



# Spotlight on Research

Volume IX, No. 2, January 2012

University of Missouri-Columbia, College of Veterinary Medicine

## Office of the Associate Dean for Research and Postgraduate Studies

This office provides information regarding research programs available to the faculty of the College, details on postgraduate programs, and may assist faculty in preparing grant proposals for submission.

This newsletter will continue to highlight recent grant proposal submissions, recognize principal and co-investigators that have been successful in securing grant funding, and applaud CVM faculty, staff and students who have received honors or special recognition.

Information from the Office of Sponsored Program Administration regarding policy and procedures changes and upcoming grant deadlines is available on the last page.

Finally, thanks to all faculty that forwarded publication and research honor/award information. If you have material for inclusion in the next newsletter, please send it to this office. Your input and suggestions are greatly appreciated.

*Donna Stearns, Newsletter Editor*  
Grants and Contracts Administrator  
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All PeopleSoft Proposal Signature Routing Sheets (PSRS) requiring dean's signature should be brought/sent to the CVM Office of Research, W203 Veterinary Medicine. In order to identify personnel affiliated with grant funding, track project effort and shared credit, **please include an itemized Year 1 budget**. In addition, the grant face page and abstract (or work scope) should be attached if not specifically identified within the PSRS document.

## New State Veterinarian is CVM Alum



Director of Agriculture Dr. Jon Hagler announced Dr. Linda Hickam as Missouri's State Veterinarian on September 13<sup>th</sup>. A native of Columbia, Mo. and graduate of the MU College of Veterinary Medicine, Dr. Hickam, will serve as Missouri's lead animal health authority and administrative head of the Department's Division of Animal Health.

"Missouri's animal health practices are among the best in the nation and I am confident Dr. Hickam is the right person to take over," said Director of Agriculture, Dr. Jon Hagler. "Dr. Hickam has worked closely with Dr. Woods (past state veterinarian) over the past three years and the livestock industry will continue to move forward under her leadership."

Dr. Hickam has been with the Missouri Department of Agriculture since 2007. For the past three years she has served as Missouri's Deputy State Veterinarian and State Epidemiologist. She has a diverse background in animal health, including small and large animal practice, commercial livestock production and sales facilities, as well as regulation and policy development.

The health of Missouri's livestock is enviable among states. Our stringent animal health regulations and rigorous disease testing help keep Missouri free from costly and threatening livestock diseases. The Animal Health Division is responsible for controlling, eradicating and testing for livestock disease in Missouri. This is accomplished through testing, vaccinations and regulatory programs involving cattle, swine, horses, poultry, exotic animals, sheep, goats and small animals as provided under the Diseased Animal Law.

## In the News

The past few months have found many College of Veterinary Medicine faculty and researchers in national and international news venues. Just a sampling:

### **MU Study Finds Risk Factors for Cat Cancer, Could Have Implications for Human Cancer Prevention and Treatments**

*MU NewsBureau* (Sept. 28, 2011) — A recent, large-scale study on cat intestinal cancer has provided new insight into a common pet disease and its causes; the findings could ultimately benefit humans. **Kim Selting**, associate teaching professor of oncology at the MU College of Veterinary Medicine, said tracking cancer in animals may indicate environmental factors causing cancer in humans. “We are looking for patterns of cancer development in animals, so we can find common risk factors,” said Kim Selting, associate teaching professor of oncology at the MU College of Veterinary Medicine. “I mentored a former resident, **Kerry Risetto**, as she examined intestinal tumors in cats on a very large scale, and we believe we can use this information to eventually identify cancer risk factors and treatments for humans.”

Using a database, the researchers examined 1,129 cases covering 47 years of intestinal cancer in cats. The researchers found that most feline intestinal cancers were lymphoma, or cancer of the immune system, and most cancers were found in the small intestines. The researchers also determined that the Siamese breed, particularly males seven years old or older, had an increased risk of developing intestinal cancer.

“This is important because there are very few population-based studies that allow us to evaluate cancer and risk factors on such a large scale,” Selting said. “Pet owners should be on the lookout for unexplained weight loss, vomiting and diarrhea, because these issues can be associated with intestinal cancer.”

Selting says that tracking animal cancer is important because animals share the environment with humans. By noting patterns of cancer development, doctors and veterinarians may become aware of environmental factors that could be causing tumor progression in different species, including humans. “Animal health care may predict what could be coming for human health care,” Selting said. “For example, dogs are really the only species, other than humans, that develop the toughest type of prostate cancers. If a treatment develops that can help with prostate cancer, we can test it on dogs and find results faster because cancer in dogs progresses faster than cancer in humans.”

The study “Recent Trends in Feline Intestinal Neoplasia: An Epidemiologic Study of 1,129 Cases in the Veterinary Medical Database from 1964 to 2004,” won an award for the best research generated from the Veterinary Medical Database (VMDB). The study was published in the *Journal of the American Animal Hospital Association*. In addition to Risetto, other coauthors include J. Armando Villamil, Jeff Tyler, and Carolyn Henry, all from the University of Missouri.

### **For Common Toy Breed Dog Windpipe Issue, Veterinarians Use Technology and Precision**

*ScienceDaily* (Oct. 4, 2011) — Jack, a 12-year-old Yorkshire terrier, was lethargic and gasping for air when he arrived at the University of Missouri Veterinary Hospital. His tongue and gums were a bluish-purple. But, just one day following an innovative procedure, Jack bounced back to his former youthful exuberance. Jack was suffering from tracheal collapse. Tracheal collapse occurs when the cartilage comprising the c-shaped rings of the trachea collapse, leaving dogs to breathe through a trachea that resembles a narrowed or closed straw. Standard treatment involves medical management with lifestyle changes and drugs aimed at minimizing the consequences of a smaller airway. For many dogs, medical management ultimately ceases to work.

