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Faculty Focus: What Do You Know?

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Searching the past to inform the future

By Mary Lou Peter

Just call Sarah Jones a super sleuth. The senior in food science and industry is spending part of her last year at Kansas State University digging into just how long people have been concerned about the connection between human and animal health. At least 150 years, it turns out.

Jones’ interest has taken her from her hometown of Riverview in northeastern Kansas to Washington, D.C., in spring 2016 where she met with officials from the Food and Drug Administration, the Congressional Research Service and others, to Bethesda, Maryland and the National Library of Medicine archives this summer.

“I work with Randall Phebus, professor of food safety and security, and his associate professor of food safety and security, and his The Frontier program, co-directed by Justin Kastner, well as regulatory issues,” she said.

“Antimicrobial resistance, one of society’s current-day concerns about antimicrobial resistance in animals and humans. Antibiotics and smaller drugs, together called antimicrobial agents, have been used for 70 years to treat patients who have infectious diseases, according to the Centers for Disease Control and Prevention. Since the 1980s, these drugs have greatly reduced illness and death from infectious diseases but they have been used so widely and for so long that the infectious organisms the antibiotics were designed to kill have adapted to them, making the drugs less effective.

Each year, at least 2 million people in the United States become infected with bacteria that are resistant to antibiotics and at least 23,000 of them die as a direct result of these infections, according to the CDC.

“Antimicrobial resistance, one of society’s current public health concerns, is increasingly included in the list of problems worth of tackling with a blue sky approach,” Jones said.

“By keeping up with global demand for a safe, consistent food supply, livestock producers have used subtherapeutic agents, have been used for 70 years to treat patients who have infectious diseases, according to the Centers for Disease Control and Prevention. Since the 1980s, these drugs have greatly reduced illness and death from infectious diseases but they have been used so widely and for so long that the infectious organisms the antibiotics were designed to kill have adapted to them, making the drugs less effective.

“Through more research needs to be completed, more common in the food industry such as rapid chilling and sub-thermal heating in food preservation, the Food and Drug Administration is implementing new regulations that provide for more direct veterinary oversight of antimicrobial use in livestock production. The Veterinary Food Directive will be fully implemented in December 2016.

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“It’s easy to see why Jones is doing it. She is focused on the current-day concerns about antimicrobial resistance in animals and humans, veterinary and food-system scholars, Jones said.

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“The project’s success has helped Castellanos enliven more citizen involvement. He hopes “regular people” will take action to fight pollution rather than leaving the task of monitoring to government agencies or trusting that industry won’t contaminate Wuhan’s water.

“Pollution doesn’t respect international borders, and Castellanos says sharing ideas through cultural exchange and public awareness,” he said. Castellanos has engaged in topics of local interest, such as extreme ecology, by starting a chapter of Leonardo Art Science Initiative, or LASER, at K-State. LASER gatherings bring artists and scientists together for internal presentations and audience conver- sations, and the K-State chapter is the first in the Midwest. Castellanos hopes to use the group as a springboard to host more events such as art festivals and symposia.

Castellanos came to K-State in fall 2014. He received a 2010-11 Faculty Fellowship Award to conduct an art-sci- ence collaboration research initiative, exploring human-animal interaction, communication and collaborations as well as the use of layperson interpretations as a form of knowledge production within a scientific research context. The fellowship will yield an installation created with his collaborator at West Virginia University,