



Department of Geology

Franklin College of Arts and Sciences

UNIVERSITY OF GEORGIA

Winter 2024



Letter from the Department Head Adam Milewski



Hello Everyone,

I'm excited to introduce myself as the new(ish) Department Head of Geology here at the University of Georgia.

It's truly been an honor to step into this role over the past year, and I'm looking forward to working with all of you as we continue to grow and evolve this department into one of the best in the country. We have a lot of exciting things on the horizon, and I'm thrilled to share some of them with you. One of the biggest initiatives we're launching is the introduction of four new minors that will allow students to dive deeper into various areas of geology. The minors include Environmental Geology, Solid Earth Dynamics, GeoEnergy & Mineral Resources, and

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Conservation Paleobiology. These minors will give students the flexibility to combine their passion for the geosciences with other fields, opening up even more career opportunities in today's ever-changing world. We're really excited about the doors these new programs will open for our students and the potential for our continued growth as a department.

Another major focus is our new branding campaign, built around the statement: “We Are Geologists.” This initiative is more than just a tagline—it’s a statement of pride highlighting geology’s critical role in environment, industry, technology, public health and more. From environmental challenges and renewable energy to understanding natural hazards and combating climate change—geology touches everything. This campaign is all about raising awareness of the far-reaching impact of our field, diverse industries and career paths, and building pride and unity across the department and beyond.

And it’s not just about academics and outreach—we’re also making some exciting changes within our building. We’ve started renovations that will transform our spaces, which includes a facelift to the geology atrium on the third floor, our mineral displays, and many others. We’ve also created new signage to better showcase the research happening in our department as well as educating current and potential students about the extensive career fields a degree in geology makes possible for them. Another highlight is our new “Wall of Distinction” which showcases the annual awards we present to our outstanding faculty, students and alumni. Additional displays include one titled “Rock Solid Supporters” which gives thanks to the generosity of our donors and another recognizing our corporate and industry partners. We’ve included some photos here in the newsletter but would love for you to come check it out for yourself—there’s a lot to see!

Lastly, I want to personally invite you to join us for our end of year celebration where we’ll reflect on all that we’ve accomplished this year and look ahead to what’s coming next. It’s a great chance to reconnect with old friends, meet new ones, and just enjoy the sense of community that makes our department so special. It takes place in April, so keep a look out for a save the date to come your way.

I’m really looking forward to the journey ahead and can’t wait to see where we go from here. Thank you for your support, and I hope to see you soon!

Best,

Adam Milewski
Department Head
UGA Department of Geology



FACULTY UPDATES



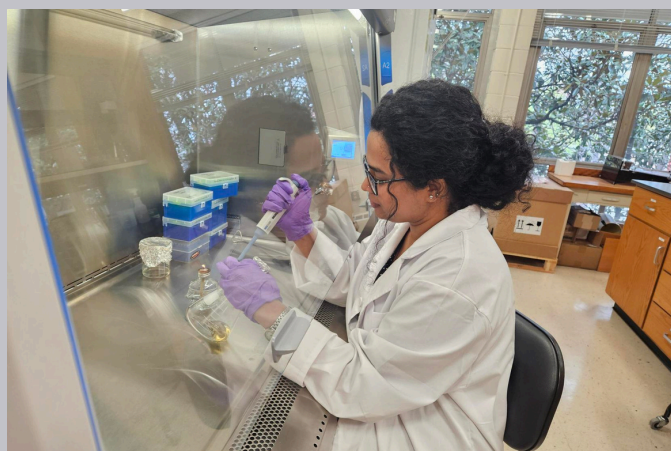
Avishek Dutta



The geomicrobiology lab at the Department of Geology, UGA, became fully operational last November. The lab is now equipped with state-of-the-art equipment for high-throughput nucleic acid extraction and analysis. In addition, the geomicrobiology lab also gained capabilities for the measurement of trace levels of organic compounds from different environmental matrices using GC-MS and other spectrophotometric methods. The geomicrobiology lab team grew in size. Gayatri joined as the first PhD student in the geomicrobiology lab. She is conducting her graduate research on anthropogenic impact on biogeochemical cycles. Gayatri presented her work at the Department of Geology alumni meet, and her research was selected as one of the top three. She also presented her work at the ASM Microbes 2024 conference, the world's largest microbial sciences conference.



