

# MU college expanding amid dire **Vet** shortage

By Marilyn Cummins  
Photos by Jennifer Kettler



Vet student Vicky Kasten checks over a dairy cow during her internship in Versailles, Mo. (photo courtesy of Vicky Kasten)

*Vicky Kasten always enjoyed diagnosing and treating her menagerie of pets while growing up in suburban St. Louis, and she often compared notes with her veterinarian aunt in Texas. So it was natural that she enrolled at the University of Missouri's College of Veterinary Medicine.*

But in October, right after donning her white coat in a ceremony marking the class of 2011's move into clinical training, Kasten didn't work on cats and dogs. She headed down to Versailles to treat large farm animals in a rural area north of Lake of the Ozarks.

"It's hard, physical labor," Kasten said. For example, she spent hours one night in bad weather helping a cow deliver a calf by wrapping chains around the front hooves of the 80-pound animal and pulling.

But she learned to love working with dairy farmers while helping out a veterinarian in Union during breaks at Missouri Baptist University, where she earned her undergraduate degrees in chemistry and biology.

"They are just such good, hard-working people," Kasten said. She and the farmers were "working together to try to figure out what to do better to care for their herds."

"To me, veterinary medicine is like a murder mystery," she said. "You're given all these clues, and you work together to try to treat the animal and hopefully save the client money at the same time."

But there's a larger mystery that the MU vet school is helping to solve: How will the U.S. meet what Dean Neil Olson calls the "current and looming" shortage of veterinarians in most areas, particularly those who treat food animals rather than pets and those involved in public health?

This fall, Missouri's sole veterinary school admitted the largest freshman class in its history: 110 students. In 2007, when Olson became the new dean, 76 students were admitted.

Olson's long-term goal is to admit 125 students a year and create more tuition revenue to boost programming resources. But that will take more space in an already crowded facility. His 10-year plan calls for a new academic building and renovation of current buildings to meet the space shortages as well as to accommodate the additional students.

## Billion-dollar industry's widespread impact

Veterinary medicine is a \$1 billion industry in Missouri, Olson said, and every dollar spent for veterinary education and services generates \$2.42 in economic impact to the state.

"But it potentially goes way beyond that" in its contribution to the state's well-being, Olson said.

It's well-known, he said, that "animal agriculture is very vulnerable to bioterrorism." Having a strong veterinary college and well-supported veterinary medicine system in the state protects animals and the state's No. 1 industry — agriculture.

Animal health and safety also helps safeguard the No. 2 industry — tourism — from the losses that would ensue if something like the foot-and-mouth disease outbreak in the United Kingdom happened close to the Interstate 70 corridor, which would require massive slaughtering of animals and the shut-down of highways, airports and more.

Day to day, MU veterinary medical extension specialists, through herd health management consultation and medical care, are directly responsible for increasing the efficiency of the Missouri's food animal production. According to university estimates, every 1 percent productivity increase in the state's \$2.5 billion livestock industry results in an increase of \$25 million more sales for the

state's producers. But that scenario requires a sufficient number of large-animal veterinarians.

## Luring large-animal docs

At MU's veterinary teaching hospital, there is a stark difference in activity on the floor where students treat small animals, with the cacophony of barking dogs and the packed waiting room, and the floor where students treat livestock.

The surroundings are quiet when Dusty Nagy, an assistant professor and doctor of veterinary medicine, leads a gaggle of students — five women and one man — on her rounds at the food animal clinic.

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## PridePoints

- MU ranks in the top five of vet schools in research funding from the National Institutes of Health.
- MU has three NIH National Resource and Research centers: the only NIH-funded swine center, the only rat center and one of three mouse centers in the U.S.
- MU has one of 15 regional biocontainment laboratories in the U.S.



Students prepare to study slides in their histology lab at the vet school. The school had to offer another lab to accommodate the large number of incoming freshmen who are required to take the class.



Tonto exercises in the water on a treadmill called the hydro physio three times a week for her neurological disease.

## Medical convergence: humans and their pets

Researchers in the MU College of Veterinary Medicine are using dogs such as Tonto, a German Shepherd with a degenerative spinal cord disease, to find better ways to treat both companion animals and humans with comparable diseases.

The initiative is called One Health, One Medicine: The Convergence of Human and Animal Health. MU's administrators have identified One Health as one of five areas of notable expertise that will be emphasized in Mizzou Advantage, a new strategy for improving the university's reputation, increasing research funding and drawing donations.

"These are the areas where we are incredibly well-positioned," Provost Brian Foster said during a recent presentation to community leaders at the Reynolds Alumni Center. "These five areas are an incredible resource for economic development."

(The other four areas are Food for the Future, New Media, Sustainable Energy and Disruptive and Transformational Technologies.)

MU is one of about five universities in the U.S. that has medical and veterinary schools on one campus and is integrating them for research, according to Carolyn Henry, a professor and director of an endowed chair in veterinary oncology at the vet school. As a land-grant institution, MU also has a highly regarded animal science program.

"We're all treating the same disease, regardless of what species it's in," Henry said.

MU is also one of only 12 members in the Comparative Oncology Consortium, formed by the National Cancer Institute to organize nationwide trials in tumor-bearing dogs using cancer drugs.

Henry said cancers in companion dogs offer a largely unexplored research opportunity for cancer imaging, device and drug development.

