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I suspect many of you are all too aware of the economic turmoil that currently grips the State of Florida. USF has not escaped and there have been serious impacts on our department this year as a result of the economic downturn. Such times spark innovative thinking and we have certainly done our share, from restructuring our College to collaborating with the geoscience community to get every interested undergraduate into the field. The results have been remarkably positive. Gifts from our alumni this year have literally saved our field school, directly benefiting our undergraduates and their future employers. So despite the dreary economic news, the news about our department is essentially great. Unfortunately, one outcome of the budget crunch is that this newsletter is only available electronically! Please take a close look at this newsletter and learn more about what is happening in the department and in the geoscience community.

Within the College we have worked over the last 12 months to develop the School of Natural Sciences and Mathematics, consisting of the departments of Geology, Chemistry, Biology, Physics, and Mathematics. This new structure has been enormously effective in sparking collaboration among faculty across these disciplines, and it allows the university to work with the sciences as a cohesive whole. This has meant increased support for research clusters including Global Change Sciences, Science and Mathematics Education, and Computational Sciences. Our basic goal is for faculty to work more freely across departmental boundaries, enhancing research and graduate education in the process. As an example, we hope to develop scientific computing across departments, with a strong emphasis for our students in geocomputation.

Another positive outcome of our collaboration in the new School structure has been that we will be able to hire two new faculty this year in the areas of hydrogeology and crustal geodynamics. In addition, we have a commitment from the university to help us hire three additional faculty in the coming 2-3 years. This is a significant boost for our department and reflects the continuing outstanding support the department receives from the university.

Our current faculty have been doing incredibly well. Highly significant achievements this year include a paper in Science by Professor Peter Harries, and award of the George Walker Medal to Professor Diana Roman.

Much of this departmental achievement stems from the strong commitment of our geoAlumni. This year you played an incredibly important role in raising funds to support geology students in their field studies. Without this support, we simply would have been unable to run a quality field school. With your support we ran great field sessions in Florida, Georgia, and Utah and an entire class of our students received the training they need in field hydrogeology, sedimentology, and geologic mapping.

Very likely the coming year will be filled with more wild fluctuations, but Geology is hanging in there!

Chuck Connor
Chair, Department of Geology
Doctoral Students

Mikel Diez was awarded a PhD in Geology in Spring ’08 for his research on the nature of volcanic conduits. Mikel has gone on to a post-doctoral position at the University of Bristol, a world center for the study of volcanoes. Parts of his dissertation have already been published in Geophysical Research Letters and as a book chapter in Statistics in Volcanology.

Sarah E. ‘Beth’ Fratesi was awarded a PhD in Spring ’08 for her work on geological information. She is currently working at SDII with Sam Upchurch.

Melissa E. Hill was awarded a PhD in Geology in Summer ’08 for her work on conduit models. She has been working at the Texas Water Development Board as a groundwater modeler, in an office next to another USF alumnus, Dr. Ian Jones.

Roy Price was awarded a PhD in Geology in the Spring of ’08 for his research on biogeochemical cycling of Arsenic in shallow marine hydrothermal systems off the coast of Papua New Guinea. Roy is currently a post-doctoral fellow at the University of Bremen Research Center for Ocean Margins, Germany. Some of his research has been published in Applied Geochemistry and Chemical Geology.

Master’s Students

Tanya Beck was awarded a MS in Geology in the Summer ‘08 for her research on the morphodynamics of anthropogenically modified microtidal inlets along West-central Florida. Tanya is continuing her study toward a Ph.D degree here at USF in the coastal research program. Her research is a federally funded collaborative effort with the U.S. Army Corps of Engineers to develop and improve morphologic modeling. Tanya has presented her research findings at several international conferences.

Amanda Hintz was awarded an MS in Geology in Fall ’08 for her research on the Black Rock Desert volcanic field in Utah. She is now a doctoral candidate at the University of Buffalo, where she is continuing her work on volcanic fields in the western U.S.

Mark Horwitz was awarded a MS in Geology in 2008 for his research on the sedimentological characteristics and 3-D internal architecture of recent washover deposits. Mark has authored and coauthored several papers on washover deposition and storm induced morphologic change, and has presented the results of his research at several national and international conferences. He is currently working on a PhD in Geology at USF in conjunction with the USF Coastal Research Lab, the focus of which is directed at Holocene geochronology of barrier island systems.

Shubhabrata Paul was awarded an MS in December, 2008, and is continuing his paleontological research in the department as a doctoral student.

Katherine Powell was awarded a MS in Summer ’08. Her research defined methods for quantifying the effects of soil organic carbon loss in wetlands impacted by groundwater withdrawal in west-central Florida. She is currently writing up a manuscript based on this work for publication in the journal Wetlands. Katherine is now enjoying life in the more temperate climes of Colorado, where she is seeking employment in the consulting industry.

Tiffany Roberts was awarded a MS in Geology in the Summer ’08 for her research on the limits of beach and dune erosion in response to wave runup from large-scale laboratory data. Tiffany is continuing her study toward a Ph.D degree at USF in the coastal research program. Her current research focuses on the hydrodynamics associated with sandbar migration and nearshore morphology. Tiffany has presented her research findings at several national and international conferences and has published her MS research in the Journal of Coastal Research.