In Jack's case, MU veterinarians inserted an intra-luminal stent, like a tiny spring, within the trachea. **Carol Reiner**, associate professor of small animal internal medicine, performed the procedure on Jack, which required no incision. "This condition is very common in toy breeds, but not all dogs with this condition have such severe symptoms," Reiner said. "We start with medical management, but because this is a degenerative disease, further measures are sometimes necessary. The procedure that Jack received is generally considered a last-ditch effort. It takes a great deal of planning and precision. But its success can be seen -- and heard -- almost immediately."

The life-giving treatment Jack received was performed at the MU Veterinary Medical Teaching Hospital, the only facility in Missouri known to offer the particular procedure that allowed Jack to breathe again so quickly. The MU College of Veterinary Medicine's success in the placement of these stents can be attributed to the teaching hospital's high-tech equipment and a full team of skilled veterinary medicine specialists, including board certified internists, anesthesiologists, radiologists and veterinary students.

"When Jack first came to us, he was wheezing and coughing, and we had to carry him around because of his condition," said **Heather Wise**, a fourth-year veterinary medical student. "At his follow up, we didn't even hear him coming down the hall for his appointment." Jack's two-week follow-up examination showed remarkable results. The team found that his oral membranes had returned to a healthy pink color and his tracheal and lung sounds were normal. The radiographs show the tracheal areas once absent of air are now propped fully open with the stent.

"We didn't realize how serious his condition was, but it was a great relief to know that it could be treated," said Connie Miller, Jack's owner.

### **Veterinarians Find Infections Faster by Monitoring Blood Compound; Blood Test for Dogs Could Lead to Similar Human Test**

*ScienceDaily* (Dec. 5, 2011) — In pets and people, the time it takes to diagnose an infection may mean life or death. Now, a University of Missouri veterinarian is identifying ways to diagnose pet infections in approximately a third of the current diagnosis time. The resulting test could be used eventually for humans.

"Infections can be difficult to diagnose, and many veterinarians have to send samples to a lab and wait three days or more as the lab attempts to grow a culture," said **Amy DeClue**, assistant professor of veterinary internal medicine in the MU College of Veterinary Medicine. "Meanwhile, the infection continues to spread each day that veterinarians wait on lab results, which is detrimental to the patient. In extreme infections, called sepsis, more than half of patients die. My group has been evaluating different blood biomarkers that could give a quick and accurate indication of infection, and we believe we've found a biomarker that will only require a simple blood test."

DeClue and her colleagues found that measuring the amount of the blood biomarker N-terminal portion of pro C-type natriuretic peptide (NT-pCNP) is a good indication of infection, and the same is true in humans. Working with collaborators at Veterinary Diagnostics Institute, DeClue hopes to develop a portable bedside test that veterinarians could use to quickly test patients for infection and ultimately target a better cure.

"In animal and human medicine, one goal is to reduce the amount of antibiotics used in treatment, to reduce bacterial resistance to antibiotics," DeClue said. "If successful, future tests could help veterinarians tailor treatment to the specific problem and reduce antibiotic use."

"The systems in dogs and people are very applicable to each other, so whatever biomarkers we find in dogs could also benefit people," DeClue said.

DeClue has tested several biomarkers for infection in dogs. "Evaluation of serum NT-pCNP as a diagnostic and prognostic biomarker for sepsis in dogs" was published in the May-June issue of the *Journal of Veterinary Internal Medicine* and "Plasma nitrate/nitrite concentrations in dogs with naturally developing sepsis and non-infectious forms of the systemic inflammatory response syndrome," was published in the

November issue of the journal *Veterinary Record*. Co-authors include **Kara Osterbur**, a graduate student and emergency and critical care resident in the MU College of Veterinary Medicine.

## **Pet Kidney Injuries Are Similar to Human Kidney Injuries**

*ScienceDaily* (Dec. 19, 2011) — When evaluating early kidney injuries in people, doctors monitor blood level increases of creatinine, a waste product of muscle breakdown, to understand the severity of the injury. Creatinine is filtered by the kidneys, and small increases are an indication of early damage to vital kidney function. For pets suffering critical illness or injury, University of Missouri researchers have found that even tiny increases of creatinine in blood also could indicate acute kidney damage. Using human blood measurement guidelines for acute kidney injuries, the researchers believe they can now help pet owners better know the severity of their animals' illness.

"The concept of monitoring creatinine for kidney disease in dogs is not new to veterinary medicine," said **Marie Kerl**, associate teaching professor in the department of veterinary medicine and surgery in the MU College of Veterinary Medicine. "Dog kidneys and human kidneys function the same way; there are only slight structural differences. In people hospitalized with any critical illness, acute kidney injury can develop even if kidney function was normal at admission. Doctors can determine whether kidney injury is occurring by seeing even very small increases in creatinine previously thought to be insignificant. We undertook a study to determine if critically ill dogs showed a similar risk of early kidney injury. If a pet is hit by a car or attacked by a larger animal causing multiple injuries, the kidneys are very susceptible to damage since 25 percent of an animal's blood passes through the kidneys with every heartbeat."

Kerl and her colleagues performed a retrospective study of creatinine change in 164 injured dogs admitted to the intensive care unit at the University of Missouri Veterinary Medical Teaching Hospital. Researchers compared the animal medical records and creatinine levels to criteria used to evaluate human acute kidney injury. The researchers then developed a veterinary acute kidney injury staging system, which would indicate to veterinarians how increases of creatinine correspond to the animal's risk of death.

"One difference between human and animal medicine is that pet owners may have a different tolerance for how far they want to go with treatment," Kerl said. "Cost is always a concern, and while some animals can get better, many animals with multiple injuries will not. This kidney evaluation staging system would be another way for veterinarians to share recommendations based on the probable outcomes."

Kerl's paper, "Characterization of acute kidney injury in hospitalized dogs and evaluation of a veterinary acute kidney injury staging system," was published in the *Journal of Veterinary Emergency and Critical Care*. Co-authors include **Meredith Thoen**, who completed residency training in the MU Department of Veterinary Medicine and Surgery.

