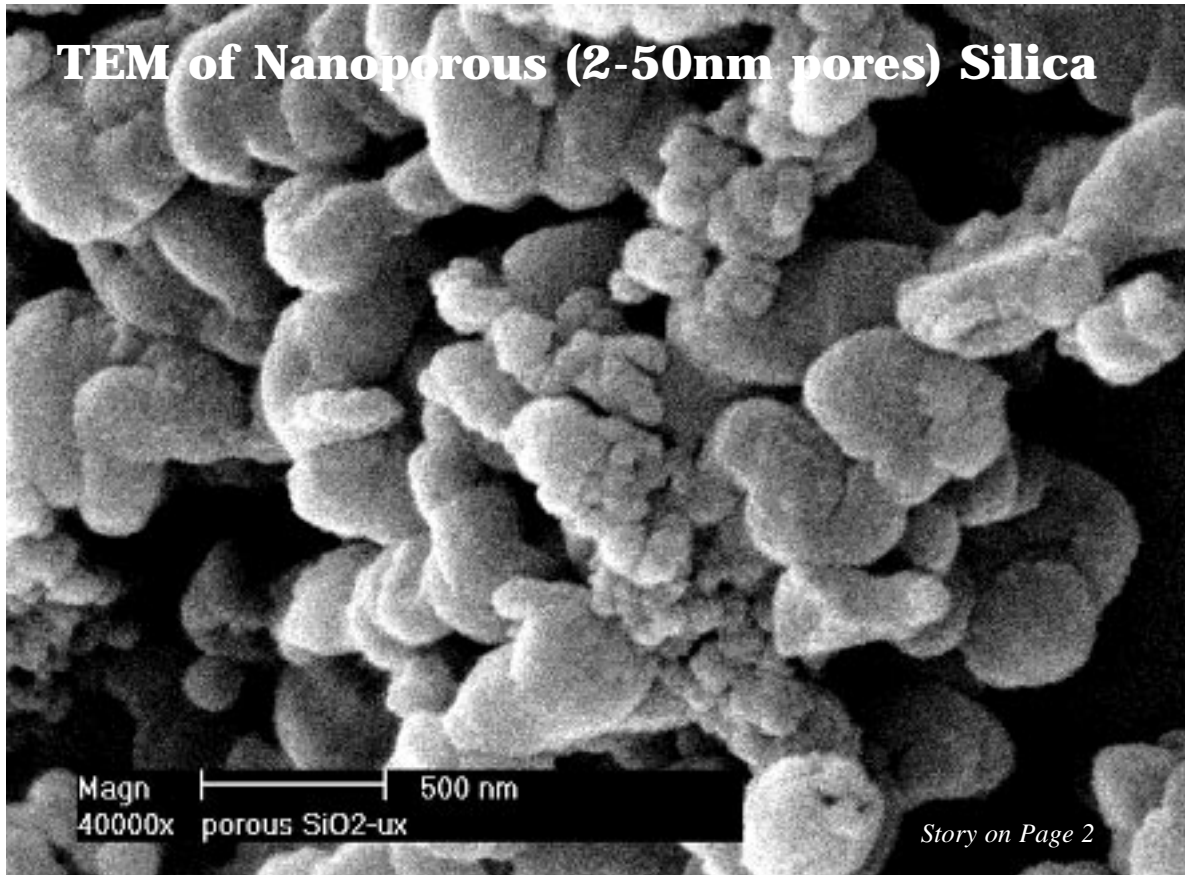


# The Rocky Gator

Spring 2004

Department of Geological Sciences, University of Florida



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## The Chair's Corner

**Greetings from Gainesville.** We have just closed out a very successful semester, with the vision of an increase in appropriations for next year improving morale considerably! We will also begin the next academic year with a new member of our faculty. Raymond Russo of Northwestern University will join us beginning this fall semester. Ray is a geophysicist with primary interests in global seismology. Ray will bring active involvement in international geophysics programs to UF, including his current projects in Romania and Chile. We will introduce Ray further in the next edition of Rocky Gator.

