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GEORGIA GEOLOGY

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OVERBURDEN

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PRESIDENT'S COLUMN

This past fall Tim Chowns with Andrew Ivester, Dave Bush and Don Thieme led a great trip to Jekyll Island to look at Quaternary stratigraphy and depositional environments. An important aspect of this trip was the participation of numerous students from various colleges around the state. The GGS trips are excellent opportunities for students to meet practicing geologists from around the state and to network with their peers from other universities. Moreover, one invariably learns about the culture and history of the state as well as about aspects of geology (e.g., coastal sedimentology) that one might not commonly work with. I view the broadening of my geological understanding of Georgia through participation in the GGS trips to be one of highly valuable.

At UGA we think that the fall GGS excursions are important educational tools, consequently, we've made the GGS trip a required field trip for one of our UGA core courses (GEOL 3020

Surficial and Near-Surficial Processes), and so most of our geology majors will participate in at least one of the GGS trips. This year we were able to use alumni funds to cover student expenses at the Buccaneer Inn – this makes it easier for the students to participate, and we intend to continue to help defray student expenses.

The Buccaneer Inn was a great place to stay - even though the inn may have seen better days, it was close to the site of the field trip and located on the beach. From a student's perspective, how can you beat that? And I didn't mind falling asleep to the sound of the ocean although the operating hours of the bar were a bit erratic.

The GGS trips are great learning opportunities for undergraduate and graduate students; moreover students like to participate in these relatively high energy gatherings of earth scientists. This was certainly true of this past year's trip to Jekyll. I urge all of you to encourage your students to join us on these yearly trips.

FIELD TRIP 2007

TECTONICS OF THE GEORGIA BLUE RIDGE:

BASEMENT/COVER ARCHITECTURE, CHARACTERISTICS OF DRIFT AND CLASTIC WEDGE FACIES, AND ACCRETIONARY TERRANES

October 12-14, 2007

Leaders: Jim Tull, Chris Holm (Florida State University), Mark Groszos (Valdosta State University), & Bill Hames (Auburn University)

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EXPOSURES

UNIVERSITY OF GEORGIA

The Department of Geology at UGA suffered the loss of one of its most distinguished professors at the age of 83: **Vernon J. Hurst**. His death came unexpectedly in August, and Vernon was writing a text on geochemistry at the time. Vernon was a native of Georgia and a veteran of World War II. In 1965 he founded the Department of Geology and for the next 46 years he was a daily presence in our department. He supervised numerous graduate students, was a University Research Professor for many years and published numerous papers on Georgia geology and clay mineralogy. One of his students, Dr. Bill Barker, has written a more complete obituary in the December 2006 issue of *Elements*.

In other news, **Sue Goldstein** stepped down as Head after 6 years of leadership through difficult financial times. **Mike Roden** became the new head and was greeted with news of a 15% holdback and the loss of all faculty travel funds. Late in the spring semester most of this money was restored but this first year has been challenging. In contrast to funding, the number of undergraduate geology majors increased to about 40 at our last tally. These students are the lifeblood of the department and so we are very pleased with the increased enrollment. We continue to run our field school out of Canon City CO, and over the last few years have integrated GIS/GPS techniques into the program. Other field courses include study abroad courses in Switzerland and Argentina, a field course in geophysical techniques, and the Interdisciplinary Field Program which runs through the western US every summer – most of the participants are first year students who gain credit in geology, ecology and anthropology.

