

eGeotiger

Fall/Winter 2025-2026



AUBURN UNIVERSITY

eGeotiger

Welcome Message from the Department Chair



Dr. Timothy Hawthorne

As we see the first hints of spring here on The Plains, I want to express my deep gratitude for the continued support and dedication shown by our alumni and friends, faculty, students, and staff. The strength of our Geosciences community is evident throughout the pages of this newsletter. Each of you continues to propel us into a new era for Auburn Geosciences.

That new era becomes very real this summer as we move into the STEM+Ag Complex—Auburn’s most ambitious academic building project in our history. When it opens, it will stand as the most modern and state-of-the-art Geosciences facility in the United States. We are thrilled to be part of this transformation and energized by what it will mean for our teaching, research, and outreach missions.

Our momentum is visible across every corner of the department. Student enrollments in GEO classes continue to rise steadily, with around 10% growth each semester, strengthening our ability to support student success across campus. At the graduate level, we are experiencing a historic milestone: with 59 students across our MS and PhD programs, we now have the largest GEO graduate cohort in the department’s history.

Inside this newsletter, you’ll find stories that highlight the people who make Geosciences such a special place—faculty pushing the boundaries of discovery, students achieving at the highest levels, alumni making an impact around the world, and staff whose dedication keeps our mission moving forward every day.

I am incredibly proud to serve as Chair of this extraordinary learning community. As you will read in this update ***Geosciences is Going Places***. We hope to see you on April 18 for the Spring Picnic here on the Plains. Thank you for all you do, and War Eagle.

With gratitude,

Tim

GAB Match Challenge from Goodney Zapp

We are grateful to the Geosciences Advisory Board for their continued support of student excellence in our department. We extend special thanks to outgoing GAB Chair Goodney Zapp '80 for her generous matching challenge.

Your gift to the GAB Fund will be matched—up to \$5,000—by GEO alumna and former GAB Chair Goodney Zapp '80.

Donors will also receive exclusive invitations to GAB meetings and events in 2026.

Donate now to GAB to double the impact on the QR code or at the below link:

<https://aub.ie/GABGiving>



COLLEGE OF SCIENCES
AND MATHEMATICS
Department of Geosciences

Alumni Spotlight

Abigail Smith Rutland

Abigail Smith Rutland, a native of Muscle Shoals, Alabama, graduated from Auburn University in 2017. Her interest in geography began during her freshman year after taking an Introduction to Geography course. Inspired by the subject, she continued enrolling in geography classes as electives before changing her major during her sophomore year. Through these courses, Abigail discovered Geographic Information Systems (GIS) and began developing the technical skills that would shape her career.

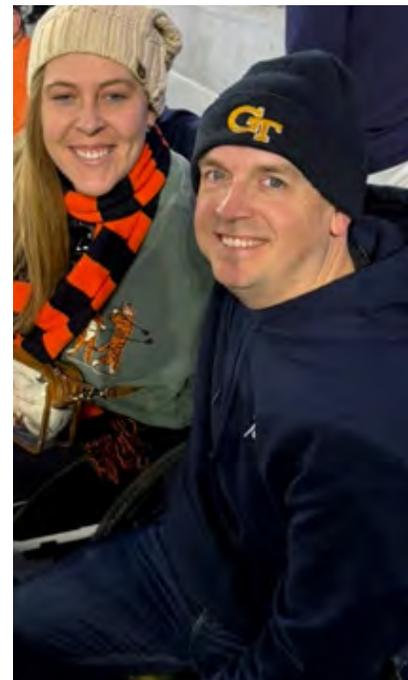
After earning her bachelor's degree, Abigail pursued a Master of Science in Geospatial Science at the University of North Alabama, graduating in the spring of 2019. That fall, she moved to Madison, Alabama, to begin working as a Geospatial Analyst at Hexagon US Federal. She started as a contract employee and transitioned to a full-time role in the spring of 2020. Shortly thereafter, her position became fully remote due to the COVID-19 pandemic.



