The Center for Forest Ecosystem Assessment has been busy this past year! Many of our graduate students graduated during this time period, and we are currently looking at starting out the 2011-2012 season with a slew of new graduate research students. During the past year, the structure of the research bodies of CFEA were rearranged to make it easier to facilitate synergy among sub-projects. The five original sub-projects were disbanded to make way for three new sub-projects: Forest Community Responses and Dynamics, Ecosystem Functions and Processes, and Coupled Dynamics of Human and Landscape. This reorganization will facilitate easier cross-collaborative efforts.

In the summer of 2010, we wrapped up the last season of our first NSF-funded Research Experiences for Undergraduates program in the Department of Natural Resources and Environmental Sciences and we'll be busy preparing for the new REU program with an international twist—students will have the rare chance to participate in research at Nanjing Forestry University in China! As the need for global cooperation increases, we need to be sure that minorities are equipped with the skills to cooperate internationally. Our EnvironMentors program (National Council for Science and the Environment, funded through NSF) provided research opportunities under the guidance of a matched mentor for minority high school students from Johnson High School. Working together, students and mentors developed rigorous environmental science research projects over the course of the academic year. Additionally, the AAMU-Birmingham Water Works Ambassador’s Program introduced > 200 high school students interested in pursuing higher education degrees to the forestry and ecology programs we provide at AAMU. I hope this newsletter provides insight into our many activities.

Happy reading,

Yong Wang
Recent Graduates

The Center for Forest Ecosystem Assessment has seen a number of students come and go this past year or so. Some recent graduates are:

**MEIKO THOMPSON (Ph.D.),** graduated in May 2010 (“? ”). Dr. Thompson is currently conducting post-doctoral research at the University of Tennessee in Knoxville.

**WILLIAM SUTTON (Ph.D.),** graduated in May 2010 (“Herpetofaunal Response to Forest Management Practices”). Dr. Sutton is also currently conducting post-doctoral research at the University of Tennessee in Knoxville.

**DANA VIRONE (MS),** graduated in December 2010 (“Effects of Silvicultural Treatments on the Ground Layer Vegetation in Pine-Hardwood Stands of the Southern Appalachian Plateau”). Ms. Virone has been working as an independent consultant and mom to two twin girls.

**LISA GARDNER (MS),** graduated in December 2010 (“Stopover Ecology of Migratory Landbirds at an Inland Site in Alabama During Autumn Migration”). Ms. Gardner is currently working as the Technical Manager of CFEA.

**SYZMANSKI (RICK) FIELDS, II (MS),** graduated in May 2011 (“The Use of LiDaR and Color Infrared Imagery to Measure Forest Characteristics in the William B. Bankhead National Forest”). Mr. Fields recently accepted a job offer from the University of Arkansas in the Cooperative Extension Service as a GIS Analyst and will begin his new position 1 October 2011.

**CLINT PATTERSON (MS),** graduated in May 2011 (“Effect of Fertilizer Supplement on American Chestnut and Bottomland Oak Seedlings”). Mr. Patterson is currently working as a statistics programming consultant at AAMU.

**ANDREW CANTRELL (MS),** graduated in May 2011 (“Herpetofaunal and Small Mammal Response to Oak Regeneration Treatments on the mid-Cumberland Plateau of Southern Tennessee”).

Our heartfelt congratulations to you all! Good luck in all your future endeavors ~ we’ll miss you!

