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Upcoming Events
Golden Eagles Luncheon, March 23
Compass Circle Roundtable and Social, March 29
Student Awards Ceremony, April 11
Spring Graduation, May 6

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A Message from the Dean

Dear Alumni and Friends:

Mrs. Martha Dixon’s recent passing has given us pause to reflect on Auburn’s historic contributions to the significant impact of the Dixon’s educational and philanthropic legacy. Under Dixon’s leadership, Martha Dixon and the Solon Dixon Foundation fulfilled Solons wishes for Auburn University to become an internationally renowned, top-ranked university with a strong natural resources program in the state and nation. With their support, we have seen the Solon Dixon Forestry Education Center grow to include a state-of-the-art learning center, dormitories, and other amenities that have contributed to the success of this facility and its faculty. The nation’s first and only building dedicated to forestry and wildlife conservation.

The Dixon family and their foundation have had a profound impact on Auburn’s educational programs at Auburn such as the Solon Dixon Forestry Education Center, which now includes dormitories, classrooms, a library, and the Dixon Center for Forestry Research. Our students and faculty are proud to be part of a program that is dedicated to providing a top-quality educational experience.

Auburn University and the Solon Dixon Forestry Education Center have been at the forefront of the University’s success in forestry education. The center is home to a world-renowned faculty and is equipped with state-of-the-art laboratories and research facilities.

School of Forestry and Wildlife Sciences

The School of Forestry and Wildlife Sciences is proud to be a part of the Dixon’s legacy. Our faculty and students are dedicated to providing a world-class education in forestry and wildlife conservation. We would like to invite you to join us in continuing this important work to reflect on Auburn’s history and the significant impact of the Dixon’s educational and philanthropic legacy.

Sincerely,

Janaki R. Alavalapati
Dean
School of Forestry and Wildlife Sciences

Contact Us

The SFWS News is distributed to alumni and friends of the school. Questions or suggestions concerning the newsletter should be directed to the School of Forestry and Wildlife Sciences at 317 South College Street, Auburn, AL 36849. Questions or suggestions concerning the newsletter should be directed to the Office of Communications and Marketing at 317 South College Street, Auburn, AL 36849.

Giving

Questions concerning the school’s development program, including annual and corporate giving, planned gifts, and estate planning, should be directed to the Office of Communications and Marketing at 317 South College Street, Auburn, AL 36849. The Auburn University Foundation, a 501(c)(3) organization, accepts gifts of cash, securities, and other assets.

Auburn University is an equal opportunity educational institution/employer.

In the Spotlight

The Alabama TREASURE Forest Association (ATRA) recently presented Alabama Gov. Kay Ivey with the TREASURE Forest Certification for her property in Monroe County. The TREASURE Forest Program was established in 1974 and recognizes landowners for their commitment to the state’s natural resources and its forestry industry. Recently, Ivey participated in a press event to announce a nearly $20 million investment by industries in a Florida-based products company, for a new manufacturing facility located in Dothan where they will produce cross-laminated timber panels. It’s a great news message to the world that Alabama is an ideal destination for investment and job creation.

Gov. Ivey awarded forest certification by Alabama TREASURE FOREST Association

Fall 2017 Dean’s List

Congratulations to our students who qualified for the Dean’s List.

Coffee, Emmanuel Barry; Mogi, Mary J., Jerkens, Crystal Boudwell, Daniel Bowman, Brandon Bowdler, Andrew Colgate, Kate Creek, Debra Davis, Shannon Davis, zero Dicken, Toby Dugdale, Mark Dunk, Victoria Harrison, Tucker Heytvelt, Emily Ireland, Colby Jones, Ailanna Morgan, Henry Morris, Bailey Morrison, Autumn Patterson, Marion Pruck, Jill Sansbury, Sabrina Ray, Scott Schembri, Holley Daniel Andrews, Kendra Singh, Zack Singh, Katharine Statt, Logan White, Andrew Williams, Missy Williams, and Melissa Woodard.
Of Mice and Medicine

A tiny creature helping solve big problems

Through noninvasive advanced imaging and phenotyping and genotyping technologies, it is possible to understand the physiology and ecology of wild lemurs. We have an identified population which can be studied and then returned immediately back to the wild on the same branch they were captured.

Sarah Zohdy

Establishing a field study in Madagascar, the researchers are building capacity on the island by teaching local Malagasy students and researchers about mouse lemurs and training them in the use of modern genomic techniques. “Technology is in advanced today that the ideal way to build capacity and educational geographics in Madagascar while simultaneously working with a new model organism would be the first century world of genomics to Madagascar,” said Zohdy.

At Zohdy’s research center and field site in Ranomafana, Madagascar, at Centre ValBio, the research team has created a sophisticated molecular biology and genetics lab where the scientists are able to conduct research in the field and see at a training opportunity for Malagasy students. This is more efficient for researchers than collecting samples for analysis at high tech laboratories in the US or Europe, and provides revenue and educational opportunities for the local population.