In late 2021, Abigail accepted a GIS Analyst position with Avineon, where she currently works remotely. In her role, no two days are the same. Abigail leads the land records team, supports customers transitioning from ArcMap to ArcGIS Pro, builds and manages datasets, and trains clients on editing workflows. She also assists Avineon's Managed Services team by resolving technical support tickets.

Abigail credits her success to strong technical skills, spatial thinking, troubleshooting abilities, and perseverance all of which were cultivated during her time in Auburn's Department of Geosciences.

Today, Abigail works from her home office in Madison, Alabama, alongside her two dog "coworkers," Cotton and Georgia. She recently married her husband, Austin, and together they built their home in Madison.



Alumni Spotlight

Ken Reynolds

Ken Reynolds, a Selma, Alabama native, earned his B.S. (1979) and M.S. (1981) in Geology from Auburn University. He initially entered Auburn as a business major but discovered geology through a required science course. With little prior exposure to earth science, Ken's curiosity quickly turned into passion after taking Geology 101 and historical geology, where engaging lectures on evolving continents and extinct species drew him into the discipline.

After completing his undergraduate degree, Ken remained at Auburn to pursue a master's degree when the university launched its new M.S. program. He began his career with Texaco in New Orleans, working on Gulf Coast asset development projects in Louisiana and Texas. Following the Texaco–Chevron merger in 2001, Ken joined Chevron and played a key role in developing the Petronius Field in the Deepwater Gulf of Mexico. He later served as a development geologist, reservoir modeler, and Earth Science Advisor, supporting technical teams and advising management on major projects.

Now retired, Ken serves as Vice President of the Geosciences Advisory Board. He and his wife, Ellen, enjoy time with their large family and traveling, with a goal of visiting all seven continents.

In Antarctica- Ken and Ellen Reynolds



At Serengeti



Ken Reynolds' time at Auburn taken from SGE induction 1978-79 in Glomerata (founded by Art Merkle). GAB members Herb Martin and Art Merkle are also in the photo. Not pictured is Laura Waters Folse



Alumni Spotlight

Herb Martin

Mr. Herb Martin was born in Pottsville, PA as part of a very mobile family. They followed his Dad's career to 3 towns in Alabama as well as one in Illinois as he grew up. Herb graduated from Ft Payne (AL) HS in 1975, received his BS in Geology from AU in 1979 and MS from LSU in 1985.

Herb retired in 2017 from thirty-five years in the oil & gas biz (last with Devon Energy). He spent first 17 years as a prospector, working principally on the U.S Gulf Coast with five+ years in International (mostly Far East basins). After 1999 until retirement, he worked in various management roles for Devon across the business, in business unit and corporate roles. The best part of Mr. Martin's career was finding energy resources, but also developed interest and skills in economic and strategic evaluation of exploration opportunities, innovative application of technology for resource delineation and expansion, with a special focus on cross-disciplinary integration applied to solving the unique challenges in "unconventional" plays.

Beach trips from time at Auburn



Outside of work, Herb Martin's interests include the outdoors (hiking, camping, hunting, fishing – even working in the yard!), golf, travel (they really like small boat "adventure" cruises), reading, FAMILY (spoiling the grands is a passion) and gardening. Lately lots of time he spent on non-profit and volunteer work.

Wife Marynm & Herb have been together a good long while (she would say a long time) and are very proud of their family – daughter Sallie (AU '09 & '11) & husband Josh Sells and their two Cabot (9) and Carlisle (7); son Sam (AU '11 in geology) & wife Chelsea and their two Hudson (5) and Harper (2); and son Wade & wife Anna.

Family Photo 2025



Kayaking in Costa Rica 2023



Golf trip to Savannah, GA Fall 2025



Geosciences Excellence Summer Project

This past summer 2025, the Department of Geosciences launched its inaugural "Geosciences Excellence Summer Project" successfully engaging K-12 students with the world of Earth science. Led by ESS PhD student Md Riaz Uddin, along with Professors Ashraf Uddin and David T. King Jr., the program offered a blend of on-campus classroom instruction, hands-on lab experiments, and a field trip to the Chewacla State Park to study Alabama's geological history. The goal of the summer project was to spark curiosity and inspire the next generation of scientists.

