

ROCKY Gator

The Official Newsletter of the Department of Geological Sciences

Fall 2008/Spring 2009



This past summer, Dr. Kyoungwon "Kyle" Min made some new friends in Colombia while on a research trip with PhD candidate Sergio Restrepo.

From the Department Chair . . .

Happy New Year to you all,

As the 2009 spring semester cranks up and 2008 comes to an end, it's time to reflect on the events that have transpired and changes that have occurred here in the Department and at the University over the past year.

Our graduate program continues to thrive: we have experienced increased numbers of undergraduate majors and our faculty has been successful in obtaining numerous research grants. We now have a complete and wonderfully functioning office staff of four that have allowed all of us to work more efficiently and certainly made my life much easier.

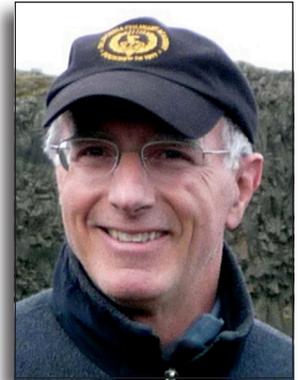
We have begun to update and modify our class offerings, in part due to the recent decrease in the number of faculty in the Department. Professors Neil Opdyke and Guerry McClellan officially retired, Professor David Hodell is now the Woodwardian Professor of Geology at the University of Cambridge (UK), and Dr. Phil Neuhoff has relocated to Idaho. We were very sorry to see all of them leave but were, however, able to hire Dr. Mark Panning, a new Assistant Professor of Geophysics, who joined us this fall after completing a PhD at UC Berkeley and a Postdoc at Princeton University. Dr. Panning's research focuses on modeling seismic waves to obtain 3D images of the deep structure of Earth and other planets. His work has revealed many intriguing aspects of mantle dynamics and explanations for regions where the continents are anomalously thick. He and Dr. Ray Russo are creating a state-of-the-art seismic computing lab.

It is clear that we are in the midst of difficult financial times and the University has suffered due to declining State revenues. Although we have taken a major cut in our departmental expense account, funding for our graduate program (from both the College and Alumni donations) remains solid and we look forward to bringing in another fine class of graduate students in the Fall of 2009.

Generous support from our loyal alumni and friends has also allowed us to continue to fund activities and programs such as field trips, external seminar speakers and student travel to meetings that otherwise would be impossible. I can't stress enough how important even small contributions to our Anniversary Fund (that is eligible for matching State funds) are in keeping the Department healthy and vibrant.

I am grateful to all of you who have continued to support us in these fiscally challenging times.

Go Gators!
Michael Perfit



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IT'S GREAT TO BE A FLORIDA GATOR!
 Congratulations to our 2008 National Champion Gator Football Team



Master's student Dylan Miner.

The **ROCKY Gator** is the official newsletter of the University of Florida Department of Geological Sciences and issues are provided free of charge to interested friends of the department, faculty, students, and alumni. Due to budget constraints, the ROCKY Gator is printed in black-and-white, but a color copy is available in pdf format on our website at www.geology.ufl.edu. If you wish to be included in our mailing list, please contact the department Program Assistant, Pam Haines, at pghaines@geology.ufl.edu, or write or phone the department at 241 Williamson Hall, PO Box 112120, Gainesville, FL 32611-2120; phone (352) 392-2231.

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A Research Trip to the Bottom of the World

Four Gators traveled to the frigid continent of Antarctica twice this past year. Graduate students Dylan Miner and P.J. Moore, and undergraduate (and now Buckeye Grad student) Kelly Deuerling accompanied Professor Jon Martin on two research cruises to the Bransfield Strait region just west of the Antarctic Peninsula.

The cruises were the field portion of an NSF-funded project designed to understand how seasonality alters chemical and isotopic compositions of foraminifera shells, an important variable in studies of paleo-climate based on fossil foraminifera. Because of the intense seasonality at 60° south latitude, Antarctica is the ideal location for this study. Water depths at the sampling sites ranged from about 600 to 1300 meters below the sea surface, and "seasonality" as we normally think about it doesn't really apply since at those depths it is always dark with temperatures hovering about 2°C.