As we look back on the first semester of our new President's tenure, it is encouraging to see a fresh look at old problems. President Machen appears committed to moving the University forward, and clearly recognizes that this can not be

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# Department Welcomes New Professor

Andrew (Andy) Zimmerman arrived in Gainesville in January of this year and has been happily settling in. Andy comes to us by way of the geological science departments of The University of Chicago (B.A.), The University of Michigan (M.S.), and Penn State (post-doctoral research) as well as the schools of marine science at The University of Texas (research assistant) and William and Mary (PhD at VIMS). He also spent a good chunk of time teaching, doing research and traveling in the Far East. Since arriving in Gainesville, he has been busy making renovation and purchasing plans for a new organic geochemistry laboratory that will be housed on the third floor of Williamson. Andy's post-doc at Penn State involved a teaching component, which he is putting to good use with ~150 students in OCE 1005, Introduction to Oceanography.

Andy's geologic interests began with a strong interest in sedimentology that evolved to sediment geochemistry and then to organic geochemistry and biogeochemistry and finally geomicrobiology and nanogeology. His doctoral research was a study of the biogeochemical and ecological changes that have occurred in Chesapeake Bay over the past five hundred years. For

example, organic geochemical biomarkers were used to reconstruct the changes in algal and bacterial (eutrophication) since European settlement in the watershed of that Bay. His immediate research plans include the use of organic biomarkers to look at the ecological changes that have occurred in some of the coastal regions of Florida due to human development. Andy has also become interested in the relationship between organic matter, microbes, and mineral surfaces. One recent set of experiments examined the effect of mineral nanopores on the preservation of organic matter in sediments and soils through the use of synthesized nanoporous alumina and silica (see below) and the adsorption of organic compounds to these materials. Here in the department, he will continue research of this type with



studies that move toward examinations of natural mineral and organic compound assemblages and include the addition of microbiological factors and looking at the results of these processes in sedimentological and groundwater settings. While this work is of a fundamental scientific nature, obvious applications can be found in such fields as petroleum science, contaminant bioremediation, and global carbon cycling.

The new geochemistry lab will include some of the traditional analytical tools of the organic geochemist; gas chromatograph (GC), mass spectrograph (GC-MS), liquid chromatograph (HPLC), but also some less traditional tools such as a laser light scattering detector for measuring molecular sizes and a gas sorptometer for measuring mineral surface area and shape. Next year he'll be offering a class in Organic Geochemistry/Geomicrobiology to graduate students and taking on a new graduate student of his own. He has expressed an appreciation for the collegiality and pleasant atmosphere of his new department and is learning what Rocky Gator life is all about...Football, Beer and Bluegrass? Also, he reports not to have missed the winters of Pennsylvania one little bit.



## *In Memoriam*

The Department of Geological Sciences mourns the recent passing of Dr. David Nicol at the age of 88. As an undergraduate at Texas Christian University, he lettered in Field and Track. Dr. Nicol received his Ph.D. from Stanford University and enjoyed appointments as Curator at the Smithsonian Museum of Natural History and Southern Illinois University.

Dr. Nicol came to the University of Florida in 1965 and taught courses in paleontology at the undergraduate and graduate level. He also enjoyed appointments with the Department of Zoology and the Florida Museum of Natural History. He was among the department's most renowned researchers, publishing 100 refereed papers in the area of bivalve ecology, taxonomy, and evolution. Dr. Nicol supervised numerous graduate students whose research resulted in often-cited publications. He retired in 1980.

*Chair's Corner continued (page 1)*

accomplished without additional funding from all sources. I believe we can expect the announcement of a new capital campaign in the near future!