The UGA faculty continues to have teaching and research projects around Georgia and the world. As noted above **Sue Goldstein** stepped down from the Headship to focus more on

foraminifera research supported by NSF at Cape Cod, Sapelo Island and the Florida Keys. She also helped to organize the International Symposium on Foraminifera in Natal, Brazil. **Doug Crowe**, **Chris Romanek** and **Paul Schroeder** along with assorted students finished their fourth field season at Uzon caldera in Kamchatka...their NSF-supported research is a collaboration with microbiologists at UGA and elsewhere which focuses on the geochemistry and microbiological communities in the hot springs within the caldera...they also keep a look out for bears – at Uzon they happen to be the largest bears in the world. **Sandra Wyld** and **Jim Wright** collaborated on a number of NSF-supported projects in the North American cordillera and in the Lesser Antilles. The latter project has involved a number of Venezuelan students and professionals, and this spring we have had a Venezuelan post-doc in residence. Jim in particular has become enamored with determining the U-Pb age fingerprint of detrital zircons as a tool to constrain tectonic evolution in the cordillera. **Sally Walker** participated in a 3 week cruise which included submersible dives to 2000 feet in the Gulf of Mexico to work on salt-brine pools and methane vents. **Rob Hawman** has been hosting a Fulbright Fellow from Egypt, Dr. Mohammed Khalifa who graduated from UGA in 2002, and who is interested in seismic properties of the uppermost crust. Rob continues his work in the Blue Ridge of Georgia and North Carolina using wide angle seismic reflections to study the structure of the lower crust and upper mantle. **Steve Holland** has changed his research focus from the Ordovician of the Cincinnati region to the late Ordovician Bighorn Dolomite of Wyoming – Steve and a colleague from Penn State will study the response of sediments and biotas to climate change during the Ordovician. Steve is also coauthoring a book, *Stratigraphic Paleobiology*, to be published by the University of Chicago Press. **Alberto Patiño Douce** and **Mike Roden** have become fascinated with the equilibrium between apatite, merrillite (an anhydrous, halogen-free phosphate) and fluids

and magmas of various sorts on extraterrestrial bodies – this has all come about through the repeated teaching of a course in planetary geology. **Marta** and **Alberto Patiño Douce**, initiated a study abroad program, Geology in Argentina, which went for the first time last summer. Marta and Alberto capitalized on their first hand knowledge of the geology and culture of Argentina to lead students on a field trip through Antofagasta de la Sierra – a high plateau dominated by numerous volcanoes and spectacular erosional landforms in northwestern Argentina. **Sam Swanson** continues to study the petrology of diverse archaeological materials including turquoise from the American Southwest, Roman mortar, and obsidian artifacts from California. Sam also remains committed to understanding the petrogenesis of ultramafic bodies in the southern Appalachians. **Dave Wenner** administrates and teaches the Interdisciplinary Field Program – an 8 week field trip through the western US to examine the geology, ecology and anthropology of the area. First-year students take this course and receive credit for ecology, geology and anthropology courses. One of our emeritus professors, **Jim Whitney**, as well as his wife, Dr. Sandra Whitney and Paul Schroeder also teach portions of this class. **Dave Wenner** will retire this year after 34 years at UGA but Dave plans to continue teaching occasionally and especially running the IFP program. **John Dowd** continues his collaboration with colleagues at the University of Plymouth in southwestern England and raves about the January weather there. **Bruce Railsback** has developed a comprehensive and valuable website: <http://www.gly.uga.edu/railsback/> - here you can find an e-book on mineralogy and geochemistry as well as many other resources for geology and earth science teachers. **Erv Garrison** continues to advise students in geoarchaeology when he is not running the Department of Anthropology where he is Head. Erv has also developed an innovative use of the old Athens cemetery (located on campus) where

he uses imaging techniques to identify cultural objects as part of his summer course in field geophysical techniques. This past year **Valentine Nzungung** represented the University of Georgia at a one month faculty development seminar in Nigeria and Cameroon, and he spent 10 days in Tanzania planning the University of Georgia African Teaching, Research and Outreach center in Tanzania. The work of Valentine and his student Dr. Dawit Yifru on the removal of the carcinogen, N-nitrosodimethylamine (NDMA), from groundwater received was highlighted in a press release from the American Chemical Society. **Ray Freeman-Lynde** continues to teach capacity crowds in his dinosaur course offered spring and summer semester. **Dave Dallmeyer** has become involved in designing and leading field trips associated with our environmental geology course, GEOL 1121. The idea is to give students a small amount of extra credit for participating in a Saturday trip to the Piedmont around Elberton or a weekend trip to Jekyll Island. We hope to give non-geology majors some exposure to science in the field and to attract new geology majors. Dave's trip to Jekyll Island is highlighted in our 2007 alumni newsletter, available on the web at our new website: <http://www.gly.uga.edu/>. Dave is also an advocate for the preservation of our coastal regions.