The initiative concluded with unanimous positive feedback, as every participant stated they would recommend the experience to others. A successful collaboration, aided by a keynote session by Dr. Lindsay Doukopoulos of the AU Biggio Center, showcased the department's commitment to introducing students to its research and teaching culture.

The success story of this exciting summer project has been featured on the Auburn University College of Sciences and Mathematics (COSAM) website and is available here: <https://aub.ie/geoexcellencesummer2025>.



Geosciences Research Showcase



The Department of Geosciences recently hosted this semester's Geosciences Research Showcase Colloquium where Students, faculty, and staff gathered to support an exciting cross-section of research taking place across the department.



Designed as an informal and welcoming forum, the Showcase offered attendees the chance to explore the breadth of geoscience inquiry happening at Auburn—ranging from climate and environmental science to structural geology, geophysics, geospatial innovation, and the history of scientific thought. Participants had opportunities to ask questions, exchange ideas, and form new research connections. And of course —there were excellent snacks.



The Colloquium highlighted the depth and diversity of student-led research in the department and celebrated the innovative work shaping the future of geosciences at Auburn University.

This semester's Showcase featured an outstanding lineup of presenters whose work spans local, regional, and global scales.

New Faculty in Geosciences



**Dr. Merhawi
GebreMichael**

Dr. Merhawi GebreMichael is an Assistant Professor of Hydrogeology in the Department of Geosciences. His research focuses on large-scale groundwater systems, lithologic characterization, and the use of hydrogeochemical, water isotope, and statistical methods to improve groundwater accessibility and decision-making.

He earned his Ph.D. in Civil Engineering from Washington State University and a M.Sc. in Hydrogeology from Addis Ababa University. He previously served as a Postdoctoral Research Scholar at the Bren School of Environmental Science & Management at UC Santa Barbara.

Dr. GebreMichael has published in leading journals, including Nature Communications, contributed to national-scale groundwater datasets, and collaborated on groundwater research in both the United States and East Africa. His broader goals include developing innovative hydrogeologic tools, mentoring students, and supporting water resource resilience for communities in the U.S. and Sub-Saharan Africa.

As a first-generation university student, Dr. GebreMichael pursued his graduate education and postdoctoral training through a wide range of academic, cultural, and institutional learning experiences. These experiences strengthened his independence, resilience, and commitment to building a supportive, ethical research environment. He is grateful for the opportunity and excited to begin impactful work at Auburn University.



Dr. Qiang Yao

Dr. Qiang Yao is an Assistant Professor in the Department of Geosciences at Auburn University, specializing in paleoecology and natural hazards. His research examines long-term environmental change, coastal ecosystem resilience, and the impacts of natural disturbances using multidisciplinary approaches that integrate microfossil analysis, geochemistry, sedaDNA, and remote sensing.

He currently serves as Director of the Paleoenvironmental Change Specialty Group of the American Association of Geographers (AAG) and has led multiple projects on mangrove dynamics and hurricane impacts along the U.S. Gulf Coast. His work has produced nearly 50 publications in international journals, including Quaternary Science Reviews, Water Resources Research, and Geochemistry, Geophysics, Geosystems.

Dr. Yao's research is supported by federal and state funding agencies and emphasizes the application of paleoenvironmental records to inform coastal management and hazard mitigation strategies. Dr. Yao is also deeply committed to integrating research with student mentorship and public outreach, actively involving undergraduate and graduate students in field-based research and promoting the societal relevance of Earth science research.

New GAB Leaders in Geosciences



Austin Bush
President

Austin Bush, the new GAB President, serves as Chief of Operations for Bush Drone Data LLC, a Huntsville-based drone services firm specializing in high-resolution geospatial data, photogrammetric modeling, aerial LiDAR, and 3D linework. He holds a Master's degree in Geography from Auburn University.



