In this Issue
Message from the Chair | Highlights 2023-2024
Department news 2023 - 2024 | Faculty Spotlight
DEI Updates | Department Awards | Club Geography
Department bookshelf
Message from the Chair
Dr. Matthew D. Therrell

Dear friends,

Welcome to the University of Alabama, Department of Geography 2023-2024 academic year newsletter. This past year was once again full of exciting new changes and opportunities. Our department continues to grow and thrive at record rates both in terms of numbers of faculty and students as well as research productivity for our department. I am excited to share this newsletter detailing some of the amazing progress of our department including accolades and achievements of our students, faculty, and staff over the past year. Among the highlights:

- We continue to enroll top caliber students in our graduate program and now have nearly 50 (28 Ph.D.) students, over half of which we continue to support through non-teaching university fellowships or research grant funding secured by faculty members.

- Our students and faculty continue to produce world-class scholarship in many areas of geography and environmental research, including publishing in all of the top disciplinary journals and achieving new records for competitive external funding. By many disciplinary metrics we are certainly one of the top programs in the nation.

- We are very excited to welcome several new tenure-track faculty who joined us in Fall 2023, as part of a cluster hire in climate science. Dr. Amobichukwu Amanambu joined us after completing his PhD at the University of Florida, Dr. Tess Doeffinger joined us following a post doc at the World Bank, and Dr. Dapeng Li joined our faculty after spending several years as an Assistant Professor at South Dakota State University. We also welcomed Dr. Cristina Robins as a full-time instructor. She has previously taught for several years in the UA Geological Sciences Department and the Blount Program. In Fall 2024 we will welcome Dr. Leah Mungai and Dr. Changzhen Wang to the faculty. We are very much looking forward to welcoming them in their new roles.

- As usual, our faculty members continue to offer some of the most popular study abroad programs at UA, including in Belize, Ghana, Ireland, and Mexico.

- Our annual Awards Day continues to be a great time for alumni and current students to meet and spend time together. We were especially excited to honor our former faculty member Dr. Bobby Wilson by awarding the first “Dr. Bobby Wilson Award in Environmental Justice Scholarship”, as well as recognize Mr. Carroll “Lew” Watson with our Outstanding Alumni Award. Multiple undergraduate and graduate students were recognized with awards including our premier “David C. Weaver Memorial Award”

These highlights only touch on all the impressive accomplishments of our students and faculty I hope you will enjoy learning about all the amazing work our department is carrying out in service of our mission to “…help our students become global citizens, environmental stewards, policymakers, and scientists, and to improve the quality of life for the citizens of Alabama..."
Dr. Jared D. Margulies was recently featured by the Los Angeles Times for his work on plant poaching. His recently published book “The Cactus Hunters: Desire and Extinction in the Illicit Succulent Trade,” also got quoted in the New Yorker. See more at: https://www.latimes.com/entertainment-arts/books/story/2023-11-17/what-can-we-learn-from-the-cactus-thieves

A project led by Dr. Hongxing Liu at UA is developing software to enable monitoring and assessing the quality of freshwater reservoirs using satellite and drone technology, potentially saving time and cost. Supported by the Water Research Foundation, the research is a partnership with the University of Cincinnati for a new generation of adaptive software tools to evaluate and demonstrate the use of satellite observations and cutting-edge drone remote sensing technology in drinking water quality monitoring and ecological assessment of freshwater resources. This innovative project brings together comprehensive field assessments of drinking water reservoirs in Alabama, Ohio and Georgia.

Student awards and recognition include—an Eisenhower Fellowship, two NOAA Hollings Undergraduate Scholarships, the William A. Fischer Memorial Scholarship from the American Society for Photogrammetry and Remote Sensing and the Distinguished Community-Engagement Scholar.

Faculty were awarded the President's Faculty Research Award, and a College of Arts and Sciences Leadership Board Faculty Fellowship

Dr. Changzhen Wang received the prestigious J. Warren Nystrom Award at the American Association of Geographers (AAG) Annual Meeting on April 16-21, 2024 in Hawaii.
The 2023-2024 academic year has been hectic and exciting at the Surface Dynamics Modeling Lab (SDML). We graduated three students, Nishani Moragoda (Ph.D.) and Sera May (MS) last summer, welcomed two new graduate and two undergraduate students and hired two new post-doctoral scholars. The students and postdocs are working on various projects funded primarily through the NOAA Cooperative Institute for Research to Operation in Hydrology (CIROH). SDML members now include:

- Dr. Anupal Baruah: Hydraulic model evaluation framework
- Dr. Dipsikha Devi: Flood Inundation Model Optimization
- Dr. Yixian Chen: 3D Channel Hydrofabric
- Monica Stone (Ph.D.): Bankfull Discharge Estimation Using Novel Datasets
- Reihaneh Zarrabi (Ph.D.): Channel Morphology and Roughness Estimation
- Parvaneh Nikrou (Ph.D.): Hydraulic Simulation of Floods Across Scales and Regions
- Riley Mcdermott (MS): Channel Shape Estimation using Novel Datasets
- Sadra Seyvani (MS): Evaluation of Flood Inundation Predictions using Remote Sensing
- Supath Dhital (MS): Surrogate Flood Inundation Modeling
- Pranav Sundararajan (URA): Rating Curve Analysis and Modeling
- Chance Jones (URA): Channel Geometry Data Compilation

Key publications this academic year from SDML include Nishani’s papers in Water Resources Research (IF: 6.1), and papers in Science of The Total Environment, International Journal of Remote Sensing, Environmental Research Letters, and Journal of Great Lakes Research. Several other, student-led, manuscripts will be published this summer. We presented our research at several conferences this year including the American Geophysical Union Fall Meeting (San Francisco, CA), the Global Flood Partnership Annual Conference (Singapore), the International Association of Floodplain Management (Japan), AGU Chapman Conference (Honolulu, HI), Alabama Water Resources Conference (Orange Beach, AL), and the Alabama Water Institute Symposium (Tuscaloosa, AL).

