Summer fellowship helps to boost Kansas agriculture, organizers say

Twenty students explore opportunities for research, graduate school

By Pat Melgares, K-State Research and Extension news service

MANHATTAN, Kan. – On a charred portion of the Kansas prairie, aspiring research scientist Giovanni Moore is on the lookout for a remarkable beetle that protects humans and livestock from parasites and pathogens by feeding on or removing animal feces.

 Appropriately named, the dung beetle is considered by biologists an important part of a pasture ecosystem, feeding on or storing feces to provide housing and food for their young. In doing so, they are transporting nutrients to the subsoil, which improves nutrient cycling, soil structure and forage growth.

For farmers, the benefits to their land and livestock herds also are real: reduced parasite pressure, better aeration, reduced compaction, reduced runoff after rain events and decreased ammonia levels.

Even so, it may seem a bit odd that Moore – a senior and animal science major at Prairie View (Texas) A&M University – is spending her summer tracking the small beetle on a Kansas pasture.

The common thread is Kansas State University, which each year since 2006 has offered a summer research fellows program for students from 1890 and 1994 U.S. land-grant institutions, Historically Black Colleges and Universities, and Hispanic Serving Institutions.
Moore is one of 20 undergraduate students selected to participate this summer. She’s paired with K-State entomology assistant professor Cassandra Olds to compare the effects of spring, summer and fall prescribed burning on insect populations.

“The information I’m collecting,” she said, “is for the betterment of the livestock ecosystem. Every living thing – big or small – plays a significant role in maintaining a balanced ecosystem. Dung beetles are a part of this category of beings that help to maintain and preserve nature.”

**A push for graduate school**

Zelia Wiley, director of the K-State College of Agriculture’s Diversity Programs Office, said the K-State Research and Extension Summer Research Fellows Program is designed to expose college students to opportunities available to them in graduate school.

Students work 35 hours per week, and receive a stipend to cover housing, meals, transportation and some personal expenses. In 17 years, 115 students have participated; 96% of those have completed the summer fellowship and nearly half (43% have used it as a springboard to graduate school.

“What we’ve seen is that many of these students have never been exposed to graduate school, but when they’re here, many show such a great passion to learn and teach,” Wiley said. “Those two traits alone speak to the success of our efforts.”

Lonnie Hobbs, who was hired in July as an assistant professor in K-State’s Department of Agricultural Economics, participated in the Summer Research Fellows Program in 2017. He completed a doctoral degree at K-State this summer.

“Being in the summer program positively changed the course of my life,” he said, “and has helped me to get on the path I am on now.”

**Helping black farmers, increasing youth’s interest in agriculture**

McKenzie Scott, a junior studying animal science at Florida A&M University in Tallahassee, spent her time at K-State this summer developing a strategic plan to identify ways to make resources available to minority farmers in Kansas.

In partnership with the Kansas Black Farmers Association, Scott conducted a survey on behalf of the Diversity Programs Office aimed at improving outreach and education.

“This is important because we can determine the challenges that KBFA members are facing in their operations,” said Scott, who hopes to eventually attend veterinary school. “The strategic plan that we will develop will provide them with the resources and education they’ll need to flourish (in agriculture).”

Keshauna Davis, a senior majoring in agribusiness at South Carolina State University in Orangeburg, helped to lead a project to educate underserved and urban youth about career opportunities in agriculture.

“Teaching youth about agriculture is important because they need to know where their food, their accessories and their belongings come from,” Davis said. “And, the world needs more
people to carry on the job of feeding everyone because the population is getting larger each year.”

**A boost for agriculture**

Students are also involved in projects using artificial intelligence and drones to manage pests in farm crops; defining the metabolic changes that facilitate efficient muscle growth in production animals; exploring the sensitivity of pigweed populations to various herbicides; and nearly a dozen others.

“The summer research fellows program continues to validate that K-State’s research has an impact on the rest of the world,” Wiley said. “What happens here each summer in this program is an indication that we are continuing to contribute to society; many of the projects are examples of how the university’s departments are keeping up with the times (and) conducting research that is relevant to Kansans in urban and rural areas.”

Moore, for one, believes she’ll carry on that commitment in the rest of her schooling and professional career.

“Being a part of this program has been a major component to furthering my education, and has opened doors to new opportunities,” she said, noting she’s learned how to extract DNA from living organisms, identify various arthropod species and more. “I’ve had the chance to sit and talk to people and companies that make a difference in our world.”

More information about the program is available online.