“Through noninvasive advanced imaging and phenotyping and genotyping technologies, it is possible to understand the physiology and ecology of wild lemurs. We have an identified population which can be studied and then returned immediately back to the wild on the same branch they were captured.” Sarah Zohdy

Instead of introducing mutations in new sc research, we are doing something much more similar to what is done in humans,” he said. “We are looking at all the wonderful genetic variation already existing in nature, since there are so many millions of mouse lemurs out there. We calculate that most knockout mutations are already present by nature, and all we have to do is find them. And because the cost of sequencing a genome is rapidly dropping, it’s now possible to sequence the genomes of thousands of mouse lemurs to see which variations they are carrying.

In doing so, the researchers could accomplish in a few years what the International Knockout Mouse Consortium would accomplish in 10 years, at a cost of nearly $1 billion, he said.

A knockout mouse is a genetically modified mouse where an existing gene has been inactivated or replaced with an artificial piece of DNA. This allows researchers to better understand the role of the gene and its impact on the overall behavior or physiology. “For decades, scientists have relied on mice, fruit flies, and worms as genetic models, but despite all their successes, these organisms rarely fail to mimic many aspects of human diseases,” said Mark Krasnow, professor of biochemistry at Stanford University. “Instead of introducing mutations in mice or fruit flies, we are doing something much more similar to what is done in humans,” he said. “We are looking at all the wonderful genetic variation already existing in nature, since there are so many millions of mouse lemurs out there. We calculate that most knockout mutations are already present by nature, and all we have to do is find them. And because the cost of sequencing a genome is rapidly dropping, it’s now possible to sequence the genomes of thousands of mouse lemurs to see which variations they are carrying.

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The smallest primate in the world, the Madagascar brown mouse lemur (Microcebus rufus), is critically endangered. Conservation of this species is a priority for Primate Biology, Behavior, and Health, “said Mark Krasnow, professor of biochemistry at Stanford University.

Biomedical research traditionally focuses on understanding a model organism to improve our understanding of human health and disease and to develop improved treatments and even cures. Fruit flies, zebrafish, and mice are well-studied laboratory model organisms, which, in the last century, have dramatically improved our understanding of human development, genetics, and disease. "We have a very thorough understanding of these organisms at the genomic and phenotypic levels, possibly more than any other organism on earth," said Zohdy. "The animal model closest to human physiologically is the mouse, however, it’s now recognized that nearly 50 percent of the time the mouse model is inactivated, created to better understand human disease fails to present within the same symptoms as humans." A knockout mouse is a genetically modified mouse where an existing gene has been inactivated or replaced with an artificial piece of DNA. This allows researchers to better understand the role of this gene and its impact on the overall behavior or physiology. "For decades, scientists have relied on mice, fruit flies, and worms as genetic models, but despite all their successes, these organisms rarely fail to mimic many aspects of human diseases,” said Mark Krasnow, professor of biochemistry at Stanford University. "Instead of introducing mutations in mice or fruit flies, we are doing something much more similar to what is done in humans,” he said. “We are looking at all the wonderful genetic variation already existing in nature, since there are so many millions of mouse lemurs out there. We calculate that most knockout mutations are already present by nature, and all we have to do is find them. And because the cost of sequencing a genome is rapidly dropping, it’s now possible to sequence the genomes of thousands of mouse lemurs to see which variations they are carrying.

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The scientists report that they already have identified more than 20 individual lemurs with unique genetic traits, including obesity, high cholesterol, high blood sugar, cardiac arrhythmias, psychiatric, eye disease, and motor and personality disorders. The lemurs have also been found to develop a form of diabetes and accumulate plaque in the brain that resembles that of Alzheimer’s patients. “I hope that this research will build awareness and encourage us to understand the biology and ecology of mouse lemurs, and all lemurs to become educated on the interaction of field ecology and modern advances in genetics,” said Zohdy. I hope this framework can be used to advance modern genomics in a way that can also be used to help conserve the natural world.

Sarah Zohdy, an assistant professor of disease conservation at Auburn University, Howard Hughes Medical Institute, the Department of Biochemistry and Department of Biochemistry and Molecular Biology, said Zohdy. "Through noninvasive advanced imaging and phenotyping and genotyping technologies, it is possible to understand the physiology and ecology of wild lemurs. We have an identified population which can be studied and then returned immediately back to the wild on the same branch they were captured."
The research site, owned by the Georgia Department of Natural Resources and managed by The Center for Longleaf Pine Ecosystems in the School of Forestry and Wildlife Sciences, leads a longleaf pine plantation. "The study is located on Fort Benning and in coordinating habitat conservation planning," said Samuelson. "An important step to protect these species, is identifying impacts of deforestation on global biodiversity. Breaking up the rainforest into smaller patches is a way to help species adapt to changing conditions." The research from the study will be published in various journals including Tree Physiology, Forest Ecology and Management; Tree Structure and Function; and Ecological Applications.

Longleaf pine ecosystems may be the key to creating more drought resilient forests and help sustain crucial plant and animal habitat. Dean G. Lunn Professor of Forestry Lisa Samaroni, who is also an Auburn Forest and Director of the Center for Longleaf Pine Ecosystems in the School of Forestry and Wildlife Sciences,leads a longleaf pine experimental drought study in Alabama and Georgia. "There is increased interest in the restoration of longleaf pine forests for forest products, a variety of important ecosystem services, and more recently, as a species resistant to disturbances associated with changes in climate," said Samaroni.

