

# **CESTA Students Summer of Innovation**

by Tiara Bullock

The Central State University John W. Garland College of Engineering, Science, Technology, and Agriculture (JWGCESTA) interns are full of passion and creativity. On October 19, 2022, twenty students from JWGCESTA presented their summer research to Central State faculty and staff.

Between May and August of 2022, the students participated in summer internships with various companies including Montgomery County Environmental Services, Land-Grant Research Program, The Dorothy Jeanius Steam Camp of Chicago, Oregon State University, Cornell University, and many others. Through the presentations, the students demonstrated how passion-filled the field of science can be and the creativity needed to dream big and accomplish their academic goals.

Mayaa Greene, a junior, majoring in Exercise Science minoring in Nutrition, interned with Cornell University as a Food Science Summer Scholar. Greene is adding diversity to a field where roughly only five percent of jobs are held by people of color and roughly only one percent are held by black women. "I feel like agriculture as a whole is second nature to black people," said Greene. "Because African-American descendants were for so long the backbone and foundation for a lot of agricultural businesses to boom."

According to National Geographic, the term "plantation" arose as settlements in the southern United States, originally linked with colonial expansion, came to revolve around the production of agriculture. Slaves were used in innovating the land which according to Greene supports the Central State slogan, Innovation is in our DNA!

Where food is needed, water is also needed. This is where Thando Mowasha's, internship comes into play. Mowasha is a junior majoring in Environmental Engineering minoring in Water Resource Management. Mowasha spent his summer with interned with Oregon State University scientist researching wastewater-based epidemiology, which is defined as the process of quantification of chemical and biological compounds and tracking patterns. The research took place during the 2022 World Athletes Championships and focused on testing athletes' water for performance enhancing drugs and pathogens.

Mowasha, along with professional scientists and engineers also collected samples of wastewater and other liquids left by those who attended the event and analyzed patterns of intake. This research is vital in keeping good liquids and pathogens within people's bodies and bad ones out of athletes bodies as well as out of local water supply systems.

This encourages better performance for athletes without added enhancers and helps ensure our waterways are safe. "I want to work anywhere I can to ensure that people have clean drinking water, maybe Detroit because of the lead problem or Florida because of the hurricane that just hit. Water is the most important resource on the planet," said Mowasha.

Where there are people needed to analyze food and water, there are people needed to help us know how best to utilize these necessities in the human body. Andrew Martin Caldwell Jr., a CSU grad student who majored in Exercise Science, worked with Dr. Kathleen Carter on a project titled, "Individualized Worksite Wellness Program." Caldwell surveyed faculty at Central State University on diet and exercise, analyzing their diet to ensure their nutrition and lifestyle met positive standards. After working with select individuals, to create individualized nutrition and fitness programs, the project demonstrated significant improvements in body fat composition as well as strength and endurance.

Caldwell, who aims to be among the top of his class, plans to pursue a master's in Nutrition and Business. "Ultimately, I want to develop my own training facility," said Caldwell.

Students such as senior Biology major, Jayla Marvin stepped out of their comfort zones and delved deeper into fields they previously did not know much about. Marvin interned in the field of entomology and learned that bees, previously a source of irritation to her, are vital to humans' food production. Her research consisted of analyzing the molecular level of RNA in its relation to bees' behavior.

Although the internship advanced her academic career within the field and assisted in her strides of obtaining a master's in Entomology, it also increased her understanding of bees. "Just being a human, knowing everyone swats at bees, I wanted to really understand the background of bees and know why they can be so aggressive especially during the day," said Marvin. "The more I worked with them, the more I learned to understand them. Bees are a vital part of pollination, and the research I helped to conduct will aid in pollinator health for generations."

The John W. Garland College of Engineering, Science, Technology, and Agriculture students at Central State University are pushing the bounds of their academic achievements through their passion to diversify the field of Agriculture. In so doing, they are inspiring other students of color.

They use their creativity, knowledge, and passion to forge new solutions to current problems and their projects help make the entire country and the world a better place to live and work.