

## Sino-US Collaboration to Advance China Veterinary Education

--Interview with Dean Richardson, College of Veterinary Medicine, Kansas State University

Interview and Compilation by *World Education Information's* editorial department

**Editor's note:** Under the planning and support of the China Scholarship Council, six U.S. and U.K. institutions—including Kansas State University—and six Chinese universities—including China Agricultural University—collaborate in training Doctors of Veterinary Medicine (DVMs). This program signifies a brand new step for China to adopt new models and mechanisms in veterinary education and to explore international collaboration in developing high-quality talents. The program will significantly enhance China's veterinary clinical training and scientific research.

What has led to this collaborative DVM program and what are its objectives? What innovative models and mechanisms are employed by this program? What are the key factors that can lead to the success of the program? What are its prospects and challenges? What positive impacts does it have on Kansas State University and other participating U.S. institutions? With these questions, our reporter interviewed Professor Ralph Richardson, Dean of the College of Veterinary Medicine, Kansas State University, who has been an initiator of this program.

Ralph Richardson graduated from Kansas State University in 1969 with a Bachelor's degree in biology and received a DVM degree from the same university a year later. In the following two years, he served in the U.S. Army at the rank of Captain. After leaving the Army, Richardson interned for one year at Purdue University before joining the Small Animal Internal Medicine Department at the University of Missouri-Columbia in 1973. In May 1976, after practicing in Miami, Florida, Richardson was appointed Assistant Professor of Medicine by the Small Animal Clinic Department at Purdue University, where he was subsequently promoted to Associate Professor and then to Professor of Internal Medicine and Comparative Oncology in July 1984. From 1987 to 1998, Richardson headed the Department of Veterinary Clinical Sciences at Purdue University before he returned to his alma mater Kansas State University as the Dean of College of Veterinary Medicine, a position he holds till today. During his time at Purdue, Richardson developed a research interest in human-animal comparative medicine, especially in how naturally occurring cancers in companion animals (cats and dogs) can be used as animal models for human cancer treatment research. As part of that research, he participated in a three-month clinical oncology training program at the University of Kansas Medical Center. Richardson actively participated in various academic, professional, and scholarly organizations. He is a double diplomate (in the areas of Internal Medicine and Oncology) of the American College of Veterinary Internal Medicine. He is a member of the American Veterinary Medical Association, the Association of American Veterinary Medical Colleges, the Veterinary Cancer Society, among others, and he served on the Kansas City Animal Health Corridor board of directors. Richardson has won numerous awards for outstanding undergraduate teaching, including a Norden Teaching Award and two Alumni Undergraduate Teaching Awards. He was named "Veterinarian of the Year" in 2003 and "The Paws Veterinarian of the Year" in 1996 by the Kansas Veterinary Medical Association and the Indiana Division of the American Cancer Society, respectively.

## I. Origin of the Collaborative DVM Program

**World Education Information:** The Sino-US collaborative DVM education program was launched on October 28, 2012, in Suzhou, Jiangsu, at the Third Chinese Veterinary Conference. At the opening ceremony, the China Scholarship Council and Kansas State University signed a memorandum of understanding to collaborate in veterinary medicine education and to co-establish a “China Scholarship Council - Kansas State University Joint Scholarship Program for Veterinary Medicine.” The China Scholarship Council will annually select outstanding veterinary students to attend Kansas State University’s College of Veterinary Medicine for a one-year pre-veterinary program and to subsequently attend one of six top veterinary schools to pursue DVM degrees. China greatly appreciates Kansas State University for contributing to the smooth implementation of the program, for funding the one-year pre-veterinary study, and for engaging the other five top veterinary schools to participate in the program. Why would you, as the representative of U.S institutions, choose to collaborate with China in developing veterinary education?

**Ralph Richardson:** Research shows that worldwide, about 70% of the newly discovered human disease pathogens originate from animals. The College of Veterinary Medicine at Kansas State University has been focusing its research on these zoonotic infectious diseases. For example, the main infection source of seasonal influenza is animals. Each year, we use the virus discovered that year to develop, in advance, influenza vaccines for the following year. Collaborating with China and other countries will help us study the diverse diseases worldwide. We need to establish such partnerships with veterinarians, biomedical scientists, and physicians in various countries.

China has a large human population, a large number of animal populations, a huge and continuously growing number of animals, and continual outbreaks of new diseases. What happens in China has an impact on the entire world. From the U.S. point of view, we want to help and protect our people and livestock. To do so, Americans need to understand what is happening around the world, not only what happens in China and elsewhere in Asia but also what happens in Africa, South America, and other regions.

