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# *lifelines*

News from the  
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## Triumph Over Trouble in Paradise



**Dr. Melinda Wilkerson supervises master's student Kelley Black (sitting) and second-year veterinary student Katie Haukos in analyzing canine blood samples.**

A tropical paradise turned into a public health epidemic for Dr. Melinda Wilkerson, who was on a sabbatical in Grenada from September to November. Her journey to collect canine blood samples for assay development led her to inadvertently contracting the chikungunya virus, which causes fever, rash and severe joint pain, among other symptoms. While Dr. Wilkerson was trying to help advance knowledge about tick-borne diseases that affect dogs, her own health was ironically

**Dr. Melinda Wilkerson collects canine blood samples in Grenada for sabbatical in spite of chikungunya epidemic**

impacted by a vector-borne disease that is spread by mosquitoes. Fortunately, Dr. Wilkerson's symptoms were mild and she was able to continue to work while in Grenada.

"I worked with a professional colleague, Dr. Diana Stone at the St. George's University School of Veterinary Medicine, to set up my research for this sabbatical in part because of the tropical environment in Grenada, which has a lot of vector-borne diseases — and chikungunya virus happens to be one of them," said Dr. Wilkerson, who is the director of the Clinical Immunology/Flow Cytometry Laboratory. "Grenada has a lot of stray dogs referred to as 'pothounds.' Many are infected with ticks, with single and multiple zoonotic bacteria including Ehrlichia and Anaplasma species. During my three months' time in the St. George's parish of Grenada, I was able to send back more than

400 plasma and extracted DNA samples to K-State."

The Grenadian stray dogs are caught and released by veterinary students, faculty and medical staff at St. George's University School of Veterinary Medicine who perform spay and neuter surgeries on the animals. These dogs were ideal for Dr. Wilkerson's project because they are often infected with Ehrlichia canis and Anaplasma platys. She has collaborated with Dr. Roman Ganta in DM/P who also works with other strains of Ehrlichia bacteria. Dr. Wilkerson said the plasma and DNA samples are analyzed via a piece of equipment in her lab called MagPix system, which detects antibodies to bacterial peptides or the oligonucleotides of the bacterial DNA.

"This sabbatical has allowed me to learn molecular techniques and to have the time in the laboratory to practice what I learned," Dr. Wilkerson said. "I extracted and purified DNA samples from whole blood and platelet rich plasma from 161 dogs. The techniques I learned have been shared with my research assistant and post doc in Dr. Ganta's laboratory."

### Inside this issue of *lifelines*



**Video report: Meet the Grants Team**

See page 2



**The business-minded veterinarian.**

See page 2



**A trip home for Dr. M.M. Chengappa**

See page 4

## VIDEO REPORT: Meet the CVM's grants administration team



*Grants specialist Bailey Starns helps Dr. David Renter review his research budget.*

As the importance of extramural funding in academic research has grown, the CVM's dedicated five-member grants administration team assists researchers

in pursuing and managing potential award opportunities.

"The reason we have and have expanded, the research grants team is to make it easier for the principal investigators to do what they do best, and that's conducting science," said Dr. Frank Blecha, associate dean for research. "The grants team facilitates getting the grants, processing the grants and then, after the faculty members have the award, to also help them manage that."

"We're unique because we stay with a project from what we call the cradle to the grave," said Lisa Duer, senior grants

manager and program coordinator for the associate dean for research. "Basically, we start at the proposal development stage and we go through the submission, then, when it's awarded, we work with the faculty to get the award set up, help the business office with funding. We also report monthly to make sure they're aware where their account is standing and help them with any minor modifications through the life of the grant."

Learn more about how the grants team helps support research activities at the college in this month's full video report, which can be found on the KSUCVM YouTube channel at:

<https://www.youtube.com/watch?v=0XibKVrazaw>.

## The Business-Minded Veterinarian

By Katie Allen, K-State Research & Extension News

Animals can teach us more about the human body than we might realize. Crack open New York Times bestseller "Zoobiquity," and you'll learn about a human cardiologist's experiences at the Los Angeles Zoo that allowed her to more closely connect human and animal medicine. Even in the first chapter—Dr. House, Meet Doctor Dolittle—author Dr. Barbara Natterson-Horowitz reveals how doctors and veterinarians could learn from each other to effectively diagnose and treat all species.

