

# Students explore the DNA of research in Summerville labs

BY ANDY OWENS

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The most difficult thing for Daetra Brunson to figure out during her internship in the ArborGen biotech labs was the gel.

## EXECUTIVE SUMMARY

Biotech company ArborGen opens new avenues for Claffin University students.

Brunson, a Claffin University junior majoring in biology, spent more than two months this summer in Ron Kothera's regulatory science lab in

Summerville. Part of her work involved the genetic fingerprinting of trees by extracting DNA and applying it to glass slides using a specialized gel.

To analyze a tree's genetic makeup, she had to gently peel the gel off the glass slide without breaking the membrane, which isn't easy. The gel involves one of the details critical to the work at the Summerville company, and because it's being used for actual research, the urgency goes beyond what she can learn in the classroom.

Brunson, who plans to go into dentistry, says that biomedical and biotechnological research are now options she's also considering.



Daetra Brunson works in the regulatory lab at ArborGen in Summerville. The Claffin University junior has been working as an intern at the research lab. (Photo/Leslie Burden)

"It's opened up an avenue for me," Brunson said.

This is the second year that ArborGen has conducted an internship with Claffin. The science being done by the interns will be used either in processes or products that ArborGen is developing or for future biotech research. The experience

students gain at ArborGen is different from that of the classroom, said lab supervisor LaShaun Swinton, because it's nearly impossible to replicate the hands-on laboratory experience from which the outcome has implications beyond an assignment.

"College labs are nothing like this,"

Swinton said, as nearby beakers of liquids swished around in one of the pine transformation lab's experiments. "When you're actually here running your own experiments, you have to be more engaged."

Swinton, who is a graduate of Claffin herself and has worked at ArborGen for nine years, did not originally plan to be a tree researcher when she was attending Claffin University in Orangeburg.

"Absolutely not. I got a biology degree, and I thought I was going into physical therapy school," Swinton said. "Like many people, I guess you don't really realize this kind of stuff is here in South Carolina."

ArborGen, one of the world's largest providers of biotechnology seedling products and genetically enhanced tree seedlings, does research to improve growth rates, tree yields, stress and environmental tolerance, uniformity, wood quality and efficiency of trees.

"ArborGen is part of a growing biotech community in South Carolina, as you probably well know, but we've been here for a decade, and the roots of the company long before that, with a lot of the science coming out of MeadWestvaco," said Nancy Hood, director of public affairs and sustainability at ArborGen.

Hood said that of the 100 employees in ArborGen's office in Summerville, 15



*Yakia Voltz, a rising senior majoring in biochemistry at Claflin University, worked in the pine transformation lab at ArborGen this summer. (Photo/Leslie Burden)*

of those have doctorates, reflecting the highly technical field of biotechnology in general and forestry research in particular. That's why the company wants to expose more students to the research side of the industry.

"It's a high percentage of really academic and science-oriented folks, so to support that kind of industry, you've clearly got to have people coming up who can work in the field. So it's been a very important priority of our CEO that we spend the time to make sure that we're involved in that academic community in South Carolina and helping to develop students coming up," Hood said.

ArborGen previously had an agreement with Clemson University, and it was there that the company learned about Claflin's well-respected biotech program, Hood said. The deans at Claflin and scientists at ArborGen met, talked and worked out the program, she said.

"Our scientists love this," Hood said. "We do a lab day for them (students) where they just come in and look around and see what it's all about.

Both of the students who worked at ArborGen this summer came through Claflin's affiliation with the National Nuclear Security Administration, a federal agency that works on national defense, environmental, energy, security and non-proliferation efforts.

Yakia Voltz, a rising senior majoring in biochemistry at Claflin, plans to go to medical school after college to become an anesthesiologist.

"It's been a great learning experience," Voltz said. "When I came here, they just started teaching me."

Voltz has been working in Swinton's laboratory to isolate embryo heads for loblolly pines. She said the lab techniques she's been exposed to during her internship went beyond what she learned in

school.

"It's just given me a broader experience with that," Voltz said.

Hood said that ArborGen would be glad to talk with other universities about internships and academic partnerships, though Claflin University is currently the only school that has an active internship program with the company. Hood said that if a student at another university is really interested in doing an internship, he or she should talk to the dean or academic adviser who handles internships and suggest a partnership between the school and ArborGen.

"They're more than welcome to call us, and we'd certainly entertain setting something up for some of the other schools," she said. "You will inspire young people who already have some interest in science to understand that forestry is one place that they can apply that interest."

Kothera said having Claflin University students get their hands into the lab work helps the scientists simply get work done, and it teaches particular skills that they use every day in the lab.

"All of this occurred at a very opportune time because we had this project that we wanted to get off the ground," Kothera said. "It's a good opportunity to teach someone skills that we use in here."

Brunson said learning to insert new genes into new plants was one of the most interesting techniques she learned this summer, mostly because it allows the plants to resist cold, extends their longevity, and makes them stronger and more valuable. Both Brunson and Voltz said the environmental aspects of ArborGen's work appealed to them and lured them into the internship program.

"It's just something that we need," Brunson said. ■