In 2009, the World Organisation for Animal Health held The First Global Conference on Veterinary Education and proposed to develop global standards in veterinary medicine education to ensure that humans can cope with challenges in the future. The Organisation further proposed the concepts of “One World, One Medicine” and “Animal + Human = Health.” This is the first time people worldwide considered animal disease, human disease, environmental impact, and other factors together as an integrated whole. We connect the environment, animals, and humans together because we are on the same planet so we must understand how we interact.

For example, suppose certain animals lived on a water or food source and contracted diseases due to adverse environmental factors, and suppose we used the animals’ manure and planted crops or caused water contamination, when humans subsequently consumed the food produced on that land, they might very well contract diseases through the food chains involved. This is an example of food safety issues.

As another example, one of China's major animal diseases is PRRS, or Porcine Reproductive and Respiratory Syndrome, also commonly known as the blue-ear disease. Pigs with this disease will experience decreased reproductive capacity, accompanied by respiratory diseases, blue ears, and various other symptoms. This disease first broke out in the U.S. in 1987, and now it exists in almost every country across the world where pigs are raised. A country simply cannot work alone to fight such diseases, because the entire world is closely connected. In May of this year, Chinese and American experts held an international conference on PRRS in China. This is the first time such conferences were held outside the U.S. Through this conference, experts from the two countries were able to discuss, collaborate, and look for answers together. From there, we started to think, how can we further promote the exchange and collaboration between China and the U.S.? The answer is through education.

In fact, China and the U.S. have a long history of collaboration in veterinary medicine education. Kansas State University also has a tradition of collaborating with China in DVM education. Back in 1919, the first Sino-US collaborative DVM education took place at Kansas State University. Qingsheng Luo, China's well-known veterinarian, agricultural educator, and a founder of China's modern veterinary medicine education and livestock infectious disease research, was the first Chinese student who came to Kansas State University to pursue a DVM degree. After graduation, he returned to China to become the Dean of College of Agriculture at Central University (After the founding of the People's Republic of China, Central University was renamed Nanjing University; Nanjing University's College of Agriculture later merged with Nanking University's College of Agriculture to become Nanjing Agricultural University, where Qingsheng Luo was a professor while also serving as the provost and later, the vice president). His two classmates were also to become deans at Kansas State University and another university. So among the graduating class of 1919, three became deans, two in the U.S. and one in China. They were the first veterinary doctorates, not only in the U.S but worldwide.

Unfortunately, this collaboration was shelved after 1951 and since then, China had not sent veterinary students overseas for DVM education, so the present collaboration represents a brand new stage after 60 years. We are picking up where we left off, setting sail again, and turning over a new page.

## II. Features and Strengths of the Collaborative DVM Program

**World Education Information:** What do you think are the features and strengths of the Sino-US collaborative DVM program?

**Ralph Richardson:** First of all, I think its most significant strength is the full support from the China Scholarship Council. This support is the driving force behind program implementation, the key factor in providing Chinese students opportunities to study veterinary medicine in the U.S., and also an important reason for us to be able to enroll these students. China Scholarship Council's support eliminated the financial burden on students and veterinary colleges. Their support has really led the program to fruition.

Second, the U.S.-China Center for Animal Health is an important liaison in the implementation of this program. The U.S.-China Center for Animal Health is a veterinary education service organization founded with the goal to improve China's animal health education, research, government interaction, and industry workforce. The Center has three main focuses: education, economic activities, and continuing education. I am part of the Center administration. The Center is located in Kansas State University's College of Veterinary Medicine. It has strong support from the U.S. Department of Agriculture, the U.S. Department of Commerce, and the State of Kansas as well as the assistance from six top U.S. veterinary schools. Support from these multiple resources is an important safeguard for implementing the Sino-U.S. collaborative DVM program.

The U.S.-China Center for Animal Health has become a portal for both sides to collaborate and interact and as a platform for people to get to know each other. Many people from the U.S. and China are highly interested in our center, and we use this platform to help them, including Kansas government officials, to establish common ground and mutual understanding. In late June and early July of this year, Kansas government officials will visit China to discuss trade opportunities—we may be able to export more pork and chicken to China to meet China's demand for meat products. Our Kansas Secretary of Agriculture also visited China a few months ago to discuss the establishment of trade relations. The Center was not the sole contributor to these efforts, but it helped people to establish contact and provided opportunities for their future collaboration. We also want to connect with China's small and medium-sized businesses and hope that Kansas can establish economic ties with China. Various enterprises in Kansas and other states in the U.S. are interested in developing business in China. Our center provides a solid foundation for all these Sino-U.S. collaborations and plays a particularly important role in educational collaboration.

Third, the International Veterinary Collaboration for China (IVCC) supports the program. I think this is also a unique feature of this program. IVCC is initiated by Zoetis (formerly Pfizer Animal Health), who saw the enormous prospect and opportunity of "international health" and connected the veterinary schools from the U.S. and the UK. They also tried to extend the collaboration to China because they saw the importance of China in the area of animal health. They realized that if we can collaborate with China's veterinary scientists, we can speed up the development of international animal health.