Ken Reynolds
Vice President

Ken Reynolds, Vice President, is a retired energy industry professional with over 35 years of experience in geology and reservoir modeling. A graduate of Auburn University with both B.S. and M.S. degrees in Geology, Ken played a key role in developing deepwater projects in the Gulf of Mexico and continues to contribute his expertise to the board.



Megha Shrestha
Secretary

Dr. Megha Shrestha, Secretary, joins the GAB with a Ph.D. in Earth System Science and international experience in geospatial analysis. Originally from Nepal, Megha completed a DAAD RISE internship in Germany and is dedicated to advancing urban sustainability through innovative research.



Art Merkle
Treasurer

Art Merkle, Treasurer, is a pediatric dentist based in Fort Walton Beach, Florida, who specializes in preventive care for children. He earned his B.S. in Geology from Auburn University and his D.M.D. from UAB. A longtime supporter of Auburn Geosciences, Art remains actively engaged with the advisory board.

Auburn City GIS Day Celebration



The City of Opelika, in partnership with the City of Auburn, Auburn University, and Lee County Mapping & GIS, celebrated GIS Day on November 14 at the Boykin Community Center. Designed for all ages, the event showcased innovative uses of GIS in data analysis, visualization, and geospatial insights. Guests explored an augmented reality sandbox, the Auburn University GeoExplorer mobile lab, drone demonstrations, and map-based storytelling from our GIS students. First observed in 1999, GIS Day highlights how geography impacts real-world decision-making. Both cities have received state and national recognition for their GIS programs, which continue to support education, research, and public service.

Auburn Sustainability Picnic: Geosciences ROCKS!

The 2025 Auburn University Sustainability Picnic, held on August 27 at the Donald E. Davis Arboretum, brought together students, faculty, and staff to celebrate sustainability, science, and community. Hosted by the Office of Sustainability, the event embraced a zero-waste philosophy featuring vegetarian options and reusable materials—showcasing Auburn’s commitment to responsible environmental stewardship.

The Department of Geosciences in the College of Sciences and Mathematics (COSAM) was proud to participate once again. Faculty and students engaged visitors with interactive displays highlighting Earth systems, environmental science, and the role of geoscience in addressing global sustainability challenges.

Special thanks to Meg, Katie, and Tim for sharing their enthusiasm and expertise—proving that Geosciences truly ROCKS!



Nancy and James Hawthorne Memorial Annual Fund for Excellence



We are very proud to announce the Nancy and James Hawthorne Memorial Annual Fund for Excellence in the Auburn University College of Sciences and Mathematics. Our family is so proud to honor the legacy of my parents with a five-year major gift to Auburn University.

Both my mom and dad celebrated the power of education. They were passionate about kindness, empathy, and looking out for others, even in many moments where our financial situation during my childhood years made that challenging.

My dad began his career as a union machinist in Pittsburgh. He sacrificed in his career, going to night school to move up into labor relations and human resource management. He did this for his family and to support others in the labor movement.

My mom instilled in us the power of education. She would spend hours with us after school ensuring we had our homework done, reminding us that education opened doors. She always encouraged us to use our education to support others.

Their legacy lives on in our family, and now that we have witnessed the passion of the Auburn Family, we found it only fitting to honor my parents' legacy through a five-year major gift commitment to the Department of Geosciences and College of Sciences and Mathematics.

This new \$25,000 fund from our family will support the next generation of science and technology through Geo Explorer Labs. Our mobile lab network across the globe is based on the ideals my parents instilled in me: belief in the power of education, belief in the power of everyone to contribute to our world, and belief that we all can pay it forward to make the world a better place.

