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North Carolina A&T State University
School of Agriculture and
Environmental Sciences
Newsletter
www.ag.ncat.edu

June 2007 • Vol. VI, No. 3

Post harvest research gets big facilities booster

The Institute of Post Harvest Technologies — an offshoot of the SAES — is under construction at the new North Carolina Research Campus in Kannapolis, and is scheduled to begin conducting

be on exploring the links between nutrition and health.

“We are both proud and honored to be a part of this visionary project,” said Dr. Carolyn Turner, associate dean for research at SAES.

“We know that many of the most common diseases today have a strong link to poor diet, including

ments at N.C. A&T.

“We don’t want to conduct research just so we can publish it and put it on a bookshelf. We want research that answers an industry problem, or creates new jobs, or expands the economy in some way,” Rao said.

For instance, close to 30 percent of food crops spoil before they can reach the consumer, so one productive avenue could be to find ways to reduce such losses, he observed. Other avenues might include seeking new ways to destroy food borne pathogens while preserving taste and nutrition, identifying and isolating components in food that provide specific health-promoting properties, and even developing non-food products from agricultural byproducts, such as biofuels or biodegradable plastics.

The research campus is expected to add fuel to the “value-added” trend in agricultural sciences. Whereas traditionally the emphasis has been placed on higher yields or cultivars that hold up to storage and transport, the research campus will be geared toward enhancing nutritional quality. The benefits will accrue to consumers, farmers and the agricultural sector as a whole, which will find new profitability in new crops, according to Rao.

“The outlook for North Carolina agriculture as it relates to this project is definitely optimistic,” he said.

To find out more about the Institute of Post Harvest Technologies, contact Rao at (336) 256-1268, or ramy_rao@ncat.edu.

cardiovascular disease, diabetes and many cancers. This campus will make it possible for us to collaborate with other researchers toward finding new approaches to disease prevention.”

The Institute of Post Harvest Technologies will be interested in all plant-based foods, with a special focus on many of North Carolina’s major food crops, including sweet potatoes, strawberries, blueberries and peanuts. Rao is seeking input from growers, packers and producers, as well as research partners at other universities and other depart-



Dr. Ramu Rao, left, and Dean Alton Thompson watch a crane place a steel beam at the UNC Center for Excellence in Nutrition at the North Carolina Research Campus. The building will house the Institute for Post Harvest Technologies.

research in January, 2008, according to Dr. Ramu M. Rao, interim director.

The institute will employ approximately 18 scientists who will research food processing to enhance nutritional quality, safety and value.

The institute is part of the \$1 billion, 350-acre North Carolina Research Campus which was formed last year through a partnership between David Murdock, owner of Dole Food Co., and six private and public universities. The research focus at the campus will

Dr. T’s Moment

The SAES has been moving a lot of ground recently.

In mid May, A&T, joined by the UNC Greensboro, officially broke ground on the new Gateway University Research Park. This high-tech research park, located just off interstate 85/40, is slated to become an economic engine for the area and the state. Gateway will create hundreds of high tech jobs and will serve as a hub for University-generated research spin-offs.

We in the SAES are especially excited about this Gateway venture because the first facility will house the United States Department of Agriculture’s Natural Resource Conservation Service East Regional National Technology Center. This Center is a partnership between A&T and NRCS. Already NRCS is working in our community. This groundbreaking will provide them a new facility. This move bodes well for all entities and we are excited about what’s to come.

In late April, SAES was part of a “topping off” ceremony for the new Nutrition Research Institute at the new North Carolina Research Campus in Kannapolis. This facility will house our post-harvest research laboratories along with programs from UNC-Chapel Hill, N.C. Central University and UNCG.

Coupled with the work that we are doing on campus and the partnerships at Gateway and the N.C. Research Campus, SAES remains on the move.

