

Fall 2005

Rocky Gator

Department of Geological Sciences, University of Florida



Rocky enjoyed the FSU game.

Inside this Issue

Faculty News	Page 3-4
Department News.....	Page 5
Research News.....	Page 6-7
Student News.....	Page 7-9
Alumni News.....	Page 10

Chair's Corner

Greetings from Gainesville—An eventful Fall semester is quickly drawing to a close and we are all looking forward to the end of a hectic semester. Fall semester once again was characterized by the arrival of more first year students entering the university than projected or planned for. Geology classes were well subscribed and our Department set a record of over 2500 students enrolled in all Geology classes. At the graduate level we also enrolled a record number of students, with 14 new students at the graduate level (they are listed later in the newsletter). We also welcomed a new faculty member, Kyoungwon “Kyle” Min. Kyle is an isotope geochemist/geochronologist currently on a post-doc at Yale and specializes in the U-Th-He system. Although

this system is used primarily to measure the ages of geologic events occurring in near surface environments and at low temperatures, Kyle's research agenda is diverse and he is one of the first geoscientists to apply the U-Th-He system to the thermal history of meteorites. He will be building a new analytical capability in our Rare Gas Laboratory, and we look forward to his arrival later this month.

In contrast to the positive feelings engendered by the record enrollments at the undergraduate and graduate levels and the addition of new faculty, I would be remiss if I did not apprise you of the continuing financial difficulties faced by the University and, consequently, by the Department. Despite record enrollments, our budgetary support decreased this year. This highlights the importance of private support once again and makes it an opportune time for me to briefly review how our private funds are used. Most of the private funds dedicated to the Department are in individual endowments that are dedicated to specific purposes. For example, the Jon and Beverly Thompson Fund is used to provide scholarships, the John and Carolyn Dykes Fund supports the Summer Field Camp and other field trips, the IMC-Agrico Fund supports an incentive program that provides matching research support to students who successfully garner their own support through GSA and other student competitions, and the Emily and Henry Danker Fund supports the Danker award and other student recognitions. The 50th Anniversary Fund, however, is the blanket that covers all of these needs and others that cannot be met using State funds, such as recruiting new students, extra field trips, additional scholarship support, etc.

Another critical aspect of the Anniversary Fund is that it is one of the few remaining multi-donor funds still eligible for the State of Florida's matching gift program. Unfortunately, our "grandfathered" eligibility for the matching gift program is not permanent. Bills have been introduced in the legislature each of the past two years that would either eliminate or reduce the matching funds available to multi-donor funds, such as our 50th Anniversary Fund. We are currently \$17,000 short of the \$100,000 plateau that will generate a state match of at least \$50,000. Although this may seem a formidable task, this goal would easily be reached if each of the >700 recipients of the Rocky Gator donated only \$25. We realize that in the wake of Katrina and Rita many of our neighbors are in difficult times and that there are many worthy causes seeking your help, particularly during the Holiday Season. We are, however, likely facing a unique opportunity to gain a nearly 3:1 match for the Anniversary Fund, i.e., \$17,000 of new gifts will capture a \$50,000 contribution from the State. Reaching this goal will permit the Department to continue to meet the needs of its students in both good times and bad.

In closing, I want to thank all of our alumni and friends who have provided financial support to the department over the past year and helped put us in position to reach our goal with the 50th Anniversary Fund. We thank you in advance for your continued support in this fund raising effort and wish you a most enjoyable Holiday Season.

Go Gators,

Paul



Faculty News...



New University of Florida geology professor **Ray Russo** works on the flow of the Earth's mantle and its relation to global surface tectonics. To figure out how the Earth's mantle flows *in situ*, he uses both field deployments of seismometers (currently in southern Chile, and most recently before that in Hawaii) and freely-distributed seismic data, and computer modeling of large-scale tectonics. The strong link between the two types of studies is development of a global model of the Earth's upper mantle flow based on observations. Although geoscientists have suspected since the 1930's that surface motions and deformation are strongly related to convection in the Earth's mantle, this supposition has not been conclusively demon-

strated. Russo's research aims directly at resolving this question via observations of current mantle flow directions and subsequent analyses of plate motion histories and long-range interactions mediated by mantle flow. Since joining the faculty at UF, Russo has taught graduate classes in geophysics and undergraduate classes in physical geology. He has developed two new courses for upper level undergraduates and graduate students, *Terrestrial Gravity and Magnetism* and *Seismology and Earth Structure*, and is currently working on a revision of an existing geophysics class into *Environmental Geophysics*. Russo and others in the Department are also developing a new course, *Planetary Geology*, for UF's large population of science majors. Finally, Prof. Russo hopes to import to UF a class he taught many times at Northwestern University, his former posting, called *Science and Art in the Western World*.



