

## TIFFANNA ROSS

PhD STUDENT, BOTANY AND PLANT PATHOLOGY

**The student**

Tiffanna Ross is honest: Agriculture wasn't her first choice. The resident of Tuschen, Essequibo Islands-West Demerara, Guyana intended to study medicine at the University of Guyana, but slots for admission to the biology program were full. So Ross signed on for agriculture instead, planning to transfer after one semester. "But I developed a liking for agriculture and it worked out for the best," she says. After earning her bachelor's degree, she worked for the National Agricultural Research and Extension Institute in her home country. Both her university and NAREI collaborated with the University of Arkansas at Pine Bluff, and as a top graduate in her class, Ross was selected for a master's-level research assistantship at UAPB. While working toward an MS in agricultural regulations, Ross applied to U.S. PhD programs. "I wanted a place that saw plant sciences as being important," she says. "I wasn't sure what research area I wanted to focus on, so I came to the PULSe [Purdue University Interdisciplinary Life Science] program." Ross completed lab rotations during the 2018 academic year without finding her suitable combination of applied plant science and guaranteed funding. But an opening in the lab of Darcy Telenko, assistant professor of botany and plant pathology, sparked her interest. "I didn't have a strong background in plant pathology, but she took a chance on me," Ross says. "I think I found a well-suited lab and a great mentor." She transferred from the PULSe program to the botany and plant pathology department and started work in the Telenko lab in May 2019.

*"There's a lot of unknowns about the fungal-pathosystem I work with. Each day when I come to lab, I try to do work that will move us forward in uncovering the unknowns. The more we know, the closer we are to dealing with this fungus."*

**The research**

Ross focuses on tar spot, a disease of corn caused by an emerging fungal agent, *Phyllachora maydis*. The fungus is common to Central America, South America and the Caribbean, where it causes severe loss only in tandem with another fungus, *Monographella maydis*, creating a tar spot complex. *P. maydis* alone was first noted in the U.S. in Indiana and Illinois in 2015. Because the tar spot complex doesn't occur in the U.S., scientists were caught off guard by *P. maydis*' solo impact on corn in the Midwest in 2018. In five years, tar spot disease has spread from two states to nine, with a corresponding increase in yield damage. Ross studies when and how *P. maydis* came to the U.S. and how it spread from state to state. She also specifically researches its population structure (genetic diversity), economic impact and control in Indiana.

**Opportunities**

Ross says the U.S. has given her opportunities that would be unavailable at home. "I come from a country where resources for conducting research are limited, where you struggle a lot to accomplish your objectives," she explains. "When you come to where it's abundant, you are motivated, and you appreciate it. You develop the focus to accomplish the task ahead." Ross has worked as a teaching assistant for two courses and published two papers. She was awarded the American Phytopathological Society Foundation graduate student travel award this year and presented two posters. She is active in several mentoring programs at Purdue and shares her research through Purdue's Caribbean Scholars Association.

**Future plans**

Ross anticipates completing her PhD by or before May 2023. She hopes her career will include research, mentoring, and impact on corn development or pathology. Away from the lab, Ross tends to her son, born in June, and enjoys literature, writing manuscripts, television series, contemporary dance and worship singing.