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GEORGIA GEOLOGY

Editor: Tim Chowns
State University of West Georgia

PRESIDENT'S COLUMN

The 2003 Annual Fieldtrip was a tremendous success. Although the first stop was complicated by some slips and slides that separated the two buses, and led to a long walk with two groups working in opposite directions, everyone seemed to take it in stride. I would like to thank the field trip leaders John Costello and Mark Cocker, both with the Georgia Geologic Survey, and Robert Hammack, geologist with C-E Minerals' Mullite Corp. of America. I would also like to express gratitude to Georgia Southwestern State University – Department of Geology and Physics for hosting the GGS Social at their lakeside retreat. Rain and mud did not dampen any of the topics of discussion at the many field stops. The possibility of "cambered folds" in the Tuscahoma Formation offered some of the most interesting discussion. Empirical evidence from as far away as England was used as a supporting argument for the origin of the folds. Many of the attendees of the fieldtrip took time during this discussion to renew acquaintances, update friends on their

activities of the past year, and to otherwise reflect on points of argument being discussed by the "theorists". This comity was observed at all the fieldtrip stops during the weekend. One participant even preempted a bus long enough for him to reconnoiter an old relationship with a venomous "friend" curled up along the side of the road.

The value of Geology as a multi-disciplinary science is again obvious to the general public with the highly technical endeavors of the two little prospectors, Sprite and Opportunity. Geologists are reviewing a vast amount of data generated by their exploration. The mars probes remind us that our science is becoming increasingly hi-tech; professional geologists must either learn new computer skills, or find someone to assist them with this endeavor. Students and future professional geologists will be using high technology to aid their field work and interpretations. However, as a practicing industrial minerals geologist, I can emphatically state that no amount of high-tech knowledge and skill will ever replace good, solid, observation in the field. As a manager with a company that hires several management trainees each year, I am finding that many new employees are not trained in how to make observations critical to the analysis required of decision making. Communication skills, written as well as verbal, are still important to the success and promotion of the management trainee. Recognition of an individual by upper management is often based on his/her presentation of observations and their recommendations, based on the analysis of empirical data. Presentation of complex concepts in simple but informative terms for management review is critical to the success of the project, as well as the individual.

I would like to remind our membership that Randy Kath issued a request in our "September 2003 Newsletter" for past guidebook editors to copy any electronic files related to the publishing of their respective annual guidebooks, and forward copies of the files to Randy Kath, Geology Department – West Georgia. This data will be used to produce PDF's of past guidebooks for issue in electronic format. To date we have received five electronic files related to past guidebooks. I'm certain that there are still some more files out there that can be copied. Please take the time to search your computers to see what you may have hidden away. It has also been recommended that we start publishing and e-mailing our Newsletter in PDF format. I will direct my staff to include a place for an e-mail address in our Fall Fieldtrip Registration Form, for those wishing to receive an electronic newsletter. Posting the Newsletter via e-mail will save the Society a lot of mailing expense and simplify the mailing process. Those wishing to continue receiving the letter by US mail will be accommodated.

C. T. Williams

ANNUAL FIELD TRIP 2004

This year's field trip is planned for October 8-10. Headquarters will be in Rome, Georgia and the trip will include a miscellany of stops in the Valley and Ridge Province. Planning is still in the early stages and members are encouraged to participate in leading the trip by contacting Tim Chowns. Topics and stops already proposed include: Drag folding in the Vulcan quarry, Rockmart; a fault duplex in Mississippian limestones near Rising Fawn; results of a seismic profile between Lookout Valley and the Rome fault; causes and effects of the April 29, 2003 earthquake centered near Menlo: depositional environments and brecciation in the Maynardville limestone; the origin of "rock towns" on Lookout and Pigeon Mountains; and hydrogeology of Cave Springs.

GEORGIA ACADEMY OF SCIENCE

This year's meeting of the Georgia Academy of Science, including the Earth & Atmospheric Science section is to be held at Berry College in Rome on March 26-27. For more details about the program members should contact Al Mead (al.mead@gcsu.edu).