Emeritus professors **Gilles Allard** and **Norm Herz** continue to work on a daily basis. Gilles is well-known as a raconteur and he is in continuous demand to give lectures at various local societies. His office remains as always, very neat. Norm's book, Operation Alacrity, concerning his participation in the development of a secret air base on the Azores in World War II, has now been translated into Portuguese. Norm continues to have the knack to visit beautiful places – he will participate in a symposium in the Azores this spring, and recently participated in a geoarchaeology meeting at Aix-in-Provence.

Geology at GSW is still hobbling along despite a 40% reduction in staff over the last few years. Actually teaching staff losses across the board have been a problem at GSW for about a decade; Geology is just among the hardest hit by them.

Our colleague and former chair **Dan Askren** left abruptly just before the year started and is now at EPA in Montgomery, apparently enjoying the work. It's hard to imagine a federal job being an attractive alternative to a university job in terms of administrative BS, but evidently it is.

Since the last report from GSW we have found an excellent colleague to handle our physics courses and dual-degree program. **Svilen Kostov** is fitting in as well as any we've had and far better than most, and seems to be inclined to stay with us for a while. This is a good feeling for people who were conducting physics searches (for a single position) once a year for a while.

Sam Peavy (geophysics/environmental geology) took over as "coordinator" for the department. We are currently considering how to change and/or redirect primary responsibility for teaching the courses that Dan used to teach and Sam will probably have to pick up something new, as the rest of us have. Still, between his new administrative duties and the prospect of more teaching he has found time to do a little research and will be chairing a session in Savannah.

Tom Weiland has taken the most direct teaching hit from Dan's departure. He has assumed responsibility for Mineralogy, optical mineralogy, and Ig/Met Petrology this year and next fall, despite having not taught any of them for several years. He has also been very busy working with the School of Ed. on accreditation and new curricular requirements in their science programs.

I've spent my "free time" this year rewriting lab assignments for Sed. Pet. and Stratigraphy, both of which I've also taught. I was to be on the program for Pam Gore's session at Savannah on using paleontological research in lower school classrooms, and had prepared a nifty little experiment with Eocene echinoids, but that session has been cancelled and I'm reconsidering attending at all.

Actually, both Tom and I spent quite a lot of our "free time" in the Fall term conspiring with the other A&S full professors to accomplish regime change. After a decade of bad management had squandered faculty to build a truly impressive administrative facade, the higher administration finally pulled a "reorganization" stunt that we thought even the Regents couldn't ignore, and we went to work.

We were rewarded by the resignation of the president and the appointment of an interim that we are so far impressed with. We anticipate further shake-up in the higher administration in the near future and are generally optimistic that the next 10 years can be better than the past 10. What this means specifically for Geology is not at all evident, but we're in a better frame of mind now to hang around and see than we were this time last year.

And then we all survived the tornado, almost unscathed. Tom's house and my primary residence were not touched at all. Svilen's yard had several large trees down and Sam's house had some as well – one landed on his workshop and demolished it. Sam also had some roof damage from wind and flying debris, but no major damage to the house. When the twister came through her neighborhood my daughter Chelsea and her fiancée were in the small house that Yonnie and I bought for her to live in. It suffered considerable roof, siding, window, fence, and HVAC damage, but nothing structural. However, spring break has been spent clearing trees and debris from her

yard and arranging and monitoring repairs. Still, the houses on both sides had huge pine trees lying across them (one has to be completely demolished) and the roof of the house behind, down to and including the ceiling joists, ended up in our yard. When I stand on her roof and see wreckage as far as I can see in almost every direction, it is absolutely amazing that only two people died in the storm here! A few weeks of clean-up really seems cheap in that light.