October saw the Gators descend upon Utah to attend a number of professional conferences. **Prof. John Jaeger** attended the Geological Society of America Penrose Meeting "Lessons in Tectonics, Climate and Eustasy from the Stratigraphic Record in Arc Collision Zones" where he presented a paper entitled "Uplift versus Denudation: the Sedimentary Record of Yakutat Terrane Collision and Glacial Erosion in Southeast Alaska. During the conference, the attendees were treated to an exceptional field trip that visited a number of incredible outcrops on the Colorado Plateau, including a beautiful day at Arches National Monument.



Prof. Jaeger (Gator cap) and attendees of Penrose Conference stop to enjoy the sites at Twin Arches, Arches National Monument, Utah.

Mark Brenner presented a paper at the 5th International Symposium on Wetlands in Playa Larga, Matanzas, Cuba (October 6-10, 2005): **Brenner, M., D.A. Hodell, J.H. Curtis, and B.W. Leyden.** Cambios climáticos en la región del Caribe durante los ~36,000 años pasados: implicaciones para la distribución de humedales y fauna acuática (Climatic changes in the Caribbean region during the last ~36,000 years: implications for the distribution of wetlands and aquatic fauna). The wetlands symposium brought together scientists from Florida, Cuba, and elsewhere to discuss development of a management plan for the Zapata Swamp in southwest Cuba. The Zapata Swamp is large and shares many characteristics with the Florida Everglades. Both aquatic ecosystems are underlain by limestone and possess many of the same plant species. The two wetlands are also faced with similar environmental problems brought about by human manipulation of the landscape. Both have had their hydrologies altered by road building, agriculture, and residential development. Both are experiencing enhanced nutrient loading as a consequence of “upstream” agriculture. Exotic flora and fauna have displaced native plants and animals in both ecosystems, and both areas serve as habitat for large wading bird populations. It is hoped that this initial scientific exchange will lead to future collaborative research between Cuban and American scientists.

Dr.’s Paul A. Mueller and Philip S. Neuhoff hosted highschool students Grace E. Nagel, Columbus, Georgia and Han Zhu, Largo, participants of the 2005 Student Science Training Program, a seven-week residential program that is a part of the UF-Center for Precollegiate Education and Training. The program emphasis is providing research participation, approximately 28-hours per week, with a UF faculty research scientist and his/her research team.



Dr. David Foster has been promoted to full professor.



Dr. Elizabeth Sreaton, has been promoted to Associate Professor.

Jim Channell received the **William Gilbert Award** from the Geomagnetism and Paleomagnetism (GP) Section of the American Geophysical Union (AGU) at the annual AGU meeting in San Francisco (5-9 December, 2005). The award recognizes “outstanding work in magnetism of Earth materials, and of the Earth and planets”, and consists of a certificate and a “terrella”. The award is named for William Gilbert (1544-1603), who can arguably be called the founder of both experimental rock magnetism and geomagnetism. He carried out numerous experiments on lodestone (magnetic iron oxide ore) between about 1581 and 1600, formally establishing many of the fundamental concepts of magnetism, such as magnetic poles, magnetic field, magnetic force and torque, shape anisotropy, thermoremanence, viscous remanence and more. Using lodestones carved into spherical shapes, which he eventually termed terrellas (little earths), Gilbert showed that the magnetic field of a terrella has the same geometry as the field of the Earth itself, as had been documented by over a century of compass and dip-needle measurements. He famously concluded that the source of attraction for the compass was located not in the stars, nor in extraordinary magnetic mountains near the North and/or South poles, but in the body of the spherical Earth, stating *Magnus magnes ipse est globus terrestris*, the terrestrial globe is itself a great magnet.