— Dr. Alton Thompson
Dean, SAES

inside

- **Work of Animal Sciences Dept. thrice honored.**
- **Swine Unit, Family and Consumer Sciences, and Natural Resources Management in spotlights**

Work of Worku gets three awards

Dr. Mulumbet Worku, an associate professor in the Department of Animal Sciences, is the recipient of three awards in recognition of excellence in teaching and research.

The SAES chapter of Gamma Sigma Delta presented her with its Excellence in Teaching, as well as its Excellence in



Dr. Worku

Research award at the school's annual banquet in April. Additionally, Worku was awarded the SAES Outstanding Teacher of the Year for 2006-07 from the University.

To colleagues and students who have observed her dedication and commitment to both teaching and genomics research since her arrival at N.C. A&T in 1999, the awards come as no surprise.

Worku's student evaluations are among the highest in the school and University. Within her long list of accomplishments, she has enhanced the curriculum of six courses; developed two new courses; established a microarrays and bioinformatics learning facility in the Department of Animal Sciences; worked toward establishing a Center of Genomics at N.C. A&T; organized 10 professional workshops; collaborated on funding efforts that have brought more than \$1 million to the University; and continues either to lead or collaborate on three or more research projects per year. She has also supervised 13 master's theses, and is currently supervising six of these.

Worku's awards nominations cite her "nurturing and scholarly reputation," her reputation as a "caring, helpful and dedicated professor," who is "a role model for

students." The nomination also notes that she is genuinely interested in advising students, with an advising workload that is one of the highest in her department.

Worku's research program is focused on exploring the molecular and genetic basis for natural resistance or immunity to mammalian diseases — especially mastitis — with the goal of improving diagnosis and treatment.

Gamma Sigma Delta award goes to Natural Resources Management Specialist

Dr. Robert Williamson, The Cooperative Extension Program at A&T's natural resources management specialist, was honored by the campus chapter of Gamma Sigma Delta with its 2006-07 Award of Excellence in Extension.

Since coming to A&T in 1984, Williamson has put together a portfolio of award-winning programs and national recognitions for his Extension work.

Williamson's resume lists 18 committee assignments at the national, state and local levels, and 16 publications. He has received more than 25 professional recognitions in his career.

Williamson has been honored by the American Forest Council for conducting educators' workshops for Project Learning Tree, an environmental education program. His "Adopt-A-Tree" essay and poster contests were selected for Renew America's Environmental Success Index for fostering



Dr. Williamson

an appreciation for forestry in children growing up in cities and suburbs. He also has been honored by the National Arbor Day Foundation for his work to stimulate interest in trees and forestry among inner city children.

The "Down-to-Earth" school gardening curriculum developed by Williamson and another A&T Extension specialist, Dr. Ellen Smoak, was one of the first curriculums developed at any of the 1890 Extension Programs to be accepted into the

Juried 4-H Youth Development Curriculum Collection. Williamson and Smoak also developed Extension's "Water Guardian Chopper Ride," an interactive CD that illustrates the



Dr. Ahmedna

Food scientist cited by Division of Research & Economic Development

Dr. Mohamed Ahmedna, associate professor of food sciences, is one of the two recipients of the University's Senior Researcher Award for 2006-07, in recognition of his outstanding contributions to science and to A&T's research program.

Ahmedna is a prolific researcher and writer. During his seven-year tenure in the SAES, he has been awarded 15 research grants totalling more than \$4 million. He is the author or coauthor of two book chapters, more than 100 papers and presentations, and editor of a probiotics textbook. He has also secured a patent on one of his inventions, a portable biosensor for detecting salmonella in poultry, and has submitted applications for two others.

Ahmedna has numerous other awards to his credit. Among these, in 2002, he received the University's Outstanding Young Investigator Award, and in 2006 he was presented the George Washington Carver Award from the U.S. Agency for International Development at a ceremony in Washington, in recognition of his work on developing value-added products and processes for peanuts. From his lab in Carver Hall, Ahmedna's research on peanuts has led to new antioxidants, a process to remove mold toxins, a low-fat, high-protein meat substitute, and an infant formula. He is currently working on developing a process to remove allergens from peanuts. Among his other activities, Ahmedna is leading an interdisciplinary study to develop a multifaceted program that will teach overweight or obese college students how to adopt healthy lifestyles.

potential water quality risks that development poses. He has been invited to many national conferences to present overviews of the water quality educational materials developed by A&T Extension.



