

# NATURAL RESOURCES & ENVIRONMENTAL SCIENCES

Welcome!



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ALABAMA A&M UNIVERSITY

# IN THE NEWS

## PH.D. STUDENT RECEIVES 2025 ESA POLICY AWARD

By Rachel Stone

Olufemi E. Fatunsin, a Natural Resources and Environmental Sciences Ph.D. student, has been named one of the recipients of the 2025 Katherine S. McCarter Graduate Student Policy Award (GSPA) by the Ecological Society of America (ESA). This esteemed award recognizes ten graduate students nationwide who are deeply committed to the intersection of science and policy, as well as to ecological advocacy.

A native of Ilawe-Ekiti, Nigeria, Fatunsin specializes in biostatistics and forest ecology. His research focuses on how forest diversity and environmental factors influence the health and resilience of Southeastern U.S. forests, with the long-term goal of creating strategies to sustain these ecosystems in the face of environmental change.

Fatunsin traveled to Washington D.C. on March 24, 2025, to take part in science policy workshops and career development training. His trip culminated in meetings with Alabama senators Katie Britt and Tommy Tuberville, along with Rep. Dale W. Strong from the 5th Congressional District.



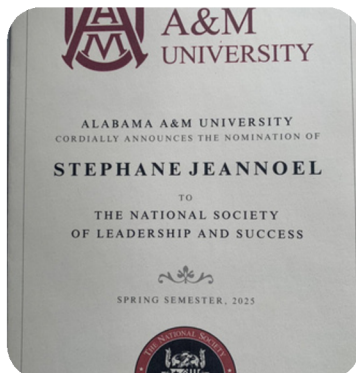
Photos from Olufemi Fatunsin

## THE NATIONAL SOCIETY OF LEADERSHIP AND SUCCESS

By Rachel Stone and Stephane Jean-Noel



Stephane Jean-Noel, a Plant and Soil Science graduate student, received a nomination from Alabama A&M University to join The National Society of Leadership and Success (NSLS). NSLS is the largest collegiate leadership honor society in the United States, with over 800 chapters and over 2 million members nationwide. Alabama A&M University joined NSLS in 2018 and has over 2,000 members.



Photos from Stephane Jean-Noel

Receiving a nomination into NSLS is a high honor as only 8% of students receive a nomination. Jean-Noel earned this honor because of his academic accomplishments and leadership potential. His achievement of a 3.3 GPA provides him with the distinguished honor of joining the NSLS as a Presidential member.



## LEARNING FROM THE NEST BOX: MY WORK AT WTARS

by Ashley Woods



In 2024, I began checking bluebird nest boxes at the Winfred Thomas Agricultural Research Station (WTARS) for field experience. As an undergraduate forestry student with a concentration in fish and wildlife, I wanted to get more hands-on experience with birds. What I didn't expect was how deeply I'd connect with the work or how far it would take me.

There are 36 nest boxes at WTARS, used by Eastern Bluebirds, Tree Swallows, and sometimes Carolina Wrens. I began monitoring them throughout the 2024 nesting season, tracking nest activity, counting eggs and chicks, and watching the birds come and go. By the end of the season, 146 birds had fledged from nests on the property.

But my team and I also encountered setbacks. Close to 30 percent of the nests failed. Some were abandoned. Others didn't survive the intense heat of summer. That number stuck with me, especially when I realized that many failures happened during the hottest stretches of the season. I started wondering if the temperature inside the nest boxes played a role.

That question is now at the center of my research.

This year, I've been fortunate to receive a Larry Zeleny Research Grant from the North American Bluebird Society. This grant is helping me expand the project by testing ways to reduce heat stress in nest boxes. I've started preparations for installing thermometers to track internal temperatures and making note of the boxes that will need additional shading. The goal is to compare shaded and unshaded boxes to see if we can create cooler, more stable microclimates for nesting birds using artificial nest boxes.