Friday, March 26, 2004
Section III: Earth and Atmospheric Sciences
Al Mead, Presiding

2:00 PALEOCENE FLORAS FROM NORTH DAKOTA: A NEW AQUATIC PLANT FROM BEICEGEL CREEK,
A. L. Sullivan, M. L. DeVore and K. B. Pigg

2:15 A COMPARISON OF THE RIGGINS MILL AND OCMULGEE INVERTEBRATE FAUNAS (EOCENE), Beth Howell,
M. L. DeVore and John Anderson

2:30 MINERALOGY AND LOWER PALEOZOIC INVERTEBRATE FOSSILS OF THE CONASAUGA FORMATION AT OUTCROPS NEAR DALTON, GEORGIA,
Donald M. Thieme and Ken Leonard

2:45 COLUMBIAN MAMMOTH EXCAVATIONS IN BRUNSWICK, GEORGIA: THE HISTORICAL SIGNIFICANCE,
Robert A. Bahn and Alfred J. Mead

3:00 **Break**

3:15 USING MAMMALIAN FAUNAS AS PALEOENVIRONMENTAL INDICATORS,
Witt Taylor and Alfred J. Mead

3:30 SIZE AND AGE CLASS ESTIMATES OF NORTH AMERICAN EOCENE PALAEOPHEID SNAKES,
Dennis Parmley and Harold Reed

3:45 VIRTUAL FIELD TRIPS IN THE CLASSROOM-AN HISTORICAL GEOLOGIST'S WINDOW INTO THE PAST,
Edward E. Chatelain and Cecilia S. Barnbaum

Saturday, March 27, 2004

Section III: Earth and Atmospheric Sciences
Mark Groszos, Presiding

8:30 CO-CRYSTALLIZATION OF TOPAZ, RED BERYL, HEMATITE, AND QUARTZ AT TOPAZ MOUNTAIN, JUAB COUNTY, UTAH,
Ryan O. Roney and Curtis L. Hollabaugh

8:45 HISTORICAL TRENDS IN NITRATE VALUES OF THE CHATTAHOOCHEE RIVER AND PREDICTIONS FOR THE FUTURE,
R. Josh Prince and Curtis L.Hollabaugh

9:00 SURFACE-WATER/GROUNDWATER INTERACTIONS BENEATH A GEORGIA PIEDMONT FLOODPLAIN,
Brian Cowan, Ethan Smith and James Mayer

9:15 **Break**

9:30 WATER QUALITY ASSESSMENT OF GOLF COURSE PONDS, S. M. Wells

9:45 LAND USE/COVER CHANGE DETECTION FROM SATELLITE IMAGES: HOW TO IMPROVE THE ACCURACY?, Zhiyong Hu

10:00 **Section Business Meeting**

10:30 **Poster Session**

11:00 A COMPARISON OF WATER QUALITY PARAMETERS AMONG THE AMERICAN RIVERS TEN MOST ENDANGERED RIVERS IN THE NATION FOR 2003,
Randa R. Harris and Curtis L. Hollabaugh

11:15 BIG CITIES AND BIG RIVERS: THE EFFECT OF BIG CITIES ON THE WATER QUALITY OF FIVE GEORGIA AND ONE TENNESSEE RIVER,
Curtis L. Hollabaugh and Randa R. Harris

11:30 CHEMICAL CHARACTERISTICS OF SOILS FROM SELECTED LOCATIONS ALONG THE LOWER SAVANNAH RIVER,
Gian S. Ghuman, S.Paramasivam, Kenneth S. Sajwan and Craig Young

POSTERS

PROPERTIES OF NATIVE SOILS SURROUNDING A SAND BORROW PIT IN LOWNDES COUNTY, GEORGIA, Timothy Couch and Eric C. Brevik

EROSION RATE IN LOWNDES COUNTY DRAINAGE DITCHES THAT DISPLAY HEADCUTS, Rob E. Edmisten, Eric C. Brevik and Judith L. Grable

GEOLOGIC CONTROLS ON THE FORMATION OF VERNAL POOLS IN THE APPLING GRANITE, HEGGIE'S ROCK, COLUMBIA COUNTY, GEORGIA, Leah J. Vandenhuerk and Richard C. Capps

TREASURER'S REPORT

Balance in account August 31, 2003		$6555.45
Income		
Dues	335.00	
Fieldtrip registration	1770.00	
Late Fees	36.00	
Lunches	474.00	
Guidebook sales	358.50	
Donations	500.00	
Miscellaneous	1.90	
Total		3475.40
Expense		
Fieldtrip buses	1850.00	
Fieldtrip lunches	407.27	
Guidebook printing	162.91	
Smoker	86.15	
Other Fieldtrip expenses	58.83	
Fieldtrip refunds	78.00	
Newsletter	150.00	
Postage	126.62	
Total		2919.78
Balance in account February 29, 2004		$7111.07

EXPOSURES

GEORGIA STATE UNIVERSITY

The Graduate Program at GSU is thriving. We have 23 students, an all time high. Our courses and labs are full of activity and new faces. We are noting a rise in returning students too. We are increasing both quality and quantity. Some of our new students have enviable records of achievement from noteworthy programs.