In this regard, I want to thank each of you who contributed to the department financially in the 03-04 fiscal year. We are particularly grateful for the response to our request to move the Anniversary Fund to the next matching level. We are well on our way to raising the funds that will garner an additional \$50,000 of state matching funds. The development of continuing resources such as those generated by endowments are critical to our department's development. In terms of how we use these funds, I'm happy to report that we have instituted a new program in which the Department uses endowment income to provide support for major field excursions. Under this program, any faculty member can utilize GLY 5786L as a stand-alone course or as a companion to an existing course to provide students with an opportunity to visit special geologic terranes. Right now, the Geology Club is organizing a trip to Death Valley (the geologic one, not Clemson or LSU!) over next spring break. This will provide an excellent field experience for graduate and undergraduate students, which would not be possible without your support. Thanks again and have a good summer.

Best wishes,

Paul Mueller

# Alumni News

Hi from the Big Apple! (**Jennifer Martin**, MS 2004) Good news, I finally got a job! I'm a hydrogeologist with Geologic Services Corporation in Holbrook, NY (on Long Island). Last week was my first week and it went pretty well. There's so much to learn! I also presented a poster at GSA in Nov 2003 titled: "Establishing the exchange of water between conduits and matrix in the Santa Fe River Sink/Rise System using water level data." It's finally warming up here thank goodness. I hope things are going well. Say hi to everyone for me. Jennifer

This is long lost **Alex Amigo** (Ph.D. 1996) now in California. I am happy to share that I just received tenure here, at Sierra College, and am enjoying every aspect of this work environment. I'm so far away now that visiting you guys looks harder and harder, but I never lose hope! Cheers, Alex

**Lauren Smith**, (MS 2004) is with a consulting company (Mactec Engineering and Consulting, Inc.) as an Environmental Scientist. Located just North of Boston.

**Susan Tierney (nee'Kulp)** (MS 2003) I'm finishing up my year as the Science teacher at Millhopper Montessori Middle School (teaching 4th-8th grades); I am teaching two courses for SFCC this summer, Introduction to Environmental Science and Physical Geology; and will be returning to UF in the fall to complete my Master of Education degree to be certified in Earth and Space Science at the secondary level.

**Matt Smith** (PhD, 1999) returned to Gainesville in August 2003 when he joined the Department faculty as a Visiting Lecturer. Matt comes to us from the American Geological Institute (AGI) where he was the Institute's Education Programs Manager. Matt's responsibilities at AGI centered on curriculum development and k-12 teacher professional development. He was the project manager and a developer/writer for three NSF-funded middle school and high school Earth Science curriculum projects. Two of these inquiry-oriented, standards-based curricula (*EarthComm-Earth System Science in the Community* and *Investigating Earth Systems*) have been published and are already being used by more than 200,000 students nationwide. The third is currently in the final stages of classroom testing.

Matt's primary responsibility for our department is teaching our large-attendance, introductory courses. He is also working to help the department better meet the needs of students intending to pursue careers as k-12 teachers. Meeting the needs of these students is particularly important now because there is a great shortage of certified k-12 Earth science teachers in

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# Faculty News

It has been a busy Spring for **Joe Meert**. Two publications sparked the interest of the media. The first was a paper on the Late Neoproterozoic "Snowball Earth" episodes published in *Nature*. Lead author was a French Ph.D. student **Yannick Donnadiue** and 4 other French colleagues were co-authors. The paper presented an integrated climate, paleogeographic and geochemical model showing how continental breakup might be able to trigger a completely ice-covered earth. The second paper, co-authored by Kansas University paleontologist **Bruce Lieberman** examined how the distribution of trilobites could be used to test paleogeographic models. In addition, the analysis suggested that the ancestors of trilobites originated in Siberia some 20-50 million years before they appear in the fossil record. Both papers were fea-

ured in a variety of newspapers, on the Discovery channel and multiple scientific websites. An undergraduate math major, **Mason Grower**, was named a 2004-2005 University Scholar and will be working with Meert on a project looking at higher order harmonics of the magnetic field. Mason receives \$2000 in stipend and a \$500 travel award to attend the Fall American Geophysical Union meeting. Graduate student **Damayanti Mukherjee** and Meert will be planning field work in India this coming year on a recently funded National Science Foundation project. Lastly, undergraduate student **Aubrey Adams** is finishing her senior thesis with Meert and **Ray Russo** (Northwestern University) on seismic attenuation in Florida.