Gayatri received the Watts-Wheeler Travel Award for attending the 2024 Goldschmidt conference where she will present her research. Gayatri also published her first paper from her PhD research. Kiana joined the geomicrobiology lab as an undergraduate researcher. She worked on the biotransformation of pesticides in riverine systems. She received the CURO research award for pursuing undergraduate research in the geomicrobiology lab. She presented her research at the CURO Symposium 2024. Kiana also secured a NASA internship at Johnson Space Center to conduct research.



Mattia Pistone



Magma Mia research group has been investigating the igneous processes occurring in the plutonic and volcanic realm: magma differentiation in the Earth's lower crust (Andrew Maendel), melt extraction from solidifying magma chambers (Kaitlyn Hulsey), magma transport in volcanic conduits (Jackson Oakey), the level of gas accumulation leading to explosive volcanism for mafic systems (Carly Daniel), and regional to global impact of explosive eruptions at Chimborazo (Ruby Parcells) and Mt Etna (Grace Lang). "Mamma Etna" has woken up with a new cycle of explosive activity starting on July 4th with volcanic fireworks that Grace will never forget while conducting tephra sampling during a field campaign supported by the Rising Explorers Grant, CURO, and National Science Foundation (see pic 1). Through radiocarbon dating of paleosols, Ruby has discovered a new eruptive deposit formed in ca. 160 AD, which coincides with eruptive horizons of the same age found in ice cores retrieved from both West Antarctica and Greenland. Jackson conducted new in-situ, real-time experiments simulating vesiculation of obsidian samples using the STEM facility at GEM for the first time.



Carly Daniel actively led the UGA Geology graduate student cohort within the 2024 AAPG IBA competition; the team received honorable mention. Kaitlyn was awarded the 2024 Outstanding Teaching Assistant Award from the Office of the Vice President for Instruction at UGA. Andrew completed successfully his Master thesis in Fall 2023; he is now Staff Geologist with Anglogold Ashanti. Mattia has been elected as 2024-2025 Continental Scientific Drilling Distinguished Lecturer by the Geological Society of America. He will present lectures on the "Moho Mission to the Foundation of Continents: The ICDP DIVE Drilling Project" (see pic 2) across the country during the coming academic year. Mattia is currently at ETH-Zurich to conduct novel experiments simulating pre-eruptive conditions of explosive volcanism; this project is supported by the Sarah Moss Fellowship, administered by the Center for Teaching and Learning at UGA.

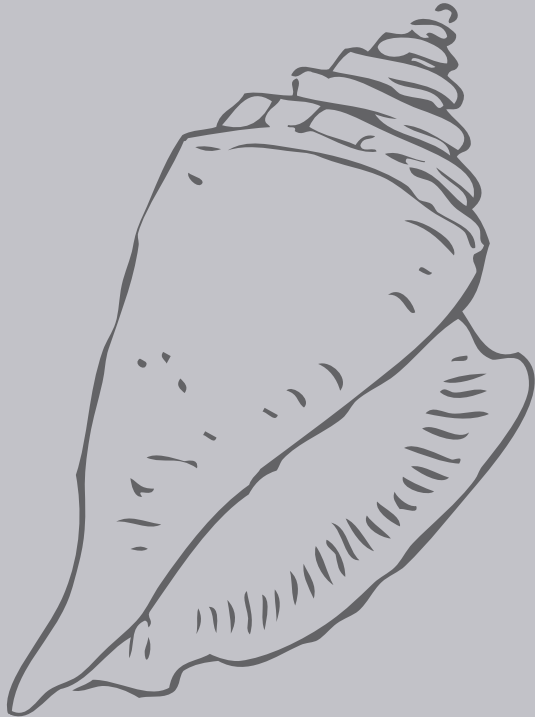


Erv Garrison



No one remembers lectures. Almost everyone remembers field trips.

