in Earth and Atmospheric Sciences with an opportunity to work in middle and high school science classrooms. This graduate-level intensive Geoscience Education program is part of an NSF-funded GK-12 Initiative, and will include completing a science-related research thesis or dissertation and activities assisting in-service middle/high school teachers in Stark County, Ohio. Students completing the program will graduate with a Masters or Ph.D. degree in Geography or Geology from Kent State University.

Students in the program will conduct research in climatology, geomorphology, remote sensing, sedimentology, or oceanography (see <http://ksuvirtual2.geog.kent.edu/GK12> for details).

Qualifications of Applicants: All applicants must be citizens, nationals, or permanent residents of the United States at the time of application as stipulated in the NSF GK-12 Program Solicitation. They must have a minimum overall GPA of 3.30 in an undergraduate program in Geography, Geology, or an allied field at the time of application and an anticipated degree completion date of no later than August, 2005. Applicants for the Ph.D. program must also have a minimum overall GPA of 3.50 in their Masters program.

Students with a demonstrable interest in teaching and education, as indicated by completion of either a minor in education or appropriate educational coursework, or who have mentoring or tutoring experience, will be given preferential consideration during the selection process. Well-qualified candidates will be interviewed in person or by phone by the selection committee. Because students will be working in middle and high school classrooms as part of the program, all participants must pass standard background checks conducted in compliance with Ohio state law.

Compensation: Each of the nine GK-12 Fellows will receive a $30,000 stipend for 12 months, and a full tuition waiver, renewable for up to three years. Target Date: For primary consideration, applications must be postmarked by March 11th, 2005. [Note: Apologies from your editor for not getting this newsletter out prior to this deadline!]

For further information and to apply on-line please go to <http://ksuvirtual2.geog.kent.edu/GK12/>.

Dr. Mandy J. Munro-Stasiuk
Kent State University

SERCH-ing for Space Science Awareness

The Southeast Regional Clearinghouse (SERCH) is pleased to announce the release of our 2K5 Funding Opportunity. We encourage you to please share this announcement with your regional science and education contacts.

Overview of SERCH

SERCH is a program funded by NASA's Science Mission Directorate (SMD). Our purpose is to promote Earth and space science awareness and enhance interest in science, math, and technology through the use of NASA's SMD mission data, information, and educational products.

SERCH works closely with 14 Space Grant consortia (AL, AR, DC, FL, GA, KY, LA, MD, MS, NC, PR, SC/VI, TN, and VA) throughout the southeastern United States. SERCH serves as a broker and facilitator of services between the region's educational community and researchers involved in SMD missions.

The objective of this SERCH opportunity is to support education and outreach initiatives, within the SERCH region, that will increase the awareness and understanding of Earth-Sun system science, solar system research and universe exploration. SERCH is particularly interested in proposals for education and outreach efforts that support the vision and mission of NASA, NASA's Vision for Education, the Science Mission Directorate (SMD) goals and the Support Network Forums.

Furthermore, SERCH is interested in proposals for education and outreach efforts that support the Broker/Facilitator operating principles, which include:

- Establishing strong and lasting partnerships between the Earth/space science and education communities.
- Highly leveraged programs/projects, relying upon a multiplier effect to reach as many communities, teachers, and students as possible.
- Being inclusive of the broadest possible audience. Activities that foster the meaningful participation of underserved and/or underrepresented groups are encouraged.

Applying for the 2005 Funding Opportunity |

1) Read the full 2005 Funding Opportunity found at the SERCH website in both PDF and Word format: <http://serch.cofc.edu/funding/2005opportunity.htm>.

2) Complete the on-line Letter of Intent at the SERCH website, before February 28, 2005: <http://serch.cofc.edu/funding/2005_intent.htm>. Include a concise (200-300 word) abstract describing the objective of the proposed effort and the method of approach. Proposals will not be considered if the on-line letter of intent is not received by the deadline.

3) Postmark proposals on May 2, 2005 to be sent to your state Space Grant office.

Note 1: Proposals sent to the SERCH home office will not be considered. *(continued on page 8)*

Note 2: Proposals received without the required number of copies (1 original plus 5 copies) will not be considered.

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Free Climate Software

We recently released free global climate modeling software for use in earth science courses that are teaching about climate change. The software runs on both Mac and Windows platforms, and allows teachers and students to do 3-d global climate model simulations and analyze the data using a graphical user interface. Well over 10,000 people have downloaded the software, but I fear that we are not reaching our target audience (earth science teachers) with most of those downloads. You can see a brief article on the subject, and links to the software downloads, on our web site at <http://www.giss.nasa.gov/research/news/20050110b/>.

Mark Chandler
Columbia University

McManus Publishes Book on Teaching Innovations

"Leaving the Lectern: Cooperative Learning and the Critical First Days of Students Working in Groups," a book by Dean A. McManus, School of Oceanography, University of Washington, with a preface by Shirley M. Malcom, Head, Directorate for Education and Human Resources Programs, American Association for the Advancement of Science, will be published in June 2005 by Anker Publishing Company. The book is written mainly for instructors of undergraduate science courses who have so far not fathomed the application of innovative methods to their own courses.

This book, unlike most books on aligning one's teaching with the reform of undergraduate science education, is not a guidebook to methods. Rather, it tells the story of how one professor changed the way he taught—from traditional lecture and examinations to cooperative learning and student projects—with emphasis on the critical first days of change that are so challenging to all involved.

From a description of the risks, assumptions, decisions, successes, and mistakes faced in changing a specific course, readers can better visualize what changing their own teaching to enhance student learning will be like than is possible from reading only general descriptions of methods. To help readers learn even more from this example, each step in the process of change is connected to precepts, strategies, and tools in instructional references.

Reflective questions at the end of each chapter help readers apply the information in the chapter. The seven themes on changing the way one teaches found in the book —accept risk, use feedback, reflect, adapt and be flexible, establish a partnership, accept that you are teaching in a different world, welcome the joy—are summarized in the conclusion.

Although the book will not be published until June, it will appear in the spring catalog of Anker Publishing Company, to be posted online at <www.ankerpub.com>.

Student Paper

Bob Pinker, Professor of Geology at Johnson County (Kansas) Community College, submitted a student paper that you might want to read. It's from Sheral Kautz, one of his Honors Geology students. The paper can be found on the GED website at <http://geosciedu.org/article/kautz_pinker_2005_3_23.htm>.
