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North Carolina A&T State University School of Agriculture and Environmental Sciences Newsletter
Produced by the Agricultural Communications and Technology Unit

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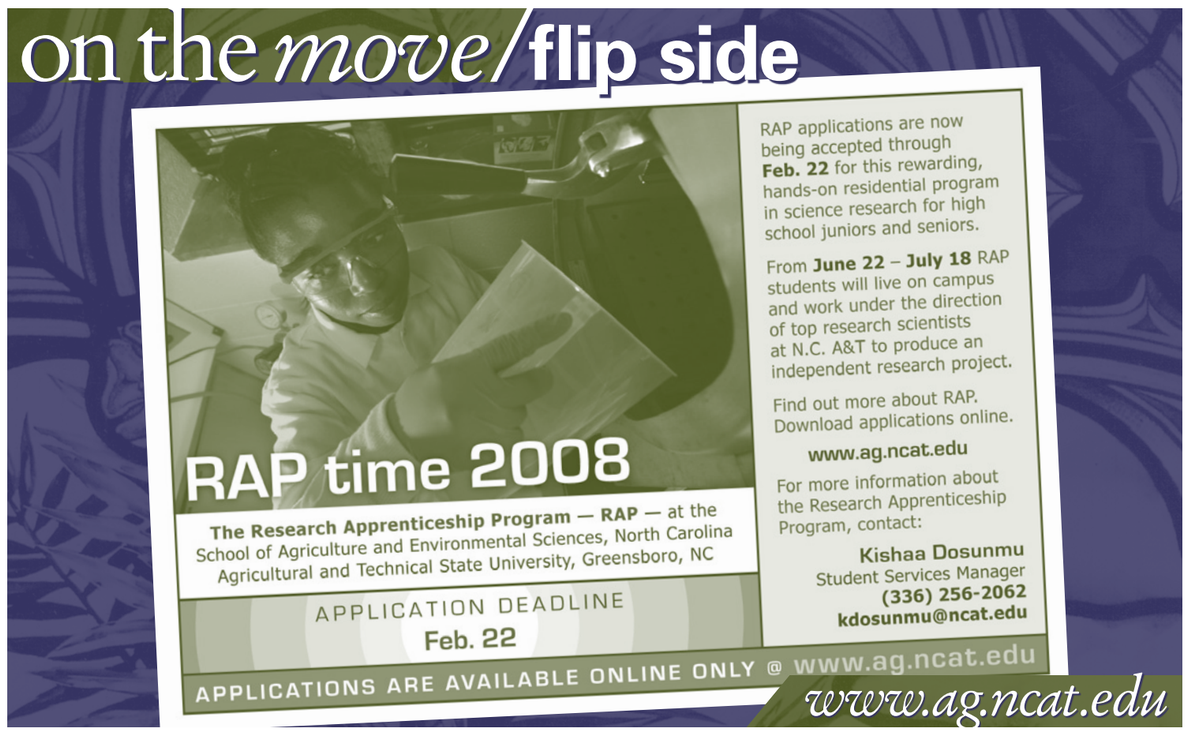

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Preparing. Finding. Implementing solutions.

December 2007 • Vol. VI, No. 6

USDA adds almost $600,000 to research and teaching resources

SAES research into new ways to help children develop healthier diets received a funding boost from USDA.

Three newly funded projects will strengthen the SAES's capacity to conduct food safety and post-harvest research, create new nutrition education programs to address childhood obesity, and deliver the global experience to more students.

These projects, funded by the USDA Capacity Building Grants program for 1890 institutions, total $590,000. But the value to SAES and society? Possibly priceless.

Consider the cost of pathogenic bacteria in foods. The Centers for Disease Control and Prevention estimates foodborne pathogens cause more than 76 million illnesses, 325,000 hospitalizations and 5,000 deaths each year. Meanwhile, the all-too-frequent presence of E.coli or Salmonella in fresh-cut produce is costly to industry and undermines consumer trust. To help address these issues, Dr. Ipek Goktepe of the Food and Nutritional Sciences Program, will lead a study to discover natural weapons against disease-causing bacteria in fresh produce. With the help of an industry partner, Baltimore-based Intralytix Inc., she will research an advanced packaging technology in combination with bacteriophages, which are microbes which feed on bacteria. These predators of the microbial world are believed to be superior to chemical food additives because they are ubiquitous in nature and harmless to humans. Intralytix has recently received the first-ever FDA approval for one type of bacteriophage to prevent listeria contamination in sliced meats and other ready-to-eat foods. Encouraged by this success, both the company and food safety experts at SAES are eager to discover additional uses for bacteriophages, including making fresh produce safer.

A second study will also touch on fruits and vegetables — as in discovering new ways to help children develop healthier diets. The work is important in light of rapidly increasing rates of childhood obesity. Nationwide, nearly 14 percent of children between the ages of 2 and 5, close to 19 percent of 6- to 11-year-olds, and more than 17 percent of those between 12 and 19 are obese. Led by Dr. Mohamed Ahmedna of the Food and Nutritional Sciences Program, the study will involve the SAES's Child Development Laboratory and five area Head Start programs to develop a nutrition instructional program for pre-school children. Two new undergraduate courses in childhood nutrition education will also be developed in the three-year project.