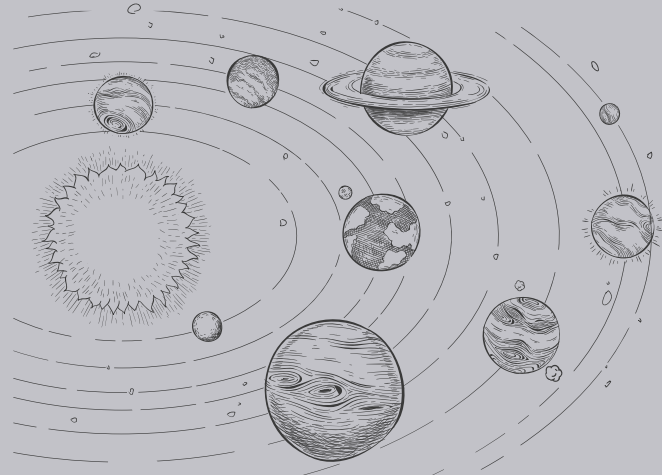
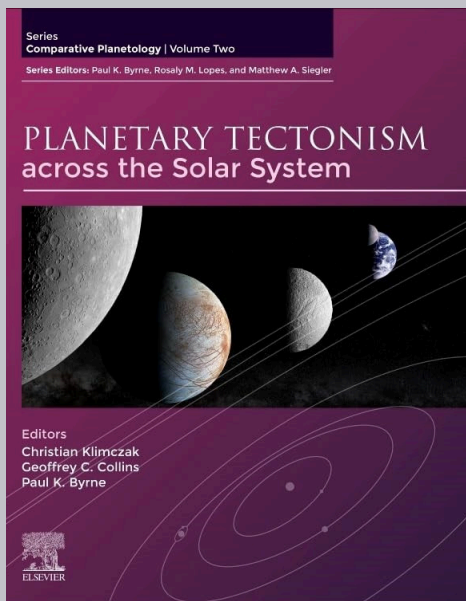
GEOL/ANTH 4700/6700 Archaeological Geology students went to the coast in April 2024, embarked from UGA's Skidaway Institute of Oceanography (SkIO) in small boats and traveled to Wassaw Island. "Wassaw" as it is known, is one of the undeveloped barrier islands of our coast. It is the closest to Savannah hence our choice to visit as an instructional excursion. The trip was voluntary but fully paid by UGA Geology. Water, beach, boats, free food, coastal geology – what's not to like?



Christian Klimczak



What is new in the world of Planetary Tectonics at UGA? I had a busy year writing and editing Planetary Tectonism across the Solar System (ISBN: 9780128160923), a book that will be published later this fall.



My research group attended the Lunar and Planetary Science Conference, where they were involved with six presentations. Ph.D. candidate Stephan (Stevie) Loveless presented his work comparing thrust fault systems underlying wrinkle ridges and lobate scarps on Mercury. Stevie completed an internship with ExxonMobil in Houston working on seismic interpretations. Here he is seen visiting an oil rig in Texas (Stevie is on far right).



Sydney Bledsoe finished her M.S. research on topographic changes observed along lava channels on Venus. She was accepted into our Ph.D. program, to continue working on Venus geology. For her doctoral research, she focuses on remote sensing of, and mapping techniques on radar in anticipation of the next Venus missions, slated to arrive at Venus in the early 2030s.

Paul Schroeder



Costa Rica 2024

This past year, two M.S. students received their degrees. Holden Aronson is now gainfully employed in Houston, TX with Murphy Oil. He has already served as an IBA team mentor along with Devon Verellen at Chevron. Oluwasuen Adeyemi is now pursuing his Ph.D. at the University of Texas, Dallas. Our collaborations with John Washington have led to new insights about the fate and transport of PFAS (forever chemicals) in the subsurface as they interact with clay minerals. New Ph.D. student Taran Bradley is working to revive mineral spectral data from the Kamchatka Uzon Caldera expeditions while incorporating new satellite spectral data to look for changes in the hydrothermal system. Paul has returned to teaching in the summer interdisciplinary field program (IFP), leading the leg from San Francisco, CA to Portland, OR. Mount St. Helens remains a formidable challenge to ascend. The IFP experience is still a unique and unparalleled undertaking, and just as enjoyable as it was during the first foray 31 years ago. A cohort of geology undergraduates, self-declared as “Team Pegmatite,” helped bring to life a new display of a granite slab donated by Bill Hood. They produced several posters for the 2024 CURO symposium, which highlight the minerals and textures of the pegmatite. The work will be used to create a narrative outreach explanation to accompany the wall-mounted monolith.

More recently, efforts have gone into developing a new program in Georgia Essential Minerals. A workshop in February 2024 brought together 45 people from government, industry, and academic circles to explore the production of rare elements from existing kaolin mining operations. A second workshop, which took place in September 2024, has brought more stakeholders together, optimistically looking to move from inferred understanding of REE resources to measured, with additional sights set on moving these to market and engaging rural communities to benefit. Collaborations continue with Critical Zone research, and although the 7-year program has concluded, research and publications are still being produced. Now that department head duties have been passed to Adam Milewski and reaching the “Golden years” of tenure in UGA Geology, it can truly be said that the freedom to teach students and follow research interests is as enjoyable as it has ever been. On the Turkish front, we continue to foster our relationships with colleagues at Istanbul Technical University (ITU), particularly by maintaining our ERASMUS+ exchange program and, more recently, with Schroeder serving as a member of the ITU Rector International Advisory Board.