Along with Samaroni, research associate Tom Stokes and graduate students Michael Lasky, Jake Blackstock, and Caren Mendonca work to collect field data and perform analyses. Assistant Professor Emeritus Gary Mandrak and graduate student Ashok Parley will conduct the modeling experiments to study soil moisture dynamics using the community based model. "Our study is unique in that we are removing precipitation to study drought effects, whereas most studies utilize irrigation to remove drought effects, rather than create drought," said Samaroni.

The research sites, owned by the Georgia Department of Natural Resources and managed by The Nature Conservancy, is located on an 11-year-old longleaf pine plantation. "The study is focused on Army compatible use buffer strips, which are important in lessening environmental constraints on Fort Benning and in coordinating habitat conservation planning," said Samuelson. "Our research will provide information on the current and future vulnerability of longleaf pine to drought. The data will also be used in parameterizing process-based models that simulate longleaf pine growth under varying moisture and climate conditions," explained Samaroni.

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Scientists identify factors contributing to West Nile virus outbreaks

In a study published in the Journal of Vector Ecology, Auburn researchers have identified climatic, ecological, and socioeconomic factors contributing to the incidence of West Nile virus, with further studies underway to refine risk predictions that could help public officials save lives during West Nile virus outbreaks without flood-prone or hurricane impacted areas.

"Troughs intercept rainfall and transport it off the plot. The winnows will blow at it that seeks out the forest edge while the issues are those that rely on the forest core and whose habitat is thus constantly upended," said Samuelson. "Regional forest sites and representations of a global threat to biodiversity and many vertebrate species will be at risk due to both fresh human activity and land use, as well as human activities and management." An important step to protect these species is to know what every human needs to understand to stop the threats of climate change and reduce the threats."
Wildlife students gain real world experience in Africa

by Maggie Smith

In August 2017, eight students majoring in wildlife ecology and management and wildlife pre-veterinary medicine had the opportunity to gain hands-on experience and exposure to wildlife management and conservation issues in southern Africa. The 15-day trip included a 10-day stay at the Mbuluzi Game Reserve in Swaziland and a three-day stay at Kruger National Park in South Africa.

The trip was led by SFWS professor Dr. Stephen Ditchkoff and Dr. Bret Collie, an associate professor at the Louisiana State University School of Renewable Natural Resources. The two professors wanted to provide students with small mammal research.

In their natural habitat without human intervention, students ran camera surveys for large mammals, trapped guinea fowl and impalas, went bird watching, and assisted University of Swaziland graduate students with small mammal research.

Brae Buckner, a student who attended the trip, said she was blown away by her experience in Swaziland. Buckner and other students were able to offer their input on how to combat the destruction of sugar cane fields caused by warthogs and vervet monkeys. “We were able to give our input on ways that we thought would help decrease this problem,” Buckner said.

The One Health graduate certificate program is based on the ‘one-health’ concept that health related interactions among people, animals, and the environment have profound influences on disease risk, transmission, and prediction efforts. This certificate will prepare individuals to educate and inform people about One Health and those factors which continuously cause variation in the interacting processes among people, animals, and the environment.

In their natural habitat, “Seeing these animals displaying natural behavior, without human intervention, was by far the most incredible experience of my life.”

— Brae Buckner

“Seeing these animals in their natural habitat displaying natural behavior, without human intervention, was by far the most incredible experience of my life.”

— Brae Buckner

SFWS to begin offering online graduate certificate programs for working professionals

The School of Forestry and Wildlife Sciences recognizes a need for more opportunity and convenience for professionals to pursue continued education and advanced degrees. This year the school has proposed several online graduate certificate programs to support individuals who wish to further specialize or advance in their careers. Earning a certificate often takes less time and is more affordable than traditional graduate programs. And because classes are online, students can complete courses at a time that is convenient for them, allowing time in their schedules for other priorities.

Courses are available now and, pending approval by the Alabama Commission on Higher Education in March 2018, individuals may begin applying credit towards a certificate program in restoration ecology, one-health, or forest finance and investment beginning this fall.

The restoration ecology graduate certificate is designed to help students better understand natural processes in terrestrial ecosystems and provide them with information on processes and practices that are relevant to the restoration of these ecosystems. The forest finance and investment certificate was developed for forestry professionals or other types of professionals, such as real estate brokers, bankers, accountants, or appraisers with interests in forest operations or forest investments. With this certificate, students may customize the program based on their background to either learn more about forest operations and investments or to gain the skills necessary to make sound forest finance and investment decisions.

The One Health graduate certificate program is based on the ‘one-health’ concept that health related interactions among people, animals, and the environment have profound influences on disease risk, transmission, and prediction.

Online graduate certificate programs require 12–15 credit hours of online coursework, which can also be applied toward the pursuit of a graduate degree if desired. Students must apply through the Auburn University Graduate School, however there is no GRE required and no minimum GPA. To learn more about the graduate certificate programs, visit http://sfws.auburn.edu/online-professional-graduate-certificate-programs.