Fatin Tutak received her MS in the Spring ‘08. Her MS involved analysis of structural data from Baja, Mexico.
Current Grants in the Geology Department

Chuck Connor, Investigation of Volcanic Hazards in the Kyushu Region of Southern Japan, McCombie, Chapman, McKinley Consulting

Chuck Connor, Impacts of Distal Ash Fallout from the May 2008 Eruption of Chaiten Volcano, Chile, National Science Foundation

Peter Harries, Comparing Greenhouse and Icehouse Biodiversity, Bureau of Land Management

Peter Harries, REU Site: Interpreting Paleoenvironments—A Multidisciplinary, Field and Laboratory Study of Florida’s Late Neogene Record, National Science Foundation

Greg Herbert, Collaborative Research: Effects of a Regional Plio-Pleistocene Extinction Event on the Escalation of a Predator-Prey Interactions, National Science Foundation

Greg Herbert, Isotopic Study of Oyster Shells from the Jamestown Well, Virginia Institute of Marine Science

Sarah Kruse, Acquisition of High Resolution Ground Penetrating Radar for Volcanological, Hydrological, and Very Near Surface Investigations, National Science Foundation


Matthew Olney, Siliceous Microfossil Biostratigraphic and Paleoenvironmental Interpretation of the ANDRILL Southern McMurdo Sound Cores, University of Nebraska – Lincoln


Bogdan Onac, Northern Annular Mode (NAM) Variability During the Little Ice Age and Medieval Warm Period in a Cave Ice Core Record from Northwestern Romania. National Science Foundation.

Thomas Pichler, Evaluating the Potential for Aquifer Storage and Recovery (ASR) Operation in the Avon Park Formation in the Southern and Central Regions of the Southwest Florida Water Management District, Southwest Florida Water Management District

Thomas Pichler and Jeff Ryan, Acquisition of a Reaction Cell/Quadropole ICP-MS System, National Science Foundation

Mark Rains, Groundwater Discharge to Salmon-Bearing Headwater Streams, Kenai Peninsula, Alaska, Alaska Dept of Fish and Game

Mark Rains, FCE LTER II: Supplement for International Collaboration with the Ecosistemas Arrecifales des Pacifico Program of the Mexican ILTER Network. Florida International University.

Diana Roman, Shear-Wave Splitting Analysis of Stress Field Perturbations Around an Active Magmatic Conduit: Soufriere Hills Volcano, Montserrat, American Chemical Society

Diana Roman, Development of a New Method for Determining the Proximal Cause of Cryptovolcanic Earthquake Swarms, National Science Foundation

Jeff Ryan, Collaborative Research: Using MARGINS Research Data Resources in the Classroom: Developing and Testing Multidisciplinary Mini-Lessons, Cardiovascular Sciences, Inc.

Jeff Ryan, Preparing Undergraduates for Research: Examining the Use of Remote Instrumentation in Earth and Planetary Science Classrooms, National Science Foundation

Eleanour Snow, Collaborative Research: Strengthening Pathways to Diversity Through Professional Development for Minority-Serving K-12 Science Educators-Expanding GeoFORCE Texas, National Science Foundation

Mark Stewart, Preliminary Evaluation of Enhanced Oil Recovery in the South Florida Basin Using Carbon Dioxide Injection, Florida Power & Light Company


Mark Stewart, Evaluation of Subsurface Sequestration of Carbon Dioxide (Co2) at Power Station: Physical and Chemical Modeling. Tampa Electric Co.

Mark Stewart and Mark Rains, Clay Settling Area Hydrologic Study. Florida Institute of Phosphate Research

Mark Stewart and Mark Rains, An Environmental Research Project: Investigate a Harm Standard Based Upon Chapter 40D-2.301 FAC. Southwest Florida Water Management District

Len Vacher, Spreadsheets Across the Curriculum, National Science Foundation

Len Vacher, Geology of National Parks: Spreadsheets, Quantitative Literacy, and Natural Resources. National Science Foundation

Ping Wang, Modeling Medium-term Morphology Change at Blind Pass, Florida, U.S. Army Corps of Engineers

Ping Wang, Mapping Survey to Evaluate Storm Effects on Pinellas County Beaches, Pinellas County, Florida

Ping Wang, Modeling Coastal Processes at John’s Pass and Blind Pass and Adjacent Beaches, Pinellas County, Florida

Ping Wang, Physical Monitoring of the Sand Key and Treasure Island/Long Key Nourishment Projects. Pinellas County, Florida

Ping Wang, Shoreline Mapping and Bathymetric Survey Project for the Hillsborough River Reservoir. Southwest Florida Water Management District

Paul Wetmore, A geophysical characterization of sediment fill in basins along the Agua Blanca fault, Baja California, Mexico

Jonathan Wynn, Stable Isotopic Constraints on Carbon Exchange During Heterotrophic Decomposition of Soil Organic Matter, American Chemical Society
In July 2008, Jonathan Wynn, Aurel Persoiu (PhD), Jonathan Sumrall (MS) and I met in Cluj, Romania for two extended field programs, in caves ranging from very hot to very cold. We spent the first half of the time in Romania, in Baile Herculane, a famous Roman thermal spa. The primary focus of this part of the fieldwork was on collecting dissolved sulfur and sulfate minerals from thermal springs and caves along the Cerna Valley as a part of Jonathan Sumrall’s Masters thesis. The aim of his research is to identify the speleogenetic mechanism of Valea Cernei caves and to reveal, based on isotope (d34S), geochemical and mineralogical analyses, the origin of sulfur and the processes that are responsible for the precipitation of sulfates in these caves. This research program is funded through a Romanian Science Foundation grant. We had a great time visiting a number of caves (some still under the influence of ~50°C thermal water or in some cases, steam) and performing chemical tests under the inquisitive eyes of the tourists that came to the spa for medical self-treatment. A one-day field trip into the Danube Gorge ended the first part of our fieldwork. On the way to the cave glacier fieldwork, we stopped at Cioclovina Cave (famous for its rare phosphate minerals and paleontological remains) and allowed Dr. Wynn to investigate/sample the bone deposit for a future grant proposal.