Mark Brenner has been promoted to Associate Professor.

## Promotions



Jason Curtis promoted to Associate In.



**David Foster** (Associate Professor) was recently awarded a UF Research Foundation Professorship for his research in

continental tectonics and thermochronology. The three year awards were created by the University of Florida Research Foundation in recognition of faculty who have established a distinguished record of research and scholarship that is expected to lead to continuing distinction in their field. He was one of six CLAS faculty selected for this award in 2004.

### Alumni News continued

Florida (and nationwide). The shortage is made worse by the fact that Title 2 of the No Child Left Behind Act calls for greater subject-area training for all secondary-level science teachers. Related to this, this year, for the first time, Geology majors are being admitted into the UF PROTEACH Program. PROTEACH is a graduate-degree teacher preparation program in the College of Education's School of Teaching and Learning.

Matt and family are excited to be back "home" in Gainesville where they are close to friends and family (wife Robin, a Gainesville native, was Geology Dept. office staff from 1995-1999).

Mike Rosenmeier (Ph.D. 2003), was married to Stacey Levine on March 7, 2004.



Valley of Fire, Nevada

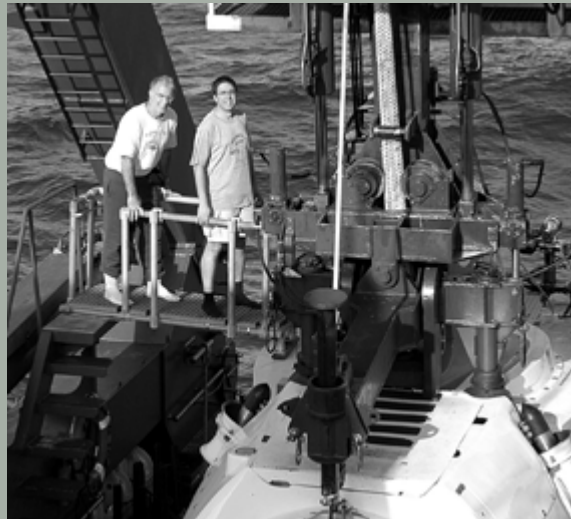
## Department

## News



Girls return home after a day at school in the floating villages of Tonle Sap Lake.

During most of the month of February, Dr. Michael Perfit participated in an oceanographic research cruise to the East Pacific Rise around 9-10° N. One of the main objectives of the expedition was to investigate the volcanic processes related to construction of fast-spreading oceanic crust at the spreading center. This cruise was a follow-up to one that acquired high-resolution magnetic, photographic and side-scan sonar data in the Fall of 2001. Dr. Perfit's graduate student Michelle Hayes participated on that cruise. This expedition was on the R/V Atlantis, which is the "mother ship" for the research submersible "ALVIN" operated by the Woods Hole Oceanographic Institution. During the cruise Dr. Perfit had three dives to depths greater than 2600 meters where he observed and samples specific sites where lava flows and mounds have covered over older seafloor. An NSF grant will provide funds for Dr. Perfit and Jillian Hinds (a new grad student) to examine the physical and chemical characteristics of the samples what were recovered.



Mike Perfit along with Javier Escartin about to enter the ALVIN for a dive on the East Pacific Rise.