This summer will be a busy one. I am leading the organization of the CIROH Developers Conference (May in Salt Lake City, UT), co-organizing the Global Flood Partnership Annual Conference (September in Kenya), and UA-lead organizer and research theme lead of the 2024 NWC Summer Institute (June-July in Tuscaloosa, AL).
This past year has been a testament to the enduring spirit of innovation and academic dedication at the University of Alabama. As UA’s Senior Associate Provost for Academic Affairs, I’ve had the privilege of steering the ship of undergraduate education amidst the exciting and sometimes challenging seas of academic program development and policy formulation.

A cornerstone of OAA’s work involved the ‘Built by Bama Core Curriculum’ development, an initiative that is close to our heart. Overhauling a core curriculum is akin to reshaping the academic DNA of an institution, and I’m proud of how our community came together to rejuvenate our undergraduate offerings. This collaborative journey wasn’t just about redesigning courses; it was about reaffirming our commitment to providing an education that is as comprehensive as it is forward-thinking.

Simultaneously, I’ve been deeply involved in academic program reviews, a process that ensures our programs remain at the forefront of pedagogical excellence and relevance. These reviews are critical in maintaining our standards of excellence and ensuring that our programs evolve to meet the changing needs of our students and the larger academic and professional worlds they will enter.

On another front, I had the unique opportunity to work closely with our colleges to address their space needs. As we expand and our programs grow, ensuring that our physical spaces meet the demands of our faculty and students has been both a challenge and an accomplishment. This work is a balancing act of resource management, strategic planning, and sometimes, creative problem-solving.

As I look back on the year, I am reminded of the resilience and adaptability of our academic community. It is the collective effort and shared vision that continues to drive us forward. I’m eager to keep building on our successes and to meet the opportunities and challenges of the coming year with the same spirit of collaboration and excellence.
Dr. Justin Hart

I am the Director of the Environmental Science Program and the Forest Dynamics Laboratory (FDL). The primary mission of the FDL is to provide science-based solutions to pressing forest management issues. This goal is accomplished through applied research, outreach with an emphasis on practitioners, professional and civic service efforts, and instruction of courses that include state-of-the-art information, hands-on learning, and professionalization opportunities for students. The lab has ongoing research projects in forest disturbance ecology. These results provide the basis for silvicultural prescriptions that are based on natural patterns of stand development and disturbance.

Dr. Joe Weber

This year my co-authored book ‘The Parks Belong to the People: The Geography of the National Park System’ came out, published by the University of Georgia press. It is a human geography of the national parks, monuments, recreation areas, battlefields, historic sites, seashores, lakeshores, and other places within the park system. It covers the geographic expansion of the system, transport to and within parks, boundaries and political geography, economic geography, threats, and even offers a quick overview of parks and similar protected places around the world and their possibilities on other planets. It is the first book of its kind, and I am very thrilled to finally see it, after far too many years of work on it. I’ve also been busy with other projects relating to parks and highways, including another national park book that I hope will be out next year. I’m getting more comfortable with teaching GY204, and I got to teach GY366 The Networked World for the first time last fall. It was a productive year.
I am broadly trained as a human-environment geographer in hazards and disasters research, Geographic Information System, and quantitative social science methods. My research is focused on the intersection of natural hazards, community vulnerability, and risk decision making. My research transcends the traditional disciplinary boundary. I collaborate with scientists from a wide range of fields. I am currently funded by several grants from the National Science Foundation, the United States Army Corps of Engineers (USACE), National Oceanic Atmospheric Administration (NOAA), and the Department of the Treasury (USDT). Some of the funded projects aim to understand stakeholder and public risk perceptions, risk communication, and risk decision-making about water-related hazards (e.g., flood, drought, and sea level rise). Others aim to assess community vulnerability and resilience to these hazards.

My current Ph.D students are involved in these projects. Specifically, as an NSF Research Trainee (NRT) fellow, Evan Cass is conducting research on compound flood risk communication between stakeholders (emergency managers, weather forecasters, elected officials) and the public in three coastal cities of the southeastern U.S.: Houston, TX; Mobile, AL; Savannah, GA. He also aims to understand how the public prepares for, responds to, and recovers from flood disasters in these three cities. We use mixed methods in this project. They include focus group meetings, content analysis, survey research, and statistical analysis. This project is funded by the USACE. Supported by a project funded by NOAA through the Cooperative Institute for Research to Operations in Hydrology (CIROH), Hemal Dey is focused on a comprehensive assessment of flood risk considering both flood susceptibility and social vulnerability in the Southeastern U.S. by applying advanced Machine Learning methods. Through another CIROH project, Fatema Nourin and Munjurul Haque are working with a multidisciplinary team consisting of civil engineers, biologists, ecologists, and stakeholder engagement professionals. We attempt to integrate stakeholders’ local knowledge into ecological and hydrological models quantifying the effects of nature-based solutions on flood risk reduction in Mobile, AL. Munjurul Haque is also focused on a USDT funded project to quantify community vulnerability and resilience to coastal environmental stressors in Mobile Bay by engaging stakeholders. Particularly, we have surveyed local stakeholders to select and weight relevant variables that constitute a comprehensive index to represent social vulnerability and community resilience respectively. Annyca Tabassum is currently focused on how changes in land use and land cover correlate with the changes of social vulnerability in big cities in the southeastern U.S.

I am a co-PI for the NSF NRT project where my main responsibility is to work with other principal investigators in physical geography, civil engineering, computer science, and education to design a comprehensive and interdisciplinary curriculum. This curriculum will train graduate students in multiple fields such as hydrological sciences, data science, artificial intelligence (AI), machine learning (ML), and decision science. These graduate trainees will also learn how to effectively translate research advances to water system operations by participating in study tours (both domestic and international), mock operational forecasting, practical labs, roundtable discussions, experiential learning, internships, team building and professional development. We welcome applications from Geography and Environmental Science majors. U.S. citizens and permanent residents are eligible for generous fellowship stipend. If you are interested in pursuing a Master’s degree or Ph.D, please email me at wshao1@ua.edu.
DR. SETH APPIAH-OPOKU

I received internal funding for my research on "improving bike share programs on college campuses in Alabama" (ATI funding) and "disrupting pangolin poaching and trading networks" (CARSCA funding). In addition, I submitted a proposal for NSF funding for my work on exploring the impact of behavioral nudges on wildlife trading and consumption. I continued to serve on the editorial boards of the Journal of Environmental Impact Assessment Review and the African Geographical Review.