The research reported in the published paper is part of Mizzou Advantage, the five unique areas that set MU apart from other universities. The project contributes to the "One Health/One Medicine: The Convergence of Human and Animal Health," which expands on MU's pioneering work in the convergence of human and animal health and connects it with research and instruction in health care delivery, health policy, medical ethics, health care business models and the culture of healthy living.

## Grants Submitted September - December 2011

PI/Co-Investigator(s)	Project Title	Amt Rqsted	Sponsor
Charles Brown	Dynamics of Immune Cell Infiltration during Experimental Lyme Arthritis	\$60,000	Natl Res Fnd for Tickborne Disease
Amy DeClue, Sandra Axiak & John Dodam	Opioid Immunomodulation	\$12,960	AKC Canine Health Fdn
Elizabeth Bryda, Craig Franklin & Yuksel Agca	A Universal Model for Cell Ablation	\$1,100,664	Harvard Univ Med Schl
RW Bill Stich, Guoquan Zhang & Gayle Johnson	Immune Intervention with Tick Acquisition and Transmission of Anaplasma Pathogens	\$1,829,375	NIH
James Cook & multiple investigators from CVM/Med School	Center of Research Translation (CORT)	\$7,230,015	NIH
James Cook, Aaron Stoker Crystel Cook	xxx Studies at University of Missouri	\$103,791	Unspecified Sponsor
Deborah Anderson	Testing of Novel Decontaminants against Bacillus anthracis	\$30,508	Los Alamos Labs
Heide Schatten	Prevention and Treatment of Prostate Cancer with Plant Extracts	\$74,500	MU Research Bd
Craig Franklin, Matthew Myles, Wade Davis, Jamal Ibdah & Jack Bragg	Molecular Fecal Biomarkers for Colitis-Associated Cancer	\$75,000	MU Research Bd
Charles Brown	Cyclooxygenase-1 and Humoral Immunity	\$75,000	MU Research Bd
Joanne Kramer, Kevin Keegan, David Wilson, Shannon Reed & Frank Pai	Detection of Lameness in Racehorses at the Gallop	\$63,216	Grayson Jockey Club Res Fdn
Amy DeClue, John Dodam & Sandra Axiak	Tramadol Immunomodulation in Dogs	\$11,510	AKC Canine Health Fdn
Guoquan Zhang	Mechanisms of B Cell-Mediated Protective Immunity Against Q Fever	\$1,858,473	NIH
Deborah Anderson	Development of a Drosophila Model to Study Vector Colonization by Yersinia pestis	\$22,724	Indiana Univ
Ferris Pfeiffer, James Cook, Aaron Stoker & Keiichi Kuroki	Translational Model for Assessing Functional Efficacy of a Tissue Engineered Meniscus	\$2,241,185	NIH
Heide Schatten	Centrosomal Asymmetry and Cell Differentiation in Mammalian Embryos	\$151,500	NIH NICHD
Aaron Ericsson & Craig Franklin	Molecular Fecal Biomarkers for Colitis-Associated Cancer	\$150,000	Am Cancer Soc
Cynthia Besch-Williford, Lela Riley, Robert Livingston, Earl Steffen & Matthew Myles	Operation of an Animal Diagnostic Laboratory (amend)	\$100,000	NIH NCI
Fred Wininger & Gary Johnson	Sensory Neuropathy in the Border Collie - Genetic Investigation	\$12,960	AKC Canine Health Fdn
Ferris Pfeiffer, Crystel Cook, Keiichi Kuroki, James Cook & Bhajanjit (Sonny) Bal	Fabrication and testing of a canine biological femoral head arthroplasty	\$218,495	NIH NIAMS
Craig Franklin, Leona Rubin & Amy DeClue	2012 Merial Veterinary Research Scholars Program	\$20,000	Merial Ltd.
James Cook, Keiichi Kuroki & Aaron Stoker	Microfracture Technique Study	\$23,516	Unspecified Donor
Leah Cohn	Ehrlichia in Missouri	\$11,012	Unspecified Donor

Jimmy Lattimer, Kimberly Selting, Jeffrey Bryan, Carolyn Henry, Sandra Axiak & Alan Ketring	Liquid Brachytherapy – A Novel Treatment for Solid Inoperable Tumors	\$27,119	Unspecified Donor
Deborah Anderson	Regulation of Immune Evasion and Cytotoxicity by the Yersinia pestis Type III Secretion System	\$1,807,176	NIH
Amy Declue, Sandra Axiak & John Dodam	Investigating Opioid Immunomodulation	\$4,000	Richard Wallace Res Incentive
Fred Wininger	Diffusion Weighted Imaging and Magnetic Resonance Spectroscopy as an Outcome Measure for Assessment of Therapeutic Strategies in Degenerative Myelopathy Dogs: A Spontaneous Model of Amyotrophic Lateral Sclerosis	\$4,000	Richard Wallace Res Incentive
Jeff Bryan	Development of Artemisinin Compounds for the Treatment of Cancer	\$169,463	Univ Washington
Patrick Pithua	Ecology & Evolution of Enteric Pathogens in North American & African Ecosystems: A Comparative Eco-Epidemiological Investigation	\$253,484	N Dakota State Univ
Michael Lewis	Core Agreement with VA for Chemo/Nuclear Canine Treatment	\$53,306	Harry S Truman VA Hospital
Craig Franklin, Elizabeth Bryda & Yuksel Agca	Mutant Mouse Resource and Research Center, Yr13	\$1,464,724	NIH NCRR
Jimmy Lattimer, Kimberly Selting, Alan Ketring, Jeffrey Bryan, Carolyn Henry & Sandra Axiak	A New Radiopharmaceutical for the Treatment of Metastatic Bone Cancer	\$303,000	Unspecified Donor
Joanne Kramer, Kevin Keegan, David Wilson, Shannon Reed & Frank Pai	Detection of Lameness in Racehorses at the Gallop	\$64,616	Am Quarter Horse Assn
Jeff Bryan	Novel Enzyme Inhibitor for the Treatment of Cancer	\$75,680	Unspecified Donor
Jeff Bryan, Amy DeClue, Sandra Axiak & Jimmy Lattimer	Evaluation of Immunological and Tumor Characteristics Defining Response to an Intravenous Infusion of C. novyi-NT for the Treatment of Melanoma, Soft Tissue Sarcoma or Select Carcinomas in Dogs	\$399,943	Unspecified Donor
Carol Reiner	Effect of xxxxx in a Feline Model of Allergic Asthma-Phase =II	\$90,000	Unspecified Donor
Guoquan Zhang	Role of Dendritic Cells in Regulating T Cell-Mediated Immunity Against Q Fever	\$185,255	Washington Univ – MRCE
Charles Brown	Role of Eicosanoids on the Innate Immune Response to Francisella infection	\$187,315	Washington Univ – MRCE
Deborah Anderson	Role of Type I Interferon Signaling in the Pathogenesis and Treatment of Plague	\$186,131	Washington Univ – MRCE
Leah Cohn	Towards a Cure for Cytauxzoonosis (Continuation2)	\$50,000	ALSAM Fdn
<b>Grants Submitted Fall 2011 – Shared Credit w/ CVM</b>			
<b>PI/Co-Investigator(s)</b>	<b>Project Title</b>	<b>Amt Rqstd</b>	<b>Sponsor</b>
George Stewart	Creation of an Animal Model for Cutaneous Anthrax	\$75,000	MU Research Bd
Cheryl Rosenfeld & David Geary	Developmental Exposure to Bisphenol A on Neurobehavioral Responses	\$75,000	MU Research Bd