We instituted a new MS degree program in Earth Sciences which features three tracks (GIS, Hydrologic Sciences, and Environmental Management) in addition to our traditional MS Geology degree program. We are collaborating with Geography faculty in this program. Thesis and non thesis options are available for both programs. We are also able to direct Ph.D. research and our first students are slated to graduate soon. In addition to programs, we are overhauling our graduate curriculum in steps to provide more rigorous courses. We are now teaching graduate only courses in soils, planetary geology, Cenozoic life, geophysics and advanced topics in physical and historical geology. The new courses, programs and influx of new people is dizzying and exciting. Visit www.gsu.edu /geology for more information.

Crawford Elliott

VALDOSTA STATE UNIVERSITY

Nevins Renovation and Associated Moves

Our department is on the move! The three-story south end of Nevins Hall has been vacated for renovation. For the next two years or so, the department office will be located in Nevins 1162. Several faculty offices and computer labs have been moved to rooms adjoining 1162, and our labs and many of our classes are being taught in the Biology-Chemistry building. Once the renovation is done we will have all new lab, office, and teaching facilities occupying all of the 2nd and 3rd floors and the western third of the 1st floor on the three-story south end of Nevins Hall. The additional space will be quite a change from the days when the entire department was crammed onto the 3rd floor, and the new facilities will be quite welcome!

New Department Chair

Dr. Dennis Marks, our long-standing department chair, retired in 2001 to pursue other interests. Dr. Arnold Somers stepped in and served very ably as the interim chair during the 2001-2002 school year while a search for a permanent chair was undertaken. We extend our sincerest thanks to both Dr. Marks and Dr. Somers for the outstanding jobs they did!

After a nationwide search, Dr. Edward Chatelain was chosen as our new department chair. Many of you will know Dr. Chatelain; he has been with Valdosta State University as an Assistant and then Associate Professor of Geosciences since 1987. He comes into the position with an excellent feel for where the department is at and some good ideas for new directions and initiatives.

Faculty News

Clinton Barineau, Instructor (2001-present). Geology.
During the past year I have been teaching our Introduction to Weather and Climate classes, Field Methods in Environmental Geography, and have continued to work with several students on various surveying projects both at Lake Louise and the Withlacoochee River. Along with Dr. Mark Groszos and three EVG majors, I am currently working on an educational grant in conjunction with the Grand Bay Wetland Educational Center. The goal of the project is to develop educational software dealing with the hydrologic resources in the Lowndes county area for use at the Education Center, which services elementary, middle, and high school students in Lowndes and the surrounding counties.

Dr. Eric C. Brevik, Assistant Professor (2001-present). Soil Science.
I have spent the last year giving "test runs" to two new courses I developed at VSU and working with upper level students on research projects in Lowndes County. The biggest of these projects involves studying short term soil formation in an abandoned sand borrow pit in Lowndes County. The highlight of my year was the first offering of Geog/Geol 3120 (Geoscience Field Trip) along with Dr. Mark Groszos. During the past year I have also taught Introduction to Landforms, Geomorphology, Geoscience Perspectives on Global Climate Change, and Physiography of North America. The variety of courses and student antics have helped keep teaching interesting. In addition to the borrow pit project, my personal research and publication efforts in the past year have included work in precision agriculture, carbon sequestration by soil, the teaching of soils in geoscience curricula, soil science history, drainage ditch erosion rates, and surface water quality in Lowndes County.

Dr. Edward Chatelain, Associate Professor (1987-present). Geology.
I am in my second year as department chair, and 17th year as a member of the department. I am still monitoring the ice margins of the glaciers of the Beartooth Plateau of south-central Montana, but have also been working with Dr. Barnbaum on several exciting websites in support of the Historical Geology core-lab course. We have established a wonderful virtual fossil website utilizing the large collection of vertebrate skull casts and other fossils acquired over the past five years, it can be visited at http://fossils.valdosta.edu/. We are presently constructing a geologic histories website that includes multiple animations and interactive panoramic views from each of the seven field sites studied in the course at http://www.valdosta.edu/phy/hist_geo_lab/.