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**LUIS BIANCUCCI:** Mr. Biancucci received his MS in Wildlife Biology at the University of Montana and conducted research on the life histories of tropical birds. He is a Ph.D. candidate and is currently writing his research proposal on the life history trade-offs in Chinese birds. (advisor: Yong Wang)

**FETUN DESTA:** Mr. Desta is continuing the research of Ashantye Williams, looking at genetic differences between oak species on the Cumberland Plateau, along a gradient, with the goal of identifying unique genetic characteristics for reliable differentiation of closely related species. (advisor: Khairy Soliman)

**ELLIOT DIGGS:** Mr. Diggs received his BS Degree in Atlanta. He will be expanding upon William Sutton’s research of copperheads in the Bankhead National Forest, by studying the relationship between copperheads and king snakes and how their predator-prey relationship is affected by silvicultural treatments. (advisor: Yong Wang)

**RASHIDAH FARID:** Ms. Farid will be examining genetic differences among amphibian species in the Bankhead National Forest that may result from different silvicultural treatments. (advisor: Khairy Soliman)

**KEVIN MESSENGER:** Mr. Messenger recently completed his MS degree at Marshall University in West Virginia, where he researched the Carolina Pigmy Rattlesnake. Mr. Messenger will be working on his Ph.D. and will focus on Chinese herpetology. (advisor: Yong Wang)

**ANGELA REEDY:** Ms. Reedy is an MS candidate, and is part of the Ecosystem Functions and Processes team in CFEA. Her research is on the differential response of phosphorus transformation in forest soils as determined by silvicultural prescription. (advisor: Thilini Ranatunga)

**EMILY SUMMERS:** Ms. Summers grew up in the tiny town of Sherwood, Tennessee and recently moved back home after completing her undergraduate degree at Auburn University. She is now pursuing her MS Degree researching the importance of ecological services, and the impacts and drivers that affect ecological processes. Her research will specialize in air quality and its role in providing ecosystem services. (advisor: Xiongwen Chen)
Education and Outreach

A major goal of the Center is to increase minority participation in scientific research of all kinds, and help facilitate the recruitment of minorities into the U.S. Forest Service. With these goals in mind, we have participated in the following events. Several of them, such as the Birmingham Water Works Board Ambassadors Program and EnvironMentors, have become traditional yearly activities for us; others are relatively new but we’re hopeful they will also become yearly traditions. All of these activities expose young adults to the possibility of pursuing scientific research as a career goal.

**EnvironMentors**

The EnvironMentors is part of the National Council for Science and the Environment, and is currently funded through NSF. It is a national college access initiative that prepares high school students from under-represented backgrounds for college degree programs in environmental and related science fields. The AAMU EnvironMentors Chapter has been working in collaboration with the North Alabama Center for Educational Excellence (NACEE). Since we began participating in the program, students from Johnson High School (Huntsville City School district—each with racially diverse enrollment) have been paired with AAMU faculty, graduate and undergraduate students in one-on-one mentoring relationships. Working together, students and mentors develop rigorous environmental science research projects over the course of the academic year.

In 2010, thirteen students were mentored by nine faculty. These students were exposed to a variety of laboratory and field techniques, as well as ArcGIS software, 3D-visualization using ArcExplorer, and soil survey mapping. One student, Antonio Fletcher, who is now a freshman at AAMU, worked with Eddie Davis on an environmental planning project.

**National Science Foundation Travel Awards**

This grant has allowed us to expose undergraduate students with an interest in a science–related career to the professional environment of the scientific meeting. It specifically provides registration and travel money for undergraduate students interested in attending the ASA-CSSA-SSSA (American Society of Agronomy [ASA], Crop Science Society of America [CSSA] and Soil Science Society of America [SSSA]) meetings. Additionally, students receiving funding through this program also receive mentoring with a research topic and creating effective posters and/or presentations. So far, twenty students have benefited from these travel awards.

During and after the week of April 26th—when tornadoes ravaged the State of Alabama—the FireDawg Crew was mobilized to assist in recovery and clean-up in tornado-damaged areas in and around Guntersville, Harvest, and Cullman. FireDawg crews worked diligently, clearing away uprooted and snapped trees near peoples’ homes. They even worked on April 26 in the midst of the tornado warnings! That’s dedication.

Additionally, FireDawgs assisted the Alabama Fire Commission and small private landowners with seven prescribed burns on 369 acres of forestland.