Finally, in the past year, I directed and taught the GY 444/544 Field Studies in Africa course (UA in Ghana Service Learning). The course is open to all students at UA regardless of their major. Our students learn by shadowing elementary school teachers, EPA officers, planners in planning agencies, social workers in social service agencies, journalists in FM radio stations, and hospital nurses. A highlight of the trip was a visit to Ghana’s Parliament in Accra where the Speaker of Parliament recognized and introduced our UA group to a great applause.
Fourteen students completed my faculty-led study abroad program in June 2023. Ireland with its long and complex history of occupation, colonization, invasion, emigration, and immigration, together with its diverse geology, geomorphology, culture, history, and heritage is an ideal location to study the intricacies of human-earth relationships in a dynamic modern setting. We completed a 17-day circuit of Ireland traveling by bus, boat, bike, and on foot; and engaging with locals and experts along the way. This cohort was comprised of students from academic centers across campus which added valuable often very different perspectives to our discussions. The experience continues to be a rewarding one for everyone involved mainly because the level of engagement and active learning continues to surpass anything I have managed to facilitate in a traditional classroom setting. I am excited to return in June 2024 with another cohort and have added new experiences to the mix including a literary pub crawl and the Dingle Peninsula. I will report back on that next year!!
Ten students completed this field course in May 2023 and produced a Watershed Management Plan for a local watershed. Students interacted daily with professionals working in local, state, and federal government, as well as private individuals and landowners to understand why watershed planning is essential. Students also learned the basics of field data collection methods and how to data mine for existing information on the watershed. Eight field days in May certainly posed some challenges, but nothing that a good attitude, excellent hydration, a lot of bug spray, and frequent dips in the creek couldn’t fix! Field activities included canoeing in North River, a city-led tour of Lake Tuscaloosa, stream gaging, fish seining, stream sediment risk assessment, and an index of biotic integrity (IBI) survey completed in conjunction with the Geological Survey of Alabama. Other field days include field trips with the Alabama Forestry Commission, the Alabama Aquatic Biodiversity Center, and a visit to a local farm demonstrating agricultural best management practices. I intend to offer this course every May Interim!!
HONORS UPDATE

GY-104 Honors Earth Surface Processes

With two semesters of this course wrapped up, I am thrilled to report that we recruited 3 new minors and a new major, not to mention the 30+ other students who report being more aware of the importance of science!! Students have greatly enjoyed the field visit component of the course and have been impressed by the application of science as demonstrated during their visits to the UA Natural History Museum, the Geological Survey of Alabama, the National Water Center, and our own Forest Dynamics Lab and Surface Dynamics Modeling Lab. Huge thanks to Dr. Hart and Dr. Cohen for sharing their expertise and research with these Honors students.
My first book, *The Cactus Hunters: Desire and Extinction in the Illicit Succulent Trade* was published in November 2023 by the University of Minnesota Press. So far it has received positive coverage are reviews in both academic and popular outlets including *The New Yorker*, *The Los Angeles Times*, *Landscape Architecture Magazine*, *Oryx*, *Plant Perspectives*, and the *Journal of Political Ecology*. I also wrote more popular articles this year about my work on cactus trade published in *Orion Magazine* and *Earth Island Journal*. In 2024, *The Cactus Hunters* received an Honorable Mention for the 2023 AAG Globe Book Award for Public Understanding of Geography, and an Honorable Mention for the Julian Minghi Distinguished Book Award from the Political Geography Specialty Group of the AAG. In addition to launching my book at a talk at Gorgas Library in November, I have given book talks in Barcelona, Spain, Wageningen, The Netherlands, Texas A&M University, the University of Delaware, and presented as part of panels on the book at two academic conferences. Throughout the next year I have several book talks and events lined up in New York, Los Angeles, Manchester, UK, and elsewhere.

I was also awarded a 2-year grant with colleagues in South Africa and South Korea from the UK’s Darwin Initiative Illegal Wildlife Trade Challenge Fund to characterize and better understand the transnational flow of illicitly harvested succulents in South Africa—many of which are now threatened with extinction for their demand by ornamental collectors internationally. Looking ahead to Fall 2024, I am excited to welcome a new PhD student to the Critical Conservation Geography Collective (CCGC), Adit Dsouza, who received a 5-year Graduate Council Fellowship from the University, and to keep growing our group’s research.

Other CCGC highlights include PhD Candidate Utkarsh Choudhury winning the inaugural Dr. Bobby Wilson Award in Environmental Justice Scholarship as well as publishing his first, first-author article in the journal *Geoforum*, as well as several graduate and undergraduate members of the group presenting excellent presentations at the 2024 Dimensions of Political Ecology Conference in Lexington, KY. We also launched a group website this year at ccgc.ua.edu. Looking forward to 2024-2025, it will be a busy year of research on all kinds of legal and illegal wildlife trade incorporating research in the United States, South America, Southern Africa, and East Asia.
As we head into the 2024 hurricane season, you are likely to hear or read a news headline with ‘Worst hurricane on record’, but have you ever stopped to think about what that phrase means? In most cases, that phrase refers to the instrumental record or the post-1971 Saffir-Simpson hurricane wind scale (formerly Saffir-Simpson hurricane scale) which is where storm category developed. Perhaps it refers to the historical storm record, which NOAA has re-categorized back to ~1850. Unfortunately, neither of these records are long enough to fully capture climate variability, let alone the impacts of climate change on storm frequency or intensity. Furthermore, our relationship to the coast has changed over time, with both larger and more abundant structures along the coast than at any time in the historical record, making comparisons of ‘hurricane impact’ difficult to assess. A longer record is needed to truly understand how hurricane frequency and intensity has changed through time.