But high productivity in surface water during the summer shuts down when sea ice forms during the winter. The project was designed to see how benthic foraminifera react to varying inputs of organic carbon over different seasons.

Since seasonality studies require sampling during at least two different seasons, the Gators made the four-day, one-way trip across the Drake Passage twice, once in mid-autumn (April) and then again in the dead of winter (late June). The Drake crossing mostly wasn't too rough, if you don't mind 60 knots of wind and 40 foot seas in driving snow storms.

Both trips lasted about three weeks, including several days in Punta Arenas, Patagonia, Chile, where the ship was docked. Most of the rest of the time was spent at sea except for several days at Palmer Station, Antarctica.

While at Palmer, all Gators became polar bears (actually the southern hemisphere ecological equivalent, leopard seals) by taking a quick dip in the Southern Ocean. Unlike Gators' natural habitats, however, getting into the water at Palmer required barefoot runs through snow and pushing icebergs away before taking the plunge into water that was about minus 1°C (yes—that's below freezing, made possible by the salt content of the water).

The cruise was extremely successful with cores collected from seven sites during both cruises (the original plan was to sample four sites), providing plenty of material to keep Dylan busy for many years working on his MS degree.



Palmer Station in Antarctica



Our Future Geologists . . . On Saturday, November 8, 2008, our graduate students hosted a pig roast at the Jonesville farm of Dr. Mark Brenner. On hand to begin networking about just what it takes to join this elite group of rock hounds were, from left to right, Emma Kamenov, daughter of Assistant In George and Katrin Kamenov, Antonia Escobar, daughter of doctoral candidate Jaime and Natalia Escobar, and Yulee Zimmerman, son of Assistant Professor Andy and Mi-Youn Zimmerman.



Above left, Dr. Philip Neuhoff; above right, Dr. Neil Opdyke; below, Department Chair Michael Perfit (right) presents Dr. Guerry McClellan with his retirement plaque; and below right, Dr. David Hodell talks to graduate students and faculty.

Department Honors Professors With A Celebratory Dinner

The Department of Geological Sciences honored two retiring professors and two professors who left the department at a celebration dinner at the Keene Faculty Center on August 29, 2008.

Department Chair Dr. Michael Perfit presented Distinguished Professor Neil Opdyke and Professor Guerry McClellan with plaques commemorating their long-time service to the department and the University of Florida.

Dr. Opdyke, a former chair of the department, retired after 27 years of distinguished service as both an educator and researcher specializing in paleomagnetism and its application to tectonics and magnetostratigraphy, as well as paleoclimatology and paleogeography of the Phanerozoic.

Dr. McClellan retired from the department after 20 years of exemplary service as both an educator and researcher specializing in environmental geology and industrial minerals.

Dr. Perfit also presented Professor David Hodell and Assistant Professor Philip Neuhoff with mahogany clocks bearing the University of Florida seal.

Dr. Hodell accepted a position as the Woodwardian Professor of Geology in the Department of Earth Sciences at the University of Cambridge. As a professor of geology and Director of the Stable Isotope Laboratory, Dr. Hodell has been teaching and conducting research in paleoclimatology and isotope geology at the University of Florida since 1986.

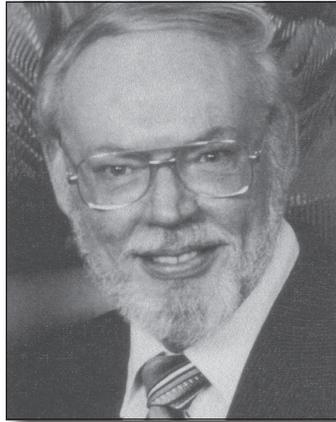
Dr. Neuhoff has been with the department since 2001 and also served as affiliate faculty since 2004 in the School of Natural Resources and the Environment at the University of Florida. His research interests focused on mineralogy and crystal chemistry of zeolites and clay minerals, nanogeochemistry and geoinformatics. Dr. Neuhoff also ran the Physical Geochemistry Research Group.

Most of the department's faculty, affiliate faculty, staff, graduate students, and many undergraduate students, as well as a few alumni, attended the dinner to express their appreciation and well wishes to the four faculty who were such integral members of our department. They are missed.