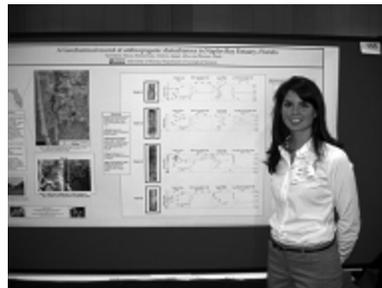
Paul Mueller, David Foster, and David Mogk (Montana State University), organized a 4-day workshop exploring the opportunities for Earth Scope Science in the northern Rocky Mountains 15-18 September. The workshop was supported by a grant from the National Science Foundation and had 180 participants.

Department News...

Salt Lake City was besieged by Gators who were there to attend the **Annual Meeting of the Geological Society of America**. 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 student that its great to be a Florida Gator. This meeting was especially important to several undergraduate students who were making their first presentations at a national meeting. Laura Gregory, working with faculty member Joe Meert, presented a poster entitled “A Paleomagnetic Study of Mafic Dikes in India: Implications for Supercontinent Assembly and Dispersal”, and Alexa Van Eaton, working with Prof. Andy Zimmerman, presented a poster entitled “A Geochemical Record of Anthropogenic Disturbances in Naples Bay Estuary, Florida”. Graduate students Sam Coyner (PhD), Warren Grice (M.Sc.), Kevin Hartl (M.Sc.), Shawn Malone (M.Sc.), and PJ Moore (PhD) presented results of their research. Faculty members David Foster, John Jaeger, George Kamenov, Jon Martin, Joe Meert, Paul Mueller, Liz Sreaton, and Jim Vogl also gave poster presentation and talks. A number of undergraduate students attended the meeting to learn more about graduate school and the latest in geological research.



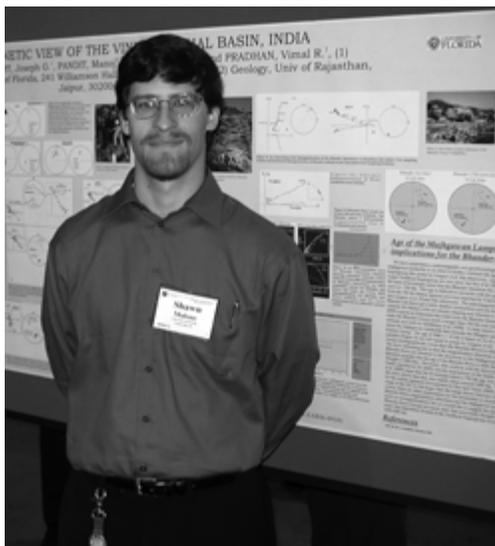
Professors Paul Mueller and David Foster (back to camera) debate the pros and cons of uranium series and noble gas geochronology with Darrell Henry (LSU).



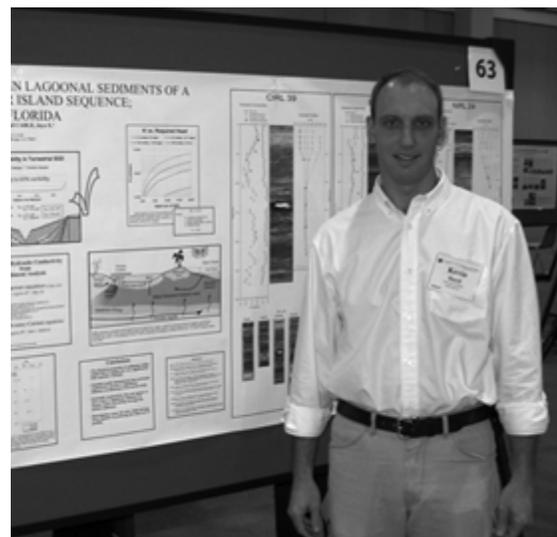
Undergraduate Alexa Van Eaton and her poster entitled “A Geochemical Record of Anthropogenic Disturbances in Naples Bay Estuary, Florida”



Professor John Jaeger and undergraduates Laura Ruhl and Alexa Van Eaton try to entice interested students to become Florida Gators.

