

USDA-NIFA grant supports swine disease research



A new, \$475,000 research grant will help a CVM research lab determine methods to control two of the most important viral agents in pigs.

Dr. Yunjeong Kim, assistant professor of diagnostic medicine and pathobiology, is the principal investigator in a study that focuses on gaining a better understanding of protein disulfide isomerases (PDIs) as a potential target for developing intervention strategies against porcine reproductive and respiratory syndrome virus (PRRSV) and Swine influenza A virus (SIAV).

“SIAV and PRRSV are two most important viral agents in pigs,” Dr. Kim said. “Controlling these viruses is crucial for the swine production industry and sustained food supply, as well as for mitigating risks of potential pandemic influenza outbreaks in humans.”

Dr. Kim explained there is an unmet need for safe and effective prevention and control measures.

“Identification and manipulation of host factors critical for virus infection may provide the foundation for devising novel intervention strategies,” Dr. Kim said. “Our group recently found that PDIs, which are involved in proper protein folding, play a key role for the replication of SIAV and PRRSV in cells by conducting experiments including gene knockdown or CRISPR-based gene editing technologies in cells.”

Dr. Kim obtained funding from the United States Department of Agriculture National Institute of Food and Agriculture USDA for her study, which is entitled, “Investigation of Genetic Factors for Swine Influenza A Virus and Porcine Reproductive and Respiratory Syndrome Virus.”

Dr. Roman Ganta’s team tackles tick-borne diseases

New \$2.7 million NIH grant extends five more years of research

The clock could be ticking for ticks. Dr. Roman Ganta, professor and director of the Center of Excellence for Vector-Borne Diseases, recently secured a new grant of \$2.7 million from the National Institutes of Health to continue his longtime work on tick-borne disease.

Previously, Dr. Ganta’s research team has received grants from the NIH’s Research Project Grant Program of \$1.8 million, \$1.825 million and \$1.687 million in 2014, 2007 and 2002 respectively. The target of Ganta’s research is human monocytic ehrlichiosis, which is caused by the tick-transmitted pathogen, *Ehrlichia chaffeensis*.

“Tick-borne diseases remain a growing public health concern for more than four decades in the U.S. and many other parts of the world,” said Dr. Ganta, a professor of diagnostic medicine and pathobiology. “My team’s

prior studies have demonstrated that this pathogen, which also infects dogs, changes many of its expressed proteins as per its growth in a vertebrate host and in the tick host. We have also

been active in studying the immune response required to protect a host from the disease. Substantial progress made during the prior five-year funded cycle is the key to landing another five years of support from the NIH.”

Funded by the NIH since 2002, Dr. Ganta said his



Dr. Roman Ganta with his team (from left) Maria Dolores Juarez-Rodriguez, Chandramouli Kondethimmanahalli, Huitao Liu, Ascencion Torres-Escobar, Swetha Madesh, Deborah Jaworski, Arathy DS Nair and Ying Wang. Not pictured are Paidashe Hove and Xishuai Tong

team’s research has aided in the development of novel genetic methods useful in understanding pathogenesis and vaccine development. With an additional five years of support through the new grant, his tick-borne disease research program will mark 22 years of continuous NIH funding.

Team volunteers at Everybody Counts - Manhattan

For the second year in a row, the CVM has participated in a community outreach event called “Everybody Counts.” This event occurred Aug. 3 in Manhattan at the Douglass Community Center.

The purpose of the Everybody Counts is to provide much-needed, no-cost services to the most vulnerable population in the Manhattan area. The event provides dental care, medical care and a variety of social service organizations, school district representatives and other community organizations who want to participate in addressing these and other needs.

A team consisting of about 50 volunteers including veterinarians, veterinary nurses and students, as well as pharmacy and medical records staff, participated at the Everybody Counts and served more than 80 pets.

“It’s truly a wonderful event,” said Dr. Kate KuKanich, associate

professor in small animal medicine. “We are honored that our KSU CVM can join Everybody Counts and make a positive difference on the health and human animal bond of the pets and families in need in our community. By demonstrating to our veterinary students the wonderful local impact we can have when we give back, I hope to inspire them too to lead community events to benefit their neighbors throughout Kansas and beyond, wherever their future veterinary careers take them.”

The CVM team performed physical examinations, vaccines and preventative care as indicated. Products were donated by



Third-year students Lauren Miller and Jason Gregory examine one of the pets brought in for Manhattan’s annual event.

generous pharmaceutical and nutrition/pet food corporations.