When people install artificial habitats like nest boxes, we take on a responsibility. It's not enough to simply put them up; we must ensure they're safe, effective, and truly beneficial for the species we're trying to support. That means paying attention to the details: placement, design, temperature, and even how often we monitor. The birds are doing their part. We must make sure we're doing ours by making sure they don't become "sink" habitats where the population number goes down because the nest boxes aren't safe.

Receiving the Zeleny Grant means a lot to me, not just because it funds the research but because it pushed me to believe in the value of what I am doing. I want to thank my advisor, Dr. Wes Stone, along with Patience Knight and Helen Czech from the wildlife lab, for encouraging me to apply and walking me through the process of writing and submitting the proposal. Their support made this possible.



Photos by Ashley Woods

This project has taught me more than I expected, not only about birds and habitat management but about how important it is to ask good questions and follow through on them. I'm grateful to the North American Bluebird Society for supporting undergraduate research and giving students like me a chance to contribute to conservation in a real, practical way.

And I'm grateful for the birds, too, for showing up, nesting in those boxes, and teaching me something new every time I open one.





# EVENTS

## 66TH SOUTHERN FORESTRY CONCLAVE

By Rachel Stone

The Southern Forestry Conclave is an annual competition that brings together students from 14 southern forestry schools to compete in a variety of physical and technical events. With over 250 participants, the Conclave features traditional physical challenges such as archery, axe throwing, pole climbing, log rolling, bow sawing, log birling, and cross-cut saw competitions. Technical events include dendrology, timber volume estimation, wildlife identification, wood identification, and more. Scores from these events are combined to determine the overall winning school of the year.

The Conclave fosters friendly competition among forestry students, helping them develop professionalism and uphold high standards in their field. Organizing such a large event requires strong collaboration among the forestry clubs to ensure its success. Alabama A&M University had the honor of hosting the 2025 Conclave, with events held at the Agribition Center, Chapman Mountain Nature Preserve, and on the AAMU campus.

Registration and camp setup started on Thursday, March 20th at the Agribition Center. Penny Stone, Sharon Steele, Evan Tenorio, Karman Morgan, Rachel Stone, and Dr. William Stone manned the registration table throughout the day, ensuring teams received their schedules, t-shirts, and participation/meal bracelets. Teams camped in the open field or the woods at the Agribition Center, braving the chilly air of Thursday night. Dr. Naka, Dr. Tadesse, Dr. Walker, Bradley Massey, and the AAMU Chief of Police welcomed everyone to campus and Conclave.







Early Friday morning, the technical events kicked off, allowing students to showcase the skills they've developed in their Natural Resources and Environmental Sciences courses. The afternoon saw the start of the physical events, beginning with the axe throw. Bradley Massey, senior and president of the Forestry Club, participated in this event and nearly knocked Auburn out for third place in an intense tiebreaker. Another exciting competition was pole felling, where students had to chop down a pole the fastest while ensuring the pole fell accurately. Forestry junior and FireDawg captain, Cedric Burrell, represented AAMU in this event, and his peers cheered him on enthusiastically. The day ended with dinner from a local establishment, Meteor Buffet, and a communal bonfire.

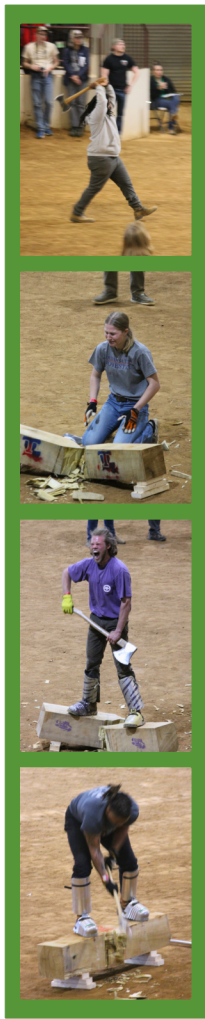


On the final day of the Conclave, the archery event kicked off bright and early. Winston Salter, a member of the Academics Afield Hunting Club, competed in this event, having honed his skills through deer hunting with the AAHC. After a lunch provided by Dallas Mill Deli, the log roll event began. This traditional sport, which evolved from lumberjack practices of floating logs down rivers to sawmills, also known as "river driving," saw Elijah McCray and Noah McNealey competing, with their peers cheering them on to the finish.

