

## **2008 High School Research Apprenticeship Program (RAP)**

Twenty high school students from across the state were selected to participate in the **Research Apprenticeship Program**, geared towards juniors and seniors from June 22 through July 18, 2008, in the School of Agriculture and Environmental Sciences (SAES), at North Carolina A&T State University. This four-week residential program is designed for students to explore career opportunities in agriculture science and to develop an understanding of available career choices in our nation's food and production and delivery system. Through the program, the students:

- gained first-hand experience in research conducted under the direction of the SAES research scientists
- conducted research projects ranging from landscape architecture, pesticide studies, biological engineering, biotechnology, horticulture and animal science to air quality, food and nutrition, fashion merchandising and design and international trade;
- gained exposure to a number of structured activities including the following: field trips, workshops and laboratory demonstrations, and instruction in computer applications, technical and scientific writing and public speaking.

The students received a comprehensive overview of how each department in the School of Agriculture and Environmental Sciences operates. They became familiar with academic programs and career opportunities in the food, agricultural, environmental, family and consumer sciences and were exposed to research techniques used in scientific research studies in the areas which they were assigned. Students selected mini-projects conducted by research scientists on various technical and scientific/research based topics in the food, agricultural, environmental, family and consumer sciences. As a result of this exposure, the students developed mentor relationships with the research scientists.

The students traveled and networked with private sector business leaders, state and federal government officials and consumers who contributed valuable career information and showcased new ideas in agriculture.

To assist in adjusting to campus life and to network with university faculty, staff, administrators, alumni and upperclassmen, students participated in a variety of extracurricular activities and seminars sponsored by the SAES and the university. SAES undergraduate and graduate students served as peer advisors in which they provided pertinent information on major program offerings, admission procedures, financial aid and housing options. Some of these peer advisors were former RAP students.

**“Let’s Talk”** a program featuring poster presentations by the students in the Research Apprenticeship Program provided an opportunity for the students to talk about their summer research experiences. During the poster presentations, students answered questions and explained their research under the direction of SAES research scientists to

interested parents, relatives, administrators, faculty, staff and students. The student's research topics by departments were as follows.

### **Agribusiness, Applied Economics and Agriscience Education Department**

#### ***“International Agribusiness Marketing”***

Maya Hayes, Apprentice  
Dr. Osei-Agyeman Yeboah, Research Scientist  
S. Janine Parker Graduate Research Assistant

#### ***“Small-to-Medium Scale Producers’ Attitudes towards Alternative Agriculture”***

Brittany Jones, Apprentice  
Dr. Kenrett Jefferson-Moore, Research Scientist

#### ***“Demand for Food in the US – The Case for Coffee”***

Koré Carpenter, Apprentice  
Dr. Anthony Yeboah, Research Scientist  
John Paul Owens, Research Assistant

#### ***“The Importance of Farm Safety Practices for Youth”***

Austin Sumner, Apprentice  
Dr. Paula E. Faulkner, Research Scientist

#### ***“Introduction to the Research Process – Review Grant Proposal”***

Jamene Gardner, Apprentice  
Dr. Chastity Warren-English, Research Scientist

### **Animal Sciences Department**

#### ***“Comparison of Growth Curve for Pigs Raised in Indoor and Outdoor”***

Derick Stinkchomb II  
Dr. Sang Oh, Research Scientist  
Treasure White, Research Assistant

#### ***“Evaluation of inserted repetitive sequence in Caprine and Human DNA”***

Gregory Day Apprentice  
Dr. Mulumebet Worku, Research Scientist  
Hamid Ismael, Research Assistant

#### ***“Assessing the presence and drug resistance of Campylobacter and Salmonella in commercial chickens”***

Lillian Johnaon, Apprentice

Dr. Willie Sillis, Research Scientist  
Ms. Murray and Mr. Hook, Research Assistant

***“Educational needs for North Carolina’s Non-Professional Equine owners”***

Brandon Robinson, Apprentice  
Dr. Rusty Miller, Research Scientist  
Jessica, Research Assistant

***“The effect of shiitake Mushroom and it’s effects on lowering cholesterol on older men”***

Amber Lassiter, Apprentice  
Dr. Hanner, Research Scientist  
Mr. Hurley, Research Assistant

Joy McNeill, Apprentice  
Dr. Allen

**Family and Consumer Sciences Department**

***”Sensory quality and consumer acceptability of ice cream fortified with fish oil”***

Ali Awod, Apprentice  
Dr. Salam Ibrahim, Research Scientist  
Dr. Chyer Kim, Research Assistant

***“Hands on observation-participation activities and experiences in the classroom”***

Cierra Wall, Apprentice  
Dr. Valerie McMillan, Research Scientist  
Angela Comer, Research Assistant

***“Evaluation of consumer acceptance and sensory characteristics of ground beef patties fortified with an alga as a source for lung chain polyunsaturated fatty acid”***

Leslie Egeonu, Apprentice  
Dr. Salam Ibrahim, Research Scientist  
Dr. Chyer Kim, Research Assistant

***“Presence of Enterobacter sakazakii in follow-on formula”***

Desmond Keith, Apprentice  
Dr. Salam Ibrahim, Research Scientist  
Dr. Chyer Kim, Research Assistant

***In vitro antimicrobial activity of select plant essential oils”***

Jessica M. Wooten, Apprentice  
Dr. I. Goktepe, Research Scientist  
Ms. Bonita Hardy, Research Assistant

Ernest Flemings, Apprentice  
Dr. Amenda

**Natural Resources and Environmental Design Department**

***“Plant Tissue Culture”***

DeMarcus S. Artis, Apprentice  
Dr. Guochen Yang, Research Scientist  
Ms. Cindy Lu, Research Assistant

***“Various soil properties used to assess soil quality”***

Austin Smith, Apprentice  
Dr. Charles Raczkowski, Research Scientist

***“Use of Hydroponics to Evaluate Visual Symptoms of Mineral Nutrient Deficiencies in Zinnia elegans”***

Geri A Frazier, Apprentice  
Dr. M.R. Reddy, Research Scientist

**Student Impacts**

This program had tremendous impact on the students’ career choices, social and economic well-being. Based on the following testimonies of the students, this program will continue to serve as a valuable opportunity for students throughout North Carolina and other states:

*“I have enjoyed my time within the RAP program. I have learned so much about A&T and the school of Agriculture.”*

*“I had a feeling that this opportunity would be somewhat beneficial to me. Little did I know of the adventures I would encounter, the friendships I would make, the mentors I would meet and the new things I would learn about myself; this experience truly changed my life.”*

*“I was nervous at first about coming but once I arrived I had a blast from beginning to end. I loved the program and learned so much about Agriculture.”*

*“My stay here on NC A&T campus has been the direct opposite of what I thought it would be. So far, this program has been a great experience full of hands on activities. This was a great experience and a field that I will consider in the future.”*

*“Attending the Research Apprenticeship Program (RAP) was definitely a memorable experience. I had the opportunity to work with warm-hearted people. It was a pleasure coming to my research station everyday. At first I did not understand the importance of soil or why it was a natural resource, but after a couple of trips to various farms and numerous experiments, I have a new appreciation for soil.”*

### **Conclusions**

Nineteen students participated in the Research Apprenticeship Program. Of the twenty students, two have entered the School of Agriculture and Environmental Sciences as a freshman in the fall of 2008, one enrolled within the university, and four will definitely attend in the fall of 2009 upon graduating from high school, eight expressed interest in attending and five were undecided.