UNIVERSITY OF WEST GEORGIA

The big news from West Georgia is the imminent addition of a new wing to the Callaway Building that will more than double the size of the premises and allow the entire department, geologists and geographers, to be housed under one roof. The new building will include two new lecture theaters, labs and offices with a large rock preparation and storage facility accessible to trucks on the ground floor. We are expecting construction to last about a year. I am currently enjoying the last view out of my office window; both the window and probably my office will disappear in a cloud of dust.

We have also added a bunch of new faculty members. First was **Jeong Chang Seong** who joined us last fall as an associate professor to take charge of our GIS program. JC is a native of Korea and happy to escape from the Arctic of North Michigan University in Marquette. Everyday supervision of the lab is still handled by **John Congleton** who also teaches a class in applied computing for the geosciences.

There are also a parcel of new PhDs. **Georgina DeWeest** is a dendrochronologist from the University of Tennessee, Knoxville who replaces Andrew Ivester. She has been working on fire history and climate in the Appalachians of Virginia based on the scarring of yellow pines. She has also been sleuthing the age of old buildings, including the Ross House in Rossville and Lincoln's boyhood home in Kentucky.

Turns out Lincoln was born long before the house!! Over the summer we will be joined by **Hannes Gerhardt** a human geographer from the University of Arizona and **Chris Berg** a metamorphic petrologist from UT, Austin. Hannes research revolves around the geopolitics of humanitarian aid in areas like Sudan and Rwanda. Chris' thesis provides estimates of strain rate in the Alps based on measurements from rolled garnets.

We were very disappointed to lose **Andrew Ivester**, who, members will recall, helped lead last year's field trip. Andrew has left academia in order to help run a family business. Hannes replaces **Heather Nichol** who has returned to her native Canada and a position at Trent University in Peterborough, Ontario. Chris takes over from **Kent Ratajeski**. We wish Kent, Heather and Andrew well in their new endeavors.

Among the old hands **Dave Bush** is hard at work making sure we have a grand time in Denver this fall; he is Technical Program chair for this year's annual meeting of GSA. He is also editor of *Southeastern Geology*, so if you have a paper and want quick turn around call Dave or visit www.southeasterngeology.org.

Randy Kath is director of our Center for Water Resources and is working with **Tom Crawford** (Professor Emeritus) to develop a pumping test methodology to better estimate sustainable yields from Piedmont wells. He is also mapping along the footwall of the Emerson (Carterville) fault and providing technical support for a new sewer tunnel in Cobb County. Meanwhile, **Jim Mayer** continues to work on stream-groundwater interactions in the Piedmont and karst hydrogeology in the Valley and Ridge. **Curtis Hollabaugh** with able assistance from **Randa Harris** (Lab coordinator) continues to supervise the water quality labs but spends most of his time organizing the innumerable fire drills that constitute the job of department chair.

This has been a banner year for **Julie Bartley** who received the CASE-Carnegie Georgia Professor of the Year award. In spite of working part time for the Vice President's office as coordinator of first year programs she continues an active research program on Proterozoic carbonates and their carbon isotope geochemistry.

Tim Chowns took a leave of absence during fall semester and lead both the Georgia Geological Society (to Jekyll Island) and Alabama Geological Society field trips (to Birmingham Ironstones). **Rebecca Dodge** also took leave time during spring semester to serve as interim director of the AmericaView Consortium, which works with the USGS and universities across the country to expand remote sensing education, research and innovation.

Our human geographer **Andy Walter** is working on the geography and politics of hunger and homelessness and has a chapter in the newly published *Encyclopedia of Human Geography* on the "Geography of Hunger and Famine"

Phil Novack-Gottshall, our paleontologist, has been quantifying ecological diversity among Paleozoic and modern marine biotas. To my knowledge he and his students have measured 7,654,321 brachiopods and found a tenfold increase in body size in three unrelated lineages during the early Paleozoic (inflationary universe?). We are especially pleased that Phil's wife **Sandy** will be joining the English faculty next spring, to teach creative writing.