Monique Lorson, Randall Prather & Duane Keisler	Determining Therapeutic Efficacy in a Large Animal Model of SMA	\$75,000	MU Research Bd
Cheryl Rosenfeld	Effects of Developmental Bisphenol A Exposure on Brain and Behavior of Rhesus Macaques	\$732,972	Tulane Univ
Kattesh Katti, Jimmy Lattimer, Cathy Cutler, Evan Boote, Raghuraman Kannah & Kimberly Selting	Pharmacokinetic Studies towards Clinical Translation of 198AuNP-EGCg for Prostate Tumor Therapy	\$1,135,658	Dept of Defense
Susan McKarns & Craig Franklin	TNF: A Target for Controlling Regulatory T Cells	\$635,214	Dept of Defense
Bhajanjit (Sonny) Bal, Keiichi Kuroki, Crystel Cook, Ferris Pfeiffer & James Cook	Fabrication and Testing of a Canine Biological Femoral Head Arthroplasty	\$221,375	Ortho Res/Edu Fdn
Martin Katz, Joan Coates, Fred Wininger, Dietrich Volkmann, Jacqueline Pearce & Gayle Johnson	Efficacy of Using Intrathecal TTP1 Enzyme Replacement Therapy to Treat NCL2 in a Canine Model-Amedment 6	\$250,192	Unspecified Sponsor
Chris Lorson	Analysis of Anti-Sense Molecules in SMA Mice (Suppl)	\$38,370	Unspecified Sponsor
George Stewart	Identification of Exosporium Components of Clostridium difficile	\$400,356	NIH
Cheryl Rosenfeld, David Geary, Todd Schachtman & R Michael Roberts	Behavioral Sex Differences in Vulnerability to Development Exposure to Bisphenol A	\$1,796,256	NIH
Mahmoud Almasri, Yuksel Agca & Xu Han	Three-dimensional MEMS-based Counter for Accurate Optimization of Time Sensitive Cell Cryopreservation Protocols	\$396,310	NSF Dirc Engr
Shinghua Ding & Christopher Baines	Neuroprotective Role and Mechanisms of PBEF in Cerebral Ischemia	\$1,844,784	Dept Health & Human Svc
Chris Lorson	Modulating Pathogenic Alternative Splicing with Botanical Compounds	\$386,652	NIH
Monique Lorson	Evaluating Therapeutic Delivery and Efficacy in a Large Animal Model of Spinal Muscular Atrophy	\$186,732	MO Spinal Cord Injuries Res Prgm
Chris Lorson, Monique Lorson & Monir Shababi	Determinants that Regulate Splicing of SMN	\$2,433,750	NIH
Stephen Sayers, Aaron Stoker, James Cook, Keiichi Kuroki & Katherine Edwards	Power Training in Older Adults with Knee OA: Muscle Performance and Urinary Biomarkers	\$416,627	NIH
John Robertson, Douglas Miller & Jimmy Lattimer	Point of Care Biological Assays for Determining Absorbed Ionizing Radiation Dose (Biodosimetry) after Radiologic and Nuclear Events	\$1,065,506	NIH NIAID
Martin Katz, Joan Coates, Fred Wininger, Gayle Johnson, Jacqueline Pearce & Dawna Voelkl	Testing Therapies for Hereditary Neuronal Ceroid Lipofuscinosis in a Canine Model	\$2,950,435	NIH NIND
Rajiv Mohan (Elizabeth Giuliano, collaborator)	Gene Therapy in the Cornea	\$1,459,895	NIH NEI
Carl Freter, Indira Benakanakere, Jeffrey Bryan & Carolyn Henry	Depletion of Membrane Cholesterol as a Strategy to Manage/Treat Cancer	\$1,781,553	NIH
Cheryl Rosenfeld, David Geary, Todd Schachtman & R Michael Roberts	Early Bisphenol A Exposure and Epigenetic Disruption of Sexually Selected Traits	\$1,776,017	NIH
Monique Lorson	Pig Animal Model of SMA for Therapeutic Studies	\$100,000	Fight SMA

