

GRADUATE AG RESEARCH SPOTLIGHT



Stephen Russell

"The body of knowledge encompassing fungi is one that few people know about. The prospect of discovery is exciting to me. Every time you go out in the field, there's a chance you'll find a species that no one has ever found before."

Stephen Russell, Ph.D. student, Botany & Plant Pathology

THE STUDENT: Mycology, the study of fungi, wasn't on Stephen Russell's radar when he first came to Purdue from Marion, Ind. as an undergraduate in political science and communications. He started cultivating mushrooms simply as a fun diversion. After graduating, he worked in politics and earned a master's degree in public affairs at Indiana University. But along with that M.S., Russell earned one in environmental science to enhance his hobby. He founded the Hoosier Mushroom Society (hoosiermushrooms.org) in 2009 and ran a small mushroom-related business in Nashville, Ind., before managing logistics for a large corporation. His five or so years in the corporate world gave him valuable time to chart his future, he says. In fall 2016 his avocation led Russell back to Purdue and the lab of mycologist M. Catherine Aime, professor of botany and plant pathology. "My advisor helps to guide the research, but I came to graduate school with a clear concept of what I wanted to accomplish," he says. His hobby is now his serious academic pursuit.

THE RESEARCH: Russell's research focuses on surveying Indiana's estimated 3,000-plus macrofungi and determining the genetics and phenology of each species. "This is foundational knowledge within mycology," he explains. He also is collecting soil samples from across the state and using next-gen sequencing to look at the fungi in each. Finding actual fruiting bodies is difficult,



as mushrooms are ephemeral; soil sampling allows him to determine if a fungus exists in the sample without seeing the fruit.

LEADING FORAYS: "I like teaching people about mushrooms," Russell says. Through the society, he leads forays into Indiana state parks to help others collect and identify wild mushrooms. He worked with the

Indiana Department of Health and Purdue Extension to develop two certification courses for people selling morels and wild edible mushrooms into the food supply (although he estimates half his students took the courses for their own education). He also has leadership roles in the North American Mycological Association, the Mycological Society of America, and the North American Mycoflora Project.

RESOURCES AT HAND: Purdue's herbarium, one of the world's largest repositories for rust fungi, is an excellent asset, Russell says. The size of Aime's lab group and diversity of projects are also important. "Everyone in our lab works with fungi in some way," he explains. Still early in his doctoral program, Russell "purposefully" has not thought about next steps, although academia is somewhere in his future if not directly after graduate school. In his spare time, he enjoys web development and, you guessed it, collecting mushrooms: "If I have a free afternoon, I'll probably go out to the woods."