

# Small Wild Birds and Rodents Unlikely Vectors for AIV Spread

The devastating avian influenza virus (AIV) outbreak in 2015 occurred despite the use of strict biosecurity controls in animal care facilities. This suggests that an alternative route or vector for the virus may have existed at the time, or may still exist today.

The Egg Industry Center funded co-principal investigators at Iowa State University, Dr. Kyoung-Jin Yoon, professor in Department of Veterinary Diagnostic and Production Animal Medicine and Dr. James Adelman, assistant professor in the Department of Natural Resource Ecology and Management, who have teams working hard to discover the virus's unknown transmission vectors.

The team's most recent AIV research project, which concluded earlier this year, aimed to determine whether small terrestrial wild birds (e.g., sparrows, starlings, and finches) or rodents can transmit avian influenza viruses, including H5N2, between traditional wildlife reservoirs (i.e., waterfowl, shorebirds) and commercial layer operations.

The project included sampling 554 small birds, such as songbirds and woodpeckers, as well as rodents found at four Iowa wetlands. Three wetlands were located within six miles of farms that were positive for Highly Pathogenic Avian Influenza (HPAI). Internal and external swabs were collected and tested during spring migration.

Researchers found that none of the swab samples tested positive for AIV. Blood samples also did not show any antibodies against influenza A virus, leading Yoon and his team to conclude that it is unlikely that small wild birds and rodents are major factors in the transmission and spread of AIV.

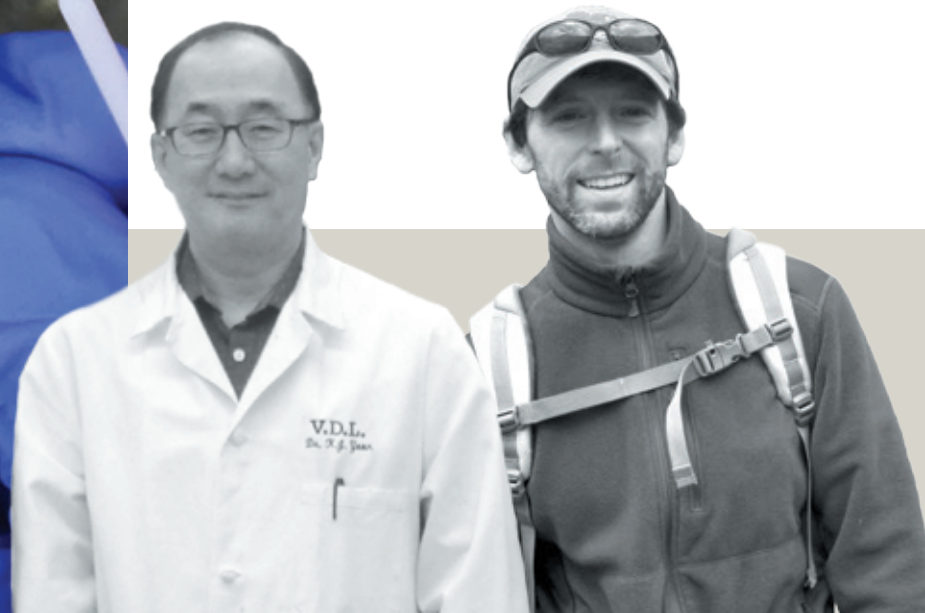
"My coinvestigators and I were surprised at first by these results, as we expected that we would see some positive birds, such as sparrows, based on literature," Yoon says. "But we were also a little relieved to learn that these terrestrial wild birds may not be a major vector of the virus. I was less surprised by the observation that none of the wild rodents were positive, as we have had years of conflicting reports in the literature."

As for other virus paths, Yoon explains that human-mediated transfer of the virus (i.e., via skin, hair, clothing) has been well documented and is taken into consideration for on-farm biosecurity practices. But other vectors exist, and Yoon has been involved in those inquiries as well, including a team at ISU looking at possible transmission of the virus via contaminated feed, a study that also was funded by the Egg Industry Center.

Yoon relies on and is deeply grateful for such external research funding. "Grants from commodity groups are very significant to my work, particularly from organizations whose missions are linked to applied research," says Yoon. "Their funding can be very timely and flexible in answering questions that are highly applicable to producers and other stakeholders. Egg Industry Center grants are a good example of this."

The cooperation of producers themselves is also key to the success of Yoon's research. "I think many of the egg producers who worked with us really wanted to know for their own benefit whether wildlife play a role in spreading AIV. The virus was and still is of primary concern."

Dr. Kyoung-Jin Yoon and Dr. James Adelman



## RESEARCHERS WANTED

The goal of the Egg Industry Center Research Grant Program is to encourage high quality egg-related research at academic institutions nationwide. Our highly competitive proposal process selects research projects based on scientific merit and relevance to current or emerging issues in the egg industry. The program is funded through the Egg Industry Center Endowment Fund, which ensures research resources remain available for the egg industry. The center is excited to continue to expand the variety of scientific solutions this research is discovering, and to help share that information with all who are interested in learning about it. Researchers interested in applying for Egg Industry Center grants or upcoming grant opportunities should contact:

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