-Tim and Alicia Hawthorne

Field Camp Meets an Alum



Field Camp (now “Advanced Field Geology”) ran for the first time as a 3-credit experience with a complementary 3-credit fall semester “Field Geology: Methods and Application” course. Dr. Raphael Gottardi, Dr. Laura Bilenker, and TA Autumn Arnold traveled with and taught 7 geology majors for 3 weeks across Wyoming, Utah, Colorado, and New Mexico. The students completed 8 projects in those 4 states and had the opportunity to enjoy (and work in) 4 national parks, 1 state park, 1 national monument, 1 national preserve, and 1 national recreation area. Toward the end of the course, they had an awesome day learning from alum Jordan Ray, a National Park Service Park Ranger at Valles Caldera National Preserve! This experience was a real highlight for the students and instructors. Scholarships and financial support for the Field Camp students were much appreciated from the GAB and the Geo Going Places fund.

Study Abroad 2025 Iceland



For 10 days in May 2025, Drs. Payne, Rogers, and Bilenker led a 3-credit study abroad trip to Iceland for undergraduate and graduate students in Geosciences and other majors. The Vikings and Volcanoes group traveled through Iceland with course content bridging human geography, physical geography, and geology. The highlights shown in these photos include The Gullfoss waterfall (top), the Sun Voyager statue in Reykjavík (middle left), a hike on the Sólheimajökull Glacier (middle right), and lunch at the Friðheimar farm's greenhouse (bottom right). Financial support for the students was made possible by the Department's Going Places Fund.



Expanding Our National Reach in 2025-2026



Auburn Geosciences is increasing its national profile by exhibiting and recruiting at six major events in 2025-2026, including GSA Connects, AGU, AAG, SEDAAG, the GSA Triple Joint Regional Meeting, and the Summit for AL STEM Educators and Workforce. The department worked with COSAM Office of Communication and Marketing to create a custom exhibit booth that can't be missed on the exhibit floor. In addition, our student worker, Lila Counterman has helped create a helpful display of faculty info cards for interested students.

Thanks to the faculty and students helping to promote the department with their knowledge and testimonials, the department has already collected hundreds of prospective student names, from just two conferences. Katie Brown's Geo role includes leading the logistics to ensure smooth operations, allowing faculty and students to focus on presenting and recruiting at these events.

Follow up plans include hosting top prospective students on the AU campus in early March 2026.

Youth Fishing Derby & STEM Event



On Saturday, November 8, the department partnered with Auburn Technology Park South and Science Outdoors to host a Youth Fishing Derby focused on community engagement and STEM outreach. The event welcomed local families for a morning of catch-and-release fishing, hands-on science activities, and tours of a new 36-foot mobile science lab.

This initiative provided an interactive opportunity to connect youth with outdoor science, promote environmental curiosity, and strengthen relationships between the university and the local community.

Thanks to GAB member, Bob Fousek, for providing generous financial support for families to take home new fishing poles and gear after the successful event!



Departmental Holiday Party



News From Faculty

Adam Payne, Returning Biggio Faculty Fellow



Senior Lecturer and Teaching Excellence Coordinator

The Department of Geosciences is proud to recognize Dr. Adam Payne, Senior Lecturer and Teaching Excellence Coordinator, on his continued role as a Biggio Faculty Fellow.

As a cultural geographer, Dr. Payne brings a campus-wide perspective to faculty development and teaching innovation. Through his leadership in New Faculty Orientation and New Faculty Scholars, he helps new Auburn faculty establish a strong foundation for success in the classroom and beyond.

Dr. Payne also co-facilitates interactive workshops designed to equip colleagues and graduate teaching assistants with practical teaching strategies and resources as they prepare for academic careers. His ongoing dedication to instructional excellence and mentorship continues to enrich the Auburn teaching community.

Richard Vachula Faculty Excellence



Assistant Professor Department of Geosciences

Dr. Richard Vachula of Auburn University's Department of Geosciences has been honored with the 2025 Emerging Faculty Creative Research & Scholarship Award in the Sciences, Biomedical Sciences, Engineering, and Agriculture category.

A leading paleoclimatologist and paleoecologist, Dr. Vachula investigates how fire, climate, and human activity have shaped ecosystems over thousands of years. His research—backed by over \$1 million in National Science Foundation funding—advances our understanding of fire-climate interactions and informs land management and policy decisions.