The third project, led by Dr. Anthony Yeboah, chair of the Department of Agribusiness, Applied Economics and Agriscience Education, will improve global education opportunities for master's candidates and undergraduates in the SAES, through stipends for study abroad and the Peace Corps Master's International program, as well as faculty workshops and a seminar series to raise awareness and interest in global experiences.

The projects are all designed to increase the SAES's capacity in research and education by funding training and equipment, and producing courses and programs that will continue long after the three-year projects are complete.

Dr. T's Moment

Most of you have received a copy of our new research magazine *Re:search*. This is our opportunity to showcase the work we are doing in our Agricultural Research Program and to illustrate why you should care.

Our cover story features Dr. Mohamed Ahmedna and his quest to inactivate peanut allergens. Peanut allergens affect millions of Americans and cause 100 – 150 deaths and many more hospitalizations annually. Though human and animal testing is on the horizon, his laboratory results are positive and if things work as planned, using peanuts, rich in proteins, healthy fats and a broad array of essential vitamins and minerals, offers the world a perfect food alternative.

As well, peanuts are the 12th largest crop in the United States with a farm value of $1 billion. That's why you should care.

Another *Re:search* story features Dr. John Allen, who has produced the University's first spin-off company. Provagen Inc. will produce Protein V, an antibody-binding protein for use in medical research, diagnostics and treatment. Protein V is believed to be one of the most versatile and strong antibody-binders known and thus could improve research and industrial processes that rely on purified antibodies. That's why you should care.

Other features highlight our efforts to examine the eating habits of young children hoping to reduce obesity and obesity-related diseases that strain our scarce tax dollars. *Re:search* also showcases our efforts to reduce the amount of money cattle farmers spend fighting mastitis, helping them to improve their bottom line and maybe reduce prices. That's why you should care.

Our work as a land-grant university is to do the work designed to help solve the problems we face. We work hard every day to do just that.

If you'd like a copy of the magazine, call my office at 336-334-7979 or see it on the web at *www.ag.ncat.edu*.

— Dr. Alton Thompson
Dean, SAES

SAES is road to first Ph.D. in Energy and Environmental Studies at A&T

Seydou Niandou Albachir successfully defended his doctoral dissertation in early November and when he gets his diploma in December, Albachir will become the first student at A&T to receive a doctorate from the interdisciplinary Energy and Environmental Studies Program. Albachir's dissertation topic was "Low Cost Nutshell-Based Activated Carbons for Drinking Water Purification: Process Optimization and Adsorption Modeling" and his dissertation advisor was Dr. Mohamed Ahmedna of the Department of Family and Consumer Sciences. Albachir's research was fully funded through a USDA Capacity Building grant, and he was also the recipient of a $10,000 fellowship for environmental stewardship from NC Beautiful.

Albachir

Albachir grew up, in the Republic of Niger in west Africa, speaking three languages — French, Hausa and Djrema — but following a bachelor's degree in water resources and environmental sciences at the Université Hassan I in Morocco in 2001, he set his sights on continuing his education in the United States.

"I was looking for a research-intensive university," says Albachir. "I was looking for one with professors, like Dr. Ahmedna, who are also among the best researchers in their fields."

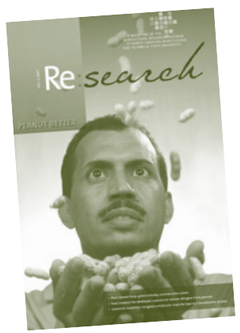
After a six-month stay in Oklahoma to ready his knowledge of English as a fourth language for graduate study, Albachir enrolled at A&T and went on to get his master's in civil/environmental engineering in 2004. Once he received his master's, he then began work on a doctorate in an Energy and Environmental Studies Program that was just getting off the ground.

His doctoral dissertation's focus was the development of a low-cost water purification system for drinking water using agricultural by-products. Working as a research associate with the Agricultural Research Program at the same time he was at work on his dissertation gave him some invaluable experiences in the nuts and bolts of conducting research, and in presenting findings at conferences and symposiums. His resume includes presentations covering research projects led by Dr. Ipek Goktepe of the SAES as well as Dr. Ahmedna.

The Energy and Environmental Studies Program at A&T is a university-wide interdisciplinary program that draws on the teaching and research resources of the SAES and the other schools and colleges at A&T to offer doctoral students a course of study that prepares them for careers in a number of high-tech fields. Albachir's coursework for the degree included upper level classes in bioenvironmental engineering taught by Dr. Ghasem Shahbazi. Another SAES connection, Dr. Jimo Ibrahim of the Cooperative Extension Program, provided Albachir with considerable technical guidance in his research work.

When Albachir was awarded the Dan K. Moore Fellowship from NC Beautiful, his thank-you noted that growing up in West Africa had left him with a "strong passion for protecting natural resources" because he had witnessed so much of "the correlation between poverty and environmental degradation."