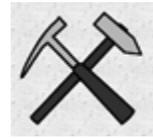


M.Sc. student Shawn Malone and his poster entitled “A Paleomagnetic View of the Vindhyan Basin, India”



M.Sc. student Kevin Hartl and his poster entitled “Submarine Groundwater Discharge in Lagoonal Sediments of a Holocene Transgressive Barrier Island Sequence”

Research News...



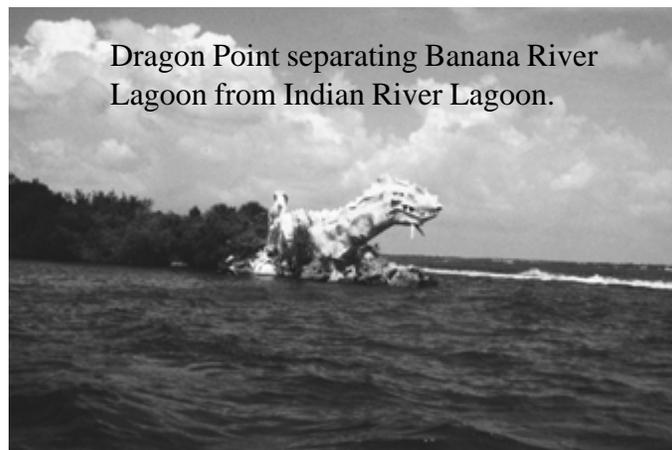
Submarine groundwater discharge – Interdisciplinary basic science with applications

The popular press, in Florida and the rest of the nation, has recently drawn attention to problems of degradation of water resources by salt water intrusion into coastal aquifers. Less has been written in the popular press about another problem associated with coastal aquifers, namely, the flow of fresh water into estuaries and coastal zones. This process, dubbed in the scientific literature as “submarine groundwater discharge” or “SGD”, could allow contaminants to flow from continents to estuaries with detrimental effects on coastal communities equal to salt water intrusion. Consequently, much basic research is currently underway in Florida and around the world to understand the physical controls of SGD and its chemical and biological impacts.

Jon Martin, along with students (**Kelly McGowan, Mou Roy, Kevin Hartl, Jango Bhadha, Eric Davis**) and colleagues at UF, LSU, and FAMU, has been working on problems related to SGD for the past several years. With grant support totaling nearly \$1.3M from the St Johns River Water Management District, the National Science Foundation, and the USGS, they are studying the controls, magnitudes, and potential for chemical contamination from SGD. Their work in the Indian River Lagoon and Tampa Bay, for example, has shown that SGD is not just simple flow of fresh water from onshore to offshore, but is complicated by physical and biological



Jon Martin preparing to make seepage measurements in the winter.



Dragon Point separating Banana River Lagoon from Indian River Lagoon.

cal processes at the sediment-water interface. Important processes include waves, tides, density contrasts between fresh and salt water, water pumped by bottom-dwelling organisms, and chemical effects of evapotranspiration by mangrove forests. Consequently,

SGD requires linking biology, chemistry, and hydrology while relying on engineering approaches and techniques. Martin and his students find this interdisciplinary challenge to be one of the most exciting aspects of this work.

Dr. Andrew Zimmerman, working in collaboration with Dr. Augusto Oyuela-Caycedo of the UF – Department of Anthropology spent much of July in the Peruvian Amazon examining soils and sediments for information on the presence and agricultural practices of early humans in the region. They were looking for ‘terra pretas’ or ‘black earths’, small areas of fertile anthropogenic soils found within the Amazon watershed. While surrounded by soils generally too infertile to support agriculture, terra preta are rich in organic matter and other nutrients and can be sustainably cultivated. Radioactive carbon dating and the occurrence of ceramics identifies these soils as prehispanic in origin and organic geochemical indicators suggest the involvement of some type of burning different from the modern method of slash-and-burn agriculture which leads to infertile soils within a few years. However, the origin of these soils is still a hot topic of debate. They believe they found some of these special soils in the area around Iquitos Peru (the only major city in the world that can not be reached by any road). The geochemistry (mineralogy and organic geochemistry) and archeology of the samples they collected will be examined by Pamela Hartman, a new graduate student entering the department to work with Dr. Zimmerman. Further plans are in the works for an expanded research program in partnership with Universidad Nacional de la Amazonia Peruana (UNAP), Iquitos, Peru.