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Jim Channell is on sabbatical in Zurich (Switzerland) from January to June 2004. He is located in the Geologisches Institut of the ETH (Federal Institute of Technology) in downtown Zurich and working with colleagues Judith McKenzie and William Lowrie (both professors at ETH). Part of the sabbatical will be spent in Italy doing field work in connection with a newly-funded NSF project dealing with tectonic rotations in the Southern Alps and Apennines. While in Zurich, Channell has also been editing (with Lowrie and Joe Meert of UF) an American Geophysical Union (AGU) monograph entitled "Internal timescales of the geomagnetic field" that contains a selection of papers presented at the AGU Chapman Conference held in Gainesville in March 2003. His other activities include planning for upcoming North Atlantic drilling expeditions through the **Integrated Ocean Drilling Program (IODP)**.

The **Integrated Ocean Drilling Program (IODP)** is an international scientific research endeavor that replaces the 10 year old ODP. The program is funded by the U.S. National Science Foundation (NSF), the Ministry of Education, Culture, Sports, Science and Technology (MEXT) of Japan, and the European Consortium for Ocean Research Drilling (ECORD) to conduct basic research into the history of the ocean basins and the overall nature of the crust beneath the seafloor. The **JOI Alliance** (that includes the University of Florida as one of 20 US member institutions) leads the efforts for U.S. activities in the IODP, which is the successor to the Ocean Drilling Program. The North Atlantic drilling proposal on which the second (Sept./Oct. 2004) and fourth (Feb/March, 2005) expeditions of IODP have been based was a collaborative effort from UF faculty J. Channell, D. Hodell, and E. Martin. Channell has been selected as scientific co-chief of the first of the two expeditions, beginning in September 2004. The objective of these two North Atlantic drilling expeditions is to establish, for the last few Myrs (Late Neogene - Quaternary), the inter-calibration of geomagnetic paleointensity, isotope stratigraphies, and regional environmental stratigraphies and in so doing develop a millennial-scale stratigraphic template.

**Mark Brenner, Jason Curtis, and David Hodell** visited Cambodia in December 2003. They were stationed in Siem Reap, just south of the majestic archaeological site of Angkor Wat. Angkor is just one of many sites constructed by the Khmer empire, which was a major power in southeast Asia from AD 802-1432. The researchers collected sediment cores from a large artificial reservoir (16 km<sup>2</sup>) at Angkor, and from the nearby large, shallow Tonle Sap Lake (~12,000 km<sup>2</sup>), which expands and contracts with the coming and going of the seasonal monsoon rains. The sediment cores will be used to investigate the early Holocene evolution of the Asian monsoon and late Holocene influence of dense human populations on the regional tropical environment.



Monumental carvings at Angkor

**Sarah Langberg**, a high school student from Fort Myers Beach who is doing research with **Dr. Mike Perfit**, won an international science fair competition. Sarah won a \$50,000 scholarship on “*Petrology, Morphology, and Geochemistry of the Southern Juan de Fuca Ridge: Evidence for Off-Axis Volcanism*”. They call it the Intel Foundation Young Scientist Award. She also took 1st place at The International Fair that garnered her \$3,000 in cash. Then, the Intel Corp. decided to fur-

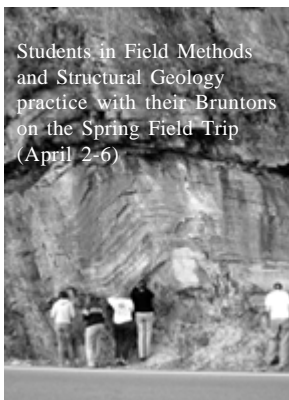
ther distinguish her project as “Best of Category” in Earth and Space Sciences, which earned her another \$5,000 in cash prizes and a BRAND NEW Intel Centrino powered notebook computer!

Special awards: from the American Geological Institute—subscriptions to their publications and \$250 cash prize. From the AWG (association of Women Geoscientists) their first place award of \$1,000. And last but not certainly not least, from the society of exploration

geophysicists, \$1,000 first place cash prize, a free trip to their nat’l convention in Denver this year, and the honor of being published.