Dr. Can (Jon) Denizman, Assistant Professor (2001-present). Geology.
I have been involved in research in karst geomorphology, hydrogeology, and the application of GIS to earth and environmental sciences. More specifically, current projects include construction of a GIS Database for Caves in Florida, Karst Geomorphology and Hydrogeology of the Withlacoochee Sinkhole Area in Lowndes County, and Water Quality Monitoring of the Mud Creek, Grand Bay Creek, Alapahoochee River Complex along with Eric Brevik and Judy Grable. The classes I have taught include Hydrogeology, Principles of Geochemistry, Environmental Geology, Advanced Geographic Information Systems, Our Hazardous Environment, Introduction to Landforms, Principles of Physical Geology, and Reading the Earth.

Dr. Judith Grable, Assistant Professor (2001-present). Geography.
A highlight of my year has been finishing my dissertation and receiving my Ph.D. from the University of Tennessee. Since arriving at Valdosta State I've taught Weather and Climate, Introduction to Landforms, and Geohazards courses as well as upper level courses in Hydrology and Biogeography. I co-lead the Hydrology/Geomorphology trip to Providence Canyon in Fall 2002 and helped Mark Groszos with a north Georgia fieldtrip. My research interests include changes in water quality, stream channel characteristics, and hydrology of streams due to urbanization, and general watershed dynamics.

Dr. Mark Groszos, Assistant Professor (2001-present). Geology.
Much of my time over the last year has been spent preparing new courses such as "Geology of Georgia" and "Mineralogy and Petrology." These classes are part of an ongoing effort to strengthen the geology minor. I continue to lead a number of 1-day to 5-day geology field trips to locales in and adjacent to the state of Georgia. These include trips to the Pine Mountain Belt near Columbus, GA, the Talladega Belt of AL, and the Western Blue

Ridge of northern GA, TN, and NC. Regular trips to Valdosta area sites have also been scheduled. These trips have been team efforts with valuable contributions from fellow faculty members. Eric Brevik and I lead the first Maymester trip to the Dakotas, the trip was truly a great experience for the students (and for me). I continue my work in the Murphy Belt of north Georgia and gave an oral presentation on the Murphy Belt at SE-GSA in Memphis last spring. I also spent several weeks in the San Gabriel Mountains of southern California last summer as part of a mineral exploration project. I am currently serving as the secretary for the Earth and Atmospheric Sciences committee of the Georgia Academy of Science.

Dr. Michael G. Noll, Assistant Professor (2000-present). Geography.

My current research focuses on: a) the narrated landscapes of Prince Maximilian of Wied (1782-1867), a German explorer and naturalist who traveled through the United States in 1832-34; b) the Hispanization of Georgia and the Southeast, with its resulting sociocultural impacts; c) community development along Highway 41 after the introduction of the Interstate system in the 1960s; and d) the vernacular (or the *Bubba Geography*) of the South. Courses I have taught include Introduction to Human Geography (GEOG 1101), World Regional Geography (GEOG 1102), Cultural Geography (GEOG 3410), European Geography (GEOG 3910), and Geography of the Middle East (GEOG 3920).

Paul Vincent, Assistant Professor (2001-present). Geography

I have been keeping busy in the GIS lab. Besides the renovation relocation the computer lab has been updated with some new hardware including a new large format plotter for the GIS lab. I have also been conducting research on instructional methods utilized to teach GIS; a portion of which was presented at the national meeting of the Association of American Geographers in New Orleans, LA. I have been involved in several teacher workshops that have introduced area school teachers to GIS technology.

Recent Fieldtrips

Upper Midwest

A highlight of the past year was the first offering of our Maymester field trip course, Geog/Geol 3120. Students in this class spend the first week of the three week long Maymester session learning about a part of the United States. The second and third weeks we load up in university vans and go there! Drs. Eric Brevik and Mark Groszos led the May 2003 trip to the Upper Midwest. We drove through parts of eleven states (Georgia, Tennessee, Kentucky, Illinois, Iowa, South Dakota, North Dakota, Minnesota, Montana, Nebraska, and Missouri) and even snuck across the U.S.-Canadian border to spend a couple of hours in Manitoba. In all, we logged nearly 6,000 miles during our journey. Geoscience stops were made in Illinois, Iowa, North and South Dakota, Nebraska, and Manitoba. Topics covered included the landforms, geology, soils, culture, and biogeography of the area as well as economic and environmental issues pertinent to this region. Stops along the way highlighted glacial, eolian, and fluvial landforms and included visits to a dinosaur dig site (we even found some dinosaur fossils!), hydroelectric dam, open-pit lignite mine, an Amish community, and a restored 1800s frontier fort. We also visited the Black Hills of South Dakota and the Sand Hills of Nebraska. Photos can be seen at http://chiron.valdosta.edu/ecbrevik/Maymester2003.htm.