Throughout the Conclave, AAMU students gave their best in multiple events, some even trying new challenges for the first time. One such student was Alayna Battle, who teamed up with senior Christopher Burns for the Jack and Jill cross-cut event. Burns, who also competed in the knife throw, bow saw, and log chop, has participated in the cross-cut event in previous Conclaves and provided advice to Battle on technique. The goal of cross-cutting is to saw through a 10x10 piece of wood as quickly as possible. While they did not place in the top three, Battle and Burns gave an outstanding performance and represented AAMU with pride.







Photos by Rachel Stone, Rong Xiao, and Wilford Briggs

The final event was the log chop, which is considered the most dangerous event of the Conclave. Participants wear protective gear on their shins and feet as they chop furiously through a slab of wood in under five minutes. The excitement in the room was palpable as everyone cheered on the competitors. One of the most emotional moments came when the female log chopper for Louisiana Tech finished for the first time ever during the competition, dropping to her knees in awe and relief after successfully chopping through the wood within the allotted time.

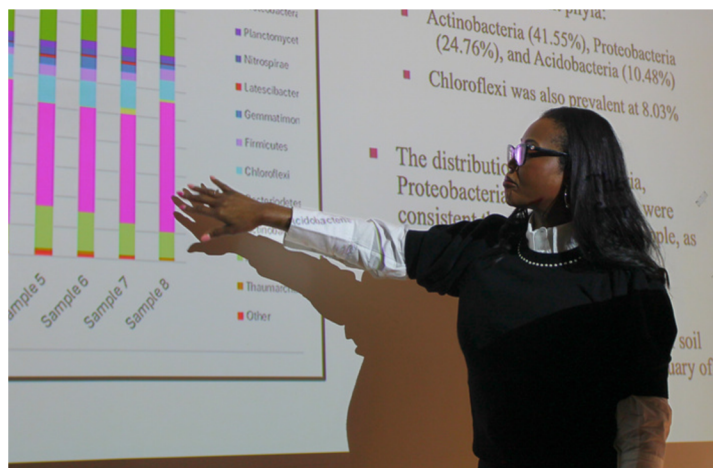
Conclave ended with a barbecue feast from family-owned Boarhog's Barbeque. Alabama A&M won the Sportsmanship Award for the third consecutive year, with the trophy proudly returned to Ms. Penny's office in the ARC. We'd like to give a huge thank you to all the students, faculty, and staff who made this year's Conclave possible, especially to Bradley Massey and Christopher Burns. A special thanks to The Biscuit Express, Dallas Mill Deli, Meteor Buffet, and Boarhog's Barbeque for catering. Conclave's success was also made possible by the contributions and generous support of our sponsors. These included Weyerhaeuser, Rayonier Inc., Westervelt, Appalachian Hardwoods, and the College of Agriculture Life and Natural Sciences, among others. The 2026 Conclave will be hosted at the University of Arkansas at Monticello. Undergraduates of any major are encouraged to participate in Conclave and get to experience the sportsmanship and camaraderie that this event fosters.



# RESEARCH

## STUDENT-LED RESEARCH INITIATIVES

By Rachel Stone and Dr. Elica Moss



Dr. Moss presented her NRES seminar on February 25th on the importance of student-led research and empowering students to develop critical thinking and problem-solving skills. This research approach encourages autonomy, creativity, and hands-on learning, preparing students to be future leaders and changemakers. Examples of environmental research topics include renewable energy solutions, climate change impact studies, sustainable agriculture, plastic pollution reduction, and urban sustainability.