The second half of the trip focused on sampling ice and speleothems from Scarisoara Cave, in northwestern Romania. The research at this site has a two-fold significance: (1) it is the location where Aurel Persoiu (USF) is conducting studies for his PhD and (2) a recently awarded NSF grant to asses the North Atlantic Oscillation variability during the Little Ice Age and Medieval Warm Period using an ice core recovered from the cave. At the same time, a team composed of four USF faculty (Onac & Wynn from Geology, Iamnitchi from Computer Science and Engineering, and Lawrence from Visual and Performing Arts) along with two scientists from overseas received an interdisciplinary research grant from USF to analyze at high resolution past changes in climate using a multi-proxy approach and to release their findings in a documentary prepared with National Geographic Romania (NGR).

During this part of the fieldwork we had great fun working as a team, especially because some of us never entered an ice cave using ropes and climbing equipment and others never thought how different working at 0°C for many hours is when the outside temperature exceeds 27°C. The ice block was carefully investigated and we collected hundreds of ice samples for isotope and pollen analyses. Meanwhile, Prof. Lawrence and Cristian Lascu (NGR’s Chief Editor) were video recording the scientific activities held in the bottom of the ice block.

Overall, it was a great trip with lots of achievements for both graduate students but also for the USF team working to complete the NSF and USF grants.
Aurel Persoiu (PhD student) and Dr. Wynn reading the stratigraphy of the ice block in Scarisoara Cave, Romania.

Dr. Onac and Jonathan Sumrall at the entrance in a thermal cave.

Dr. Wynn investigating a bone deposit in Ciclovina Cave, Romania.

Aurel Persoiu (PhD student) and Dr. Wynn reading the stratigraphy of the ice block in Scarisoara Cave, Romania.
Structure/Tectonics Group
During the 2007-08 academic year, the Structure/Tectonics Research Group included graduate students Sean Callihan, Michelle Caplinger (now Leonard), Adam Springer, Cosmin Stremtan, and Fatin Tutak. Fatin finished her MS during the year and is now working for a local environmental firm. Cosmin initiated a project studying deformation associated with Paleozoic continental collisions in Romania. Sean and Adam initiated a project characterizing the geometry transtensional basins along the Agua Blanca Fault in Baja California Norte, Mexico. All three graduate students were funded, in part, through grants from Sigma Xi. Michelle is writing feverishly and is nearing completion of her MS. In addition to the graduate students, Jeff Beeson, a recent USF graduate, is working on a project quantifying the spatial distribution of vents within volcanic fields. Finally, as part of our ongoing efforts to use the intrusions of the Henry Mountains of south-central Utah as a natural laboratory, we, including Chuck Connor and Sarah Kruse, are continuing our research into the mechanics of upper crustal magma emplacement. During the upcoming year we will continue on projects dealing with active tectonics and magmatism, including our collaborations with Mexican researchers working on the Agua Blanca Fault. We anticipate graduating three of our graduate students and helping Jeff Beeson gain acceptance to a graduate program.

Field Mapping
This summer’s field mapping course included 18 students including two field assistants and two additional graduate students. After meeting in Salt Lake City, we returned again this year, to southeastern Utah, including the Moab area and the Henry Mountains. Our projects included introductory mapping of the Courthouse Rock area, grid mapping on the Moab Fault, and some advanced mapping of a collapsed anticline in Salt Valley at the north end of Arches National Park and of a small intrusion on the northeast side of the Henry Mountains. During the first exercises the students were trained in the basic skills of locating themselves on their topographic maps and accurately measuring the attitudes of structures using their Brunton compasses. As they improve upon these skills the students learn to accurately represent the geology they identify in the field on their maps and to use those maps and the collected data to interpret the geologic evolution of the region under consideration.

In the field mapping course, just like all of our courses that offer field trips, our primary goal is to introduce the students to real-world examples of structures and features they might otherwise only know from textbooks and PowerPoint presentations. The chosen field areas present the students with a relatively simple setting (i.e. located in the north-central Colorado Plateau) but, some breathtaking examples of common structures, such as faults and...
folds. The Colorado Plateau stratigraphy present underlying the Moab area provides the perfect architecture for the students to learn the basics of mapping in a place where the exposure approaches 100 percent. Mapping of the Moab Fault provides the students, not only with a 3D understanding of how planar structures map out across topography, but also affords them the chance to see the broad distribution of deformation associated with such structures. Similarly, mapping of intrusions in the Henry Mountains allows the students the opportunity to witness the processes associated with magma movement through the earth.

During the field mapping course we also take some time out to allow the students some free time within the National Parks in this part of Utah. Students spent time in both Arches and Capitol Reef National Parks. During one of the days off the students hiked to Delicate Arch, one of the most photogenic arches in the park.
Sophie Pearson joined the USF Geology Department in Fall 2005 upon completion of a Masters from Leeds University in the UK, with a year on exchange at Pennsylvania State University. Working with Chuck Connor of USF and Ward Sanford of the USGS in Reston, VA, the focus of her study is temperature variations of gases on the flanks of active volcanoes. In particular she is looking at the potential of these fumarole temperature variations to be used to understand interactions between the volcanic and hydrologic systems, and as a tool to forecast changes in volcanic activity.