Student News...

Kelly McGowan, a Ph.D. student working with Dr. Jon Martin, spent ten weeks this summer in Kyoto, Japan, at the Research Institute for Humanity and Nature working with Dr. Makoto Taniguchi. Kelly participated in the NSF East Asia and Pacific Summer Institute with 65 other graduate students from around the country. The purpose of the program is to expose future researchers to Asian cultures, while making international contacts with researchers in their field. Kelly spent her time in Kyoto comparing chemical and physical methods of measuring submarine groundwater discharge.

Mr. Sergio Restrepo was awarded The South East Alliance for Graduate Education and the Professoriate (SEAGEP) fellowship for two years starting in Fall 2005. It is awarded to students with strong interests in an academic career. The award includes tuition waivers for three semesters (fall, spring, fall 2006). Furthermore, **Sergio** has been chosen to receive the American Geological Institute’s Minority Scholarship for the academic year 2005-2006. Recipients of AGI Minority Geoscience Scholarships are provided with financial awards ranging from \$500 to \$3,000.

Congratulations to **Jaime Escobar** and wife **Natalia Hoyos**, they were joined together in holy matrimony on June 17, 2005.



The University of Florida Beta Psi chapter of Sigma Gamma Epsilon chose **Laura Gregory** to be this year's recipient of the W.A. Tarr Award. The award is given to a student in any area of earth science who has demonstrated exemplary scholarship. Other factors that are considered include personality, leadership, contribution to the school, and ability to get along with people. Our congratulations to Laura for being this year's winner!

New Students - Fall 05

Gokce Atalan, Anadolu University, Ph.D.,
Alejandro Gallego, University of Chile, Ph.D.
Jennifer Gifford, Syracuse University, MS
Dustin Grzesik, Northern Arizona University, MS
Pamela Hartman, University of Idaho, Ph.D.
Alexander Hastings, Penn State University, MS
Branden Kramer, Coastal Carolina University, MS
Kristen Marra, University of Oklahoma, MS
Jennifer Mays, University of Kansas, MS
Michael Ritorto, University of Michigan, MS
Rachel Wendt, University of Miami, MS
Chuang Xuan, China University, Ph.D.



The Ernst Award, Outstanding Teaching Award

In recognition of the fact that general education and majors classes require very different teaching skills, this award is given out to two outstanding teaching assistants:

1000-2000 Level

Susanna Blair for GLY 2030 Engineering Geology and GLY 1150 Florida Geology

3000-4000 Level

Warren Grice for GLY4400 Structural Geology

Susanna and Warren each received \$200 scholarships in recognition.

The Horn Award for the Outstanding Graduate Student

The Horn Award is given to one graduate student who has excelled in the following aspects during their total graduate career at UF: eagerness, inspiration, involvement in/contribution to the geology department, academic ability and research activity. This year's recipient is **Howie Scher**, who also received a \$200 scholarship award.

Joann Labs Hochstein won the inaugural **Nicol Award** in Paleontology for 2004-2005 school year. Due to the generosity of Ruth Nicol Fox, this annual award is given in honor of Professor David Nicol to the best student research in paleontology.

Special Thanks goes to Jody Franklin for putting together this edition of the Rocky Gator. Jody is out on maternity leave for 3 months. She has another boy to add to her joy.

Alumni News...

Craig W. Oyen

June 27, 1963 – September 5, 2005

Dr. Craig W. Oyen, 42, of Shippensburg, PA, died unexpectedly in Arizona on Monday, September 5. Born in Williston, ND on June 27, 1963 to Mr. and Mrs. Walter Herbert (Norma) Oyen, he graduated with honors as the WHS Senior Class President in 1981. He earned his B.S. at NDSU (Fargo, ND), continued with graduate studies at the University of Tennessee (Knoxville, TN), and completed his Ph.D. in Geology at the University of Florida. Following three years on the faculty of Georgia Southern University (Statesboro, GA), in 1998 he joined the faculty of Shippensburg University (Shippensburg, PA), where he was an Assistant Professor in the Geography and Earth Science Department. Craig maintained an active, enthusiastic involvement in scientific research, resulting in numerous national and international publications and presentations, and travels to locations around the globe. At the time of his death he was on sabbatical from Shippensburg University, working with the National Park Service in the Grand Canyon, a place he dearly loved. Craig's family is very proud of his dedication and contributions to the profession he cherished. Remembrances may be designated for a student field research scholarship to be established in his memory, and correspondence may be addressed to Herb and Norma Oyen, 1228 Park Place, Williston, ND 58801.