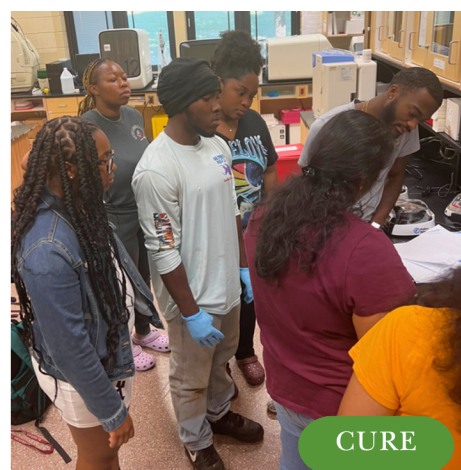
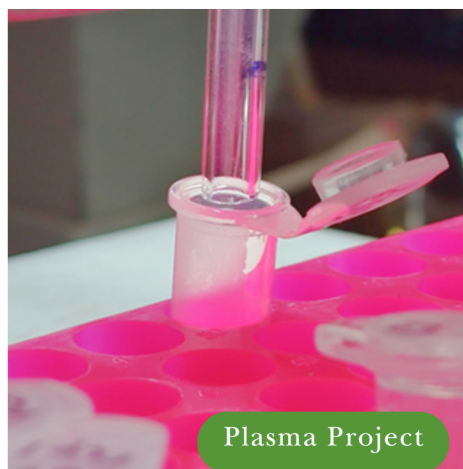
Dr. Moss focused on different student projects, starting with graduate student Ajani Brooks's research on the Bacterial Community Microbiology of Surface Irrigation Water at the Winfred Thomas Agricultural Research Station. Brooks' research aims to assess the microbiome of the pond at the research station to determine whether precipitation and temporal fluctuations affect the bacterial community. Objectives of this project include enumerating *Escherichia coli*, evaluating physicochemical parameters, and creating a machine learning algorithm to predict *E. coli* concentrations. Preliminary results show that *E. coli* concentrations increase in January but remain below the standard, with a positive correlation between *E. coli* and specific conductivity.

The next student researcher focused on was graduate student Gianna Porter. Her research examines the Effects of Atmospheric Plasma Treatment on Agricultural Soil Microbiome. Atmospheric plasma treatment is a promising method for amending contaminated soil and eliminating harmful bacteria, providing environmentally safe results. The study aims to evaluate the native soil microbiome and the effects of different treatment durations and carrier gases on the microbiome. Preliminary results show that the dominant phyla in the soil are *Actinobacteria*, *Proteobacteria*, *Acidobacteria*, and *Chloroflexi*, with *Actinobacteria* being the most active.



The third student research Dr. Moss highlighted was undergraduate Jalen Whisenhunt's project on the Water Quality Assessment of Indian Creek Watershed. This study evaluates the water quality and prevalence of fecal indicator bacteria in the Indian Creek watershed. Whisenhunt's project monitors the upper and lower watersheds in the Tennessee River Basin, which is listed as impaired by the EPA. Fecal indicator bacteria such as *E. coli*, *Enterococcus faecalis*, and *Pseudomonas aeruginosa* are analyzed, with results showing an increase in bacterial numbers with increased temperature. The study will continue for a year to provide a comprehensive understanding of the bacterial presence in watersheds.

Dr. Moss next spoke about her Environmental Microbiology Class's course-based undergraduate research project, where students analyze soil samples using various methods. Students characterize the absolute and relative microbiota abundance in soils under different agricultural management systems. The study includes soils from industrial hemp, miscanthus, sugarcane, and miscanthus hybrid, with results showing that sugarcane and miscanthus have the highest bacterial and fungal DNA abundance. This project highlights the importance of understanding the diversity and abundance of fungal communities in soil.