My Coastal Research and Extreme Events (Co.R.E.E.) lab develop long-term records of storm intensity and frequency through the study of prehistoric storms (paleotempestology) through archives left in both sediment and tree-ring records. Recent research conducted by 2023 M.S. graduate Jared Friedman, funded by the National Science Foundation Paleo Perspectives on Climate Change (P2C2), highlighted the usefulness of oxygen isotope records in recording long-term changes in hydroclimate in the northern Gulf of Mexico, with a strong potential for recording hurricane activity through time. Graduate student Lexie Thornton is currently working to understand how coastal geomorphology influences the archival record in sediments from previous storm events, crucial for calibrating records of storm intensity over the last millennia. By re-examining previously published sediment paleotempestite records, Lexie’s calibration will enable comparisons between paleo storm activity and modern hurricane records, allowing for examination into how storm frequency and intensity have changed over time. Through these interdisciplinary research efforts, My team and I are advancing the understanding of the long-term dynamics of coastal systems and the associated impacts to these environments as a result of various drivers, including extreme events.

My research extends beyond paleotempestology embracing a variety of disciplines for a deeper comprehensive understanding of coastal dynamics. Incorporating principles of coastal geomorphology, sedimentology, geochronology, environmental engineering and dendrochronology. Our lab members use this expertise to establish long-term, high-resolution records within coastal environments. My students and I are specifically interested in utilizing these records to elucidate the impact of storm frequency and magnitude, sea-level rise, geologic framework and human impacts on coastal systems. Through meticulous analysis and synthesis of data from multiple disciplines, they aim to unravel the complex interactions shaping coastal geomorphology, ecology and overall vulnerability within these systems.

I am also the co-PI on a collaborative CIROH grant with Dr. Julia Cherry (New College and Biology) and Dr. Nate Jones (Biology), which aims to determine changes in the sediment accretion rate and associated drivers in both Grand Bay National Estuarine Research Reserve (MS) and Plum Island Estuary (MA). As part of this project, Co.R.E.E. lab member and geography graduate student, Caleb Novinger, is currently helping to clarify the accretion rate in the Plum Island Estuary through analysis of existing datasets and DEMs, a method that will be applied at Grand Bay National Estuarine Research Reserve through the combined efforts of this project.

I am a co-founder of the Science Research and Education Network (SciREN) Alabama program that aims at fostering collaboration between researchers and K-12 educators throughout the region, bridging the gap between scientific research and education. This initiative, which originated from a team of marine science graduate students at the University of North Carolina, has expanded to multiple U.S. institutions, including the University of Alabama since 2021. By creating lesson plans rooted in cutting-edge research, SciREN Alabama empowers K-12 educators to integrate real-world science into their classrooms to enhance educational experiences and public understanding of water resources, coastal science, environmental issues and much more.

Through these diverse research endeavors, spanning from fundamental science in the Co.R.E.E. lab to outreach and educational initiatives like SciREN Alabama, I and the Co.R.E.E. lab work towards a common goal: to better understand the impacts of climate, sea-level and human influence on coastal system. By leveraging our expertise and engaging with various stakeholders, we aim to influence better mitigation strategies, enhance the resiliency of our coastal communities and ecosystems and highlight the importance of integrating research, education, and outreach to address pressing environmental challenges and empower communities to action.
I joined the Geography Department in Fall 2023 as a full-time instructor, teaching GY 102 (Earth Surface Processes), GY 110 (People, Places, and Environment), and GY 202 (Water Planet). Prior to this, I worked across three departments – Geology, Geography, and the Blount Undergraduate Initiative. I’m a paleontologist by training (I’m the world expert on fossil squat lobsters, having described over 60 species of them), but I’m an interdisciplinary scientist and “jack of all trades” when it comes to teaching (and master – and PhD – of one!). Thus far I’ve taught 11 different courses at UA over the past four years, building four of them from scratch, and continually seem to add to my list. This is also probably related to the fact that I’ve never found an internet rabbit hole I didn’t want to hop into.

What my paleontological background allows me to do is add a fourth dimension to much of the material I teach – time. Humans in general tend to think of the world as static – the river has always been there, these animals have always lived there, the mountains are immortal – but that isn’t true. Climate change is a topic that students are absolutely tired of hearing about and feel helpless to change things, with many zoning out as soon as you mention it or are immediately hostile to the notion. Where I’ve taught in the past, I’ve been interrupted in class by a student asserting that climate change is a lie (Florida), to a student tentatively raising his hand after a climate discussion with the question, “Are we all going to die?” (San Jose, CA). What students need is a way to not feel helpless about what is going on around them, that they have agency, and it’s an issue separate from politics.

Looking at the climate from the perspective of time, it surprises many students to learn our average temperature is actually lower than the average for Earth – we’re just approaching the highest that humans have ever lived through and we’re doing it at a rate that is nearly unprecedented, outside of mass-extinction events. This understanding, coupled with maps of previous sea level extent (Tuscaloosa being ocean-front property in the past, or Florida being twice as wide due to receding shorelines) gives new perspectives and visualizations to the information. Crucially, providing information about what technology exists, what is being done, and what can be done to both understand the causes and mitigate the effects of the changes on Earth seems to allow higher engagement from students. Also, listing geographic reasons as to why we no longer have armadillo relatives the size of VW Bugs (glyptodonts) allows for a blend of ‘interesting, but still conveying relevant information.’

When it comes to each topic I discuss in classes I try to match with an example that is relevant to the students or shows how something works in the “real world.” About half of the students are from Alabama, and I do my best to keep Alabama, or at least Tuscaloosa, at the forefront of examples. On one of the early days of classes, I pass around notecards asking the students to write down their name and where they consider their hometown to be. This way I can formulate some of my examples to include areas they are familiar with. This semester, I’ve had quite a few students from New Jersey, so I’ve had to tailor my anecdotes a bit.
DR. CHANGZHEN WANG

Dr. Changzhen Wang received the prestigious J. Warren Nystrom Award at the American Association of Geographers (AAG) Annual Meeting on April 16-21, 2024 in Hawaii. Her winning paper entitled "Overlapping Cancer Service Areas: Delineation and Implications" received two rounds of competition for her original ideas and significant contributions to the advancement of geographic knowledge, and the quality and effectiveness of written style and oral presentation. The paper has been published in Transactions in GIS in 2024.