This prestigious award recognizes Dr. Vachula's exceptional early-career achievements and his growing influence in the field of geosciences.

Please join us in celebrating this outstanding accomplishment!

News from Faculty



Dr. Stephanie Rogers
Department of Geosciences
Robert B. Cook Associate Professor of
Geographic Information Science

What began as a childhood fascination with maps has grown into a distinguished career that places Dr. Rogers at the forefront of geospatial science at Auburn University. An Associate Professor of Geographic Information Science in the Department of Geosciences, Dr. Rogers now holds the prestigious Robert B. Cook Endowed Professorship, recognizing her outstanding scholarly contributions and leadership.

Through innovative use of drones and satellite imagery, Dr. Rogers is transforming how scientists monitor water quality and understand complex socio-environmental systems. Her GeolDEA Lab produces multidisciplinary research supported by more than \$3 million in funding from agencies such as the USDA, USGS, NOAA, and NSF. She has authored over 30 peer-reviewed publications, many with student co-authors, and is known for offering hands-on geospatial courses that equip students with cutting-edge analytical skills.

Trained broadly across physical geography, GIScience, and remote sensing, Dr. Rogers' current work spans water quality, UAS-based data production, wastewater infrastructure, pollinator health, and citizen science.

Congratulations, Dr. Rogers, on this well-deserved honor!



Student Award Recognition



Alexandra Tsalickis

PhD candidate Alexandra Tsalickis has been selected for the Dean's Research Award, recognizing her exceptional scholarly achievements and contributions to our research community.

Separately, Alexandra has also received the Harry Elderfield Student Paper Award from the AGU's Paleoceanography and Paleoclimatology Section—the section's only student honor. She earned this award for a dissertation chapter published in *Geophysical Research Letters*, and will receive a \$500 prize, complimentary meeting registration, and recognition at the AGU Annual Meeting. Her work exemplifies both scientific rigor and creativity in understanding past ocean and climate systems.

These two distinctions highlight Alexandra's outstanding impact at both the university and international levels.

Save the date: Special thanks to Marynm and Herb Martin '79 for matching our Geo Explorer Auburn program during the 2026 Tiger Giving Day and a special naming opportunity in our new home, the STEM+Ag Complex. More soon!



Giving to Geosciences

Going Places with Geosciences Fundraising Needs

We ask you and your industry connections to consider giving to the Auburn Department of Geosciences to support our programmatic needs. Here are our areas of greatest need.

Thank you and War Eagle!

Give now at:

<https://aub.ie/GeoGiving>

1. Continued Student Financial Support and Scholarships: scholarships and fellowships aimed at supporting students' educational experiences, including field camps, study abroad opportunities, local classroom fieldwork, and assistantships for both graduate and undergraduate students.
2. Geosciences Outreach and Engagement for Land-Grant Mission: Geo Explorer Auburn Mobile Lab and Global Network, Auburn Museum Displays, Heat Study, Destination STEM, outreach events, school visits, tailgating and science festivals.
3. Professional Development and Networking Opportunities: resources for students and faculty/staff to attend conferences, workshops, and networking events, as well as funding for colloquia and outreach programs to enhance academic connections.
4. Research Faculty Mentoring Support: Endowed professorships, graduate student research start-up funds, mentoring awards, and incentives for faculty and staff achievements, aimed at fostering an environment of excellence in teaching and research.
5. Enhanced Learning Resources and Facilities: STEM+AG: Investment in new spaces. Active learning environments, such as new teaching and lab equipment, and shared sample preparation facilities, visualization wall for GIS Lab and Colloquium space.

College of Sciences and Mathematics
Ashley Underwood
ashley.underwood@auburn.edu
(334) 844-2931

We would love to hear from you! Please send your stories to us!

Editor: Kiley Coan rainskl@auburn.edu



Department of Geosciences
Auburn University
2047 Beard Eaves Coliseum
Auburn, AL 36849-5305
Phone #: 334-844-4282



Website: www.auburn.edu/academic/cosam/departments/geosciences/index.htm