Kattesh Katti, Jeff Bryan, Raghuraman Kannah, Anandhi Upendran, Cathy Cutler, Sandra Axiak, Indira Benakanakere, John Robertson, Jimmy Lattimer, Evan Boote, Justin Davis & Amolak Singh	Novel Nanotherapeutic Approaches to Achieve Tumor Staticity	\$4,240,381	NIH NCI
Salman Hyder & Matthew Cook (fellow)	Novel Breast Cancer Therapy using Cholesterol Biosynthesis Inhibitors	\$102,328	NIH
Chris Lorson	Analysis of *** Compounds in SMA Mice	\$10,110	Unspecified Donor

**Grants Awarded September - December 2011  
Totaling \$3,407,819\***

PI/Co-Investigator(s)	Project Title	Sponsor	Current Award
Elizabeth Bryda & Hongsheng Men	Development of New Knockout Rat Models for PKD	NIH NIDDK	\$187,481
Bob Backus & Lori Gutzmann (fellow)	Pfizer Animal Health-Morris Animal Foundation Veterinary Fellowship for Advanced Study	Morris Animal Fdn	\$160,000
Elizabeth Bryda & Cythia Besch-Williford	Inbred Rodent Strain Validation and Verification (supplement)	NIH NCI	\$100,000
Philip Johnson, Amy DeClue, Nat Messer, Joanne Kramer, Shannon Reed & Alison LaCarrubba	Dysregulation of Innate Immunity Predicts Outcome during Endotoxemia/SIRS	Am Qtr Horse Assn	\$65,596
James Cook, Aaron Stoker & Crystel Cook	xx Studies at University of Missouri Sponsored by Sponsor (supplement)	Unspecified Sponsor	\$6,060
Lela Riley, Craig Franklin, Beth Bauer & Elizabeth Bryda	Mutant Mouse Resource and Research Center, Yr12 (supplement-carryover)	NIH NCRR	\$2,414,348
James Cook, Kei Kuroki & Aaron Stoker	Microfracture Technique Study	Unspecified Sponsor	\$23,516
Leah Cohn	Ehrlichia in Missouri	Unspecified Sponsor	\$11,012
Guoquan Zhang	Development of O Antigen-Based Vaccines Against Q Fever	NIH NIAID	\$336,240
Carol Reinero & Amy DeClue	Mesenchymal Stem Cells as a Novel Treatment for Feline Asthma: Evaluation of Efficacy and Mechanisms of Immunomodulation	Winn Feline Fdn	\$24,566
Charles Brown	Cyclooxygenase-1 and Humoral Immunity	MU Res Bd	\$55,000
Rebecca Johnson	Puppies for Parole: Shelter Dog Training and Inmate Behavior Outcomes	Mizzou Advantage	\$24,000

\*data based on **Grant Award Summaries** received from OSPA. Also includes MU internal funding awards (e.g., Research Board, Research Council) to the College of Veterinary Medicine.

**Outside Grants (Dalton, Life Sciences Center, Other Divisions, Special) Awarded September - December 2011**

Chris Lorson, "Cooperative Lead Development Program for Treatment of Spinal Muscular Atrophy," Indiana Univ, 06/01/2011 - 05/31/2012, \$82,806.

George Stewart, "Center of Excellence for Emerging and Zoonotic Animal Diseases," Kansas St Univ, 07/01/2011 – 06/30/2012, \$83,168.

Rebecca Johnson, "Dog Presence and Children's Stress during Forensic Interviews for Child Abuse," NIH NICHD, 12/01/2011 – 11/30/2012, \$100,000.

## **Livestock Grant and Project Review COR Announces 2012 AHFF Awards**

Michael Calcutt & Thomas Reilly, "Analysis of Hydrogen Peroxide Production as a Possible Virulence Factor of *Mycoplasma hyopneumoniae*."

Meera Heller, Carol Reiner, John Middleton & Patrick Pithua, Innate Immunity of Neonatal Calves and the Role of Colostrum on Innate Immune Function."

Patrick Pithua, "Risk Factors and Bayesian Estimation of True Prevalence of *Mycobacterium avium* Subspecies Paratuberculosis Infection in Missouri Goat Herds."

## **Phi Zeta Honor Society Announces 2011-2012 Grant Awards**

### Summer Recipients (Mentors):

Ryan Birks (Deborah Fine)  
Christina Chamberlain (Cheryl Reiner)  
Lauren Henderson (Tim Evans)  
Kristin Krebs (Kim Selting)  
Jenna Pannone (Patrick Pithua)  
Anna Ritzman (Charles Brown)

### Fall Recipients (Mentors):

Carla Bermudez (Bill Stich)  
Lynn Brockway (Philip Johnson)  
Matthew Cook (Salman Hyder)  
Amanda Dolgins (Shannon Reed)  
Kevin Donnelly (Elizabeth Giuliano)  
Pamela Fry (John Middleton)  
Jacqueline Glascock (Chris Lorson)  
Chamisa Herrera (Jeff Bryan)  
Kirsty Husby (Shannon Reed)  
Ignacio Idoate (John Middleton)  
Glenn Jackson (Craig Franklin)  
Charles Maitz (Fred Hawthorne)  
Jennifer Menning (Jeff Bryan)  
Farrah Monibi (Jimi Cook)  
Brandie Morgan (Martin Katz)  
Erkan Osman (Chris Lorson)  
Carmela Pratt (Deborah Anderson)

Research findings will be presented during the 35<sup>th</sup> Annual Phi Zeta Research Day on May 4, 2012.

## **Special Recognition and Honors, Fall 2011**

**Dr. Frank Booth**, Professor, BMS, was the invited guest lecturer at the 20<sup>th</sup> MIC OStyn, at the Katholieke Universiteit Leuven, Flanders, Belgium, November 2011.

**Dr. Charles Brown**, Professor, VPB, was re-appointed to the Editorial Board of Infection and Immunity and to the Autumn Immunology Conference Advisory Council, Fall 2011.