CURO_2024. Team Pegmatite gathered at the Classic Center 2024 CURO symposium in Athens, GA. Mentors included Paul Schroeder, Andy Darling, and Taran Bradley (back row). Posters presented (front row) Olivia Francois, Sali Boyer, Grace Lang (absent), Blair Cowan, Sierra Wermuth, and Will Bell.

GRADUATE STUDENT NEWS



GRADUATE THESES AND DISSERTATIONS: 2023-24

M.S. Recipients Summer & Fall 2023

Oluwaseun Adeyemi

Mineralogy of per- and polyfluoroalkyl substances (PFAS) contaminated soils from agricultural fields in Society Hill, South Carolina. M.S. thesis advised by Paul Schroeder.

Alexandra Bonham

Sub-annual variation of δO and δC in *Odocoileus virginianus* tooth enamel: paleoclimate and diet reconstruction in the Lower Chattahoochee River Valley at the onset of the Little Ice Age. M.S. thesis advised by Suzanne Pilaar Birch.

Marjean Cone

Testing for climate and elevation controls on Pennsylvanian plant communities in valley fills of the Breathitt Group in eastern Kentucky. M.S. thesis advised by Steven Holland.

Andrew Maendel

Magmatic differentiation and growth of a large mafic intrusion in the lower crust: insights from varying scales. M.S. thesis advised by Mattia Pistone.

Ph.D. Recipient Spring 2024

David F. Richards, IV

Remote Sensing-Based Monitoring of Landscape Changes in Coastal Systems. Ph.D. dissertation advised by Adam Milewski.

GRADUATE DEPARTMENTAL AWARDS & ACCOLADES

Gilles & Bernadette Allard Geology Award

Emily Jackson
Michael Stefanou

Miriam Watts-Wheeler Scholarship: Research

Grace Burns
Amy Laubenstein
Oyindamola Oseni

Miriam Watts-Wheeler Scholarship: Travel

Gayatri Basapuram	Stephan Loveless
Carly Daniel	Olajide Oladipo
Lea Davidson	Cade Orchard
Yannie Donaldson	David F. Richards, IV
Kaitlyn Hulsey	Fabian Zowam

AAPG Imperial Barrel Award Team

Kwaku Asiedu	Taran Bradley
Carly Daniel	Katie Gooch

Berg Scholarship in Geophysics Awardee

Kwaku Asiedu

Outstanding Teaching Assistants of the Year

Emily Jackson
Michael Stefanou

Outstanding Graduate Students of the Year

Cade Orchard, M.S.
David F. Richards, IV, Ph.D.



AWARDS & ACCOLADES

Kwaku Asiedu

- National Groundwater Association Paul M. Yaniga Memorial Trust Fund Award
- Imperial Barrel Award Competition

Taran Bradley

- Imperial Barrel Award Competition

Carly Daniel

- Imperial Barrel Award Competition

Lea Davidson

- USGS Mendenhall Post Doctoral Fellowship

Yannie Donaldson

- Invited colloquium speaker, Rutgers University: Groundwater in deserts? Insights from machine learning and hydrogeophysics
- Invited Panelist, GS-LSAMP Speaker Series
- Invited Speaker, American Geophysical Union, San Francisco, California: A geophysical approach to monitor infiltration and geochemical processes in an arid and saline environment
- Invited Speaker, American Geophysical Union, San Francisco, California: On the importance of near-peer-mentoring: an example from GNOMES, a critical zone geophysics, experimental learning field program
- Panelist, National Association of Black Geoscientist International Student Career Journey

Kaitlyn Hulsey

- Outstanding Teaching Assistant Award, UGA Center for Teaching and Learning

Katie Gooch

- Imperial Barrel Award Competition

Stephan Loveless

- Outstanding Teaching Assistant Award, UGA Center for Teaching and Learning
- Future Faculty Fellows Program, UGA Center for Teaching and Learning
- Engineering and Technology Internship with ExxonMobil

Amy Laubenstein

- 2-Year United States National Chapter (USNC) Sponsored Student Membership for the International Assoc. of Hydrogeologists (IAH)
- National Groundwater Association Paul M. Yaniga Memorial Trust Fund Award