Teo Barrios

Pearls for the University Farm's Swine Unit

Teodoro Barrios, whose unflinching dedication to his work has increased productivity, safety and service at the University Farm's Swine Unit, is this year's SPA/EPA non-teaching award winner. Most notably, Barrios improved the Swine Unit to the degree that its state waste water permit has been reinstated — a rare feat because permit revocations are seldom rescinded — and the unit is now back under state supervision, rather than maintaining a federal permit requirement. Farm Superintendent Leon Moses likens this achievement to taking the unit from a "D" to an "A."

Respected by the students whom he guides in hands-on animal science laboratory experiments as well as by co-workers and the three-person staff he supervises, Barrios gains extra distinction for his willingness to do any job at the Swine Unit regardless of his management position. From running the hogs and putting them back in their pens, to pressure-washing the building and mowing grass, Barrios pitches in where he deems necessary.

As a manager he has been instrumental in revitalizing the unit, increasing swine operations from 80 to 200 sows in three years, using the same staffing level and by developing relationships with vendors. He has also improved employee morale.

The Swine Unit is also supposed to get a new water-treatment system this year, recommended by Barrios for its ability to recycle the waste water for all the unit's water needs. The system is expected to significantly lower the unit's water bill and portends similar savings for other areas of the farm that may follow suit, as well as potentially helping small farmers adopt similar technology and savings.

The A-Team honored

The 10-member SAES Curriculum Committee earned notice at the SAES Awards Banquet, winning the school's Collaboration Award for its singularly-focused work on the school's evolving curricula. The honorees are **Drs. Marcus Comer, Doris Fultz, Benjamin Gray, Donald McDowell, Valerie McMillan, Shirley McNeill, Geraldine Ray, Manuel Reyes, M.R. Reddy and Willie Willis**. As a team, the committee spent untold hours examining new courses and revising existing ones; and reviewing course offerings and how courses are sequenced. Members also made sure that science and technology aspects were integrated throughout all forms of SAES curricula, and took measures to ensure that students would be trained in problem solving and teamwork.

"The sharing of resources and intellect will enable us to increase the value, scope and significance of our work," Dean Alton Thompson said, in honoring the team.

Accomplishments of the advisor of the year touted

Dr. Valerie Jarvis McMillan, the 2007 Academic Advisor of the Year, from the Department of Family and Consumer Sciences, wins accolades for her ability to challenge and motivate her students and for devising a record-keeping system to keep up with their growing numbers. The work she does with students is also reflected in helping develop the Child Development and Family Studies programs. Students and FCS Chairperson Dr. Gladys Shelton say that McMillan is accessible, patient and is a calming influence on students.

McMillan has an open door and is a willing listener, but insists on developing critical thinking skills in her students.

"Because students are young, they leave their academic progression in the hands of their advisor," McMillan says. "They come to you and say, 'what am I supposed to do?' I reverse that and say, 'What is it that you want to do and achieve? My role is to help facilitate and guide you, not to do it for you.' I help them understand that this is a dual responsibility."



Dr. McMillan

Although McMillan celebrates as her students receive their diplomas and walk across the graduation stage, the real milestones for her are their employment and confidence in their careers.

"When I can see students really get interested and excited and see themselves become a professional and not just 'getting a degree'; when they start to see that 'I can do something with this, when I get done,' that's rewarding," McMillan says. "We cannot afford to have our students going into this world unprepared. They have to be better than good. They have to be excellent."

on the *move*

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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7,000 copies of this public document
were printed on recycled paper at
a cost of \$879.14 or \$0.13 per copy.



Distributed in furtherance of the acts of Congress of
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To register, call or e-mail Andrea Brooks: 336.334.7956, albrooks@ncat.edu

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