In March of 2011 the FireDawg crew set up a booth and fire demonstration at the Forest Fair day on the AAMU Campus. A total of 150 5th and 6th grade students from the north Huntsville area participated. We worked alongside the USFS, Forestry Club and other agencies in this outreach event. The students were taught the use of good fire in forest health and restoration and how damaging wildfire can be in the rural urban interface. In the summer of 2010 ten FireDawg crew members were employed for internships with USFS, BLM, NPS, and USFWS on various fire details thought-out the US. Summer 2011 these same agencies are employing 16 FireDawg students in fire crews in several western states and in the wildfires in South Georgia and North Florida.

Employer response to the success of the FireDawg program has been extremely positive and we have secured an additional $20,000 USFS grant for equipment, supplies and training. The AFC has committed to renewing this grant for FY 2011-12 and has made a state funding request to increase the grant amount due to our past successes.

Forestry students demonstrate how to use a two-man saw during the Forest Fair Day, March 2011, AAMU Campus.
AAMU received funding in 2008 from the National Science Foundation to establish an REU site at the University, for three years. In the summer of 2010 we hosted the last group of students. Our program aims to provide high quality research experiences for minority undergraduates and to mentor future 21st century researchers in the environmental and natural resource sciences. There are several students currently at AAMU who were REU students: Alisha Sledge, Rakeyta Scales, Bajah Andersond at the Soil Science Society of America meeting. Dr. Wang and Dr. Stone will know about their students. Rakeyta, NaAsia, Bajah, and India Brown, an REU alum from Fort Valley State University will present at the meeting this year. Rakeyta worked at the Dauphin Island Laboratories in summer 2011. REU alum Tashundra Bryant also presented at the Soil Science Society of America meeting in 2010. She has since graduated (May 2010) and is now working at Aperian Lab Solutions. Many other students have graduated and are now attending graduate school.

The objective of this program (EB@aamu) is to: prepare students with a strong interest in environmental biology to pursue an undergraduate degree while being creatively engaged in a research environment; provide opportunity to undertake hypothesis-driven research with mentors; and increase the number of students entering the graduate programs in environmental biology. This program began in 2010, and we have had one complete cohort of students. Our second cohort just began this fall (see tables).
This summer, the fourth Young Water Ambassadors (YWA) Campus Visit and Lake Purdy Field Day was hosted by AAMU. A new class of 100 high school students and 12 high school teachers participated in the two-day event. At the college and career day 19 students ultimately signed commitment cards to attend AAMU in 2012.

The YWA are being actively recruited by AAMU for potential future candidates as college freshmen and are being encouraged to pursue various degree programs, including those in forestry and agriculture. We had seven commitments to seek a degree in Environmental Science or Forestry, Ecology and Wildlife Program. At the conclusion of the summer program, 50 of the YWA presented a program to the BWWB on the AAMU experience. Because of the program presentation, the BWWB made a commitment to fund the 2012 YWA for a two full day campus experience to include an overnight stay in the dorms, a one-day campus tour, and a one-day CFEA lab tour. The USGS-FS Southern Research Station has committed to funding a three-day visit for all twelve teachers along with the CFEA Project Manager to tour the Bent Creek Experiment Station and the Coweta Hydrological Lab in Asheville, North Carolina.

In the BWWB YWA program, we have collaborated with these twelve teachers to provide additional opportunities to conduct outreach with their individual schools. Most of these schools are located in the Birmingham Metro area and provide opportunities to engage their students and expose them to natural resource issues and solutions within their urban environment. The immediate feedbacks from the participants both from AAMU and from BWWB were very good about this initiative, they were impressed by the diversity of our programs, professionalism, skills, and the way we communicated with the high school students. This effort also included some of our earlier graduates from AAMU. A student survey was performed and is being used for further improvement of the program. We are planning to continue our effort of recruitment during this year’s BWWB’s Summer Water Ambassadors Program.