Cade Orchard

- Scientists in Parks, Badlands National Park

David Richards, IV

- Keynote Speaker, Peach State Louis Stokes Alliance for Minority Participation
- Post-doctoral fellowship, U.S. Naval Research Laboratory

Fabian Zowam

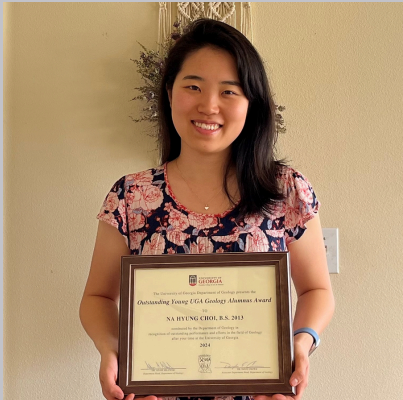
- Internship with Tulsa Refinery

ALUMNI SPOTLIGHTS



EARLY CAREER ALUMNI OF THE YEAR

NA HYUNG CHOI
B.S. 2013



DEPARTMENT POINTS OF PRIDE

Valentine Nzengung was named a USG Regents Entrepreneur and recipient of the Lioba Moshi Award for Service in African Studies

Adam Milewski was named the 2024 Klepser Lecturer for the University of Tennessee

Sally Walker named Chair of the AAAS Section E (Geology & Geography)

Faculty in Geology were awarded new grants from NSF Earth Sciences Division, NASA Solar Systems Workings, and NSF International Research Experience for Students

Establishment of two new Experiential Learning Funds (\$50K each): **The Chemours Experiential Learning Fund** and **The Watkins-Roden Experiential Learning Fund in Geology** (by generous donation of Dr. Mike Roden, Professor Emeritus)

Congratulations to our Alumni of the Year Awardees

DISTINGUISHED ALUMNI OF THE YEAR

JOHN HAYDEN
B.S. 1985



DEPARTMENT PHOTO TOUR

1ST FLOOR




DEPARTMENT PHOTO TOUR

2ND FLOOR

DEPARTMENT OF GEOLOGY

RESEARCH

We investigate geological processes to understand our world, address the demand for raw materials, and enable solutions for environmental change.



TEACHING

We mentor students in undergraduate and graduate degree programs to cultivate foundational skills needed for successful careers in geology.


GEOLOGY UGA

DEGREES

- A.S. in Geology
- A.B. in Geology
- M.S. in Geology
- M.A. in Geology
- Ph.D. in Geology


MINORS

- Environmental Geology
- Geosurvey & Mineral Resources
- Geospatial Paleontology
- Geology
- Global Earth Dynamics



SERVICE

We apply our geological expertise to support the diverse needs of the University, the geological profession, our local communities, and society.



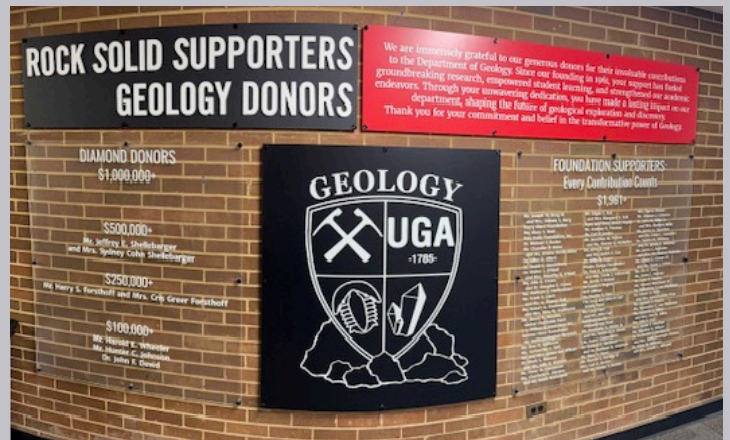


DEPARTMENT PHOTO TOUR

3RD FLOOR PRIDE HALL



Georgia First Corporate Partnership



Department of Geology Donor Recognition Wall

DEPARTMENT PHOTO TOUR

3RD FLOOR EXHIBITS



DEPARTMENT PHOTO TOUR

3RD FLOOR ATRIUM



Artwork display made possible through collaboration with the Lamar Dodd School of Art in the new student lounge space located in the Geology Atrium.

Ansley West Rivers' (BFA '06) cyanotype and palladium prints of watersheds in Georgia highlight the delicate and vital connections between water systems and the surrounding landscape.