Indeed, veterinarians are needed not only to treat our pets and livestock, but in a broader context, to help with zoonotic disease maintenance. The interaction between animals and humans secures the continuous demand for the profession, and the fewer veterinarians we have, the larger potential for catastrophic disease, according to Dr. Michael Dicks, director of the economics division for the American Veterinary Medical Association (AVMA).

Although the profession is needed, Dr. Dicks said financial struggles do exist, especially for those beginning to practice.

Many veterinarians who are just starting out find that they need to make enough money to pay off their high educational debt while trying to make a living, which can pose a major challenge.

According to the CVM, the average debt reported by its 2014 graduates was \$170,380, and graduates in 2013 had similar debt at \$170,919.

The average practice salary reported by 2014 K-State graduates was \$64,678 and for 2013 graduates, \$63,294. For those practicing outside of Kansas, the average starting salaries were a bit higher at \$66,057 for 2014 graduates and \$66,939 for those who graduated in 2013.

"The downturn of the economy impacted veterinary medicine and what graduates could earn in their first year," said Dr. Roger Fingland, executive associate dean and director



*Dr. Casey Thomas, DVM 1981, examines a ferret at his practice in Junction City.*

of the Veterinary Health Center. "It is important to educate people who want to be veterinarians about the financial realities. But, I think the value of being a veterinarian has to always be in the discussion."

## HOT TOPIC: Research project gives hope to pets with out-of-date rabies vaccine that are exposed to virus

By David Kirkpatrick, AVMA

A tragic decision was forced on a loving dog owner when her pet was bitten by a rabid skunk. Because the dog was only days overdue for its rabies booster vaccine, the owner, according to published news stories, was forced to choose between a lengthy period of quarantine for her pet or euthanizing it. In this sad case, the pet owner made the painful decision to end her dog's life through euthanasia.

It is situations such as this that prompted a group of researchers to embark on a study to see whether they could make a difference and help avoid similar cases in the future. The results of their efforts appear in a scientific report in the Jan. 15, 2015, issue of the *Journal of the American Veterinary Medical Association*, and they help paint what might be a clearer picture about the options veterinarians and public health officials have when faced with similar situations.

"The general public gets to see cases like this once a year," said Dr. Mike Moore, project manager for the Rabies Lab at the Kansas State Veterinary Diagnostic Laboratory and the report's lead author. "We get calls like this – if not weekly – every other week. I was a practicing veterinarian for 23 years, and it's really, really sad for me not to be able to help these people."

The study shows that pets whose rabies vaccination was considered out-of-date at the time of exposure to a rabid animal responded well after receiving an immediate rabies booster and did not develop any signs of the illness. The authors hope that the findings bring some clarity to guidelines that currently call for such animals to face lengthy periods of quarantine or be euthanized.

"Up to now, there hasn't been any scientific data presented for animals that are out-of-date on their vaccinations," Dr. Moore said. "Public health officials didn't have any measurable way to make their decision. Our results show that the two groups of animals – those that are out-of-date and those that are up-to-date – respond the same, and we feel they should be treated the same. If animals considered out-of-date have been primed with an initial vaccine, then when they're boosted after exposure, their titer goes up really high, really fast, and that's what we want in the case of exposure to rabies."

When confronted with cases of confirmed or suspected rabies exposure, veterinarians and public health officials typically refer to or rely on the *Compendium of Animal Rabies Prevention and Control* for guidance. According to the current version of the compendium, dogs and cats with current rabies vaccination status that have been exposed to an animal confirmed or suspected to be rabid should immediately receive a rabies booster vaccination and be observed for 45 days, most often under the pet owner's supervision with no contact restrictions.