Dick Sanders thought he had retired but was dragged back kicking and screaming to teach petrology last semester. He was joined by **John Costello** (State Geological Survey) who helped out with an evening class in Physical Geology. It was good to have people my own age to talk to!!

Tim Chowns

GUIDE TO THE NATURAL ENVIRONMENTS OF GEORGIA

Help Needed

Jim Renner is working with three other co-editors to prepare the manuscript for a Guide to

the Natural Environments of Georgia, a book planned to be published by the University of Georgia Press sometime in 2009. This book is inspired by the early 1970's GGS publication by Dr. Charlie Wharton. Jim is responsible for everything in the book that is non-biological, including physiography, geology, soils, hydrology, and climate. So far a draft Blue Ridge Ecoregion chapter has been prepared.

As John Costello can attest (he wrote a draft Blue Ridge geology introduction), the effort to incorporate appropriate geological information into the description of natural environments is substantial.

Anyone who might be interested in helping out as a reviewer or contributor on the Piedmont, Valley and Ridge (including Cumberland Plateau), and Coastal Plain sections is welcome. Please call Jim at (770) 492-8215.

NEW EDITOR

Beginning next year John Mann has agreed to take over as editor of our new online newsletter. Up until this year John has been editing the newsletter for the Atlanta Geological Society so he knows the ropes. For future reference his e-mail is stjmann@bellsouth.net. To all our correspondents: Thanks for keeping the news flowing over the last 10 years. Let's continue to support the Newsletter and send in news when John comes calling. One advantage of an online site is that we can easily include digital pictures. This could include people or places. How about submitting some spectacular geologic pictures? In this vein what do you make of the following picture? Where is it? What kind of rocks? What's the story? To check out the details try increasing the scale.



TREASURER'S REPORT

Balance in account July 31 st 2005	\$7117.54	Balance in account July 31, 2006	\$5641.88
Income (2005-6)		Income 2006-7	
Dues	550.00	Dues	685.00
Fieldtrip registration	2965.00	Fieldtrip registration	2180.00
Lunches	1020.00	Lunches	1372.00
Guide & CD sales	709.85	Guidebooks & CDs	440.00
Total	5244.85	Miscellaneous	138.00
Expense (2005-6)		Vibracore	300.00
Fieldtrip buses	2865.00	Total	5115.00
Fieldtrip lunches	1112.34	Expenses (2006-7)	
Guidebook printing	1332.90	Prerun for fieldtrip	301.82
Registration supplies	226.81	Fieldtrip lunches	1699.90
Smoker	165.85	Soft drinks	113.19
Newsletter	150.00	Picnic Shelter	100.00
Postage	316.54	Smoker	506.26
Guidebook Scanning	400.00	Guidebook printing	1196.80
State Science Fair	150.00	Bull horn	171.02
Miscellaneous	1.07	Vibracore	662.10
Total	\$6720.51	Registration supplies	213.92
		Leaders' expenses	631.63
		State Science Fair	150.00
		Postage	74.29
		Refunds	10.00
		Miscellaneous	11.50
		Total	5842.43
		Balance in account June 11, 2007	\$4914.45

FIELD TRIP 2007

TECTONICS OF THE GEORGIA BLUE RIDGE: BASEMENT/COVER ARCHITECTURE, CHARACTERISTICS OF DRIFT AND CLASTIC WEDGE FACIES, AND ACCRETIONARY TERRANES

October 12-14, 2007

Leaders: Jim Tull, Chris Holm (Florida State University), Mark Groszos (Valdosta State University),

After a weekend of sand and sun on the coast last year, hardrockers will welcome a return to the Georgia Blue Ridge this fall. According to Jim Tull who has organized the trip we will concentrate on basement/cover relationships and their implications for late Proterozoic rift architecture around the Fort Mountain area along the Blue Ridge front. The lower Paleozoic drift facies sequence and younger clastic wedge successor basin sequence will be examined in exposures in the Murphy belt, and accreted Ordovician arc rocks will be examined along the eastern/western Blue Ridge boundary. Guidebook articles will focus on the Ocoee rift basin evolution, details of Murphy belt stratigraphy and structure, the Pumpkinvine Creek metavolcanic sequence, and recent geochronology studies in the region.