Because of Zoetis, we were invited to collaborate with three other U.S. institutions—University of Minnesota, Iowa State University, and University of California, Davis—and two U.K. institutions—University of Nottingham and London's Royal Academy. We all focus on different research areas. University of California, Davis and University of Minnesota, for instance, focus on dairy hygiene. They collaborate with the Chinese dairy industry to produce better milk, grow better cows, and increase production. Iowa State University and University of Minnesota study swine diseases and swine health issues together. Here at Kansas State University, we chose to collaborate with China in education primarily because we want to train DVMs, to provide Chinese veterinary graduates with opportunities for further education, and to help them understand what is happening around the world, explore that world, and develop a global perspective.

### III. Features of U.S. DVM Education

**World Education Information:** Veterinary medicine education in the U.S. is globally recognized for having the world's leading education system and rigorous enrollment and certification system. It offers the most stringent, standardized, and high-quality education and will lead the future globalization of veterinary medicine education. In the U.S., DVM is a hallmark of vocational education. One must obtain a DVM before participating in the North American Veterinary Licensing Examination and thereafter applying for a license to be able to practice veterinary medicine. Can you talk about how veterinary schools in the U.S. train a qualified DVM?

**Ralph Richardson:** In the U.S., students spend three to four years studying their basic courses, including math and science. Four years of DVM professional training follows that, with a curriculum similar to one used in medical schools. In fact, we believe that DVM and research doctorate degrees are rather similar. During the first year, students generally study animal physiology, animal immunology, infectious diseases, and so on. In the second year, they study radiology, clinical pathology, and pharmacology. The third year includes studies in animal medicine, animal surgery, and theoretical diagnosis and treatment. In the fourth year, students practice what they have learned in clinical practice where they communicate directly with animal owners. This is a full 12-month practice period; for every two to three weeks, students will practice at a different service station. They may participate in surgeries of small animals, horses, and other animals or apply pathology or radiology knowledge. During these 12 months, students will experience intensive training in a range of areas.

So, if you bring your animal to visit a veterinary college hospital in the U.S., the first people you will see are veterinary students. They will record animals' medical history, perform physical examinations, and propose treatment plans. They will then report to their professors: "This is what I saw, heard, smelled, and felt, and I think this is where the problem is." Only after that will the professors be involved to examine the students' initial treatment plans. Students are not merely passive observers but active practitioners; together, they and their professors participate in the animals' treatment. If the surgery involved is a complex one, the student may be the professor's assistant; if the surgery is a simple one, the professor will let the student be the surgeon and stand by to provide guidance. The animals that students work with during clinical practice are owned by the general public, so we require that students have excellent communication skills, a strong sense of ethics, solid knowledge, and the ability to practice that knowledge.

When students graduate, we require that they be ready to start clinical practice. They should be able to go out, conduct what we call "basic treatment," and pass the national standardized exam and state exams. And I have to sign off on their graduation to verify their capabilities and qualifications. In addition, because students have built a solid foundation in school, they will be able to perform very effectively and gain more knowledge in their future careers.

I think the strength of the U.S. veterinary medical training lies in its emphasis on developing students' abilities in clinical practice. In China and many other countries, students who finish

veterinary graduate schools will continue to learn a great deal from experts in the field and shadow these experts for maybe a year or two before they can independently practice veterinary medicine, whereas U.S. veterinary students start practicing right after they graduate from the university. From this perspective, we ask for more from our graduates than other countries do.

I have found that in some parts of China, veterinary medicine is primarily seen as a discipline that serves environmental health and livestock protection. But in the U.S., we are more concerned with companion animals such as dogs, cats, and horses. We consider all these animals within the realm of veterinary medicine. We require that students study cattle and sheep or individual pets such as dogs and cats. At school, we provide students with a variety of animals for learning and experimenting so they are not limited to studying food safety and environmental hygiene. Sixty or seventy years ago, the Americans also equated veterinary medicine to food safety and livestock health, but now, everywhere around the world, that perception is changing. People's perception toward pets is also changing, and we must be able to provide better treatment for pets than we did fifty years ago.

#### IV. Initial Progress in the Collaborative DVM Program

**World Education Information:** In August 2012, the China Scholarship Council selected the first group of students from China Agricultural University and Huazhong Agricultural University veterinary colleges to go to Kansas State University for one year of pre-veterinary study. How are these students doing in their study? Through your contact with the Chinese students this year, what do you think are Chinese student's strengths and weaknesses as compared to American students?