Governmental awards: The US Air Force cash award of \$1,500.

For information on Intel International Science and Engineering Fair, please check out their website: <http://www.sciserv.org/isef/results/grnd2004.asp>.



## Student News



## Awards

This spring semester the UF Structural Geology students and the Field Methods students went on a field trip to Columbus, GA (Uchee Belt), Tennessee (Valley and Ridge-Blue Ridge Transition) and North Carolina (Blue Ridge).

**Sarah Newell (MS)** gave a talk titled “Relative changes in C3 and C4 biomass recorded by carbon isotopes of lipid biomarkers in the Maya Lowlands of Peten, Guatemala” at the Fall 2003 AGU meeting in San Francisco. Co-authors on the paper were: David A. Hodell, Jason H. Curtis, Mark Brenner, and Michael F. Rosenmeier.

**Michael Hillesheim** also gave a poster at the same meeting titled “Neotropical Climate Change Related to Intertropical Convergence Zone Migration During the Last Deglaciation” with co-authors David A. Hodell, Jason H. Curtis, Mark Brenner, Thomas P. Guilderson, Christina Gallup, Douglas F. Schnurrenberger, Flavio S. Anselmetti, Daniel Ariztegui, Michael F. Rosenmeier, and David G. Buck.

Other students that gave talks/posters were Kusali Gamage, Howie Scher, and George Kamenov.

**Lisa Marie Mertz** and **Gillian Rosen** went to Honolulu and gave talks at the American Society of Limnology & Oceanography (ASLO) Ocean Research Conference. Lisa Marie presented work on bioturbation and preservation potential of event bedding in salt marshes. Gillian spoke on the pre-20th century eutrophication history of a shallow estuary in Cape Cod, Massachusetts.

While in Hawaii they also ran an 8.15 mi race- The Great Aloha Run, which raises money for local charities. About 22,000 people ran the race. They also hiked at Diamond Head crater and spent a morning surfing, in between meetings.

**Jonathan Hoffman (MS)** received notification that he has been awarded the Mitchell Hope Scholarship Award from the Southwest Florida Fossil Club.

Dr. David Dilcher’s graduate student, **Shusheng Hu**, received a Sigma Xi Grant-In-Aid for his research on fossil pollen of the mid-Cretaceous sediments of Kansas and Minnesota. **Shusheng** has also been awarded a \$1500 grant from the *Evolving Earth Foundation*.

**Sarah Newell (MS)** was the winner of the Grants-in-Aid of Research Program (GIAR). The \$1000 grants was used to go to the Lawrence Livermore National Lab for 1 week to run her thesis samples for radiocarbon dating.

**Horn Award** for Outstanding Graduate Student: **Warren Grice W.A. Tarr Award: Jessica Lyons**

**Danker Award** for outstanding graduating undergraduate: **Aubrey Adams.**

**The Ernst Award**(1000-2000 level Course): **Jaime Escobar** for GLY1000.

**The Ernst Award** (3000-4000 level Course): **Laurie Cotsonika** for Mineralogy and Petrology.

**Estwing Award**, Co-winners are **John Roberts** and **Aubrey Adams.**



Lisa Marie Mertz(MS) and Gillian Rosen(Ph.D.)

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**Department of Geological Sciences**

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Thank you very much for your support!!

Laurie Cotsonika  
 Geology Club President

Warren Grice  
 Sigma Gamma Epsilon President

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# *What's Happening?*

The Alumni News of The Rocky Gator relies upon information from you. In order to continue this page in future issues we need your help. Did you get promoted or win any awards recently? Did you move to a new city? Get married? Have a child? Would you like to inform us of another Gator alumnus? Let us know what you are up to by mailing or emailing us the information, with pictures if possible, to **Rocky Gator, University of Florida, Department of Geological Sciences, P.O. Box 112120, 241 Williamson Hall, Gainesville, FL 32611-2120** or **info@geology.ufl.edu**.