**Dr. James Cook**, Professor, VMS, was the keynote speaker at the 27<sup>th</sup> Annual Academy of Surgery Research Meeting, Austin TX, October 2011. He was also a guest editor for *Clinical Relevant Strategies for Treating Cartilage and Meniscal Pathology*, October 2011.

**Dr. Joan Coates**, Professor, VMS, was invited lecturer at the Iowa State University College of Veterinary Medicine (November 2011), the University of Illinois College of Veterinary Medicine (October 2011), the Southwestern

Veterinary Symposium, San Antonio TX (September 2011) and the German Shepherd Dog Club of St. Louis (October 2011).

**Dr. Rebecca Johnson**, Adj Associate Professor, VMS, was invited speaker at the Kansas City Area Life Sciences Institute Annual Symposium, April 2011. She was also featured in the November/December 2011 issue of the *Saturday Evening Post* regarding “the magic of animal-assisted activity.”

**Dr. Dennis O’Brien**, Professor, VMS, presented at the 24<sup>th</sup> Annual Symposium of the European Society for Veterinary Neurology, Tier, Germany, September 2011.

**PROMOTIONS** (Effective September 2011):

Charles Brown, Veterinary Pathobiology – Professor

Joan Coates, Veterinary Medicine/Surgery – Professor

Deborah Fine, Veterinary Medicine/Surgery – Associate Professor

Craig Franklin, Veterinary Pathobiology – Professor

Joanne Kramer, Veterinary Medicine/Surgery – Associate Teaching Professor

Thomas Reilly, Veterinary Diagnostic Laboratory – Clinical Associate Professor

Kimberly Selting, Veterinary Medicine/Surgery – Associate Teaching Professor

Charles Wiedmeyer, Veterinary Pathobiology – Associate Professor



**Elected to Leadership Positions**

Dr. Craig L. Franklin was elected to the Board of Directors of the American College of Laboratory Animal Medicine to serve a three-year term, beginning October 4, 2011. ACLAM is a specialty board recognized by the American Veterinary Medical Association.

Dr. Elizabeth A. Giuliano was elected to the American College of Veterinary Ophthalmologists Board of Regents at the American College of Veterinary Ophthalmologists annual meeting, October 2011.



**A Winning FBR Public Service Commercial**

**Features Jimi Cook and Emma**

Foundation for Biomedical Research’s new 60-second spot “Emma’s Story,” which aired nationally on 15 networks, was honored with two Telly Awards. The 60-second spot features Emma, a yellow lab that received innovative surgery to cure her of lameness thanks to advances made through animal research, and Dr. James L. Cook describing the surgery undertaken at the CVM.

*The Telly Awards is the premier award honoring the finest film and video productions, groundbreaking web commercials, videos and films, and outstanding local, regional, and cable TV commercials and programs.*



## Receives TREK Award

Dr. William H. Fales, veterinary pathobiology, received the TREK Award for Excellence in Veterinary Microbiology from the American Association of Veterinary Diagnosticians in September. The award recognizes distinguished research accomplishments in microbiology that contribute to new scientific findings in veterinary medicine.

### Recent Publications

(Extracted from PubMed, a service of the National Library of Medicine, and received from faculty, September-December 2011. Items to be included in future issues, please forward to Donna Stearns, W203 Veterinary Medicine or by email to [StearnsD@missouri.edu](mailto:StearnsD@missouri.edu).)

Arce-Esquivel AA, KV Kreutzer, JW Rush, JR Turk & MH Laughlin. Exercise does not attenuate early CAD progression in a pig model. *Med. Sci. Sports Exerc.* 44(1):27-38, 2012.

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## NIH ANNOUNCEMENTS --

### Ruth L. Kirschstein National Research Service Awards (NRSA) and Other Fellowship Applications: New Policy on Post-Submission Information on Sponsor's Research Funding

**Notice Number:** NOT-OD-12-022

#### Key Dates

**Release Date:** December 14, 2011

#### Purpose

Ruth L. Kirschstein National Research Service Awards (NRSA) Fellowships (F30, F31, F32, and F33) and non-NRSA International Fellowships (F05) require that the Fellowship Applicant identify a Sponsor(s) who will supervise the training and research experience. The Sponsor should be an active investigator in the area of the proposed research training and must document the availability of sufficient research support for high-quality research training in the application. The review of

Fellowship applications is in part based on the Sponsor(s)' research qualifications, including successful competition for research support.

The following Policy is effective with applications submitted for the December 8, 2011, and thereafter:

Because the Sponsor(s)' funding is a major factor in the review of a Fellowship application, this information will be allowed as post-submission material to update the Sponsor(s)' funding information in the originally submitted application. Applicants must follow all instructions and due dates in [NOT-OD-10-091](#) when submitting additional material. Information on the Sponsor(s)' funding information must not exceed 1 page, and is limited to the project title, funding source (e.g. NIH grant number), a brief description of specific aims, and relevance to the fellowship application under review. The additional material is due no later than 30 days prior to the meeting of the review committee.

## Notice of Two Pilot Processes for Submitting Administrative Supplement Requests Electronically to NIH

**Notice Number:** [NOT-OD-12-024](#)

### Key Dates

**Release Date:** December 21, 2011

### Purpose

Since 2005 NIH has transitioned nearly 95% of its grant applications to an electronic submission process offered through Grants.gov. This includes transitioning to the use of the SF424 (R&R) family of forms and away from the PHS398 paper-based applications. NIH now announces two pilots for submitting administrative supplement requests, one through Grants.gov and one through a "streamlined system" in the eRA Commons. The pilots are anticipated to begin on/around February 1, 2012. Both are expected to standardize the administrative supplement request process and reduce the application burden of grantees.

Please note these two pilots are only available for administrative supplement (non-competing Type 3) requests that do not involve a change of scope or specific aims, and which do not require peer review. All competitive Type 3 requests (also called Competitive Revisions) are handled through separate processes and are not included in these pilots.

