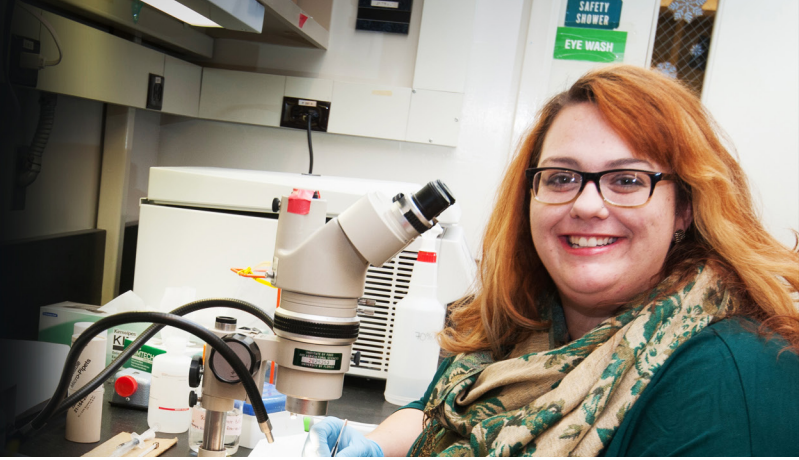


# GRADUATE AG RESEARCH SPOTLIGHT



## Brittany F. Peterson

*"In the other universities I looked at, you are admitted directly to one department, working on one project. Because of the PULSe program, I got to take my first year to explore the research that was being done at Purdue."*

*Brittany F. Peterson, Ph.D. candidate, Department of Entomology*

**THE STUDENT:** Science was always a strong suit for Brittany Peterson, an Air Force brat who spent her high school years in a suburb of St. Louis. "I was fascinated by opportunities to make discoveries," she says. Peterson earned a bachelor's in microbiology at Western Illinois University as a likely precursor to medical school. She hadn't considered graduate school until her thesis advisor, an ichthyologist, encouraged her to think instead about a career in research. While working on her master's in molecular biology, another faculty member called her attention to the Purdue University Interdisciplinary Life Science Program (PULSe), which financially supports Ph.D. students during a first year of rotations with faculty across 27 academic departments. "I knew I wanted to study bacterial symbiosis — I wanted to talk about the 'good guys' — but I didn't care so much what system or what department I did that in," Peterson says. "The opportunity to do rotations and explore varied research projects, without having to commit to a specific area, let me experience different departments." After arriving at Purdue in fall 2011 she completed all four of her rotations in Agriculture, three in different areas of Entomology: "After eight weeks, I knew this department was home."

**THE RESEARCH:** "My research is about understanding how organisms interact with one another — how they have evolved to both benefit from a relationship," Peterson says. Under the guidance of Professor Michael E. Scharf, she focuses on insect-microbe

symbiosis, specifically the interactions between the eastern subterranean termite, *Reticulitermes flavipes*, and its 4,000-plus symbionts. The termite is a good study subject because of the myriad of microorganisms that live in its gut, Peterson explains. Her research contributes to understanding how prokaryotic symbionts in its gut ecosystem impact the termite's digestion and immunity.

**THE PROTÉGÉ:** Dr. Scharf's lab was Peterson's final PULSe rotation. "Once I realized how complex the [termite's] system was, I was fascinated by it," she says. "I had to know more, and a project took root." She recalls her advisor sitting down with her early on to discuss both her project goals and career goals. "Dr. Scharf is the epitome of a mentor," she says. "In addition to guiding me to do really interesting research, he saw me as a fellow scientist. His investment in me as a professional has led to success."

**FUTURE MENTOR:** Peterson, who anticipates completing her degree in May 2016, is drawn to the opportunities for hands-on mentoring with students that academia offers. She is also passionate about helping further women in STEM fields and works with the Women in Science program in the College of Science to facilitate the advancement of graduate women at Purdue. Outside of the lab, she enjoys exploring the nearby agronomy farm with her dog Taq, whom she rescued last fall from a Lafayette shelter and named, appropriately, after an enzyme.