



Drugs from bugs: NIH grant for Dr. Philip Harwidge



A new grant will support research toward developing drug treatments for psoriasis.

By Adrian Austin

Dr. Philip Harwidge, a microbiologist and biochemist, has received a \$218,593 grant from the National Institutes of Health for enhancing the development of drug treatments for psoriasis, a chronic inflammatory skin disease.

The study, “Using anti-inflammatory bacterial proteins to treat psoriasis,” is in collaboration with Drs. Christian Rueter and Karin Loser, both with the University of Munster, Munster, Germany.

Dr. Harwidge’s research is focused on how bacterial virulence proteins can be developed into anti-inflammatory drugs. This work is derived from the “drugs from bugs” concept. This term refers to the concept that basic research focused on understanding how microbial pathogens have evolved to control and modulate the host immune system during infections can be exploited for novel immune-modulation strategies to treat inflammatory diseases that are unrelated to microbial infections.

“Overactive immune responses are often the causes of different autoimmune or chronic inflammatory diseases such as psoriasis,” Dr. Harwidge said. “Although certain immunosuppressive drugs and various biologics have been used successfully to treat these disorders, these drugs have notable limitations, including the need for many of them to be administered systemically.”

Dr. Rowland receives Iman Award for research

Two Kansas State University faculty members, one from the CVM and one from the College of Engineering, each received \$5,000 awards in recognition of their outstanding research and teaching during a ceremony Oct. 15 at the K-State Alumni Center.

Introduced in 2007, the annual Dr. Ron and Rae Iman Outstanding Faculty Awards are sponsored by the K-State Alumni Association and are made possible through the generosity of Ron and Rae Iman.

The recipient of the Iman Outstanding Faculty Award for Research is Raymond R.R. “Bob” Rowland, Ph.D., professor of diagnostic medicine and pathobiology. Todd Easton, Ph.D., associate professor in engineering, received the Iman award for teaching.

Dr. Rowland’s award recognizes faculty members who have distinguished themselves in their chosen profession and who have contributed significantly through research to improve the betterment of the educational experience, or whose research has had a significant impact on their area of study.

His nominator, Dr. Derek Mosier, professor and head of the Department of Diagnostic Medicine and Pathobiology, said, “Bob has established an international reputation addressing fundamental problems



PHOTO BY DAVID MAYES

Dr. Derek Mosier, Dr. Bob Rowland, Ron and Rae Iman gather after presenting Dr. Rowland with the outstanding faculty award.

in the detection and control of infectious pig diseases caused by emerging and foreign viruses. Bob’s lab has also been active in the training and mentoring of undergraduate, graduate and veterinary students as well as post-doctoral students and junior research faculty. His professional service to research organizations as well as the department, college and university are also notable.”

Dr. Rowland is a virologist and immunologist and is an internationally recognized leader in swine health. For more than 25 years, he has worked on developing control measures for porcine reproductive and respiratory syndrome virus, known more commonly as PRRSV, the most devastating disease to ever face the global swine industry.

His recent work, in collaboration with scientists from the University of Missouri, demonstrated that genetic modification of the PRRSV receptor delivers complete resistance to disease. This work is considered a “game changer” that creates a path for the elimination of the virus and other pig diseases.

Other work related to host genetics is the discovery of a severe combined immunodeficiency syndrome in pigs. His national and international leadership is demonstrated by directorships of the USDA-funded PRRS Coordinated Agricultural Project, PRRS Host Genetics Consortium, and the North American PRRS Symposium. He serves as a subject matter expert on trade issues affected by swine diseases.

CVM selects 31 new Early Admission Scholars

A group of 31 Kansas State University undergraduate students will have a special opportunity to fulfill their dreams of becoming veterinarians. The College of Veterinary Medicine recognized these students for being selected in its Early Admission Program during an afternoon ceremony Oct. 26 in Trotter Hall.

“The young men and women inducted into the Veterinary Scholars Early Admission Program represent the top 5 percent of Kansas State University students,” said Dr. Callie Rost, assistant dean of admissions.



Front row (from left): Erin Cocjin, Mason Loy, Mira Bhagat, Allison Burnett, Kathleen Fitzpatrick, Madeline Myrick, Lauren Greiner and Elizabeth Seidl. Middle row: Claire Stastka, Heidi Anderson, Hannah White, Lauren Bridson, Jayden Hanna, Kirsten Stous, Cheyenne Lozano, Greta Pereira, Grace Calo and Sarah Timmerman. Back row: Elizabeth Buller, Rachel Brown, Elise Hesseltine, Georgia Wilde, Brooks Nichols, Caleb Brezina, Brittany Salisbury, Julia Gross, Lilli Heinen, Ashley Kragelund, Abigail White, Lucy Schermerhorn and Shelby Watkins.