Changzhen is a dean’s postdoc research associate in the Department of Geography and the Environment at The University of Alabama. She will join our department as an Assistant Professor from August 2024. Changzhen received her Ph.D. in geography from Louisiana State University in August 2022. Her research focuses on developing and applying GIScience, complex network analysis, computational methods, and geovisualization in health, transportation, and urban studies.

The Nystrom Award is an esteemed honor established by the AAG. It's named after J. Warren Nystrom, a former AAG Executive Director from 1966 to 1979 and a prominent geographer, for his exceptional contributions to geographic thought and education. As an annual prize, this award recognizes exceptional papers based on a recent dissertation in geography within three years, emphasizing their significance and originality.

DR. LEAH MUNGAI

In December 2023, our research proposal titled “Mapping under-represented small farms in the Black Belt of Alabama” was selected by the College Academy for Research, Scholarship and Creative Activity (CARSCA) at The University of Alabama for a funding amount of $5,105. In this research proposal, we examine minority-owned small farms systems in the Black Belt region of Alabama to serve as an entry point to understanding their varied management practices and their potential for improved farm productivity. We are preparing for fieldwork and subsequent analysis in the coming Fall. Our findings will lay the groundwork for characterizing small farms’ heterogeneity for the co-development of innovative farm practices for sustainable food production in the Black Belt region of Alabama. This research project will be led by me and Co-I as Dr. Nicholas Magliocca.
I am deeply engaged in the study of water and its complex interactions with our environment. As the founding force behind the Hydro-Environmental Systems (HES) Lab, I am currently at the helm solo, eagerly awaiting the arrival of my students this fall (2024). My work is dedicated to unraveling the multifaceted roles water plays across the globe and understanding its significant impacts.

The essence of the HES Lab is to scrutinize the impacts of both climatic and human-induced changes on water resources, focusing keenly on the dynamics between surface water and groundwater systems. My approach is uniquely holistic, marrying the rigor of traditional fieldwork and lab analyses with the innovations brought by Geospatial Artificial Intelligence (GeoAI), machine learning, and unmanned aerial vehicles (UAVs). This synergy offers a rich, multi-dimensional understanding of how water landscapes are shaped by the climate and human activity.

One pivotal area of my investigation centers on hydrological droughts, particularly affecting the life-giving rivers of Apalachicola and Mississippi. Supported by the Environmental Protection Agency (EPA), this exploration is set to illuminate the critical importance of stage data in discerning the nuances of these phenomena. Traditionally overlooked, this data is pivotal in grasping the full picture of water availability and the health of river systems under the dual pressures of human activity and climate change. The role of stage data here is pivotal; it serves as a critical measure in understanding the dynamics of river flows and the onset of hydrological droughts. This information is not just numbers on a chart; it’s the heartbeat of our rivers, telling us the story of their rise and fall, their vigor, or their distress.

The drought project has significantly broadened my perspective, uncovering the intricate web of environmental teleconnections and human actions that trigger hydrological droughts. These insights are invaluable for developing comprehensive water management strategies poised to safeguard our shared future. The lingering question of how specific anthropogenic and climate factors catalyze hydrological drought onset (initiation) remains at the forefront of my inquiry.

Another significant current research delves into mapping Alabama’s groundwater-dependent ecosystems (GDEs). Given the state’s pressing challenges with water contamination juxtaposed with its abundance of freshwater systems, this initiative is not merely academic—it’s a vital step towards sustainable water utilization that benefits both human and ecological communities. In addition to exploring GDEs, my interests extend to how integrating hydrographic surveys with Digital Elevation Models (DEMs) can improve the accuracy of flood modeling. This question is particularly pertinent when the surveys are not readily available, blending technical innovation with practical application in a significant way.

We hope to place innovation at the heart of the HES Lab’s mission, aiming to employ UAV-LiDAR technology combined with graph theory for managing sediment transport in small catchments. Additionally, we plan to leverage deep learning to predict river depths and floodplain inundation using minimal datasets. These initiatives represent the cutting edge of water-environmental research, offering new tools and methodologies for tackling age-old problems.

As I navigate these investigative waters alone for now, my ambition is unwavering: to deepen our collective understanding of water systems, enhance their stewardship, and ensure their preservation for the legions that will follow. I invite you to join me on this voyage of discovery and innovation as we chart a course towards a future where water is not just understood, but revered and protect.
I joined the Department of Geography and the Environment at the University of Alabama as an assistant professor of GIS in fall 2023. Prior to moving to the University of Alabama, I worked as an assistant professor of GIS at South Dakota State University. I have about 20 years of experience working on GIS. My research interests include GIS and its applications in disasters, public health, transportation, and sustainability. My research has been funded by local, state, and federal agencies and primarily focuses on: 1) data-driven evacuation modeling and planning; 2) Web GIS applications in disasters, public health, and agriculture; 3) wildfire risk modeling and mapping; and 4) OpenStreetMap data quality assessment.

I have been working on wildfire evacuation modeling in the American West in the past thirteen years. I plan to conduct new research on hurricane and tornado evacuation in the southeastern U.S. in the next few years. Additionally, I have used various types of spatial data (e.g., Twitter, Google Street View, and address point data) in my research. I have a strong interest in using big data to do more data-driven research at the University of Alabama. More information on me and my students’ research can be found on the Disaster Informatics and Geospatial Information Technology (DIGIT) lab website: https://digit.lab.ua.edu.

I am a certified GIS Professional (GISP), and I am experienced in training GIS professionals to help them prepare for the GISP exam. I am dedicated to educating the next generation of GIS professionals at the University of Alabama. I am teaching advanced GIS courses such as Web GIS and spatial databases in the department and working with other faculty members to co-develop the Uncrewed Aerial Systems (UAS) certificate program. I plan to continue working with other faculty members to improve the GIS courses and curricula at the University of Alabama and making our students better equipped in handling the job market. I am happy to help the students in our GIS programs develop their career plans.