After starting fieldwork on Cotopaxi volcano in Ecuador, the extreme elevation involved and the activity of the volcanoes in Nicaragua led her to refocus her efforts to Telica, Masaya and Cerro Negro volcanoes there. Just four months after installing sensors to record soil temperature, air temperature, barometric pressure, rainfall, self-potential and seismicity at Masaya volcano, lava broke the surface of the crater for the first time in 2 years, and remained visible for 10 days. Temperatures increased by up to 5°C at the fumaroles 3.5 km away, requiring a huge input of energy. There was also a distinct, repetitive shape to the temperature time signal, which suggested that as well as volcanic activity, rainfall and groundwater are also important factors when looking at distal fumarole temperatures. It also showed that the frequency spectrum can be extremely useful in identifying changes in temperature due to volcanic activity. Trying to understand these cycles in the temperature variations led to the current stage of her studies, where she is creating numerical models of the volcanic system using SUTRA and TOUGH2. These simulations attempt to recreate the two-and-a-half years of high resolution temperature data she has collected, including the effects of volcanism and rainfall, and to improve current understanding of how the hydrologic system affects volcanic activity.

Sophie has a Presidential Fellowship from USF that allows her to carry out her studies anywhere in the world. With the help of three NSF travel grants and six other grants, she has presented her research at conferences in Ecuador, USA, Taiwan, Japan and Iceland. She has also spent 68 days in Nicaragua spread over seven trips, working closely with Instituto Nicaragüense de Estudios Territoriales to install, maintain and improve the monitoring systems. A recent highlight to her studies was the acceptance of a paper to Geology, which appeared in the December 2008 issue.
Connie Bryan, Fiscal and Business Specialist, continues to learn the many layers of fiscal management in the department and to reconcile P-card purchases. Connie is currently recovering from hip replacement surgery. Paul Bryan, Teaching Lab Specialist manages teaching and research lab activities and handles purchase orders. Connie and Paul have just found out they have a new granddaughter on the way. Mary Haney, Office Manager, continues to handle the administrative duties for the department. Mary and her husband James like to travel to their property in Alabama to savor the peace and quiet. Mandy Stuck has joined the department as an Academic Program Specialist, working as an assistant to the graduate program. Mandy transferred from the University of North Florida. She loves her dogs, Duncan and Leo, and thinks Tampa is great. Lynn Wilkinson, Fiscal and Business Specialist, is in charge of Geology’s fiscal resources and a grant budget of over $4,000,000. Lynn and her husband Steve are building a new home in Zephyrhills, where Steve is a science teacher at Zephyrhills High.

Staff News

Sophie fixing the telemetry at Masaya volcano that allows the carbon dioxide flux measurements to be collected and sent to computers in Managua and in Tampa in real time. Next on the list is to add the temperature datalogger to this telemetry system.

Vultures love the second datalogger that Sophie recently installed near the crater at Masaya volcano, and are constantly pulling apart the cables!

The new lava extrusion observed in the crater of Masaya volcano in October 2006.
Geology Department Publications in 2007 and 2008
(Noe: Student names indicated by bold print.)

Books


Papers


Vacher, H.L. and Chavez, T., 2008, Quantitative literacy on the Web of Science, 1: The bibliography and its role in the history of this journal. Numeracy, 1: 1, article 2. (H.L. Vacher and T. Chavez) Available at: http://services.bepress.com/numeracy/vol1/iss2/art2


Connor, Chuck (Professor and Chair): It has been another great year to be part of the USF Geology Department. Mikel Diez finished his doctorate working with me this year, and has moved on to the University of Bristol as a postdoctoral fellow. Alain Volentik, Sophie Pearson, Koji Kiyosugi, and Armando Saballos continue to work with me on their dissertations, and Amanda Hintz received her MS this Fall and has moved to University of Buffalo to begin her PhD Laura and I finished editing our book “Volcanic and Tectonic Hazards Assessment for Nuclear Facilities”, to be published by Cambridge University Press in the near future. I have also been working on guidelines for volcanic hazard assessment for the International Atomic Energy Agency, and doing field work this year in Chile, Japan, Sicily, the western US, Mexico, and elsewhere. It is great to be busy!

Herbert, Greg (Assistant Professor): This past year saw several milestones for my paleobiology lab, including Shubhabrata Paul completing his master’s degree (my first student to finish since I started as a tenure track assistant professor in 2005) and beginning his doctorate and Dr. Lisa Whitenack joining our group as a post-doctoral fellow. Jenn Sliko is continuing her work on her dissertation in paleoclimatology of the Florida Pleistocene, and Julie McKnight is close to completing her master’s degree project in stable isotope geochemistry. Our group also conducted major NSF-funded field expeditions in the quarries of south Florida in 2008 and participated in a Florida Institute of Oceanography research cruise to study marine invertebrate ecology of the west Florida Shelf. We plan to repeat both expeditions in 2009 as well as conduct fieldwork in Mexico.

McIlrath, Judy (Instructor): This Summer I began my fourth year of teaching, my third year as undergraduate advisor, and my second year as secretary to the Geology Alumni Society! My days are filled with student appointments, phone calls, emails, lecture preparation, and developing new course material (Oh yes, and trying to get my last name changed in a million places). Spawning death valley and long valley caldera. Hosting several international guests in my home this year has been a joy, and for the first time in the fifteen years that I have been doing this, I found that I must put some stipulations on the welcoming statement “Make yourself at home”! Life is good, and in case you haven’t heard me say it, I love my job!

