

## **NTP provides lab and training to N.C. A&T University**

*By Celso Furtado*

The National Toxicology Program (NTP) [Pathology Support Group](#) is providing state-of-the-art laboratory facilities and training to student researchers from the North Carolina Agricultural and Technical State University (N.C. A&T). Participants are learning the latest techniques for collecting, processing, sectioning, and staining biological samples.

“They had been doing everything by hand and storing samples in the freezer, which reduced the quality of the samples for analysis,” said Natasha Clayton, supervisor of the laboratory and coordinator for the project.

### **Weekly trips to the NIEHS lab**

Each Friday, Sherrell Pettiford, a senior majoring in laboratory animal science, and Dawn Conklin, lab manager at the university, travel from Greensboro to Research Triangle Park, where they work with Clayton to learn manual and automated pathology procedures, including histology, clinical chemistry, and hematology.

This training opportunity grew out of a project between Darlene Dixon, D.V.M., Ph.D., head of the NTP [Molecular Pathogenesis Group](#), and Jenora Waterman, Ph.D., associate professor of functional genomics in the N.C. A&T’s [Department of Animal Sciences](#) (<http://www.ncat.edu/academics/schools-colleges1/saes/academics/anisci/index.html>). The project requires histopathology tissue evaluation, and Clayton and Ronald Herbert, D.V.M., Ph.D., head of the NTP Pathology Support Group, quickly recognized the value of training Pettiford and Conklin in the preparation of samples using NIEHS laboratory processing equipment, which is not available at the university.

Pettiford’s study includes 20 pigs, half of which were housed indoors and half outdoors. She is researching the respiratory effects of the housing environment by examining samples of the trachea, which is the windpipe that connects the pharynx and larynx to the lungs.

### **A visible difference**

“Friday after Friday, Ms. Pettiford and Ms. Conklin are able to compare the results of manual and automated processing as they go through each step and see the difference,” said Clayton. “At the same time, we train them to understand what they are doing and why they are doing it. We try to show the outcome, the end product, or the quality of the slide that is so important for diagnostic procedures.”

“I would like to thank NIEHS and NTP for all their time, because this is a time consuming process,” said Conklin. “This really is a high quality process that we can take to our labs, to show the techniques to other researchers. It’s not going to stay with just this lab.”

Supporting N.C. A&T is in-line with the NIEHS strategic plan goal of inspiring a diverse and well-trained cadre of scientists in the field of environmental health sciences.

(Celso Furtado is a special volunteer with the Office of Communications and Public Liaison)



*Pettiford’s project, “Swine Production Style Influences Histological Morphology, Proteomic Dynamics, and Superoxide Dismutase Expression of the Tracheal Epithelium,” was selected as one of three winners at the N.C. A&T Fall 2014 Undergraduate Research symposium (<http://www.ncat.edu/research/students/symposium-2014-fall.html#sherrell>). (Photo courtesy of Steve McCaw)*



*Conklin, who is a research technician at the university, will use her training on procedures and equipment to teach other students in the program. (Photo courtesy of Steve McCaw)*



*Clayton, left, demonstrates analysis of slides using the multiple viewer microscope in the Pathology Support Group Core Laboratory. (Photo courtesy of Steve McCaw)*

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