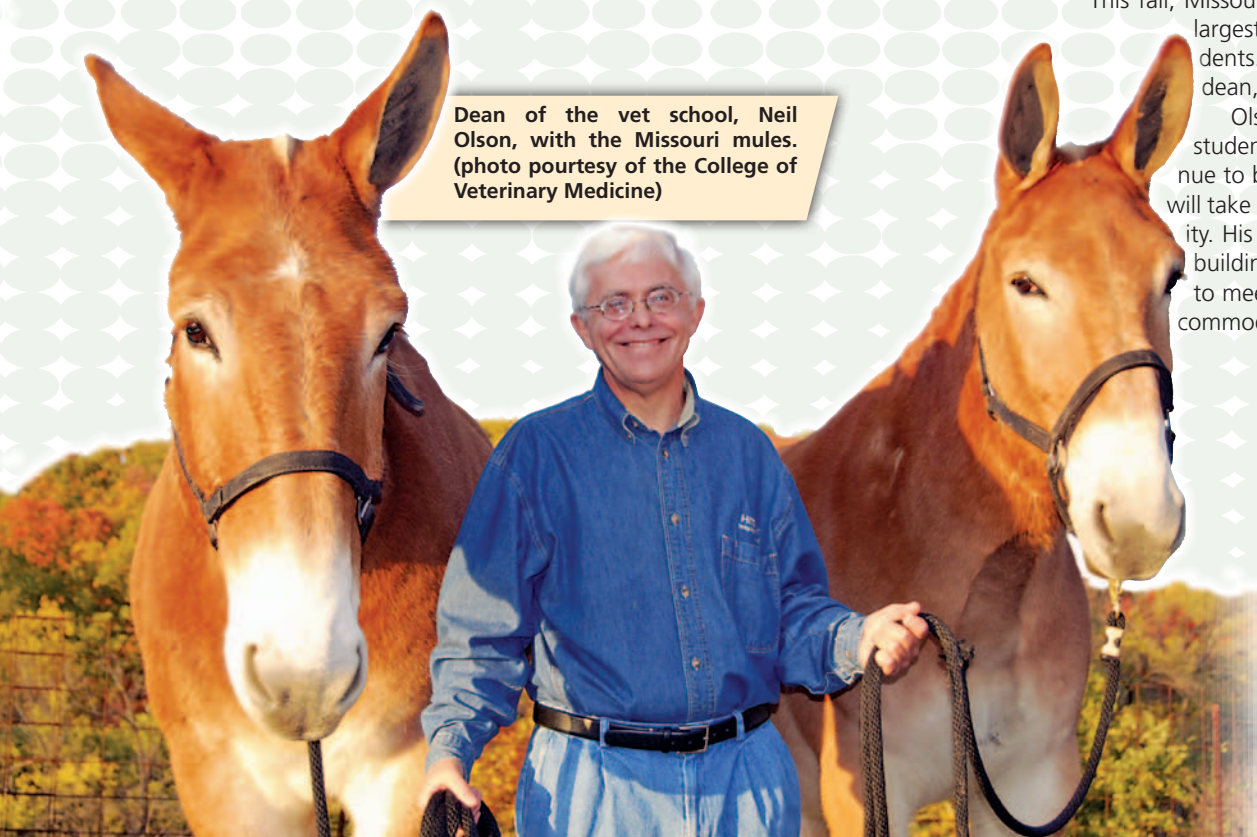
MU also has comparative orthopedic, ophthalmology, general medicine and neurology programs.

Earlier this year, MU researchers reported an incurable, paralyzing disease in humans is now genetically linked to a similar disease in dogs. They found that the genetic mutation responsible for degenerative myelopathy in dogs is the same mutation that causes amyotrophic lateral sclerosis, the human disease also known as Lou Gehrig's Disease.

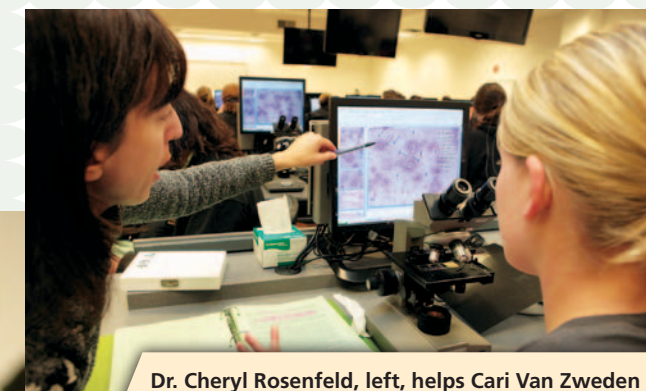
Joan Coates, a veterinary neurologist, said in a news release that dogs with the degenerative spinal cord disease are likely to provide scientists with a more reliable animal model for Lou Gehrig's Disease than transgenic rodents, the models traditionally used. "Also, this discovery will pave the way for DNA tests that will aid dog breeders in avoiding DM in the future," she added.

Henry pointed out that companion animals are better research subjects than rodents for numerous reasons, including their more similar size and structures and the fact that pets and humans have a shared environment.

She also stressed that the dogs used for their research developed cancer and other diseases "on their own. I'm not creating cancer in my patients." ▶



Dean of the vet school, Neil Olson, with the Missouri mules. (photo courtesy of the College of Veterinary Medicine)



Dr. Cheryl Rosenfeld, left, helps Cari Van Zweden understand lymphatic tissue in her histology lab at the vet school.



Rebecca Moland looks at slides of animal spleens in her histology lab.

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