Onac, Bogdan (Assistant Professor): I taught Sedimentary Petrology, Karst Geology as well as a new incarnation of GLY 6739 - Quaternary Geology with emphasis on sea-level change. A field trip to San Salvador Island, Bahamas served the last two classes. My research on paleoclimate reconstruction based on ice deposits from caves in Romania received funds from the NSF and USF (an interdisciplinary grant in which I have co-PIs from 3 departments across the campus and 3 from overseas). Jonathan Wynn, Aurel Persoiu and two of the Tampa co-PIs joined me during the fieldwork in Romania where we collected ice and speleothems from Scarisoara Ice Cave. Following up on this trip, Wynn, Persoiu, and possible a new graduate student will return to Romania in June/July 2009 to continue their research. I continued to work on sea-level changes based on speleothems from caves in Mallorca, Spain, project that also received funds from NSF. Next step in this project is to take with me a graduate and an undergraduate student during May 2009 to work on this exciting project. My master student (Jonathan Sumrall) had a great time working on southwestern Romania on sulfates from thermal caves, trying to decipher their origin based on sulfur isotope analyses. Dr. Wynn joined us for his fieldwork as member of Jon’s dissertation committee. Both my students (Persoiu and Sumrall) presented papers at meetings in Slovenia, Austria, and Russia.

Rains, Mark Cable (Assistant Professor): I continue to be busy, with ongoing research projects in Florida, Mexico, and Alaska. Most of these projects are interdisciplinary in nature, such as our efforts to balance limited water resources in coupled human-natural systems in rural communities on the central Pacific coast of Mexico and our efforts to quantify the physical and biological controls on juvenile salmonid habitats in headwater streams in Alaska. I am helped in my efforts by three PhD students, three MS students, and the occasional undergraduate student assistant. My wife, Kai, is the Florida Operations Manager for Three Parameters Plus, Inc., an environmental consulting firm largely serving large mining interests in Alaska. Our daughters, Cazlin and Zanti, are 8 and 6 years old, and are proving to be amazingly resilient and resourceful as one parent is often out of town and in the field. They travel with us frequently, and this year even got to do field work with me in Alaska. (They thought that sampling fish was more interesting than sampling water.) In our spare time, we can all be found in the pool, sailing, or cheering for the Rays from the cheap seats.
Roman, Diana (Assistant Professor): It’s been a fun and exciting year for me as I focused on growing my research group, which now comprises two PhD students, Heather Lehto and John O’Brien, who are working on seismic data from Mt. St. Helens, Washington, and the Katmai Volcanic Cluster, Alaska, respectively; and one MS student, Wayne Kilgore, who is studying a cryptovolcanic earthquake swarm at Strandline Lake, Alaska. In addition to my ongoing interest in precursory volcanic earthquakes and crustal stress perturbations, I’m currently starting several new lines of inquiry into noneruptive seismicity in volcanic regions – an important but sorely neglected topic that I hope will contribute to a greater general understanding of the full range processes driving microseismic activity in volcanically active regions.

Ryan, Jeff (Professor & Assistant Chair): Since the last newsletter, I’ve been engaged in two NSF-funded educational projects, inherited management of a new piece of analytical equipment, and have been traveling way too much both to support these projects, and to meet my obligations as an officer in a couple professional organizations.

The first of the two new projects, funded by the NSF Course, Curriculum and Laboratory Improvement Program (CCLI), is an attempt to measure the educational impact of using research instrumentation in undergraduate geoscience courses. Now, I’ve been doing this for a while, and as many of y’all who took those classes can recall, it can be a hassle, because the instruments are in a different building, and only a few people can use them at a time. However, in this project I’ve taken the inconvenience factor out of it by using the Florida Center for Analytical Electron Microscopy (FCAEM) electron microprobe and scanning electron microscope, which can be fully operated remotely by terminal emulation. I was part of the NSF grant that got this facility for Florida, so now I use it live in class – we do whole class exercises with the SEM and microprobe, and every student in GLY 3311C gets to run samples they collected on my Fall Blue Ridge field trip via microscope to find out FOR SURE what minerals are in them. It’s too early to know for sure whether this does what NSF hopes it will – which is make folks learn Petrology better! – but it certainly gets students excited, and it’s started several students on independent research projects examining subsets of the many Appalachian igneous and metamorphic rocks we’ve collected over the years. Two former GLY 3311C students presented this work at the GSA Southeastern Section meeting this past Spring, and two more are slated to do so this Spring (more on this Spring below…)

The second NSF-funded project (and the primary source of my excessive travel!) is related to my service on the NSF-MARGINS Program Steering Committee – it’s an effort to take the many discoveries funded by the NSF-MARGINS and get them into college geology and marine science courses. The project involves running workshops for faculty, of which I’ve done a couple thus far; and conducting education-related portions of MARGINS faculty Institutes, which got me to Hawaii once (not so bad…), and participating in workshops at major geoscience meetings, which has had me bouncing everywhere (I went to seven meetings last year – too many!!!). I’m trying to keep some of this at home by running the next workshop in St. Petersburg in March. Aside from my MARGINS travels, I’m also bouncing around a good bit related to my service on the Executive Boards of the Council on Undergraduate Research, and the National Association of Geoscience Teachers – between them, I got to visit a range of interesting places, such as El Paso, TX, St. Johns, MN, Davidson, NC, and Grand Rapids, MI (in late November – COLD!).