John Chadwick (Ph.D., May 2002) is a new tenure-track Assistant Professor at the University of North Carolina in Charlotte. John spent the past three years as a postdoc at Idaho State University, where he conducted satellite remote sensing and precision GPS research, and somehow found time to get married to another former Geo-Gator (**Claire Grimm, B.S. 2001**). His new job will involve teaching introductory and advanced remote sensing, GIS and GPS classes, and introductory Geology classes. He has several research projects in the works, including studies of the lava flows at Craters of the Moon National Monument and environmental changes around Yellowstone Park. Meanwhile, Claire is teaching geology labs at UNC and will teach Mineralogy and Optical Mineralogy in the Spring. John will be annoyed if Claire's office is bigger than his!



John And Claire Chadwick

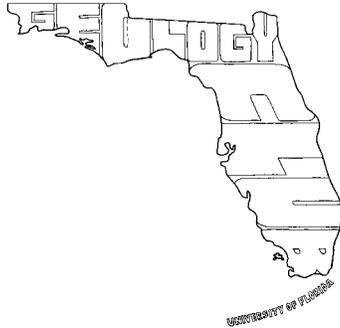


Susan Tierney (nee' Kulp) is teaching 8th grade Physical Science at UF's P K Yonge Developmental Research School here in Gainesville. She has almost completed a Master's Degree in Education from UF focusing on teaching secondary science. Her classroom is open to anyone who wants to share their physics or chemistry-related research with her students!

Support the University of Florida's Geology Student Organization

Purchase a T-shirt featuring our **new** design

Front Left of Shirt



The cost for adult and children shirts is \$15.00 and \$10.00, respectively. Please add \$6 to your order this will cover the cost for shipping and handling. To place your order, please send the full payment with the form below. When your shirt has arrived, we will notify you by phone or email, and your shirt will be sent. Note: for sizes XXL and XXXL, the cost will be an additional \$2.50.

Back of Shirt

You might be a geologist if...

- ...you own more pieces of quartz than underwear.
- ...your rock collection weighs more than you do.
- ...your rock garden is located inside your house.
- ...you can pronounce the word "molybdenite" correctly on the first try.
- ...you think road cuts function primarily as tourist attractions.
- ...the baggage handlers at the airport know you by name and refuse to help with your luggage.
- ...your internet home page has pictures of your rocks.
- ...you will walk across eight lanes of freeway traffic to see if the outcrop on the other side of the highway is the same type of rock as the side you're parked on.
- ...you find yourself compelled to examine individual rocks in driveway gravel.
- ...you have ever found yourself trying to explain to airport security that a rock hammer isn't really a weapon.
- ...you consider a "recent event" to be anything that has happened in the last hundred thousand years.
- ...you have ever responded "yes" to the question, "What have you got in here, rocks?"

Thank you very much for your support!!

Laura Gregory Jill Chapman Emily Grudem
 Geology Club President Sigma Gamma Epsilon President

Order Form (Please Print)

Youth T Shirt Size	Adult T Shirt Size	Price per Shirt	Quantity	Price
Small	Small	Y- \$10, A - \$15		
Medium	Medium	Y- \$10, A - \$15		
Large	Large	Y- \$10, A - \$15		
XLarge	Xlarge	Y- \$10, A - \$15		
	XXLarge	A - \$17.50		
	XXXLarge	A - \$17.50		
			Subtotal =	
			Shipping =	\$6.00
			Total =	

** Shirts are pre-shrunk, so, sizes are a little bigger than normal

Contact Information

Name: _____

Address: _____

City: _____ State: _____ Zip: _____

Day Phone: _____

Evening Phone: _____

Email: _____