**Ralph Richardson:** Our training model includes four to five years of study at Chinese universities, plus one year of pre-veterinary study at Kansas State University. In other words, when a Chinese student enters the DVM program, he or she would have had five to six years of basic classes. We have credit hour requirements for these classes.

During the one year at Kansas State University, we need to ensure that students complete all the preparatory work. Every Thursday afternoon, we would have a seminar with these students to keep track of their learning experience and progress so we can communicate up-to-date information to the China Scholarship Council and their respective Chinese universities. Dr. Ronnie G. Elmore is the Chinese students' advisor. He guided them in their study to meet the prerequisites for DVM. We also strived to help Chinese students adapt to American culture and live more comfortably. We do not want them to worry about listening to English in the classroom or to rack their brains over language issues. We want them to know that at Kansas State University, they can feel at home. The four students did superbly here. We like them very much and get along very well.

I do not think Chinese students have their so-called weaknesses. I think they may have a disadvantage in the English language, but the four students are excellent. They have bright personalities, love sports, and like to communicate with others. They all have excellent academic performance with GPAs above 3.7 and finished the pre-veterinary study with good grades. I

think they adapted well to studying in the U.S., obtained necessary interpersonal communication skills, and proved to everyone that they can excel in the U.S. as much as they do in China. They have proved their abilities, are more confident and fluent in terms of communication skills, and showed tremendous growth.

## V. Elements for Success and Prospects of the Collaborative DVM Program

**World Education Information:** What are the key elements to ensure the successful implementation of the program? What are its prospects and challenges?

**Ralph Richardson:** The key is to have the strong support from the China Scholarship Council. This is the number one element for success.

The second is to select the right students. This year, we spent two days interviewing students. Face-to-face, individual communication with these students is quite valuable. Although we can see their transcripts, TOEFL scores, and graduation credits, communicating with them face-to-face, asking them questions, and learning about their language and communication skills first hand are more convincing than looking at written transcripts. The candidate selection process is therefore also a key point.

In addition, I think the one-year pre-veterinary study at Kansas State University is also an important factor. During this year, students experience a series of transformations both culturally and academically. Cultural adaptability and academic excellence are key elements for their future success.

As for the prospect of the program, when these students complete their study and return home, they are likely to become professors at their alma maters. At that time, these universities will have a broader perspective, be able to experiment with new veterinary treatments, and be recognized by other, including Western, countries. With one returning graduate, he or she can teach a class of new veterinary students. By then, the senior professors at the universities may say that they want to join the new professors in what they do, which will move the entire veterinary medicine program forward. I also hope it creates more continuing veterinary education in China so there will be more Chinese veterinarians who know what is happening in the world outside China. Simply put, when these graduates return to China, they will bring more and better opportunities for China's veterinary medicine field.

For our College of Veterinary Medicine at Kansas State University, one challenge for the program is that we will continue to be responsible for students' one-year pre-veterinary study. But we are very happy to assist students in their first year of study in the U.S. and are willing to continue to do so. Currently, the program is going well and receiving strong support, including funding for our interview trip to China this time. We hope to partner with the China Scholarship Council to effectively cope with any challenges that may come our way.

## VI. Collaborative DVM Program's Positive Impact on the U.S. Partners

**World Education Information:** What positive impact will this collaboration bring to Kansas State University and other participating U.S. institutions?

**Ralph Richardson:** I think the positive impacts include the following:

First, promote collaboration and exchange between Chinese and U.S. universities. Our partner institution China Agricultural University has an excellent veterinary medicine college. They employ modern instructional facilities and innovative teaching methods to demonstrate to students the most advanced medical treatments and to further prove that things such as instructional facilities, clinical veterinary training, and practical veterinary training will become important aspects of veterinary education. China Agricultural University also provides excellent learning opportunities for American students studying abroad there. Our students learned about traditional Chinese medicine, including Chinese herbal medicine and acupuncture. Every summer, our students will come to China Agricultural University to study. I hope this exchange will continue.

Second, through the Sino-US collaboration in education, promote collaborations in other areas such as disease prevention and control. For example, Dr. Jishu Shi at our college, who is from China, has obtained the approval from the U.S. Department of Agriculture to store samples of different pathogens. Chinese and American experts can research these pathogens in Dr. Shi's lab to develop vaccines. If a disease that has never occurred in the U.S. breaks out in China, we can explore new treatment plans in China's infected areas.

Third, promote Sino-US cultural exchange. I think cultural sensitivity and awareness is also very important. This is true for Chinese students who come to the U.S. to study; it is also true for Americans who come to China. We need to learn how to become better at cross-cultural communication, which is a great opportunity for us. Our collaboration is not limited to animal health; from public health to environmental health and other areas, we need to strengthen partnerships and search for best plans together.

Editor: Ya Pan