In preparation for the trip members may want to read the overview of the western Blue Ridge in Georgia given by Jim Tull and Chris Holm (2005); Structural evolution of a major Appalachian salient-recess junction: Consequences of oblique collisional convergence across a continental margin transform fault; Geological Society of America Bulletin v. 117, p. 482-499.

The Great Smoky fault marks the location where the sole thrust (decollement) at the base of the Paleozoic section further northwest, descends into Grenville basement and overlying late Proterozoic metasedimentary rocks. The latter, Ocoee Supergroup includes a great thickness of coarse grained clastics deposited in grabens during the rifting of the Iapetus Ocean. It stands in distinct contrast to rocks in the Valley and Ridge province, being both older, and more highly deformed and metamorphosed. Farther to the southeast these Proterozoic rift stage rocks are overlain by rocks of the Murphy syncline. Although, much debated, most workers agree that these are the metamorphic equivalents of parts of the Paleozoic section in the Valley and Ridge. Although allochthonous, both the Ocoee Supergroup and the Murphy Group of the western Blue Ridge, are part of the original cover sequence deposited on the North American (Laurentian) craton during the opening of Iapetus. It is not until one crosses the Allatoona fault on the southeast side of the Murphy syncline, that the occurrence of amphibolites of the Pumpkinvine Creek Formation, signal the involvement of oceanic crust within the Appalachian thrust stack. Here the stratigraphy is island-arc related and its relationship to Laurentia under current debate.

This year's field trip will traverse the western Blue Ridge from Grenville basement near Fort Mountain to oceanic crust on Lake Allatoona. Most of Saturday will be spent around Fort Mountain examining the relationship between Grenville basement and Proterozoic cover. These relationships are best examined along the streams and the trip will include two relatively long hikes up Rock Creek and Holly Creek. A stout walking stick will be helpful for navigating the stream beds. Lunch on Saturday will be at Fort Mountain State Park. Sunday's trip will focus on the stratigraphy and structure of the Murphy belt near Canton and on lithologies in the hanging wall of the Allatoona fault in the eastern Blue Ridge. During the lunch stop there will be an opportunity to visit the new Hickory Log Creek dam near Canton. The trip will end at about 2.00 pm in Canton.

Headquarters for the trip will be the Holiday Inn Express in Canton. The motel is located on Transit Avenue at the intersection of I-575 with Riverstone Parkway (old GA 5) on the north side of town. A special group rate of \$69.00/ night is available for participants. Members should make their own reservations by calling 770-479-7300 by the deadline of October 1, 2007. Please mention your association with GGS when registering. For members who may wish to camp, sites are available up to October 15 on a first come basis at Victoria Campground on Lake Allatoona about ten miles from Canton 1-877-444-6777 (www.recreation.gov).

Please join us Friday evening beginning at 7.00 pm to pick up registration materials and socialize over a beer. Jim Tull will give an introductory talk and overview of the trip beginning at 8.00 pm.

**AS A REMINDER TO LATE ARRIVALS; THE TRIP WILL DEPART THE MOTEL AT 7.30 am
SATURDAY AND 8.00 am SUNDAY**

DON'T FORGET THE FOLLOWING DEADLINES
MOTEL RESERVATIONS OCTOBER 1st, REGISTRATION OCTOBER 5th

DEADLINES FOR FALL FIELD TRIP
DON'T FORGET DEADLINE FOR MOTEL RESERVATIONS
OCTOBER 1
DEADLINE FOR FIELD TRIP RESERVATIONS
OCTOBER 5