TEACHING THE TECHNOLOGY TO FEED THE WORLD

Alumnus T.J. Bradford immerses students in precision agriculture

By Sarah Buckleitner

IN DR. T.J. BRADFORD'S OPINION, TO teach precision agriculture you have to let students get their hands dirty.

Bradford, an instructor in the Department of Plant and Soil Sciences, earned his master's degree in agronomy at Mississippi State University, and went on to earn his doctoral degree in agricultural education. He now teaches the precision agriculture course and lab, where he emphasizes the importance of hands-on learning for precision agriculture students.

Dr. Scott Willard, associate dean of the College of Agriculture and Life Science, spoke to Bradford's skillfulness as an instructor.

"Dr. Bradford has students coming to precision agriculture from many different backgrounds, but with his unique blend of agronomy and agricultural education he not only has technical expertise, but can approach teaching from the perspective of a trained educator," Willard stated.

Bradford has taken a new approach to teaching theory-heavy subjects.

"The goal of my teaching is to pair experiential learning with practical experiences. A lot of students are looking for technology to bring back to the farm, and without practical experience they may know a lot of theory but be unable to apply that theory in a professional setting," Bradford stated.

Bradford grew up on a farm in Isola, Mississippi, a small town in Humphreys county. There his family grows peas, butter beans, squash, and watermelons, among other produce. His early experience with agriculture led him to pursue the topic in his major at Mississippi State University in 2008.

"As soon as I stepped on campus, I fell in love. The faculty members are great and there's an atmosphere of teamwork throughout the department," Bradford said.

His major advisor, Dr. Barry Stewart, made a particular impact on him.

"Dr. Stewart made connections for me, helped me build my course schedule, and ensured that my courses always reflected my future goals. He was pivotal in my career," Bradford explained.

Dr. William Kingery, another professor in the plant and soil sciences department, also helped influence Bradford's career.

"Dr. Kingery made me think. When I first came to school, I just wanted to know the answers. But he forced me to step back and learn how to solve problems," Bradford said.

Bradford had initially planned to be a soil scientist, but his experience working with the U.S. Department of Agriculture made him realize that while he was passionate about plants, he preferred to work with people.

"I got lonely spending my days in the field or on the computer. While I loved the work, I knew that it wasn't the career for me. So for my doctoral degree, I combined my passions by studying agricultural education."

His doctoral work, which centered on gathering information about how students best learn agronomy only reinforced his inclination to teach.

"I worked with three different high schools, and divided the students in half. Half of the students just received theoretical education on agriculture. The other half received theory in conjunction with a high tunnel, where they could play out the theories they learned in the classroom," Bradford explained.

The results inspired him.

"The students who had the high tunnel got really into it. They started a garden club when the class was over, and some even came to Mississippi State for an agronomy summer camp. Even though they didn't necessarily want to go into agriculture, what they learned by combining theory with hands-on application resonated with them."

Bradford applies that experience to the teaching he does now.

"When teaching, I try to emphasize how the theory we learn fits into the real world through practical assignments. In the new precision agriculture lab, students are exposed to all the programs they will need to be able to use in a professional setting," Bradford explained.

With growing populations and shrinking arable land mass, Bradford believes that educating students about the power of precision agriculture has never been more important.

"The application of precision agriculture is astounding. Right now we're striving to feed the world—to feed nine billion people by 2050—and I believe that precision agriculture is the key to reaching that goal. It enables us to do more with less; the sheer possibilities make me giddy," Bradford concluded.

MSU instructor T.J. Bradford (left) works with senior agronomy major John Clay Lyles of Lawrence in the College of Agriculture and Life Sciences' new Precision Agriculture Laboratory in Dorman Hall. (Photo by David Ammon)