K-State recognizes Dr. T.G. Nagaraja CVM joins One Health Day in Olathe



Dr. T.G. Nagaraja's as received an award sponsored by the William T. Kemper Foundation and the Commerce Bancshares Foundation.

Dr. T.G. Nagaraja was one of two prolific researchers and educators at Kansas State University named as a recipient of a 2018 Commerce Bank and W.T. Kemper Foundation Distinguished Graduate Faculty Award.

"This year's recipients, Drs. Kirkpatrick and Nagaraja, are faculty members who excel in research and in the teaching and mentoring of K-State students," said Shawn Drew, market president and CEO of Commerce Bank, Manhattan.

As part of their award selection, Drs. Kirkpatrick and Nagaraja each gave a public presentation on their work.

Dr. Nagaraja is a highly regarded researcher on the

gut microbiology of cattle. Supported by extramural funding of more than \$11 million — predominately from the U.S. Department of Agriculture and noted animal health companies — Dr. Nagaraja's work has focused primarily on the role of rumen microbes in function and dysfunction of the rumen, particularly liver abscesses of cattle and on foodborne pathogens, with a focus on Shiga toxin-producing *Escherichia coli* and salmonella in cattle. His work has resulted in seven U.S. patents.

Dr. Nagaraja's research is a blend of basic and applied studies and involves collaborative interactions with epidemiologists, molecular biologists, pathologists and ruminant nutritionists. He and his associates have made significant contributions in the following areas: use of ionophore antibiotics in cattle; causes, pathogenesis and vaccine development for liver abscesses in feedlot cattle; causes and preventions of ruminal disorders such as acidosis and bloat; ecology of Shiga toxin-producing *Escherichia coli* and *salmonella* in cattle; and antimicrobial resistance and antimicrobial alternatives. Dr. Nagaraja and his associates have published 19 book chapters, 14 review papers, five symposia proceedings and 214 peer-reviewed journal papers.



The CVM's Dr. Mike Apley speaks at KC One Health Day.

Kansas City One Health Day, held at K-State Olathe, included a keynote about antimicrobial resistance from Dr. Mike Apley.

Two students with connections to the CVM received scholarships in recognition of their One Health-centric research.

Brianna Salgado of Kansas State University's animal sciences and industry program won the undergraduate scholarship for her project, "Development of Local Kansas *E. coli* UTI Antibigrams to Improve Antimicrobial Stewardship in Companion Animal Medicine." She has been mentored by the CVM's Dr. Kate KuKanich.

Sarah Remfry was awarded for "Prevalence of Shiga toxin-producing *Escherichia coli*, a major foodborne pathogen, in swine feces." She is being mentored by the CVM's Dr. Raghu Amachawadi.

CVM News Ticker



The Rabies Lab was well-represented at the Rabies in the Americas (RITA) meeting in Buenos Aires Oct. 28 to Nov. 1. In addition to giving several talks and poster presentations, Director Dr. Susan Moore and Beth McQuade, research assistant, announce the location for next year's conference.



This Halloween brought out some interesting costumes for the occasion, for both people and animals. From top left: Shannon Nicholson, Amy Thornborrow, Teresa Lynch, Cindy Mott and Malissa Thomas; Sombra Wilson (submitted by Sarah Wilson); Kimberly Glotzbach and Shawna Nehls; Fegus Thomsen (submitted by Lydia Thomsen); the Sara Gonzalez and family - Harry Potter (Harrison), Hermione (Penelope), Bellatrix (Sara), and Snape (John).

Mentoring with naked mole-rats



Drs. David Eshar, Gail Huckins and Trenton Shrader with an anesthetized naked-mole rat at the Lincoln Zoo veterinary clinic.

A group including K-State veterinary faculty, staff, an intern, students and even an alumnus, recently finished an intense three-day anesthesia research project at the Lincoln (Nebraska) Zoo. The featured subject of the project involved naked mole-rats.

"This project is the research internship project of Dr. Gail Huckins, our zoological

medicine intern," said Dr. David Eshar, associate professor in companion exotic pets, wildlife and zoo animal medicine. "The zoo veterinarian, Dr. Trenton Shrader (class of 2015), director of medicine and conservation projects.

Dr. Eshar said the project received funding through the 2018 MCAT grant.

lifelines is published monthly by Marketing and Communications in the College of Veterinary Medicine, edited by Joe Montgomery, jmontgom@vet.k-state.edu. More stories at: www.vet.k-state.edu/lifelines/1811.html

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