Above: Valdosta State students gain an overlook in the badlands of Theodore Roosevelt National Park in North Dakota; center: VSU students at Mount Rushmore, South Dakota; bottom: VSU students investigate sand grains in the Sand Hills of Nebraska.

Regional Fieldtrips

Dr. Mark Groszos and Mr. Clint Barineau have been leading several weekend field trips each semester to the Appalachians in northern Georgia and Alabama as well as other destinations within these states. These trips have proven to be highly popular with the students. Dr. Ed Chatelain continues to lead his Jekyll Island field trip and Dr. Eric Brevik and Dr. Judy Grable led the Hydrology and Geomorphology classes on a field trip to Providence Canyon in Fall 2002; pictures from the trip can be seen at http://chiron.valdosta.edu/ecbrevik/ProvidenceCanyon.htm. Dr. Can Denizman has taken groups of students to Florida to go sinkhole hunting, and Mr. Barineau's summer Weather and Climate class spent a day at the beach cloud gazing.

Above: Dr. Groszos (far left) and Mr. Barineau (second from left) point out features in a roadcut in northern Alabama; bottom: students explore a granite outcrop in north Georgia

UNIVERSITY OF GEORGIA

The geology department at UGA continues to move forward under the leadership of **Sue Goldstein** in spite of the significant budget cuts affecting the University. Athens and UGA hosted an international meeting of clay mineralogists via a joint meeting of the Clay Minerals Society and the American Mineralogical Society (June 7-12) – this meeting was presided over by **Paul Schroeder** and included numerous symposia as well as field trips to Graves Mountain and the clay pits of central Georgia. An important issue of concern for the department has been the recent revision of the K-12 science curriculum for Georgia. Recently the department was asked by the university administration to produce a response to the proposed science curriculum, and this very important effort is being led by **Sam Swanson** and **Sally Walker** who have outlined major concerns regarding the presentation of evolution, the relegation of earth science to the sixth grade, the weakening of discussion of plate tectonics and the apparent omission of the age of the earth and the universe from the science curriculum.

This has been truly a banner year for faculty research (both current and emeriti). First to our emeriti – we are pleased that three of our emeriti, Professors **Allard**, **Herz** and **Hurst** maintain offices and are in the department on a daily basis. However, at times they appear to be disturbed by the shenanigans of the younger generation. Luckily they, especially Professor **Allard**, are quick to bring our transgressions to our attention. They are also actively working on major projects. **Gilles Allard**, with the help of **Doug Crowe**, one of our computer specialists, **Mark Heiges**, and computer-savvy students, is curating a unique and enormous collection of ore deposit samples from around the world. Gilles has donated this collection to the Georgia Museum of Natural History and ultimately the catalogue will be available on the web. **Norm Herz** has just published "*Operation Alacrity - the Azores and the War in the Atlantic*" (Naval Institute Press). This book has nothing to do with archaeology and very little with geology but outlines the history of a secret WWII operation that included Churchill, Roosevelt, Hitler and others (including Norm) as principal characters. **Vernon Hurst** is hoping to join Norm soon as a book author, and notes that during the last 470 weeks most of his time has been focused on completion of a book "*Origin and evolution of Earth, Life and Weathering*", the completion of which is expected during the next 30 weeks.

Two of our current faculty, **Steve Holland** and **Bruce Railsback**, received international recognition for their research accomplishments, and a number of other faculty are spearheading new and innovative projects. **Steve** received the Charles Schuchert Award (Paleontological Society) for work that "reflects excellence and quality" by a paleontologist under the age of 40. You may remember that Steve previously won the James Lee Wilson Award for excellence in sedimentary geology by a young scientist (2000) – Steve's research uses computer simulations to test for stratigraphic artifacts in the fossil record and to design sampling strategies that overcome these artifacts. He uses the highly fossiliferous Upper Ordovician strata of the eastern United States as a testing ground for these models. **Bruce Railsback** also received international recognition for the publication of "An Earth Scientist's Periodic Table of the Elements" (Sept. 2003 Geology) which is a revision of the periodic table that emphasizes the importance of ionic potential in governing the behavior of elements in nature – this work received attention from Nature, New Scientist, and Discovery; the latter magazine placed Bruce's work in the top 100 Scientific advances for 2003. **Doug Crowe, Paul Schroeder**, several of our grad students as well as microbiologists from UGA and elsewhere received NSF support to start a combined microbiologic-mineralogic study of the hot springs at Uzon Caldera, Kamchatka. This past summer Doug along with three of our grad students and some students and faculty from the Department of