“We are so proud of all of those who volunteered their time and talent to this event,” Dean Bonnie Rush said. “By joining this event, we hope were able to foster well-being through ownership of healthy pets and minimize transfer of zoonotic disease in our community.”

Donors contribute \$212 million in fiscal year 2019 for Kansas State University; \$15.19 million for the CVM

Donations to Kansas State University reached an all-time high in the fiscal year ending June 30, 2019, with more than \$212 million in private gifts through the KSU Foundation.

Giving to the university's endowment was the highest in five years, and the value of K-State's long-term investment pool grew to \$613.4 million. Endowment growth is key to K-State's goal of becoming a top 50 public research university by the year 2025, as it directly correlates to the university's capacity to serve future generations of K-Staters.

Of the total funds, \$15.19 million was specifically



Dean Bonnie Rush meets with reps from Hill's Pet Nutrition to thank them for a lead gift supporting the creation of a new Pet Health & Nutrition Center at the Veterinary Health Center.

for the CVM. This was the second largest fundraising year in KSUCVM history. Thanks so much to the 1,531 alumni, friends and corporate partners who have graciously and generously supported the college this year!

Undergrad student wins third place for research poster at anatomy conference

Congratulations to Emily Johnson, a fifth-year senior in animal science and pre-veterinary medicine major from Leavenworth, Kansas, who works in the anatomy lab with Dr. Pradeep Malreddy.

Emily recently earned third-place recognition at the biennial meeting of the American Association of Veterinary Anatomists for her poster on "Rehabilitation of the osteological specimens using an alkali-, acid- and enzymatic-based solutions." The poster competition was mostly comprised of entries by graduate students and postdoctoral fellows.

"I have learned a lot from doing this project," said Emily, who is also a member of the K-State rowing team. "I have never worked with research before so this was unknown territory for me. Along the way I've learned that an enormous amount of thought has to be put into coming up with a plan just to do the experiments."

Dr. Malreddy said Emily's responsibilities have included preparing cadavers for training and managing inventory. She recently found a set of animal bones in the basement of Coles Hall.

"These bones must be about 50 years old," Dr. Malreddy said. "They were dusty and oily, so



Emily Johnson, a fifth-year senior in animal science and pre-veterinary medicine, won third place for her poster at the meeting of the American Association of Veterinary Anatomists.

we thought it would be a good project for Emily to rehabilitate the bones for use. For Phi Zeta Research Day [on March 26], we had Emily perform experiments and data analysis on the bones. Emily won a first place award for her poster at Phi Zeta, so we suggested having her submit the poster for AAVA."

Emily explained for her project that she, Dr. Malreddy and lab technician Sandy Roten had to take into consideration every factor they could think of including the temperature of the room and label testing for our specimens.

"Along with the seemingly infinite factors to consider, there were many different ways to perform the experiments such as focusing on the concentration or on how much time to leave the bones in the solutions," Emily said.

New activities at summer Day Camp



The Vet Med ROCKS student club recently hosted its second annual Summer Camp for elementary, middle school and high school students. New learning activities were added, which took advantage of some of the newly renovated spaces in the CVM. There were more than 150 campers across three different sections, with tours of the BRI and specific clinical experiences. See more photos at Lifelines online!

CVM News Ticker



Dr. Chris Blevins, Maggie Adamson, Michael Duff, Alison Brunner and Jamie Chermak team up to serve as the original onsite veterinary staff for the Dodge City Roundup Rodeo. See more pictures at Lifelines online!

Experts from industry, academia and government — including the Food and Drug Administration's Center for Veterinary Medicine — are leading a series of discussions focused on minimizing disruptions and increasing communication in the supply chain operations phase of animal pharmaceutical production. "Animal Pharmaceutical Supply Chain Interruptions" is from 9 a.m. to 4:30 p.m. Sept. 26 at Kansas State University's Olathe campus.

K-State to host international Rabies in the Americas conference in Kansas City. The committee is planning an informative program with innovative technology, intriguing research, and updated protocols and procedures, with activities to highlight what Kansas City has to offer. Mark your calendars for Oct. 27-Nov. 1.

lifelines is published monthly by Marketing and Communications in the College of Veterinary Medicine, edited by Joe Montgomery, jmontgom@vet.k-state.edu and Brenna Leahy, leahy@vet.k-state.edu. More content: www.vet.k-state.edu/lifelines/1908.html

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