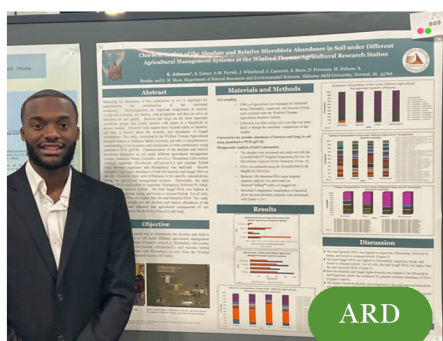
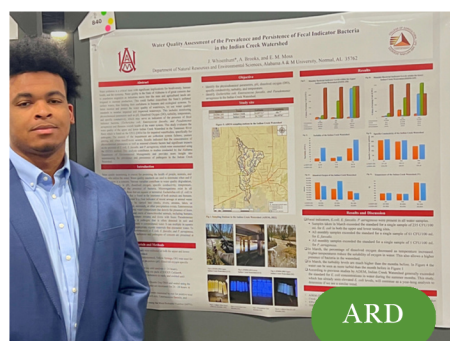




Dr. Moss spoke on student-led environmental justice research that includes different student groups, such as INROADS and ADEM. Dr. Moss's INROADS students researched environmental justice in Alabama, gathering stories from various communities. Students traveled to communities like North Birmingham, Africatown, Emelle, and Shiloh to meet with community members and document their experiences. The research resulted in a video presentation showcased at a meeting in Washington, DC. This meeting provided opportunities for scholarships and internships. The INROADS project aimed to address local and global sustainability challenges and emphasized hands-on research and data collection.

ADEM approached Dr. Moss to develop a Brownfield Redevelopment Training Partnership for students to participate in. These students will conduct inventory reports, develop brownfield surveys, and assist with community visioning workshops. The project aims to help communities create comprehensive planning and vision for their towns and cities. Dr. Moss's hometown of York is one of the locations included in the study, highlighting the importance of local engagement and community involvement.

At the end of her seminar, Dr. Moss emphasized the critical role of environmental research in pioneering solutions for a sustainable future. These research initiatives empower students to develop critical thinking and problem-solving skills, contributing meaningful knowledge to their field of study. Alabama A&M's motto, "start here, go anywhere," encourages students to take ownership of their research and develop innovative solutions.



Photos by Rachel Stone and from Dr. Elica Moss, Gianna Porter, and Jalen Whisenhunt



## GEOSPATIAL TECHNOLOGIES

By Rachel Stone

Dr. Ranjani Kulawardhana held her NRES Seminar on Experiential Learning, Research and Professional Training Towards Building Future Geospatial Workforce on March 25th. She discussed integrating geospatial technologies into research, emphasizing GIS (Geographic Information System) and remote sensing. Dr. Kulawardhana highlighted the interdisciplinary nature of geospatial technologies, which allow for comprehensive analysis of spatial relationships and patterns. Geospatial technologies analyze plant growth, urban changes, soil conditions, climate factors, and environmental phenomena, and can also handle the multiple layers of this data.

Dr. Kulawardhana introduced remote sensing as a key component of geospatial technologies, highlighting its ability to collect data from space or the air. Remote sensing data can interpret ground observations and make inferences about vegetation, water, and other features. LIDAR (Light Detection and Ranging) is an example of remote sensing technology that can be used to measure plant height and terrain elevation. LIDAR uses laser light pulses to measure distances between these objects.

Dr. Kulawardhana transitioned into speaking about case studies from her past and current graduate students who used or are using geospatial technology for their research projects. One project focused on the coastal wetlands of Mississippi, which used remote sensing data to analyze changes over time. Another case study is focusing on urban heat island effects, using satellite data to analyze temperature differences between urban and natural areas. A third case study reviewed higher numbers of COVID-19 in disadvantaged communities in Mississippi.

There are several opportunities for students to get into geospatial technologies, including attending the American Geophysical Union conference and applying for NASA internships. Dr. Kulawardhana

encouraged students to utilize free training materials and software available through ESRI to enhance their skills.



Photos by Rachel Stone



# WANT TO KNOW MORE?

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