Microbiology spent three weeks in the caldera which in addition to hosting amazing hot springs is the home of very abundant and very large grizzlies as well as the largest moose in the world. This research has been featured on UGA's website. **Jim Wright** leads an NSF funded investigation of the origin of the Caribbean plate and the accretion of the Leeward Antilles (Aruba, Curacao, Bonaire, La Orchilla, Los Roques, La Blanquilla, and Los Testigos) to the Venezuela continental margin. This fall he organized a workshop and field trip on the island of Aruba for all the project participants. One suspects that this field area has its own set of hazards but bears are probably not one of them. **Sandra Wyld** and Jim were also awarded another 3 years of funding from NSF to continue investigating the Cretaceous strike-slip history of the western U.S. Cordillera. Their geologic mapping and geochronological studies have helped to restore major strike-slip motions of the Cordillera back to 90 Ma and have led them to develop a new model for the Paleozoic tectonic evolution of the North American Cordillera based on an alternative view of the detrital zircon record of several outboard, suspect terranes. **Rob Hawman** leads an NSF funded project doing deep seismic soundings of the Blue Ridge Mountains in North Carolina with the objective of testing various models for isostatic compensation of the southern Appalachians as well as constructing a model of velocity structure and Moho relief across the orogen. Rob uses his instruments to record wide-angle reflections generated by quarry blasts and reports they have found a number of very strong reflections, including some probably from the Moho. **Alberto Patino-Douce** has been shifting his experimental interests to other silicon-based systems: he is looking into new research avenues in the field of critical phase transitions modeled by cellular automata computer simulations. Novel applications that he is exploring include: melt segregation and migration, changes in the composition of the Earth's early atmosphere, and the rise and fall of ancient civilizations. Finally, in a study demonstrating the interdisciplinary nature of planetary geology, student **Scott Harris** with the help of **Steve Holland, Paul Schroeder, Mike Roden**, **Mack Duncan** (Huber) and **Ed Albin** (Fernbank) found shocked quartz in a layer that can plausibly be related to the Chesapeake Bay impact and may be the elusive source of the Georgia tektites…this layer is near the base of the Twiggs Clay member of the Dry Branch Formation.

Teaching is an important part of our mission as well, and there are a number of ongoing innovative efforts centered around the summer programs. **Dave Wenner, Paul Schroeder** and emeritus professor **Jim Whitney** continue to lead the summer honors program in the western US which lasts about 10 weeks and results in credit for two semesters of introductory geology. This program also involves faculty from Anthropology and Ecology and includes important components from these fields. Although not a summer course, **Ray Freeman-Lynde's** course on dinosaurs, "Lifestyles of the Big and Famous in the Mesozoic", continues to draw large numbers of students (Ray uses Tony Martin's [PhD 1991] text, "Introduction to the Study of Dinosaurs" in this course). **Erv Garrison** leads his geoarchaeological program in Switzerland where the students investigate Neolithic lake sites; later in the summer Erv teaches a field-based course in shallow geophysical techniques in the Athens area. In his spare time Erv is the acting head of the Department of Anthropology. This summer, **Marta and Alberto Patino-Douce** will begin developing a program in South America (you may remember that Marta is a native Argentinian; Alberto's background is somewhat complex but he spent most his youth in Argentina) focused on the culture and environmental science of Argentina. Finally, **Doug Crowe** and **Mike Roden** received support from UGA to integrate GIS techniques in the summer field school which is a required class for our majors. With the help of UGA geographer **Tommy Jordan** and the grant

money, Doug and Mike developed procedures for geologic mapping using laptop computers, ArcView, digital airphotos and topos, and handheld GPS units following the techniques pioneered by Doug Walker at University of Kansas among others.