During this pilot administrative supplement requests can still be submitted directly to the awarding IC as described in the NIH Grants Policy Statement. However, grantees are encouraged to pilot these new systems to become familiar with them before their use is required. More on the requirements for submitting Administrative Supplement requests can be found in [Section 8.1.2.11](#) of the NIH Grants Policy Statement.

### New Electronic Submission Process for Administrative Supplements

Beginning on/around February 1, 2012 the pilot systems will be available for submission of Administrative Supplement requests. Many ICs have existing web sites detailing the eligibility requirements, programmatic interests, and submission requirements for administrative supplement requests. Although the systems will simplify the application process, NIH strongly encourages applicants to review the awarding IC's web site and discuss potential requests with the awarding IC before submission to ensure they meet the IC's requirements.

The process for submitting an administrative supplement will vary depending on whether the activity code of the parent award requires electronic submission (as of the submission date of the supplement application). Visit the list of [Activity Codes Processed Electronically by eRA](#) to determine if the activity code of the parent award has transitioned to electronic submission.

If the parent award's activity code has not transitioned to electronic submission, then these electronic submission pilots do not apply and grantees should submit administrative supplement requests directly to the awarding IC, as described in the NIH Grants Policy Statement

If the parent award has transitioned to electronic submission, institutions may: (A) electronically submit using the SF424 (R&R) Application Forms and Grants.gov/Apply, or (B) electronically submit using the streamlined submission process of eRA Commons.

All requests utilizing one of the pilot systems must be submitted through an active Administrative Supplement Funding Opportunity Announcement (FOA) published in Grants.gov. For specific administrative supplement programs (such as Research Supplements to Promote Diversity in Health-Related Research), FOAs will be published for applicants to apply through. For all other supplement requests, a general "Parent FOA" will be published allowing submissions that do not fall under an existing administrative supplement program. These will be published in early 2012.

## NSF ANNOUNCEMENTS -

The Directorate for Biological Sciences (BIO) of the National Science Foundation (NSF) has initiated **new procedures** for the submission and review of regular research proposals to the core programs within the Division of Molecular and Cellular Biosciences (MCB), Division of Environmental Biology (DEB), and Division of Integrative Organismal Systems (IOS).

### Division of Environmental Biology (DEB), and Division of Integrative Organismal Systems (IOS)

Effective immediately, **DEB and IOS** will have **only one submission date each year**. In addition, they will **require a pre-proposal** to be submitted with full proposals to be submitted only by those invited to do so.

Important points of the new policy ~

- Pre-proposals have a deadline of **January 10** each year. Invitations to submit full proposals will be issued by **May** each year. Full proposals, for those invited, will be in **August**.
- One of the primary reasons for this change is to reduce the amount of time and energy by the PIs in developing full proposals which have a low success rate. It is expected that the success rate of invited full proposals will be in the range of 25%-35%.
- **The preliminary proposal project description must include a one-page list of all expected participants (PI, Co-PI, collaborators, other senior personnel). The page limit for the narrative part is 4 pages.** The pre-proposal must include a specific enough overview of the approach to answering the scientific question or testing the proposed hypotheses to allow panelists to evaluate the likely success of the research.
- Results from previous support may be included in the pre-proposal but are not required. However, building upon prior support may make the pre-proposal more compelling.
- In a given year, an individual may participate as a PI, co-PI, or lead senior investigator of a subaward on **no more than two** preliminary proposals submitted per Division solicitation (DEB or IOS). Preliminary proposals in excess of the limit for any person may be returned without review.
- There is no limit on the number of times you may resubmit a pre-proposal.
- The **data management plan** is **NOT** required for pre-proposals.
- The **post-doc mentoring plan** is **NOT** required for pre-proposals.
- **Pre-proposals should NOT include a detailed budget or budget justification**; a value of \$2 should be entered in the budget to allow FastLane submission. The words "not Applicable" should be entered in the Budget Justification.
- NO supplementary documents are allowed for the pre-proposal.
- A **Conflict of Interest list IS required** for the pre-proposal.
- Pre-proposals will be reviewed by an expert panel and you will receive a summary of their discussion, as well as individual reviews from three panelists. If you are invited to submit a full proposal, you will have this feedback to help you in preparing the full proposal.
- If a full proposal is invited but not funded, you will have to start over with a pre-proposal.
- If you are invited to submit a full proposal but do not do so, you do not need to start over with a pre-proposal but you must contact your PO for submission guidance.
- If you have a current award that is scheduled to expire between April and December 2012, and because of the switch to pre-proposals in January 2012, creating a gap in funding, contact the PO managing your award for guidance on how to proceed.
- Pre-proposals will be evaluated on intellectual merit and broader impacts, just like the full proposals. For pre-proposals, it is likely that relatively more attention will be given to the general question being addressed in the proposal and the approach to be employed, than the finer technical aspects of the experimental design.
- Priorities will be given to innovative or potentially transformative ideas, the logic of the experimental approach, the qualifications of the PIs to conduct the research, and feasibility.
- Program Directors will use criteria to formulate Invite/Not Invite decisions that are similar to those used currently to make funding decisions of full proposals. These include portfolio balancing with respect to programmatic scientific interest, career level, and the full range of broader impacts.

### Molecular and Cellular Biosciences (MCB)

- The MCB Division is implementing an **8-month cycle for proposal submission**.

- The next round of proposal deadlines will be Sept 6, 2011, May 21, 2012, and Jan 28, 2013.
- The Division will accept investigator-initiated research proposals only in response to Program Solicitation NSF 11-545, [http://www.nsf.gov/publications/pub\\_summ.jsp?ods\\_key=nsf11545](http://www.nsf.gov/publications/pub_summ.jsp?ods_key=nsf11545)
- Proposals for Grants for Rapid Response Research (RAPID), Early-concept Grants for Exploratory Research (EAGER), and for limited support of special meetings and workshop will still be accepted by the core programs at any time during the year.
- An investigator can serve as a PI or co-PI on only **one regular investigator-initiated research proposal per cycle**. This limitation applies only to proposals submitted to the NSF 11-545 solicitation. PIs receiving current funding for other grants may apply.
- Letters of Intent/Pre-proposals are NOT required.

