

# BRIDGING THE PACIFIC



A decades-long mentorship is helping two Kansas State University professors improve American and Chinese animal health



Jishu Shi's office is filled with memories of his time as a student at Kansas State University. On the wall hang plaques for five patents that he and mentor Frank Blecha, university distinguished professor of immunophysiology, received from research during Shi's time as a doctoral student nearly 20 years ago.

Across the hall is Shi's research laboratory — the same laboratory where he spent many hours as a student researching molecular and cell biology. Even Shi's office, which previously belonged to one of his graduate supervisory committee members, shows how his career has come full circle. Shi is now a Kansas State University associate professor of anatomy and physiology.

"Returning to Kansas State University has really been a homecoming for me," Shi said. "This is the first place where I did my studies. My family is here."

Among his university family is Blecha, both a mentor and friend. The two met when Shi left Beijing in 1992 to study under Blecha as a doctoral student in immunology. Although Shi would go on to work in industry and at other universities, Blecha — the head of the department of anatomy and physiology — would eventually bring Shi back to Kansas State University in 2008, but this time for a faculty position.

"I recruited him back because I knew what he would be able to do," Blecha said. "I knew of his intellect, initiative and work ethic. In a relatively short amount of time, he has accomplished a lot."

One of Shi's accomplishments is co-founding the U.S.-China Center for Animal Health with Blecha and other Kansas State University and local leaders. But also significant are Shi's successes as teacher, researcher and mentor — roles that he says he learned from Blecha.

"Dr. Blecha is a really good mentor and a good friend," Shi said. "I am so lucky that he was my adviser when I came here, and I'm happy that we can continue to work together."

## Kansas State University across the ocean

Now as colleagues, one way that Shi and Blecha work together is through the Kansas State University-based U.S.-China center, an international animal health partnership.

For Shi, the center is a way to help students, animal health businesses and veterinarians in the United States, his current home, and in China, his home country.

"As an educational institution we can train leaders for the future animal health industry and government," Shi said. "In turn, I think this can put Kansas State University and the state of Kansas in a better position to compete in the Chinese market. We can also create jobs and economic opportunities for the state of Kansas."

The idea for the center began in December 2009 when Shi represented Kansas State University at a Midwest China Hub Commission meeting in St. Louis. The commission was looking for ways to export Midwest goods and services to China, which gave Shi an idea: Kansas State University could "export" its animal health educational services overseas.

And so the U.S.-China Center for Animal Health was born.

In the early months of 2010, Shi and Blecha developed the center with several local, regional and Chinese animal health leaders: Ralph Richardson, dean of the College of Veterinary Medicine; Dan Richardson, CEO of Kansas State University Olathe; members of the Kansas Department of Commerce; and Zhongqiu Zhang, director general of the Bureau of Veterinary Services with the Chinese Ministry of Agriculture. The leaders created three missions for the center: improve the veterinary training system in China, establish Chinese continuing education programs and help U.S. companies market their products in China.

"By developing these missions Kansas State University can use its animal health expertise to address industry needs in China," Ralph Richardson said. "At the same time, the center will strengthen the university's reputation as an international research university and will create tremendous educational and industrial opportunities for our students and faculty."

As both a Chinese native and a Kansas State University faculty member, Shi became the natural choice for the director of the center.

"Jishu's passion for the center and his knowledge of both systems — the Chinese agricultural veterinary system and the U.S. regulatory system — have made him a perfect fit," Blecha said. "The center wouldn't exist without Jishu. He is the driving force behind it."

China needs improved animal health and veterinary education, Shi said, because the country's veterinary education methods lack the regulation found in American doctor of veterinary medicine training. Although China has 1 million veterinarians, any student who graduates from a Chinese college — whether a three-year, four-year or five-year program — with an animal health degree can call himself or herself a veterinarian.

The Chinese Veterinary Medical Association, known as CVMA, has asked for Kansas State University's help in developing an accreditation system similar to that in the United States because of the university's strength in the doctor of veterinary medicine curriculum, infectious disease research, animal vaccine and drug development, and animal health work force training.

Five other American universities with doctor of veterinary medicine programs — the University of Missouri, Oklahoma State University, University of California Davis, the University of Minnesota and Iowa State University — have partnered with Kansas State University to train and educate Chinese veterinary medicine students. Beginning in fall 2012, each university will accept two Chinese students to study veterinary medicine. The Chinese government has agreed to provide \$7 million in total support for these students' education.

"We are trying to educate 50 Chinese students in 10 years," Shi said.