Mike Roden

State University of West Georgia

The Department of Geosciences continues its tradition of excellent teaching and research involving undergraduate students. For example, faculty, students, and staff are presenting nine posters/talks at the Southeast GSA meeting in March 2004, 23 papers were presented at the 2003 GSA in Seattle, and five at the 2004 Georgia Academy of Science.

Julie Bartley (Associate Professor) continues her research on geochemistry of Mesoproterozoic carbonates, carbon cycling, and tectonics of the Mesoproterozoic. Dr. Bartley's student, Alice Stagner, won the best paper award for geosciences at the 2003 Annual Meeting of the Georgia Academy of Sciences (GAS). While most of us were finishing up the fall 2003 semester Julie and Alice spent a productive and eventful field season in Mauritania. Julie's student is presenting at 2004 Southeast GSA. In her spare time Julie is training half the faculty and students on how to use the new Scanning Electron Microscope.

Dave Bush (Associate Professor) was the Program Chair for the 2003 GSA meeting in Seattle – so what two groups of geologists gave you the most trouble? Dave is very active in research on coastal and multi-hazards, hurricane impacts on development shorelines, hazard mapping, risk assessment, property damage mitigation, and marine shelf storm sedimentation. Dave is the senior author of : **Bush, David M**., William J. Neal, Norma J. Longo, Kenyon C. Lindeman, Deborah F. Pilkey, Luciana Slomp Esteves, John D. Congleton, and Orrin H. Pilkey, in press, *Living with Florida's Atlantic Beaches: Coastal Hazards from Amelia Island to Key West*. Durham, NC: Duke University Press. **Rebecca Dodge** (Assistant Professor) is a contributor to AAPG Explorer Energy Mineral Division quarterly column, and is President of AAPG Energy Minerals Division. Dr. Dodge has been instrumental in bringing GLOBE to Georgia. This program has added greatly to the application of geoscience to the classroom. Additionally Rebecca serves on the Geosat Committee, Inc. and has worked hard to bring us GeorgiaView as a partner in the AmericaView consortium. **Tim Chowns** (Professor) is the senior member of the Department of Geosciences reaching 30 years of service at UWG in 2003. Dr. Chowns calm manner and soft words of advice are appreciated. Tim has finished his paper, "Stratigraphy of the Red Mountain Formation in the type area" for the Alabama Geological Survey. Tim's research includes Silurian sequence stratigraphy in the Appalachian foreland basin and Holocene changes at St. Simons Sound, Jekyll Island.

Curtis Hollabaugh (Chair and Professor) with Randa Harris (staff) and two students has published in 2004 three invited papers on nutrients in surface waters in *Environmental Geosciences*. His students have presented at state, regional, and national meetings on topics that range from co-crystallization of vapor phase minerals from Topaz Mountain, Utah to the water quality of various watersheds in Georgia.

Andrew Ivester's (Assistant Professor) recent research continues toward reconstructing paleoenvironments of the southeastern United States. These include the origin and natural history of Carolina Bays and age dates of the Carolina bays with optically stimulated luminescence analyses. In another project Andrew and a student, Jackie Reed, determined the soil development of different-aged terraces in Snake Creek valley, Carroll County, Georgia. Professor Emeritus **Thomas Crawford** and Associate Professor **Randal Kath** are presenting at Southeastern GSA their research

on artesian and flowing artesian groundwater conditions in the southern Piedmont and Blue Ridge. Tom and Randy are also presenting pump test methodology in igneous and metamorphic rock aquifer/well systems. They continue to increase our understanding of groundwater in Georgia. Dr. Kath's research involves detailed geologic mapping focused on groundwater exploration and development. Randy has developed a method to collect digital field data, using a handheld personal digital assistant. The automation allows the digital collection of geologic field data and integration with digital topographic maps (digital raster graphics).