In my spare time, I enjoy travelling, hiking, and fishing. I am also excited about the opportunities for saltwater fishing in Alabama.
The Departmental DEI committee was excited to award the first winners of the inaugural Dr. Bobby Wilson Award in Environmental Justice Scholarship to two outstanding Geography and the Environment PhD candidates in the 2023-2024 year. This new Departmental award is named for Emeritus Professor Bobby Wilson who taught and researched in the Department from 2002-2015. The award is intended to recognize excellent scholarship related to environmental and geographic justice, broadly conceived. Although Dr. Wilson’s impactful work focused on labor geographies, Black geographies, racial capitalism, urban planning, and residential segregation, the committee considered submissions from current graduate students in the department that advance scholarship related to environmental and geographic justice across the breadth of the discipline. The award honors Dr. Wilson’s lasting contributions to the intellectual growth of the discipline of Geography and his firm commitment to anti-racist scholarship. The committee chose to make 2 awards this year to recognize the importance of scholarship in environmental and geographic justice both here in Alabama as well as internationally, and to encourage support for research on these topics employing both quantitative and qualitative methods in geographical research. Both awardees also received $250 honorariums.

The DEI committee also introduced a weekly informal coffee hour to the department starting in Spring 2024. The coffee hour, held in the Farrah Hall map library, are intended to foster inclusivity and a welcoming culture for student, staff, and faculty interaction in the department. We hope to continue this new tradition into next year after the summer break.

-Jared Margulies
Carroll “Lew” Watson, Jr. grew up in Lincoln, Alabama and attended the University of Alabama where he earned his BA in Geography. He credits former Geography Professor, Dr. Walter F. Koch for kindling a strong interest in the subject while in the program. Mr. Watson was also a student of the first Cartography class taught at the University. While at UA he was also involved with the Army ROTC program and was commissioned as a second lieutenant in the Army Corp of Engineers following graduation. As a Geography major, he sought out positions in which his geography training would benefit his Army career. This led to the training program to become a Topographic Engineer. As a result, he was assigned to a Topographic Engineer company in Vietnam and upon the end of his assignment there he was promoted to captain and was assigned as a company commander of a Topographic unit in Frankfurt, Germany. A year later he was reassigned again, this time as Chief of the Geographic Division of the Topographic Engineer Center in Heidelberg. Following that assignment, he elected to end his military career and returned to his hometown and began a business career.

Shortly after his return he elected to extend his education by enrolling in the Birmingham School of Law earning a JD. Knowing education is a key to success, he took real estate courses leading to earning a Broker's License from the Real Estate Commission and a Certified General Real Property Appraisers License from the State Appraisers Board. Furthering his real estate education, he earned two designations from the Appraisal Institute.

Taking an interest in local government he ran and was elected Mayor of Lincoln in 1972, at the age of 29. In addition to his service as mayor he found other areas of public service: elected Chairman of the East Alabama Regional Planning Commission, President of the Alabama League of Municipalities, and currently on the Executive committee, President of the Alabama Chapter of the Appraisal Institute, Chairman of the Board State of Alabama Real Estate Appraisers Board, and with the National League of Cities Chairman of the Small Cities Council, a member of the National League of Cities Board of Directors and currently a member of the Advisory Council. By involvement with these organizations this contributed to the growing success of his city, Lincoln. Completing his eleventh term as Mayor, Watson has decided to end his service in local government in 2025.

His interest in the community has also extended into projects to help people and veterans. He led his city into helping establish a Veterans Community Project, Dovetail Landing. This program assists veterans in transit back to civilian life, providing a healthy environment where veterans and their families can come to rehabilitate, acclimate, and reintegrate back into society.

His other interest is to find funding for a portion of the county that needs public water. Wells in the affected area are polluted with iron. Public water would also bring in fire hydrants, which would lower home insurance cost.

Mr. Watson recreational activities includes fishing, fossil hunting and travel with his wife Sharon. His interest in travel extends back to his Geography major at UA as being the inspiration for that. He has traveled to all seven continents and over forty countries. Mr. Watson also enjoys coming back on campus, whether it be for football games or showing his grandchildren around the University, showing where he took classes and changes that have taken place since his arrival on campus in 1961. His daughter and son are also graduates of the University.
OUTSTANDING GRADUATE RESEARCH AWARD (MS)

RILEY McDERMOTT

Riley McDermott is an accelerated Masters Student in her 2nd year of graduate school with the Geography department. Her research is focused on river hydrology and the improvement of flood inundation mapping technologies. She is currently working on her thesis titled ‘Estimation of River Channel Shape using Regression and Machine Learning Approaches’ in which she aims to determine the watershed characteristics that influence cross-sectional river channel shape to generate a model that can estimate channel shape for rivers across the Contiguous United States. She also supports additional channel geometric research done by her colleagues in the Surface Dynamics Modeling Lab. Riley is an active participant in the National Science Foundation’s Research Traineeship for Water Research to Operations, where she and her team are researching the ideal way of communicating flood hazards via flood maps to expert and non-expert end-users. She also interns part-time at the National Oceanic and Atmospheric Administration’s (NOAA) National Water Center, supporting the development of the NOAA and National Weather Service’s operational flood inundation mapping system. Outside of her graduate studies Riley is an avid runner and hiker and enjoys traveling. She is grateful that her graduate studies have enabled her to attend conferences all over the country this past year, including the American Geophysical Union’s fall meeting in San Francisco, California and the Cooperative Institute for Research to Operations in Hydrology (CIROH) Developers Conference in Salt Lake City, Utah. Post-graduation she plans to enter industry to gain professional experience and continue to develop her research skillset, with the potential to return to academia to pursue her doctorate later in her career.