Graduate Fellowship Fund Honors UF Graduate Raymond T. Skirvin

The Raymond T. Skirvin Graduate Fellowship Fund was established this past year to honor one of our late Rocky Gators. Raymond T. Skirvin, who graduated from the University of Florida with his Master of Science in Geology in 1962, passed away at the age of 75 in Houston on October 8, 2006.



*Raymond Taylor Skirvin
MS Geology, 1962*

Mr. Skirvin was a Navy veteran of the Korean War. Following his discharge from the US Navy, he resumed his education and began a happy, 50-year marriage to Lorraine F. Skirvin. Upon completion of his degree, Mr. Skirvin worked for Exxon as a petroleum geologist in New Orleans, Houston and Singapore.

He and his wife, with son David and daughter Sandra, returned from Singapore to settle in the Houston area. He accepted a position with J.R. Butler and Com-

pany and eventually retired as executive vice president. During his retirement years, Mr. Skirvin was an avid reader, fisherman and lover of the outdoors.

The Raymond T. Skirvin Graduate Fellowship Fund was established, in large part, by two of Mr. Skirvin's classmates: Jon L. Thompson, former president of ExxonMobil Exploration Company, and James G. Floyd, former president and CEO of the Houston Exploration Company.

If you wish to contribute to the Raymond T. Skirvin Graduate Fellowship Fund, please contact Department Chair Dr. Michael Perfit:

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BY PHONE

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All contributions are tax-deductible.

UF Student Had A Busy Summer

PhD student Misty Stroud attended the 2008 Integrated Solid Earth Sciences (ISES) Summer School: "Dates, Rates, and States" in Colorado Springs from July 24 to 30, then participated in the workshop "Preparing for an Academic Career in the Geosciences" at the National Weather Center at the University of Oklahoma from July 31 to August 3, 2008. Misty also attended the 2008 Calabrian Summer School, a multidisciplinary international project coordinated by the Lamont-Doherty Earth Observatory of Columbia University, at the Università della Calabria, Arcavacata (Cosenza), Italy, from September 1 through 12, 2008.

Startling Data from Machu Picchu

Assistant In Dr. George Kamenov and Emory University anthropologist Bethany Turner performed Sr and Pb isotope analyses on human skeletal remains buried at Machu Picchu, the famous Inca site in Peru. Dramatic variations in the isotope ratios indicate that none of Machu Picchu's ancient residents were born at the site.

The new data suggest that people were brought to Machu Picchu from all corners of the Inca Empire, possibly to serve the Inca royalty during their frequent visits to the famous site.



Gators Travel to India for Wedding



Pictured above from left to right: Jennifer Gifford, Riya Sharma, Vimal Pradhan, Edouard "Eddy" Ardisson-Pesquet, and Dr. Joseph Meert.

PhD student Vimal Roy Pradhan married his fiancée Riya Sharma on March 9, 2008 in the historic city of Jaipur, state capital of Rajasthan. Dr. Joseph Meert, Vimal's advisor, graduate student Jennifer Gifford, and former graduate student Edouard Ardisson-Pesquet also attended the festivities.

Mark Brenner Experienced Excellent Summer (and Fall) Adventures

Associate Professor Dr. Mark Brenner taught the UF Study Abroad class in tropical ecology in Yucatan, Mexico, from late June to early August 2008. This was Dr. Brenner's sixteenth year coordinating the course.



Through close contact, students learned to recognize the carbonate clays and silts that characterize the area near Rio Lagartos, on the north coast of the Yucatan Peninsula.

PhD student Mary Beth Day and Yale University PhD candidate Peter Douglas row ashore after collecting water and sediment samples from a cenote in Yucatan, Mexico. Samples were collected in August 2008 as part of a paleoclimate study.



Mary Beth Day picks her way carefully through the spiny vegetation of northern Yucatan, Mexico, after collecting stemwater samples from gumbo limbo trees. Samples were collected as part of a regional climate study.

In August 2008, Associate In Dr. Jason Curtis, PhD student Mary Beth Day, and Dr. Brenner collected sediment cores in Lake Izabal, Guatemala for a paleoenvironmental study.