*(Thanks to Sheryl Koenig, Grant Writer in the Life Sciences Center, for compiling information on NSF changes.)*

## **USDA ANNOUNCEMENTS -**

### Allowable F&A increase for USDA grants:

**Indirect Costs** – NIFA is prohibited from paying indirect costs exceeding **30** percent of the total Federal funds provided under each award. This limitation is equivalent to **0.42857** of the total direct costs of an award. See Part IV, E (below) for additional information.

#### ***E. Funding Restrictions***

Pursuant to Section 720 of the General Provisions to the Consolidated and Continuing Appropriations Act, 2012 (Pub. L. 112-55), indirect costs are limited to 30 percent of the total Federal funds provided under each award. Therefore, when preparing budgets, applicants should limit their requests for recovery of indirect costs to the lesser of their institution's official negotiated indirect cost rate or the equivalent of 30 percent of total Federal funds awarded.

Funds made available for grants under the AFRI program shall not be used for the construction of a new building or facility or the acquisition, expansion, remodeling, or alteration of an existing building or facility (including site grading and improvement, and architect fees).

### **Sponsored Programs CVM Satellite Office**

*The OSPA satellite office, located in E115 Vet Med Bldg., said good-bye to Renee Hale in November as she returned to GE Capital in Moberly to be closer to her family. The satellite is staffed by Sr. Grants and Contracts Administrators Jill Ferguson and Jamie Holliday. Hannah Clampitt has been on maternity leave as her family welcomed Willa James Clampitt to the family. The satellite office phone number is 882-1290.*

### **OSPA CERTIFICATE SERIES**

Each session is designed to enhance overall technical expertise in sponsored projects. Courses will cover various areas of sponsored projects and will be in various formats of lectures and case studies as well as hands-on computer training. The format of the series is in four tracks; Introductory Overview, Regulatory, Pre-Award, and Post-Award. Registration is required for each course with a minimal non-refundable fee for each class. Upcoming: *Budget Development Pre-Award* (February 21, 2012); *Notice of Grant Award, Acceptance & Establishment of Award Pre-Award* (February 22, 2012); *Effort Verification Reporting, Cost Transfers and Payroll Correcting Entries Post-Award* (February 22, 2012); *Cost Share Post-Award* (February 22, 2012). Watch email for registration announcements.

## Grant Information and Tips

How to Locate NIH Funding Opportunities - click on the link below:

<http://grants.nih.gov/grants/guide/index.html>

How to Locate NIFA (formerly CSREES) Funding Opportunities – click on the link below:

[http://www.csrees.usda.gov/funding/application\\_info.html](http://www.csrees.usda.gov/funding/application_info.html)

How to Locate NSF Funding Opportunities – click on the link below:

<http://www.nsf.gov/funding/>

### Fringe Benefit Rates (Campus)

#### **Personnel employed ≥ 75% FTE**

FY12 - 31.87%                      FY14 - 33.81%

FY13 - 32.83%

Note: FY12 Federal Funding fringes are 27.25%  
(Med Schl is 24.25% - for grants admin in MedSchl)

#### **Personnel employed < 75% FTE                      7.65%**

UMC graduate students - tuition & insurance

UMC undergraduate students - exempt

#### **Graduate Student Fees**

2011-12                                      \$326.70/cr hr

(If sponsor disallows, should be cost-shared in budget.)

2011-12 Academic Yr \$5,880.60    Summer \$1,306.80

#### **Graduate Student Medical Insurance**

25% FTE (12 mos)                      \$1,201.00

50% FTE (12 mos)                      \$2,402.00

### **Changes to Grant Fact Sheet (GAS) Information:**

New mileage reimbursement rate - \$ .525/mile (1/1/2012)

Current: **DHHS F&A Rate Agreement Date – 04/15/2011**  
Point of Contact: Arif Karim (214) 767-3261.

#### NIH Salary Cap:

President Obama signed into law the Consolidated Appropriations Act, 2012 (H.R. 2055) PL 112-74 on 12/29/11 which reduced the salary cap from \$199,700 to \$179,700.

**For Additional Funding Opportunities/Dates  
Check Research Office Website**

<http://vetmed.missouri.edu/teach-research.htm>

AKC ACORN grants accepted anytime

Other RFP calls will be distributed via email  
when available.

## Upcoming Research Deadlines & Dates

### January 17, 2012

ADA Res Programs

MU Faculty Summer Research Fellowship

### January 25, 2012

NIH "T" & "P" Series Grants

### January 27, 2012

AHA Midwest Affiliate, electronic

### February 1, 2012

Waltham Fdn

### February 2, 2012

MU Research Council

### February 5, 2012

NIH New R01

### February 6, 2012 (Columbia campus)

MU Research Board

### February 12, 2012

NIH New "K" Series Grants

### February 15, 2012

Morris Pre-Proposal: B-Cell Lymphoma in Dogs

### February 16, 2012

NIH New R03, R21

### March 1, 2012

AKC OAK Preproposals

### March 5, 2012

NIH R01 Resubmissions

### March 12, 2012

NIH "K" Series Resubmissions

### March 15, 2012

ACVIM Grants Preproposals

### March 16, 2012

NIH Resubmissions R03, R21

### March 21, 2012

Morris Small Companion Animal Proposals

### April 2, 2012

Faculty Intl Travel

MU Research Council

### April 5, 2012

NIH "R41/R42" Series Grants

### April 8, 2012

NIH "F" Series Grants

### Mid-April, 2012

Morris Large Animal Proposals

### May 1, 2012

AAEP Fdn