I am also now Principal Investigator on an NSF grant that has brought a brand-new Perkin Elmer ICP-MS instrument to our department (hurray!). I was a co-PI on this originally with Dr. Thomas Pichler, but he has departed our shores for home and family and a “Herr Doktor Professor” job in Bremen, so now it’s mine to play with. Zac Atlas, our newest igneous petrologist, is tasked with the day-to-day management of the instrument (along with the new stable isotope mass spectrometer that Jonathan Wynn got for us), and I’m gradually becoming more helpful. We hosted Dr. Masaya Miyoshi from Kunamoto University as our first visiting ICP-MS user in the Summer, and he presented his new results at the AGU Fall Meeting this December. Coming up early in 2009 is a big Departmental event – the Geological Society of America Southeastern Section Meeting, which the Geology Department is hosting in St. Petersburg, FL. I’ll also be planning and convening a “summit meeting” of sorts (at NSF’s behest) to bring together the major NSF Geoscience research and data management initiatives with the different NSF-supported education-related cyberinfrastructure efforts, to try and forge new linkages among these resources, so as to get the big geoscience discoveries into classrooms and to the public more quickly. And somewhere in there, I hope I’ll get to start some new science projects, with Zac looking at melt inclusions in Central American lavas, or with my old student (now Lecturer at Leeds University) Ivan Savov examining the transition of subduction to collision in Armenia. And maybe I’ll even get to spend a few nights in my new house….

Stewart, Mark (Professor): A few years ago, an engineer from a Florida power utility walked into my office and asked if I knew anything about carbon sequestration. I had just finished a study on subsurface storage of hydrogen, so I said yes, and that started a progression of events that has lead to a major part of my research shifting to geologic evaluation and modeling of subsurface sequestration of carbon dioxide. I am working with Jeff Cunningham and Maya Trotz of CEE on sequestration. Mark Rains and I are working on several hydrology studies, and Mark, Jonathan Wynn and I are completing a study of non-vegetative criteria for assessing the level of ‘harm’ to cypress wetlands from development and pumping.

PhD students Darline Lott, Bill Hutchins, and Swagata Guha are plugging away on their dissertation projects. Last year I taught introductory oceanography in spring and fall to about 350 students each time. It is
are now pursuing their PhD degrees at USF coastal
Tiffany Roberts, graduated from the MS program and
graduate students, Tanya Beck, Mark Horwitz, and
of the complicated tidal inlet morphology. Three of my
field-oriented studies, we added numerical modeling
along the Florida coast. In addition to our "traditional"
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Vacher, H.L. 'Len' (Professor): I am interested in
subjects that cross geology subdiscipline boundaries in
the same way that columns cross rows in a spreadsheet.
My teaching, service and scholarly activities now
focus on three such cross-cutting areas: geoscience
education, information science, and quantitative literacy.
In the first category, Jeff Ryan and I taught a seminar
course in the Spring (2008) on geoscience education
assessment for PhD students interested in a career in
college-level teaching. In the second, Todd Chavez,
Director of Collection Analysis at the USF Libraries,
and I taught a course in the Spring on geoscience
information which was directed at preparing graduate
students to use modern library techniques to develop
a literature review of their research topic. In the third
is my work with the National Numeracy Network
(http://serc.carleton.edu/num), which includes editor
responsibilities for Numeracy, NNN’s online journal
(http://services.bepress.com/nnnumeracy); continuation
of the undergraduate course, Computational Geology, a
Fall course on quantitative literacy for geology students;
and a couple of NSF-funded projects. The first of these
is Spreadsheets Across the Curriculum (http://serc.
carleton.edu/sp/ssac_home), which is now in its fourth
year. The General Collection on the SSAC Web Site now
includes 57 educational modules from 42 authors from
21 institutions from 11 states and from 25 fields (Library
of Congress categories). Our new three-year grant (with
Judy McIlrath, Mark Rains and Tom Juster) is to develop
a Geology of National Parks Collection on SSAC to
support Judy’s online, Geology of National Parks course.
That work will be in collaboration with eight National
Park Service Research Learning Centers (at Point Reyes,
Glacier, Yellowstone, Indiana Dunes, National Capitol
Region, Great Smokey, Mammoth, and Congaree
National Parks).

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Wynn, Jonathan (Assistant Professor): It is hard to
believe that two years have passed since I joined USF
Geology in Fall 2006—the past years have been busy,
but exciting. Our work on the Dikika Research Project
of Ethiopia has continued and will be published in a
Geological Society of America book: “the Geological
Context of Human Evolution in the Horn of Africa”
in late 2008. Zelalem Kubsa, a graduate student from
Mekelle University in northern Ethiopia has begun his
research project to work on stable C and O isotope
records from mammalian tooth enamel as a record of
paleoenvironmental change in 8 million years of the
history of the Ethiopian Rift. My other current projects
are centered around understanding the rate at which
carbon is cycled through soil organic matter, using
stable isotopes as a natural tracer technique. Jennifer
Chelladurai has begun a project to monitor the rates of
decomposition of tropical and temperate soil organic
matter in synthetic soil profiles, and a test of the
assumption that the respired CO2 is in full isotopic
equilibrium with dissolved and precipitated inorganic
carbon. I am also setting up a study of changes in the
natural carbon cycle with soil moisture conditions in
some of Florida’s classical soil moisture gradients in the
Ecological Research area near Riverfront Park. During
the most recent summer, I began work on a project in
the Peruvian Andes where we will establish a gradient in
soil temperature to examine the rates of decomposition
of C3- and C4-derived soil organic matter, and begun
working with Bogdan Onac and students on several
cave-related projects in Romania. Having been here at
USF for two years, several USF graduate students have
sparked my interest in other new areas of research,
including the role of decomposition organic carbon
in speleogenesis, records of paleoclimate in cave
sediments, ice, speleothems, and fossil corals. Perhaps
my most exciting research news is the installation of
USF Geology’s new stable isotope ratio mass spectrometer,
with funding from the College of Arts & Sciences
and Office of Sponsored Research. This facility has been
running for a year now, giving USF Geology researchers
the capacity to make H2,C,N,O and S isotope ratio
measurements of a wide variety of Earth materials.