Jason Curtis prepares a sediment/water interface core for extrusion, as dubious locals watch the operation.

Dr. Brenner presented a keynote address, "Proyecto Paleoambiental Lago Petén-Itzá: nuevas perspectivas sobre el paleoambiente y el paleoclima de Centroamerica" ("The Lake Petén-Itzá Paleoenvironment Project: New Perspectives On Past Environment and Climate in Central America") at the I Congreso Nacional Ciénagas y Lagunas de Colombia: Homenaje al Dr. Thomas van der Hammen (First National Congress on Wetlands and Lagoons of Colombia, in Honor of Dr. Thomas van der Hammen). The congress was held in Medellin, Colombia, on September 24, 25, and 26, 2008. Dr. Brenner also accompanied Dr. Norberto Parra's geomorphology class on a two-day field trip.



Students examine sediments as they hike up a tributary fan along the Rio Cauca.

Current Graduate Students Receive Prestigious Fellowships

The University of Florida Department of Geological Sciences is very proud of our current batch of graduate students. Following are lists of students who are receiving financial assistance to pursue their degrees in the form of two prestigious endowed fellowships, The Jon L. and Beverly A. Thompson Fellowship and the Alumni Graduate Fellowship.

Thompson Fellows:

- Katherine Malone
- Julie Mathis
- Brittany Newstead
- Robert Sirianni

Alumni Fellows:

- | | |
|-------------------|--------------|
| Nichelle Baxter | Moutusi Roy |
| Mary Beth Day | Misty Stroud |
| Richard MacKenzie | Chuang Xuan |
| | Mingyu Zhu |

Postdoc Studies Eruption Samples in Central America

In March of 2008, post-doctoral scientist Dr. Adam Goss participated in a UF-sponsored field trip to the Panama Canal in collaboration with scientists at the Smithsonian Tropical Research Institute in Panama.



The objectives of the expedition were to map and collect fresh volcanic and plutonic rocks of the mid-Miocene arc in order to reconstruct the Neogene-tectonic evolution of southernmost Central America. This once-in-a-lifetime opportunity was made possible due to the ongoing Panama Canal expansion project that is currently blasting away a new cross-section across the isthmus to accommodate larger/wider ships through the canal.

In addition, Dr. Goss has been actively working with department chair Dr. Michael Perfit on obtaining high-precision trace element and isotopic data for lava samples from the 2005-06 eruption on the East Pacific Rise previously collected by the remotely-operated vehicle JASON and submersible ALVIN. These data show that the mantle source of 2005-06 lavas has remained relatively constant since the last eruption in 1991 and that shallow-level processes, such as fractional crystallization and magma mixing have changed the composition of 2005-06 precursor melts.

Using the UF multi-collector (MC) ICP-MS, Goss has identified discrete changes in the Pb isotopic signature (like a mantle chemical fingerprint) occurring over the seven-month duration of the 2005-06 eruption. These findings mark the first time such isotopic changes have been observed at this short time scale for any seafloor eruptive event.

This NSF-funded research was presented at the annual American Geophysical Meeting in San Francisco in December.



Pete Adams examines an excavated dune on a pocket beach backed by high seacliffs at Piha Beach on the North Island of New Zealand.



Geology Gators Attend GSA

October saw the Gators descend upon Houston to attend the Annual Meeting of the Geological Society of America. Ten UF graduate students were able to attend the meeting and present their research, supported in part by the Alumni Fund.

Many outstanding papers and posters were presented at the meeting by attendees from UF, and a well-visited recruiting booth was staffed by UF students and faculty who did their best to convince interested students that its great to be a Florida Gator.

Graduate students Ariel Bennett (M.Sc.), Jonathan Banks (M.S.T), Jen Gifford (PhD), Jin Jin (M.Sc.), Abby Langston (M.Sc.), Richard MacKenzie (PhD), PJ Moore (PhD), Mou Roy (PhD), Misty Stroud (PhD), and Jie Wang (PhD) presented results of their research.

Post-doctoral scientist Adam Goss and faculty members David Foster, John Jaeger, Joe Meert, Paul Mueller, Phil Neuhoff, and Jim Vogl also gave poster presentation and talks.

