YOUR
IOWA STATE
STORIES OF TRADITION AND TRANSFORMATION
SUMMER 2016

Photo: Paul Gates

Diagnose, Cure, Prevent, Repeat

"We always have to be thinking about the next big, bad thing," said Jim Roth, director of the Center for Food Security and Public Health at Iowa State University. In 2015, Roth and his colleagues from the Veterinary Diagnostic Laboratory and the College of Veterinary Medicine at Iowa State were confronted with a "big, bad thing:" avian influenza. As thousands of birds got sick, Iowa State became the go-to institution for answers. Government agencies, industry leaders and consumers across the nation looked to the university's diagnosticians and researchers for help diagnosing and understanding the illness.

As efforts to contain the virus got Iowa State into headlines across the nation, the results from the studied cases landed in the laps and labs of students in the College of Veterinary Medicine, where 135 faculty and professional staff members team up to process more than 75,000 animal health cases a year, amounting to the largest caseload in the country. Those cases become sources for applied research questions and case studies, which help prepare the next generation of veterinarians, diagnosticians and microbiologists.

Iowa State's role in helping contain the avian influenza virus is just one of the many food-animal challenges the university's experts are taking on. The network of researchers on campus, coupled with cutting-edge technology and powerful partnership programs, is integral to keeping Iowa's $16 billion-a-year food-animal industry humming along. It also is tasked with developing national plans for food security, a directive passed down from the federal government, which relies on Iowa State's secure egg supply plan for the nation. Recently, the university was asked to develop additional secure supply plans for turkey, beef, milk and pork.

Diagnosing, curing and preventing animal disease to ensure a safe food animal supply is integral to the mission of the university. The highly coordinated, all-hands-on-deck efforts that Iowa State leads ensures the health of the animals we depend on for food – at home on dinner tables here in Iowa and on dinner plates across the nation.

Let Us Know Your Thoughts!

The Iowa State University Foundation strives to ensure the best possible philanthropic experience for our alumni and friends. Because your opinion matters to us, please take five minutes to complete a survey at www.isuf.info/2016ISUFsurvey.

ENTRANCE EXAM

Can you ace this Iowa State College entrance exam from 1871?

1. **Name and define all parts of speech.**
2. **Name in order of size the three largest rivers in the world.**
3. **Divide 365,729 by 365**
4. **If four men in six days cut 36 cords of wood, in how many days will nine men cut 27 cords?**

Go to www.isuf.info/entranceexam for the answers!

BOOTS ON THE GROUND

Can you tell the difference between a common cold and the flu? Last year, Swine Medicine Education Center Director Locke Karriker's students had to make a similar diagnosis – with pigs.

Students visiting a client's farm noticed that some of the pigs had lesions and were lame. Karriker, the Dr. Douglas and Ann Gustafson Chair for Teaching Excellence, knew that the symptoms might not be serious, but they could also be signs of the contagious foot-and-mouth disease.

After careful collection of samples, and visual documentation and analysis of symptoms, the students concluded – to their relief – that the symptoms were indicative of Seneca Valley Virus, a much less contagious diagnosis. "Students learn that the picture is never complete when they're first exposed to a situation," said Karriker. "The investigative process of considering many answers, assimilating data and re-evaluating their assumptions has enormous value."

Contributed photo

Photo: Paul Gates

A Word of Thanks

Every day the sound of words from lectures, presentations and conversations over coffee fill the air across Iowa State's campus. And every day, a handful of students who came to the university with basic English skills thank **Carole Chapelle** for being able to understand those words.

A leading authority in second language acquisition and assessment and a Distinguished Professor of English, Chapelle helps English as a second language learners on campus hone their English speaking abilities in the applied linguistics and technology program. "We help international students succeed in school by studying the language they need to learn, and developing effective tests to assess their progress," she said.

With a focus on computer-assisted language learning and testing research, Chapelle and her graduate students design unconventional technology-based methods to help people learn, like using the online game Second Life to help Korean air traffic controllers master the English they need for their jobs. "Connectivity brings a huge range of cultural and linguistic resources to the classroom," said Chapelle.

Chapelle's work with English language learners was recently recognized when she was named the inaugural Angela B. Pavitt Professor in English. The position was established by the late Dale Grosvenor in his bequest, and is intended to honor a faculty member who concentrates on ESL. Chapelle's work is vital to the Iowa State community, as she helps students of all nationalities keep the conversations flowing on campus.

Photo: Christopher Gannon

Planting Polymers

The next time you hit the road, you might be driving on soybeans. **Chris Williams**, the Gerald and Audrey Olson Professor in Civil Engineering at Iowa State, and his colleague **Eric Cochran,** are developing plant-based polymers to replace and supplement widely-used petroleum-based polymers, which turn up in places like road asphalt and even sticky notes.

As leaders of a $5.3 million Bio-Polymer Processing Facility at Iowa State, Williams and Cochran are spearheading a joint project with Argo Genesis Chemical LLC. The project grew from an idea created by Nacu Hernandez-Cantu, one of Cochran's graduate students, in which the team is developing a soybean oil-based asphalt additive. The plant-based product could replace the petroleum-based products currently used by manufacturers to make asphalt tougher and resistant to thermal expansion and shrinkage, according to Williams.

The public-private venture between Iowa State and Argo Genesis is unique, allowing for knowledge exchange between Iowa State researchers and business experts, which helps with efforts toward commercialization. It also happens to be the largest biopolymer pilot plant at a university based on radical polymerization. As for the team's goals for the project? To have us all walking and driving on soybeans.

EDUCATING IOWA'S EDUCATORS

8,200 Iowa State graduates work throughout Iowa as educators, making Iowa State University a leader in preparing the future teachers, principals, superintendents, professors and other educators in Iowa's 99 counties.

Photo: Paul Gates

A SUMMER FACELIFT

New and returning students this fall will be greeted by the familiar faces of Iowa State's iconic Fountain of Four Seasons, along with the newly completed renovation of the plaza surrounding the fountain. During the summer, crews swapped out the old concrete pathways for paved sidewalks and two new walkways from the east and west. Cast stone benches now ring the fountain, and hundreds of perennials and shrubs will add color to the plaza year-round.

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Welcome to YOUR IOWA STATE, the newsletter that keeps you connected with **Iowa State University**. Look inside to find out what's happening on campus as well as to relive some of your own Iowa State memories.

IN THIS ISSUE

Photo: Ryan Riley - College of Human Sciences

What *you* make possible

Fighting fire with fiber

Guowen Song leads a team of Iowa State researchers in apparel, merchandising and design who are emerging on the national scene with their work of integrating science and technology with design, such as developing new textiles for clothing worn by firefighters that result in better protection, less heat stress and reduced burn injuries – work made possible in part by support from the Noma Scott Lloyd Chair in Textiles and Clothing.