Jim Mayer's (Assistant Professor) research concentrates on stream/groundwater interaction in rock-saprolite-alluvium system in the Piedmont. Jim is the department hydrogeologist – a vital field of research and teaching in all modern geosciences departments. He is striving to unravel the complex relationships between surface and groundwater in the Piedmont of Georgia. **Heather Nicol's** (Assistant Professor) current research projects include analysis of Caribbean flight patterns, borders research, and the changing Canadian-American border relations since September 11, 2001. Heather Nicol is a conference organizer for "Meeting at the Border". She continues to work toward full development of a Center for Canadian Studies and a Canadian Studies curriculum at West Georgia. **Brooks Pearson** (Assistant Professor) is doing research on historical cartography, energy and the environment, and GIS. Brooks' was the United States representative to the United Nations 8th International Conference on the Standardization of Geographic Names in Berlin, Germany. **Richard Sanders** (Assistant Professor) trains students on the ICP. He encourages students to use the ICP as part of their petrology project. Dick's research is on igneous and metamorphic petrology and geochemistry, environmental geology, the geochemistry of metals in the environment, and applications of ICP technology in geology. **Johnny Waters** (Professor) continues his research on paleontology of Paleozoic echinoderms, mass extinctions, and systematics of the Blastoidea (Echinodermata). Johnny is a Co-PI with Julie Bartley, and two former faculty members on the NSF grant that purchased our scanning electron microscope with EDX and EBSD. Drs. Bartley, Kath, and Waters have formed the Center for Microanalysis with the SEM as its center. Because water is vital to the economic growth of an area, Drs Waters, Kath, and Hollabaugh created the Center for Water Resources (CWR) to address concerns about water quality, water quantity, and surface and groundwater resources.

Fieldtrips

Drs. Dodge and Sanders are leading a Maymester fieldtrip course to west Texas and New Mexico that includes stops at Carlsbad Caverns, Guadalupe Mountains, Davis Mountains volcanics, and Big Bend National Park. Tim Chowns continues to lead numerous trips for our students. For example, this year between his classes and Geoscience Club trips he has lead six trips throughout Georgia.

In November, Julie Bartley, colleagues Linda Kah (University of Tennessee) and Janine Sarfati (University of Montpellier), and UWG student Alice Stagner conducted four weeks of fieldwork in Mauritania. They examined the flat-lying sedimentary rocks of the Atar Group to better understand carbonate platform development in the northern Taoudeni Basin during the Proterozoic. The stromatolites of the Atar Group are famous for their diversity and abundance, and the team was not disappointed. Reef-forming stromatolites show cyclic growth patterns, and seafloor cement present within the reef suggests rapidly changing ocean chemistry during reef growth. Laboratory work to look at the geochemistry of the Atar Group has just begun. Alice Stagner will present a poster at the southeastern GSA meeting in March, detailing the formation of some fluidized carbonates in the Atar Group.

Curtis Hollabaugh

GEORGIA TECH

A new era for the School of Earth and Atmospheric Sciences (EAS) at Georgia Tech began in 2002 as Judith Curry joined the faculty as Chair of the School and we moved into the new Environmental Science and Technology Building. Judy, whose primary research area is the dynamics of weather and climate, came here from the University of Colorado. Those who remember that we were originally known as the School of Geophysical Sciences may be interested to note that our new chair did her doctoral work in the original Geophysical Sciences department, the one at the University of Chicago. The new building (known formally as the Ford Motor Company Environmental Science and Technology Building) has brought all of us in EAS under one roof for the first time in almost 30 years, but the building also houses environmental scientists and engineers from several other Schools.

Four new academic faculty members, all specialists in atmospheric science, joined the faculty in the fall of 2002. Additional hiring under Judy Curry's lead has brought or will bring six additional faculty members (three jointly appointed with other Schools). Most of these have interdisciplinary research interests involving aspects of both the geological and atmospheric sciences. Their hiring represents a major step toward unification of the geological science and atmospheric science components of EAS and also presents new opportunities for interaction with other Schools. Jean Lynch-Stieglitz, Marc Steiglitz, Irina Sokolik, and Allison Macfarlane are here now; Kimberly Cobb and Emanuele Di Lorenzo are to join us in August.

There have been some departures from the faculty as well. Doug Davis, who played a lead role in starting our atmospheric sciences program, retired last spring, as did I. Both of us are continuing some research work. Jim Gaherty is now a research scientist in the Seismology, Geology and Tectonophysics Division of Lamont-Doherty Earth Observatory, and Philip Froelich is Professor in Geological Sciences at Florida State.

Marion Wampler

MEMBERSHIP UPDATE

If there have been any changes in your address please send the following information to:

Tim Chowns, Department of Geology, State Univ. West Georgia, Carrollton, GA 30118.

Name_____

Business Affiliation and Address

_____

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Address for mail if other than above

_____

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Telephone Numbers
Business_____

Home_____

FAX_____

E-mail
Address_____

Have you paid your dues for 2003-2004?

$5.00_____

Georgia Geological Society
Department of Geology
State University of West Georgia
Carrollton, GA 30118