Pictured above: Graduate students Jennifer Gifford, Rich McKenzie, Ariel Bennett, and post-doctoral scientist Adam Goss try to convince professor Joe Meert that it's great to be a Florida Gator (rather than a Michigan Wolverine, as his allegiances were apparently torn that day...).

Adams Travels to New Zealand

This past summer, Assistant Professor Dr. Peter Adams traveled to New Zealand where he spent two weeks with colleagues from the University of Auckland, traveling to potential coastal research sites. The west coast of New Zealand is a tectonically active margin that provides numerous examples of uplifted marine platforms.

Dr. Adams and his colleagues are investigating the origin and development of these platforms, which are shaped by waves from the Tasman Sea, in an effort to better understand the geomorphic evolution of rocky coasts.

More Faculty and Research News

Dr. Michael Perfit presented a paper on "Origins of Oceanic Dacites" at the 18th V.M. Goldschmidt Conference in Vancouver, Canada this past summer.

Dr. Liz Sreaton was co-chief on Integrated Ocean Drilling Program (IODP) Expedition 316, investigating evidence of earthquakes and tsunami offshore of Japan.

Dr. Dan Spangler, Emeritus, continues to serve on the Second Ad Hoc Committee on Florida Hydrostratigraphic Unit Definition. The publication should be available through the Florida Geological Survey in 2009, and will replace the 1980s publication by the Survey which established the original hydrogeologic standard aquifer systems definitions for the State of Florida. Dr. Spangler was a charter member of that first Ad Hoc committee.

Dr. Mark Brenner and Dr. Thomas J. Whitmore (Research Assistant Professor in the Department of Environmental Science, Policy, and Geography at the University of South Florida) serve as co-Editors-in-Chief of the *Journal of Paleolimnology*.

Dr. Andy Zimmerman recently received a grant from the Geobiology and Low Temperature Geochemistry division of NSF to study Black Carbon Remineralization in the Environment. In addition to laboratory studies of microbial oxidation of chars produced from various biomass types and under a range of conditions, he will travel to Brazil this summer to begin black car-



bon/soil weathering studies. These experiments will not only fill a gap in our understanding of the global carbon cycle, but may also help us develop potential carbon sequestration materials to alleviate CO₂ build-up and global warming.



Dr. Neil Opdyke and Dr. Guerry McClellan were honored with the titles of Distinguished Professor Emeritus and Professor Emeritus, respectively, after their retirement from the department in 2008.

During September Dr. Michael Perfit (pictured at left) and PhD student Dorsey Wanless (below left) traveled to Iceland to present

the results of their research at the International Association of Volcanology and Chemistry of the Earth's Interior (IAVCEI) General Assembly in Reykjavic. Before the meeting they also joined a field trip that climbed the active volcano Hekla. Samples collected will be used in the ever popular Igneous and Metamorphic Petrology Lab.

Dr. Jim Channell presented the Bullard Lecture at the AGU meeting in San Francisco in December. This lecture, named after Sir Edward Bullard (1907-1980), is one of several "Bowie" lectures inaugurated in 1989 to commemorate the 50th presentation of the Bowie Medal, AGU's highest honor named after AGU's first president.

Dr. Jim Channell was bestowed the honor of Distinguished Professor during the fall 2008 semester.

Dr. Mark Brenner gave the keynote lecture, entitled "Groundwater Pumping and Irradiation of the Florida (USA) Landscape," during the 4th International Symposium on In Situ Nuclear Metrology as a Tool for Radioecology, in Rabat, Morocco, which took place October 13 through 16, 2008.

Dr. David Gust, Head of the School of Natural Resource Sciences at the Queensland University of Technology (QUT) in Brisbane, Australia, visited the department for two weeks in December and talked about geoscience and education in Australia. Our department has entered into a cooperative agreement with QUT that will allow for the exchange of faculty and students for study and research between the two institutions.