## Kansas State University Olathe: The perfect meeting ground

Given its close proximity to Kansas City International Airport, Kansas State University Olathe — the university's newest campus, which opened in April — provides an ideal facility for university-led training classes for Chinese veterinary practitioners. Such

## Parents' week for undergraduate Chinese students

Because he was once an international student at Kansas State University, Jishu Shi knows the challenges of studying at a school on the other side of the world. That prompted him to start a parents' week for the more than 800 undergraduate Chinese students who attend the university.

"During the week, parents see the university and understand how their children live," Shi said. "When the parents go back to China, they will have a mental picture in their head and it will make them more comfortable to have their child attending school in America. The week can also be a recruitment tool that helps the university and local businesses."

The first parents' week will take place in November and is a collaboration among Shi, the office of student life, the office of international programs and the Division of Continuing Education. Shi has a \$5,000 grant from Manhattan Knowledge Based Economic Development to support establishing the week.

training programs can generate revenue for the university and in turn, Kansas State University faculty and veterinary medicine students can travel to China to establish a continuing education center. This international interaction will open the doors for American students to work in China, Shi said, and builds the university's presence overseas.

"I see this as a really good opportunity to educate the future Chinese leaders of animal health education, industry and government," Shi said. "Just think if all of these leaders are Kansas State University alumni — that will be beneficial for the university and the state of Kansas in the future."

Kansas State University Olathe also provides a way for Kansas City-based businesses to reach out to China. The center already has two Kansas City-based animal companies as institutional members: Ceva Biomune, an animal health company, and Shor-Line, which manufactures animal care equipment.

"The whole idea is to be able to help small to midsize Kansas companies market their products and services to China," Blecha said.

At the Olathe campus, Shi has a new office and an 800-square-foot laboratory, which were some of the first spaces to open at the new campus.

"With the office and laboratory space we can create all kinds of interactions between Chinese and U.S.

companies," Shi said. "But we can also do developmental work with U.S. companies that are interested in marketing and registering more products in China. We will work with them to co-develop or evaluate products and find business partners for them in China.

"We're also in active negotiation with several Chinese animal health companies that want to establish their research and development divisions in Kansas," Shi said. "More jobs will be created in Kansas and more animal health products will be exported to China from Kansas."

### International education and research

As a graduate of both the Chinese and American veterinary education systems, Shi understands the importance of educational and business opportunities between the countries.

Shi received his master's degree at the Chinese Academy of Agricultural Sciences and his doctor of veterinary medicine training from China Agricultural University in Beijing. While a Kansas State University doctoral student, Shi worked with Blecha on a U.S.

Department of Agriculture project that looked at antimicrobial peptides, which are produced by the body to calm

infections and kill bacteria. Together, their research appeared in the Proceedings of the National Academy of Sciences of the United States of America and the U.S. Patent and Trademark Office awarded them five patents.

"You always look for a student who is able to act and think more like a scientific investigator,"

Blecha said. "Jishu was one who always — even from the very beginning — would take the initiative to ask questions and find answers. He came up with great ideas and that's what you want to see — a student who can develop and think on their own."

Shi's time working in the lab as a doctoral student influences much of his current work. Amid directing the China center, he still finds time to teach physiology to first-year veterinary medicine students and work on three major research projects.

Shi's current projects and collaboration include:

- A project to develop a vaccine for porcine reproductive and respiratory syndrome virus, or PRRSV.
- A project that looks at human inflammatory diseases. The research may lead to a developmental drug for human inflammatory bowel disease.
- A collaborative project supported by \$375,000 in National Institutes of Health, Center of Biomedical Research Excellence (COBRE) funding. Shi and Kansas State University professors Lei Wang and Deryl Troyer are looking at how cancerous stem cells develop and potentially cause cancer relapse.

"I think translational science is very important and my research programs focus on developing a product or discovering something that can be used to make a product for animals or for humans," Shi said. "That's the passion of my research — I want to see the usefulness of our work."

But Shi also has a passion for bridging the gap between the U.S. and China, and his efforts make him an educator who will continue to influence the animal health industry and train its next generation of leaders.

"While we train students and expand their knowledge, it's also important for them to have a larger perspective of the world," Shi said. "I want our students to know that we are here to prepare them to compete and succeed globally in all aspects of the animal health profession, including clinical practice, education, biomedical research, industry, public health and governmental services."



Jishu Shi



Frank Blecha

By Jennifer Tidball, Communications and Marketing