OUTSTANDING GRADUATE RESEARCH AWARD (PHD) AND DR. BOBBY WILSON AWARD IN ENVIRONMENTAL JUSTICE SCHOLARSHIP

HEMAL DEY

Hemal Dey is a Ph.D. candidate and works as a research assistant at the Risk Decision Making Lab, University of Alabama. He earned his MSc and BSc degrees from Jagannath University, Bangladesh. His research primarily focuses on natural hazard risk assessment, particularly in flood risk assessment. His ultimate research goal is to develop novel methodologies to simulate future flood risk by employing machine learning (ML) models along with GIS and Remote Sensing techniques. His work is distinguished by its novel approach, which comprehensively assesses flood risk utilizing ML models by incorporating both the physical dimensions and the social dimensions of floods. Remarkably, he has simulated flood susceptibility and risk in major Gulf Coast cities such as Mobile, New Orleans, Houston, and Tampa, currently undergoing peer review in academic journals. Now he is moving forward to simulate flood risk for the Southeastern US. Additionally, he has served as a teaching assistant for one semester. Apart from his academic pursuits, he enjoys traveling, playing games, and photography in his leisure time.
OUTSTANDING GRADUATE TEACHING AWARD

DANIEL TURNER

Daniel Turner is a PhD candidate in Geography at the University of Alabama working with Professor Kevin Curtin in the Laboratory for Location Science. He holds an A.B. in History from the University of Chicago and a M.S. in Geospatial Information Sciences from the University of Texas at Dallas. His professional experience includes work for the National Oceanic and Atmospheric Administration and the City of New Orleans. His PhD research develops spatial optimization techniques in the analysis of human mobility, improving quantitative anomaly detection and identification of decision-making in complex spatial behavior. The research uses high resolution player location data from basketball as an example.

CHAIR’S AWARD

EVAN CASS

Evan Cass is a third-year Ph.D. candidate in the Laboratory for Risk Decision Making with Dr. Wanyun Shao, who he has worked with since 2018 as an undergraduate research assistant. He has been at UA since the fall of 2016 and earned his master’s degree from the Geography department in the spring of 2021. His dissertation research covers different aspects of coastal hazard risk perceptions and mitigation from both expert and non-expert decision makers. These include understanding and use of hurricane communication tools, synthesis of decision makers’ approaches to mitigation in different positions and geographic locations, and observation of patterns and influences on coastal flood insurance ownership. By applying coastal hazard risk perceptions to mitigation actions and decision making, the threat posed by these hazards can be addressed.

With the US Army Corps of Engineers, he is working in a multidisciplinary group to conduct research on compound flood risk communication and mitigation in cities along the Gulf Coast. This research employs mixed methods to observe perceptions of risks and influences on decision making for coastal emergency managers and residents. In addition to preparation for coastal hazards, the research also covers resilience and recovery from water-related hazard events. In addition, over the past year he has been a member of the NSF Research Traineeship (NRT) program. This has granted him many opportunities to learn about hydrologic modeling and forecasting and to collaborate with other students in an interdisciplinary setting. In the fourth year of his Ph.D. program, he will be supported by the UA Graduate Council Fellowship as he works to complete his dissertation research and prepare for graduation. After he graduates, he plans to continue pursuing academic research opportunities and hopes to contribute to the field of geography not only through his own research, but also by sharing knowledge with future researchers.

OUTSTANDING UNDERGRADUATE ENVIRONMENTAL SCIENCE MAJOR AWARD

AUDREY RAY

Growing up on the shores of Lake Erie just outside Cleveland, Ohio I had the chance to live and play in and around the twelfth largest freshwater lake in the world. Seeing the diverse ecosystems around the lake and learning how it was formed by glaciers inspired me to study Environmental Science in college. The passion and enthusiasm of all the professors I’ve had in my geography and environmental science classes at Alabama have strengthened my love for learning about the outdoors and my desire to protect it. Pairing that STEM degree with a liberal arts minor has drastically improved my writing and critical thinking skills and challenged me to learn about societal topics not covered in my major requirements. This combination has given me a unique worldview and expanded my interests. My career aspirations are constantly changing because of those diverse interests, which my advisor, Dr. Justin Hart, can confirm. But at least as I write this bio, I’m hoping to pursue a job that combines science, people, and travel. I’m considering a career in environmental education, but I’d like to gain some hands-on experience before attending graduate school. This summer I’m thrilled to have the opportunity to study wildlife ecology and conservation in Gaborone, Botswana, and next fall I’m hoping to intern in New Zealand for a few months. The next step is unknown, which scares and excites me. I want to stay open to opportunities, however, because that is how I ended up in Alabama! In my free time, I love to run, read, share ice cream with friends and family, and participate in any outdoor activity from hammocking to paddleboarding.
ASHLEIGH PRICE

Ashleigh is a fifth-year PhD candidate working with Dr. Kevin M. Curtin in the Laboratory for Location Science. She joined UA in the Fall of 2019 after receiving her AA&S in Science from Wytheville Community College, BS in Geosciences from Virginia Tech and MS in Geography from the University of Southern Mississippi. She has been a Graduate Research Assistant on two NSF grants where she researched counterdrug strategies and designed interdiction models for targeting illicit supply chains. She formulated spatial optimization models to allocate interdiction operations and developed an integrated agent-based/optimization model to simulate narco-traffickers’ spatial responses to interdiction. Her current work is using this integrated approach to understand how spatial decision making by counterdrug forces relates to future spatial patterns of illicit trafficking. The optimization models she formulated can support spatial decision making across many applications and operational contexts. She has also worked under the supervision of Dr. Nicholas R. Magliocca on an NSF funded project where she researched irrigation adoption in the Deep South. For her dissertation research, she is studying ways that different types of hazards and disasters influence the potential for criminal victimization over time and among places. The broader impacts of her research include the ability to inform spatial decision making in ways that truly improve public safety and quality of life for underserved communities via the spatial allocation of protective resources and by improving risk communication to the public during emergency situations.

DAVID C. WEAVER MEMORIAL AWARD

ASHLEIGH PRICE

Ashleigh is a fifth-year PhD candidate working with Dr. Kevin M. Curtin in the Laboratory for Location Science. She joined UA in the Fall of 2019 after receiving her AA&S in Science from Wytheville Community College, BS in Geosciences from Virginia Tech and MS in Geography from the University of Southern Mississippi. She has been a Graduate Research Assistant on two NSF grants where she researched counterdrug strategies and designed interdiction models for targeting illicit supply chains. She formulated spatial optimization models to allocate interdiction operations and developed an integrated agent-based/optimization model to simulate narco-traffickers’ spatial responses to interdiction. Her current work is using this integrated approach to understand how spatial decision making by counterdrug forces relates to future spatial patterns of illicit trafficking. The optimization models she formulated can support spatial decision making across many applications and operational contexts. She has also worked under the supervision of Dr. Nicholas R. Magliocca on an NSF funded project where she researched irrigation adoption in the Deep South. For her dissertation research, she is studying ways that different types of hazards and disasters influence the potential for criminal victimization over time and among places. The broader impacts of her research include the ability to inform spatial decision making in ways that truly improve public safety and quality of life for underserved communities via the spatial allocation of protective resources and by improving risk communication to the public during emergency situations.

