

Postdoctoral researcher investigated avian influenza virus

By Jordan Stidham



Christina Leyson learned the ins and outs of conducting high-quality research to improve animal and food health as a participant in U.S. Department of Agriculture Agricultural Research Service Research Participation Program.

Christina Leyson, Ph.D., waited for nearly two years before she was accepted into the U.S. Department of Agriculture (USDA) Agricultural Research Service (ARS) Research Participant Program.

“Many consider the Southeast Poultry Research Laboratory (SEPRL) as one of the leading research centers in my field, and so it made a lot of sense to apply to their postdoctoral program,” said Leyson.

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.

Leyson earned bachelors and master’s degrees in molecular biology and biotechnology from the University of the Philippines, Diliman.

In 2016, Leyson received a doctoral degree in infectious diseases from the University of Georgia, while also contributing to research efforts at the Poultry Diagnostic Research Center (PDRC) in Athens, Georgia. Postdoctoral researchers at PDRC told her about the USDA ARS Research Participation Program.

Leyson’s goal in applying to the program was to expand her skills and expertise to perform high-quality, independent research on viral diseases in avian species.

She started her doctoral program knowing that she wanted to conduct research on avian viruses, but she wasn't sure on which virus species to focus. She explained, "I ended up working with a chicken respiratory virus and absolutely fell in love with the research on avian viruses. It is really no surprise that I thoroughly enjoyed my research experience since Georgia is a top producer of poultry and has a large concentration of leading experts in avian diseases."

The Southeast Poultry Research Laboratory (SEPRL) primarily focuses on avian influenza which is considered to be one of the most important emerging diseases in poultry. The avian influenza virus (AIV) has the ability to change rapidly, which may lead to outbreaks in wild and domestic birds alike.

Under the mentorship of veterinary medical officer, Mary Pantin-Jackwood, Ph.D., Leyson studied how different strains of AIV cause disease in domestic species like chickens and wild species like mallards. One of the goals of Pantin-Jackwood's laboratory is to understand the factors that enable AIV to infect and cause disease in various avian species.

Leyson hopes the information generated from her research will aid in controlling avian influenza outbreaks.

Additionally, in the past five years, the development of new and innovative sequencing techniques has rapidly increased. SEPRL is pushing the envelope in applying next-generation sequencing techniques (NGS) to avian pathogens. This intersection of avian virus pathogenesis and NGS is a perfect marriage of Leyson's research skills and interest.

For Leyson, "It [researching at SEPRL] really fostered my imagination and expanded my horizons on what I can do as a researcher. I learned something new every day, not only from our wonderful faculty, but also from everybody that works in this field."

"I've thoroughly enjoyed my first year as a postdoctoral participant at SEPRL. There were days that were challenging, but I was comforted in the fact that I had incredibly supportive colleagues and that our research was relevant to animal health, not only in the U.S., but worldwide as well. Most of all, I received the satisfaction that the research we conducted in the laboratory contributed to animal health and to producing safe and affordable protein source," she said.

Her advice to anyone interested in participating in this research program is to "reflect on what you would like to get out of a research program and keep talking to folks from different fields in which you are interested, even if it is remotely. You can never predict what opportunities are out there."

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