

Postdoctoral USDA ARS participant continues his career development in poultry health research

By Jordan Stidham



Christopher Stephens learned about avian influenza virus (AIV) as a participant in U.S. Department of Agriculture Agricultural Research Service Research Participation Program.

Chicken has been consumed for thousands of years because of its high protein content and its nutritional vitamins and minerals. Maintaining the health of chickens and many other poultry species is critical to safeguarding a reliable food supply. Diseases are an ongoing concern for the poultry industry.

As an undergraduate, Christopher Stephens, Ph.D., decided to pursue a doctorate and career in poultry health research. He applied to and was accepted at the U.S. Department of Agriculture (USDA) Agricultural Research Service (ARS) Research Participation Program and expanded his research skills in the field of poultry health, specifically poultry virology.

The USDA ARS Research Participation Program provides opportunities for students, postgraduates, established scientists and faculty to participate in programs, projects and activities at ARS-designated facilities to help ARS solve agricultural problems of high national priority.

Stephens attended the University of Georgia where he obtained a bachelor's degree in 2009, master's degree in 2011 and a doctoral degree in 2015, all in the field of poultry science.

More recently, research microbiologist Erica Spackman, Ph.D., his mentor, encouraged him to continue his research and return to the same laboratory to begin his postdoctoral research.

During Stephens' experience as a participant at the U.S. National Poultry Research Center in Athens, Georgia, he focused on applied research topics pertaining to the avian influenza virus (AIV), more

commonly known as bird flu. His research projects have included studying the thermal inactivation of AIV in poultry litter and assessing the transmission of AIV from broiler breeders to eggshells, egg contents and embryos. Thermal inactivation refers to the time required at a specific temperature that renders the virus non-viable.

The data he helped create on thermal inactivation in poultry litter has been used by USDA's Animal and Plant Health Inspection Service to revise procedures to decontaminate poultry houses following AIV outbreaks. The new procedures are expected to help save money during future virus elimination procedures.

At the lab, Stephens helped explore and assess the risk of AIV spreading during composting processes. Composting is a natural process by which organic materials decompose. He collaborated with a group to evaluate different devices used to capture avian respiratory viruses in poultry houses. The results of these investigations are expected to make it easier and more efficient to collect samples and to more accurately determine if an area is safe for use after an AIV outbreak.

Throughout his time with USDA ARS, Stephens enjoyed the opportunity to research alongside world-class scientists. "I have learned a wealth of knowledge on poultry virology from my mentor and the other scientists here at the facility. I have also learned what it takes to have a successful research program," said Stephens.

Throughout his appointment, Stephens presented data to international audiences, was introduced to expert scientists in his field and was invited to be a guest lecturer at his alma mater.

"Become involved in as many projects as you can, so that you have the most well-rounded experience possible. Also, take every opportunity to present and network at scientific meetings," Stephens said as a recommendation to potential participants.

For Stephens, the next chapter in his life is to gain a career position in either research or diagnostics in poultry health. He hopes to mentor others in his field, much as he was mentored at the start of his career.

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