My current courses include Principles of Stable
Isotope Geochemistry, Global Biogeochemistry, and
Biogeochemistry of the Earth’s “Critical Zone.” I also
co-teach Geomechanics (Rock and Soil Mechanics) with
Diana Roman, and Analytical Geochemistry with Jeff
Ryan. I enjoy the fact that teaching these courses helps to
keep me updated on the state of research peripheral to
my narrow areas of interest.
**Bretnall, Bob (BA 83; MS 88):** We continue to usher at the Hippodrome State Theatre in downtown Gainesville; it’s the only way to get me to see a play. And I get to terrorize the patrons by operating the oldest continually operating electric elevator in the state. It’s quite the ride and difficult to get the floors to line up. Watch your step.

I began teaching Earth & Space Science at Santa Fe College in January, did so again this summer, and will do so again this fall. The class is a general course geared toward non-science majors who need a science credit. It’s a blast! Imagine me shaping the minds of young adults. Makes you shudder. Beware of Laurel Oak trees; they grow up fast, then fall down. The very large one in our front yard (30 inch diameter, 55 feet tall, ~35 years old) was showing signs of rot (white bulbose fungal growth), so we had it taken down. The tree had no roots! The only thing holding it up was gravity and luck. My advice: get rid of them now and plant something more hardy, such as a live oak. Work is good for Annie and me. Annie is taking on a leadership role in the University of Florida Financial Services Department, embracing the move to PeopleSoft (a data management program) by learning all she can, then teaching it.

The FDOT Fairbanks Disposal Pit groundwater remediation project for which we moved to Gainesville is cleaning up nicely: air sparging the upper surficial aquifer and bioaugmenting the lower surficial aquifer has greatly improved the groundwater quality and we anticipate cleanup being completed in the next few years.

Life is grand.

**Cain, Heather L. (BS 95):** Co-founded MCD of Central Florida, Inc. in 1998

**Cain, Matthew L., P.G. (BA 94):** Board Member - Board of Professional Geologists - Appointed by Governor Crist 6/07. Founded MCD of Central Florida, Inc. in 1998

**Coe, Matthew (BS 06):** Personally, I am married (wife Wanda, 8 years this past August), reside in St. Petersburg and have two boys (Benjamin Matthew 5 and Zachary Gerald 1-1/2). Professionally, I am a registered geologist here in the state of Florida (since December of 2006) and I am currently the Director of West Florida Operations for GLE Associates, Inc. (architecture, engineering and environmental consulting).

**Countryman, Tony (BS 91, MS 96):** Between 1990 and 1996, I worked out of Tampa for an environmental company called Florida Groundwater Services, Inc. In 1997, I work for six months in the Ambient Ground Water Monitoring Program Section at the Southwest Florida Water Management District. For the last eleven years, I have worked for the Northwest Florida Water Management District (Tallahassee office) as a hydrogeologist in the Ground Water Bureau of the Resource Management Division. We have recently returned from our first trip to the Hawaiian Islands. We spent a week exploring the more natural parts of Oahu and hopping to the Big Island of Hawaii to visit the Volcanoes National Park.

**Dunn, Richard A., P.G. (BS Nat Sci 84):** I work as an agent to FDEP Petroleum Cleanup (Preapproval Program in the state) since April 2000. Kids: Katlyn 14 in school, Jasmine 20 finishing up culinary art school in Tallahassee and my son Ryan 22 (2 year degree from Tallahassee Community College) staying with my sisters in Clearwater to work our some details of his next plan of action (school, work other).

Went to Austin Texas to witness my nephew’s wedding along with 8 brothers and sisters, April 2008.

Went scalloping and fishing over the summer in my boat with co-workers and family.


**Goetz, Jim (BA 68, MA 73):** I am still a working stiff with Universal Engineering Sciences, Inc. in Tampa. I am currently the PG in our office, Environmental Services Manager, working on Environmental and Forensic (sinkhole) investigations. I still reside in Apollo Beach. Recent activities? Well, did the 8-day raft trip down the Grand Canyon a few years back, take trips to Phoenix, New Mexico, Seattle and Old Mexico on a regular basis to visit friends and just get away. There are many things to enjoy in the canyon, attached is a photo showing one of the best. Looking forward to the newsletter.