UTKARSH CHOUDHURY

Utkarsh is a Ph.D. student in the Geography and the Environment department at UA. His research explores the intricate web of relationships between humans, animals, and the environment through the lens of political ecology. With a special focus on India’s rivers and wildlife, he is fascinated by the ways in which multispecies interactions shape conservation politics and outcomes. His journey in this field began with a master’s degree in development studies from the University of Sussex. It was an enriching experience that sparked his interest in understanding how political actions impact not only humans but also the myriad of other species with whom we share this planet. Since then, he has been fortunate enough to contribute to journals like Geoforum and present his work at various conferences. Alongside his research, he is passionate about addressing climate anxiety and promoting climate action. With the help of the Levitetz Innovation Seed Grant awarded by New College at UA, he started an outreach program that is gradually evolving into a social enterprise. Through this platform, his team aims to share practical advice on how we can all make a difference in the face of environmental challenges, while also highlighting the interconnectedness of human and non-human well-being. When he is not buried in research, you can find him outdoors, either rock climbing, hiking, or caving. These activities help him connect with the planet on a physical level and serve as a constant reminder of the incredible diversity and resilience of life on Earth. There’s nothing quite like the thrill of scaling a cliff at Sandrock, Alabama, or exploring the intricate cave systems beneath the earth’s surface, all while appreciating the countless species that call these places home. Looking ahead, he is committed to making a positive impact in the fight against climate change and environmental injustice. He plans to focus his efforts on community organizing and collaborating with grassroots movements to advocate for equitable and sustainable solutions that prioritize the well-being of all life forms. His goal is to build bridges between academia, activism, and policymaking to create a more resilient, just, and compassionate future for all. He is excited to continue learning, growing, and working alongside others who share this vision of a world in which the interconnectedness of all beings is recognized and celebrated.

DR. BOBBY WILSON AWARD IN ENVIRONMENTAL JUSTICE SCHOLARSHIP

UTKARSH CHOUDHURY

Utkarsh is a Ph.D. student in the Geography and the Environment department at UA. His research explores the intricate web of relationships between humans, animals, and the environment through the lens of political ecology. With a special focus on India’s rivers and wildlife, he is fascinated by the ways in which multispecies interactions shape conservation politics and outcomes. His journey in this field began with a master’s degree in development studies from the University of Sussex. It was an enriching experience that sparked his interest in understanding how political actions impact not only humans but also the myriad of other species with whom we share this planet. Since then, he has been fortunate enough to contribute to journals like Geoforum and present his work at various conferences. Alongside his research, he is passionate about addressing climate anxiety and promoting climate action. With the help of the Levitetz Innovation Seed Grant awarded by New College at UA, he started an outreach program that is gradually evolving into a social enterprise. Through this platform, his team aims to share practical advice on how we can all make a difference in the face of environmental challenges, while also highlighting the interconnectedness of human and non-human well-being. When he is not buried in research, you can find him outdoors, either rock climbing, hiking, or caving. These activities help him connect with the planet on a physical level and serve as a constant reminder of the incredible diversity and resilience of life on Earth. There’s nothing quite like the thrill of scaling a cliff at Sandrock, Alabama, or exploring the intricate cave systems beneath the earth’s surface, all while appreciating the countless species that call these places home. Looking ahead, he is committed to making a positive impact in the fight against climate change and environmental injustice. He plans to focus his efforts on community organizing and collaborating with grassroots movements to advocate for equitable and sustainable solutions that prioritize the well-being of all life forms. His goal is to build bridges between academia, activism, and policymaking to create a more resilient, just, and compassionate future for all. He is excited to continue learning, growing, and working alongside others who share this vision of a world in which the interconnectedness of all beings is recognized and celebrated.
MADI REISER

Madi Reiser is a senior in the Geography department graduating this May, with her Bachelor of Arts as a double major in Geography and History. Following graduation, she will be returning to UA to get her master's in geography and will be working with Dr. LaFevor. Throughout her time on campus, she has been involved with the UA Miracle and the Student Recruitment Team. She considers it an honour to be receiving an award from the department, and can’t wait to get started all over again this fall.
Club Geography has also been busy this year! During the fall, we got a lot of new interest at Get On Board Day playing ‘Name That Country’. As it was football season, we mainly focused on our tailgates which we had outside of Farrah’s most home games. We have also been continuing our biweekly meetings where we do Geography Kahoots and the occasional Geoguessr tournament to keep our skills sharp. We closed the semester with a Thanksgiving potluck where we got to network with Faculty members from the department.

This semester we have taken on a couple of projects that we are excited about. The first of which is with the UA Arboretum to make a new map for them. We recently surveyed the area and are working with the Arboretum employees to make it as user-friendly as possible. Our second partnership is with the Tuscaloosa Magnet School Elementary where we are part of their community partnership teaching Geography to grades 3-5. We hope that through this partnership we can instill a lifelong love of Geography while showing where a career in the discipline can take them. We hope to finish the year with another potluck where we showcase the results of our mapping project and reflect on our experience at the magnet school.

- Parker King
  President, Club Geography
The Parks Belong to the People:
The Geography of the National Park System
by Joe Weber & Selima Sultana
University of Georgia Press

Searching for Home Waters: A Brook Trout Pilgrimage
by Michael K. Steinberg
University of Georgia Press
Contact Us
Department of Geography
The University of Alabama
204 Farrah Hall
513 University Boulevard
Tuscaloosa, Alabama 35487-0322
(205) 348-5047
Fax: (205) 348-2278

For questions and contributions to the newsletter, contact
Dr. Nitasha Sharma
✉️ nsharma4@ua.edu