In 2010, we formalized our commitment to the BWWB - YWA program by presenting our results of this partnership to the Board at their July meeting at the Cahaba Pumping Station. AAMU received a resolution from the Board in appreciation for our partnership and for AAMU’s commitment to education and recruitment for the urban and rural youth of the Birmingham Metro area. In addition, we received a letter of commendation from the BWWB, presented to AAMU in July 2011 at the annual board meeting at the Birmingham Water Works Board Main office. The BWWB NRMP Service agreement was extended for 2010-11 with an award of $69,500 to continue to provide natural resource management assistance and advice. We have reapplied for 2011-12 for another one-year service agreement for FY 2011-12. The BWWB has assured that this service agreement will be renewed in light of the acceptance of the USFS grant application. A USFS grant application has been submitted and awarded to fund the teacher coordinator trip to the Bent Creek and Coweta Experimental forest. Along with the 12 teachers, four BWWB land management employees will be going on the tour the goal is to demonstrate to the participant’s proper road building techniques, best management practices for timber harvesting in forested watersheds, and the potential for employment for YWA in natural resource careers. Another aspect of the USFS proposal is to increase the participation of CFEA students in the natural resource inventory and management recommendations for the 10,000-acre BWWB property. In addition, the proposal established a research partnership between CFEA, FEWP, COE and BWWB as a long-term study area for impacts of thinning and prescribed burning on the BWWB property.
International Experiences Broaden Horizons

The Center for Forest Ecosystem Assessment recognizes there is an urgent need to provide minority students with a global perspective that allows them to compete in an increasingly international environment. We have been diligently working to strengthen our international research program by forming global partnerships with universities abroad, such as Nanjing Forestry University, among others, in China and EARTH University in Costa Rica. Below are some of the international programs we are establishing at AAMU.

AAMU’S CHINA EXCHANGE PROGRAM

Faculty and students of NRES spent part of their spring/summer in China this year. This was the third and final year for this program in particular, funded by the USDA’s NIFA International Science and Education Program. The purpose of this program has been to strengthen AAMU’s capacity to develop globally competent students and faculty. Each year, students come back from China with a new appreciation of different cultures—of course, in particular the Chinese Culture. We have been hard at work developing a mutually beneficial relationship with Nanjing Forestry University, as well as other Chinese universities.

This year, faculty were charged with recruiting one or two students and we had an excellent and diverse team head out. Faculty that went were: Dr. Wubishet Tadesse, who specializes in spatial analysis using GIS and remote sensing; Dr. Yong Wang, a statistician, ecologist, and ornithologist; Dr. Xiongwen Chen, who researches landscape ecology; and Dr. Mankolo, who specializes in soils and organic farming.

AAMU’S NEW REU PROGRAM COMES WITH A CHINESE TWIST

A new Research Experiences for Undergraduates (REU) program has been accepted by the National Science Foundation. This time, students will take a trip abroad to China’s Nanjing Forestry University (NFU), where they will get to experience not only hands-on research, but a completely foreign culture. Students will be housed at NFU and will be paired with a faculty member and student(s) to help conduct research in forestry and conservation-related fields. We are excited to be furthering our relationship with NFU, and are looking forward to another summer in China.

As we are strengthening our relationships abroad, we are likewise looking forward to strengthening our ability to prepare students for international travel. To facilitate exposure and interest in international research at this minority institution, we are looking into establishing a Confucius Center, where students can learn Mandarin and Chinese culture prior to travel.

SUMMER ENRICHMENT PROGRAM AT EARTH UNIVERSITY, COSTA RICA

AAMU has also teamed with Tuskegee University and EARTH University in Costa Rica. Students were recruited across both Alabama university campuses, and four students were selected to participate in the program. These students spent four weeks in an internship program at EARTH University, and gained first-hand experience in natural resource and agricultural sciences in a third-world country.

Based on this year’s experience, we will be sending more students to EARTH next year, and will develop two courses for the internship in the near future.
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