**Griffith, Jim (BS 66):** Retired after working in oil exploration in the U.S. and the Middle East for 30+ years and lives happily in San Antonio.
Hardesty, Steve (BA 67): Hey, I’m still out here with both feet hitting the floor each morning. Retired, but still teaching Meterology and Natural Hazards/Disasters courses (online) for Valencia Community College, Orlando. This facilitates spending six months (hurricane season) at our home in Spruce Pine, North Carolina (a mining district) and the balance in Orlando. I use my Masters in Business skills to manage two family trusts, handyman skills when in NC restoring the house there and fishing/shooting skills when in Orlando. Wife Linda (USF Anthropology, ’67) like to garden in both places. Only child, Heather, is married and living in Maitland, Fl.

Kelly, Kristen L. (BS 99): I am currently in my 4th year teaching 7th Grade Science in Hillsborough County.

Lawn, Andrew M., MS, P.G. (MS 89): I’m a Vice President and Office Manager of HSW Engineering, Inc. Orlando. We recently expanded our space downtown and employ one P.G., two P.E.s, one junior geologist, three scientists and two technicians.

Pam and I recently celebrated our 20 year wedding anniversary and have two lovely daughters, Maggie (15) and Anna (13). Maggie is in the International Baccalaureate program at Winter Park High School and rows in Crew. WPHS Crew have won the State Championship 28 times; Maggie was in the varsity lightweight boat when her boat took the gold at the State Champs on the Tampa Bypass canal last April! Anna, Pam and I joined the Orlando Rowing Club this summer and currently enjoy 3 pre-dawn mornings of brutality per week.

We purchased a property at the outfall of 18 Mile Creek to Lake Erie in hometown Lakeview, New York where the Tichenor Limestone, a widely traceable carbonate unit, outcrops and is underlain by fossiliferous Wanakah Shale. We enjoy visits to the creek and beach collecting Devonian brachiopods, crinoids, corals and trilobites. We hope to build a little retirement ski lodge with a basement where I’ll be silver-smithing Devonian jewelry after I get the girls thru Grad school, God willing.

I still play volleyball on Thursdays – guys-night-out and still love driving a MINI Cooper I invested in a few years ago (better than the stock market), but the girls don’t fit in the back seat so well anymore. I’m thinking about trading it for a 2009 Dodge Challenger – reminiscent of the old Buff State and USF days in the 1973 Challenger (I still have the green machine) and 1966 (boating to outcrops) Dodge Coronet.

Go Bills, Bucs and Bulls!

Lawrence, Thomas (MS 89): A new job. Well, it has actually been a year. I am working for Redox Tech, LLC, (www.redox-tech.com ) in the Atlanta area. We specialize in in-situ remediation (the largest user of Klozur persulfate in the US, according to FMC; end of plug). In May my son graduated from Georgia Tech with a BS in Computer Engineering and a BS in Physics, he now has a job in Phoenix, AZ, designing microchips. (Good in calculus and physics … how can that be?)

Morrison, Kevin (MS 95): Current position - Senior Software Developer at OTH Services, Inc. in Tampa.

Scheldt, John C. (BA 74): Still plugging away at El Paso E&P - Houston drilling coalbed methane wells in the Black Warrior Basin of Alabama. Sure is great doing REAL geology again after having to be a directional driller and run a coal coring and analysis operation.

Scott, Thomas (BA 71): I am completing my 35 year with the Florida Geological Survey in Tallahassee and have served as the Assistant State Geologist for Geological Investigations for 23 years. This year I have had the opportunity to represent the Association of American State Geologists as a Senior Advisor to the International Year of the Planet Earth and as a Commissioner with the North American Commission on Stratigraphic Nomenclature. I am very pleased with how the Geology Department has grown over the years. I just wish it had been this good when I was an undergrad! My wife, Nada, and I look forward to the Geology Alumni Society banquet each year when we get to catch up with old friends and meet new ones.

Serridge, Eileen Matte (BS 84): Mathematics Teacher and Volleyball Coach at Titusville High School

Spieler, Angela, PE (BS 93; MS 95): I continue working as a Professional Engineer in Tampa with Kisinger Campo & Associates (KCA). My husband, David, and I are celebrating our 8th wedding anniversary. Our daughter Taylor (6) just started kindergarten at Lewis Elementary in Temple Terrace.

Spinner, William T. (BS 02): Currently working for Atwell-Hicks, LLC in Tampa. Married and have 8 month old son.

Stott, Jennifer Kling (MS 97): I continue to reside in Columbia, Maryland with my husband and two daughters (ages 5 and 7). This fall I was appointed the new full-time Physical Science instructor at Howard Community College where I have been an adjunct for the past many years. I have a diverse teaching load including Geology, Earth and Space Science, Oceanography, Astronomy, and Meteorology. I also went on a fantastic trip to Glacier National Park where besides seeing awesome rocks, mudcracks, and ripples marks, we saw lots of moose and grizzly bears too.

Tichenor, James “Rob” (BS 95): Recent news: I’ve just returned from a 10 month stint in Iraq as part of the reconstruction efforts. I have been living in the Denver, CO area since 2000 working for an environmental/ engineering consulting company.


Wierzbicki, Paul (BS 81): I earned a Master’s Degree in Public Administration from Florida Atlantic University in Boca Raton. For the past approximately 25 years, I have worked at the Florida Department of Environmental Protection, Southeast District in West Palm Beach. I am supervising the Waste Cleanup Program.

Let us know how you are doing!
Please send an update on your activities by email to Mandy K. Stuck, Academic Program Specialist, Department of Geology at mkstuck@cas.usf.edu. Please include your full name, year of graduation and degree awarded. Pictures are welcome!
Graduate student Jennifer Chelladurai relaxes on sandstone of the Pigeon Point Formation, California. Photo by Abe Chelladurai.