Albachir's Ph.D. has him on target for getting right into the line of work that's been a lifelong dream: protecting natural resources. Unfortunately, however, he and his family (a wife and two-year-old son) won't have time to celebrate. Albachir has already accepted a position as a project manager with Delta Environmental Consultants, a firm that specializes in environment-related business problems, and although his new employer is giving him time off to return to Greensboro to pick up his diploma in December, he will first be off to Brazil to assist with a project for one of Delta's clients, the Coca Cola Company.



Read more about the research being conducted by Dr. Ahmedna in the most recent issue of Re:search *at www.ag.ncat.edu.*

Seven more up

Alston

Black

Jarrett

Jones

Owen

Sanchez

Starling

When the 24-member advisory group that guides The Cooperative Extension Program at A&T held its annual fall meeting on campus in November, seven new members joined the panel — including, for the first time, two A&T students.

The Strategic Planning Council met for two days at Extension headquarters in Coltrane Hall, where the panel heard presentations from staff and welcomed new members. The council includes agribusiness, education, human services, and community leadership from across the state. Council members guide and gauge issues that Extension should address.

The new members are:

Ernestine Alston of Greensboro. The Guilford County native has been a 4-H volunteer for 26 years, helping young people develop life skills that prepare them for productive adulthoods. She has served on the 4-H Guilford County Advisory Council and on the 4-H Parent Leader Association. She was inducted into the N.C. Volunteer Achievement Hall of Fame.

Marieka Black, of Burnsville, volunteers 20-to-30 hours a month with the 4-H program. The Yancey County native is a coach for 4-H Teens Reaching Youth and helping develop entrepreneurial skills. She also volunteers for other organizations in the county including the Yancey County School System. Black was received the 2004 North Carolina Award for Outstanding Volunteer Service.

Jennifer Jarrett, student representative, is a native of Swain County where she was President of the Swain County High School FFA. At A&T, Jarrett is majoring in Spanish Studies, and is a former animal science major. Most recently, she traveled to Costa Rica with an Eco-Study Tour designed to explore and compare cultures.

Cedric Jones Jr., student representative, is a native of Franklin County. At A&T he is a junior, majoring in Agriculture Education. He recently completed an internship with Kraft Foods, and is a member of Phi Beta Sigma Fraternity and FFA.

Brad Owen is president of the newly formed Farmer's Market in Lexington. He is active with the Davidson County Horticulture Specialized Committee, the N.C. Mushroom Growers Association and the Carolina Farm Stewardship Association. In Davidson County, he has been an advocate for the small acreage movement, small farmers and agribusiness.

Paula Sanchez, of Reidsville, comes to the SPC as a collaborative agency representative. She is the Rockingham County Director for Migrant Education, where for more than 20 years she has provided services and educational opportunities to Hispanic migrant workers.

Thomas C. Starling, of Elizabethtown, is a collaborative agency representative to the council. He is director of the Bladen County Farm Service Agency. He has helped organize several events honoring community achievements, from the agency's Black History Program to the county's Agriculture Appreciation Luncheon.

faculty & staff notes

Hill

Dr. Stephanie R. Hill has joined the Department of Animal Sciences as an assistant professor. Hill comes to the SAES from Virginia Tech, where she was a post-doctoral researcher in the Department of Dairy Science. Hill completed her bachelor's and master's degrees at N.C. State, and her doctorate in the Department of Dairy Science at Virginia Tech. Her research interests include nutrient utilization in dairy cattle, and management of nitrogen and phosphorus excretion on dairy farms.

The Department of Agribusiness, Applied Economics and Agriscience Education has two new assistant professors:

Faulkner

Dr. Paula E. Faulkner, who earned her bachelor's and a master's at A&T. She earned her doctorate in Agricultural Education from Penn State.

English

Chastity Warren English, who has bachelor's and master's degrees from A&T and is a Ph.D. candidate at Virginia Tech. English is a native of Whitakers, in northeast North Carolina and a graduate of North Edgecombe High School in Tarboro.

The Department of Family and Consumer Sciences has three new research associates and an assistant professor to welcome to the SAES:

Kim

Dr. Chyer Kim, a research associate. Kim comes to the SAES from the University of Georgia, where he received both his master's degree and doctorate in food science and technology. His research interests include food safety and quality enhancement, and foodborne pathogens.

Song

Dr. Danfeng "Tammy" Song, also a research associate, received her M.D. degree and her doctorate in Nutrition and Food Hygiene at Harbin Medical University in China. She received her second doctorate in cereal and food sciences at North Dakota State University. Her research interests include microbial enzymes, food processing, anticancer effects of phytochemicals, and biomass conversion.

Lumpkin

Dr. Chantel Lumpkin is now an assistant professor in the areas of child development and family studies. She comes to the SAES from Western Michigan University. Her post-baccalaureate degrees are a doctorate in Family and Child Ecology from Michigan State University, a master's degree in Christian Counseling from Oral Roberts University, and a second master's in marital and family therapy from Loyola Marymount University.