*Drs. Mike Moore and Rolan Davis collaborate on a research project at KSVDL Rabies Lab involving expired vaccines.*

The compendium guidelines are less clear when it comes to recommendations for dogs and cats overdue for a booster vaccination, suggesting that these animals be evaluated on a case-by-case basis that takes into account a number of criteria. Unfortunately, this recommendation for a case-by-case risk assessment, coupled with concerns for public safety, a fear of liability and the lack of published clinical data, commonly leads to conservative handling of these animals, which most often means either euthanasia or a six-month quarantine.

"Hopefully this closes the gap," said report co-author Dr. Rolan Davis, reference diagnostician at the Rabies Lab. "The one paying the ultimate price in situations like this is the pet. It's our hope that people will report every instance of possible exposure to rabies and not be penalized if they are five days overdue."

The authors are careful to point out that all pets should be vaccinated at the appropriate age and should receive their regular rabies boosters. The study, while providing hope to pets considered out-of-date who have been exposed to rabies, also reinforces the critical importance of that initial rabies vaccine.

"Animals don't communicate if they have had a possible exposure," Dr. Davis said. "They can't tell us if they've had an encounter with a rabid animal. Routine vaccination covers for those exposures that the owners might not recognize. That's why pet owners can't vaccinate once and forget about it."

## Successful showing at CRWAD



Dr. Charley Cull, Dr. Arathy Nair, Dr. Vinay Shivanna and master's student Lance Noll won awards at annual conference.

Four CVM grad students earned awards for presentations at the annual Conference of Research Workers in Animal Disease held Dec. 8 and 9 in Chicago.

Dr. Charley Cull, Ph.D. student, won first place for his oral presentation entitled, "Feedlot- and pen-level prevalence of Shiga toxin-producing *Escherichia coli* in feces of commercial feedlot cattle."

Dr. Arathy Nair, research associate, won first place for her oral presentation entitled, "Real-time PCR assay validation for detecting *Rickettsia rickettsii* infections in dogs and ticks."

Dr. Vinay Shivanna, Bangalore, India, a Ph.D. student, won first place for his presentation entitled, "Characterization of entry events during bile acid-mediated porcine enteric calicivirus replication."

Lance Noll, master's student, shared first place for his oral presentation entitled, "Pooling of immunomagnetic separation beads do not affect sensitivity of detection of six serogroups of Shiga toxin-producing *Escherichia coli* in cattle feces."

## CVM News Ticker

The **Kansas State Veterinary Diagnostic Laboratory** is hosting the 4th Annual Conference on Animal Diagnostics and Field Applications. The conference will be hosted at the Hilton Garden Inn and Conference Center in Manhattan on Feb. 7, 2015. The conference will highlight topics on: Anaplasmosis and Bluetongue, Epizootic Hemorrhagic Disease and Related Culicoides-transmitted Diseases. There will be 5.5 of CE credit available. Find out more information at: [www.vet.k-state.edu/education/continuing/conferences/Diagnostics/index.html](http://www.vet.k-state.edu/education/continuing/conferences/Diagnostics/index.html).

**Dr. Elizabeth Davis** delivered a presentation to the American Association of Equine Practitioners in Salt Lake City, Utah. The seminar title was "Equine Immunology and Vaccine Strategies."

**Dr. Bob Larson** delivered a presentation to the Academy of Veterinary Consultants in Kansas City, Missouri. His seminar was entitled, "How to Evaluate the cost-effectiveness of veterinary products and services."

The Kansas Division of Emergency Management presented, "Winter Weather Safety Discussions" in December. On the 11th, **Dr. Susan Nelson** was the special topic expert in the event from 10:30-11:00. The discussion topic was "Special Care for Pets in Kansas Winters."

**Dr. Amit Kumar**, research associate in the DM/P department, was selected to serve as a reviewer in the journal, *Nature* ([www.nature.com](http://www.nature.com)). He also been appointed as managing editor of the journal, *Microbiology and Related Research*, which is newly established in India.

## Dr. Chengappa goes to Bangalore



Dr. M.M. Chengappa (fourth from left), University Distinguished Professor and head of DM/P, helps present the Karuna Trust Awards in Bangalore, India, in December. He won this same award in 2008. The trip was a homecoming for Dr. Chengappa as he earned his DVM and MVS degrees at Mysore Veterinary College in Bangalore.

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