Spring 2009 UF Geological Sciences Seminar Series

- Jan. 8, 202 Williamson Hall, 3 p.m.
Excursions and Paleointensity: Integration of Magnetic and Isotope Stratigraphies
Dr. James E. T. Channell
Distinguished Professor of Geology
University of Florida
- Jan. 15, 202 Williamson Hall, 3 p.m.
Inferring North American Continental Evolution from Seismic Tomography
Dr. Suzan van der Lee
Associate Professor
Department of Earth and Planetary Sciences
Northwestern University
- Jan. 22, 202 Williamson Hall, 3 p.m.
Ocean Acidification on the West Florida Shelf
Dr. Lisa L. Robbins
Senior Scientist and Oceanographer
Center for Coastal and Watershed Studies
United States Geological Survey
St. Petersburg, Florida
- Jan. 29, 202 Williamson Hall, 3 p.m.
Cape Roberts, ANDRILL and SHALDRIL: Exploring the Antarctic Margin by Ice- and Icebreaker-based Scientific Drilling
Dr. Sherwood W. Wise, Jr.
Professor of Paleontology
and
Shijun Jiang
PhD Candidate
Department of Geological Sciences
Florida State University
- Feb. 5, 209 Emerson Hall, 3 p.m.
Managing Water for a Sustainable Life
Dr. Daniel P. Loucks
Prof. of Water Resource Planning and Management
School of Civil and Environmental Engineering
Cornell University
(Hosted by the UF Water Institute)

- Feb. 12, 202 Williamson Hall, 3 p.m.
A Western Aleutian Perspective on the Genesis of Island Arc Lavas
Dr. Gene Yogodzinski
Associate Professor and Associate Chair
Department of Geological Sciences
University of South Carolina
- Feb. 19, 202 Williamson Hall, 3 p.m.
Cretaceous–Tertiary Growth of the Tibetan Plateau
Dr. Paul Kapp
Assoc. Prof. of Structural Geology and Tectonics
Department of Geosciences
University of Arizona, Tucson
- Feb. 26, 202 Williamson Hall, 3 p.m.
Inocermid Paleocology, Bottom Water Anoxia, and Deposition of Cretaceous Black Shales on Demerara Rise (Tropical Western North Atlantic)
Dr. Ken MacLeod
Assoc. Prof. of Paleontology and Biogeochemistry
Department of Geological Sciences
University of Missouri—Columbia
- March 5, 282 Reitz Union, 3 p.m.
Presentation Title To Be Announced
Dr. Richard Wayne Skaggs
William Neal Reynolds Professor and Distinguished University Professor
North Carolina State University
(Hosted by the UF Water Institute)
- March 19, 202 Williamson Hall, 3 p.m.
Atlantic Overturning Responses to Ice Volume and Orbital Forcing
Dr. Lorraine Lisiecki
Professor of Paleoclimatology
Department of Earth Sciences
University of California, Santa Barbara



- March 26, 202 Williamson Hall, 3 p.m.
Nitrogen Biochemistry in the Itchetucknee River Ecosystem
Dr. Matthew J. Cohen
Assistant Professor
School of Forest Resources and Conservation
University of Florida
- April 1, 202 Williamson Hall, 3 p.m.
Pulses of Rapid Metamorphic Mineral Growth and Related Tectonic Processes
Dr. Ethan Baxter
Assoc. Prof. of Isotope Geochemistry and Petrology
Department of Earth Sciences
Boston University
- April 9, 202 Williamson Hall, 3 p.m.
Drip by Drip — Cave Breath, Speleothems and Paleoclimate: Time Series Microclimate Geochemistry in Hollow Ridge Cave
Dr. Philip "Flip" Froelich
Professor of Chemical Oceanography
Department of Oceanography
Florida State University
- April 16, 202 Williamson Hall, 3 p.m.
The Argentine Precordillera: A Laurentian Terrane Accreted to Gondwana
Dr. William A. Thomas
Hudnall Professor and Department Chair
Department of Earth and Environmental Sciences
University of Kentucky

Let Us Know What's Happening

The *Rocky Gator* relies on information from you. Did you get promoted or win any awards recently? Did you move to a new job or city? Get married? Have a child? Or can you tell us about another Rocky Gator with whom you're in contact? Let us know what's happening by mailing or e-mailing us the information—with photos if possible—to **Rocky Gator, University of Florida Department of Geological Sciences, PO Box 112120, Gainesville, FL 32611-2120**; e-mail pghaines@geology.ufl.edu.

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