



Spotlight on Research

Volume VII, No. 1, September 2009

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 to the Office of Research and Postgraduate Studies, 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.



COATES NAMED "HERO IN MEDICINE" BY ACVIM

The American College of Veterinary Internal Medicine awarded Dr. Joan Coates, CVM neurologist, the Hero in Medicine distinction at their annual meeting in Montreal, Canada, in June. Dr. Coates was recognized for her groundbreaking research in canine degenerative myelopathy. She joins former dean, Joe Kornegay, who was named a Hero for his work in muscular dystrophy.

ACVIM also recognized Resident, Dr. Tekla Lee-Fowler, for "best research abstract" and Sr. Vet Tech, Stephanie Gilliam, with a first place distinction for her presentation on a dog with polyradiculoneuritis.

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 builds ties between veterinary and human researchers

June 2, 2009 | *Columbia Missourian* (By Tim Lloyd, writer, and Ivy Ashe, photographer)



James "Jimi" Cook, MU College of Veterinary Medicine and **Sonny Bal**, orthopedic surgeon MU School of Medicine, have been collaborating for more than seven years on research to create biological joints for hip and knee replacements.

COLUMBIA — Jimi Cook's grandfather was one of the first patients in the U.S. to have artificial knee replacement surgery. "From the time I was 8 years old, I have always wanted to find a better way to treat arthritis after watching him go through six knee replacements," Cook said. He is an associate professor of small animal surgery and director of the [Comparative Orthopaedic Laboratory](#) at the MU School of Veterinary Medicine. Nearly three decades after his grandfather's surgeries, Cook is developing new technology that might make repeat surgeries things of the past. But his discovery didn't only come from studying the human skeletal system. "Dogs are the closest replicas of humans for us when it comes to studying clinical problems in knees and hips," he said. Cook's new technique involves growing cartilage in a lab that can be molded into permanent joint replacements. It's just one in a growing number of human medical advancements made by researchers studying their canine companions.

Growing knees, hips and shoulders In the sterile petri dishes of a walk-in-closet sized lab, cells divide and multiply into living cartilage that Cook plans to mold into new knees and hips for dogs. "The goal is to make replacement parts," said Sonny Bal, an associate professor of orthopedic surgery at the MU School of Medicine. Bal is working with Cook on the human application of his technique. ... Cook's technique replaces damaged joints with living tissue, meaning patients ... could get a new set of knees that would heal with the rest of their bodies.

The technique being developed by Cook mimics the natural process of cartilage and bone formation during growth and development of the joints. Molds of joints are then made and filled with lab-grown cartilage, forming exact replicas of joints in need of replacement. Because conditions like arthritis progress month to years faster in dogs, Cook is able to more rapidly test the effectiveness of his technique. "In dogs with arthritis, everything happens much faster," Cook said. "This allows us to see the results of our research sooner than if we were working on humans."

The Food and Drug Administration recognizes physical similarities between dogs and humans, and if a new treatment is proved effective for dogs, it can more quickly be tested in humans. "We've been working on this for seven years," Cook said. "It would have taken 15 to 20 years if we were working on humans."

New horizons Cook and Bal are widening the scope of previous collaborations to include engineers from the Missouri University of Science and Technology and researchers at Columbia University in New York City. The multidisciplinary approach puts MU in line with a worldwide effort to strengthen ties between veterinary medical and human medical research. "The campuses that have veterinarians and physicians working together are where a good deal of biomedical research is done," Kaplan said. "Dr. Cook has become a giant in the field."

Recently discovered neurological similarities between dogs and humans could lead to treatments for degenerative brain diseases. Veterinary neurologist **Joan Coates** is part of a research team that found a genetic link between hereditary degenerative myelopathy (DM) in dogs and amyotrophic lateral sclerosis (ALS), commonly referred to as Lou Gehrig's Disease. "There is a potential that this discovery may assist with finding new treatments that will slow the progress of some forms of hereditary ALS," Coates said. She is quick to point out that years of study are needed before a treatment for humans can be developed. "We still have a lot of work to develop markers of disease in dogs in order to evaluate disease progression and response to potential treatments," Coates said.

Working with dogs could shorten the time frame. “ALS takes two to five years to progress in humans; it takes six months to a year in dogs,” Coates said. “We may be able to test and see more results more quickly when evaluating potential therapies in dogs.”

Kaplan said Cook and Coates' advances could just be the beginning of new advances in the field of veterinary and human medicine. “If you combine the brains and minds of different medicines, you will come up with things that would have not come about otherwise,” Kaplan said. “It could be miraculous.”

The Golden Years: Have You Had Your Turmeric Today?

July 22, 2009, *Columbia Daily Tribune* (By Marcia Vanderlip, writer)

An increasing body of research shows curcumin, the main active ingredient in turmeric root, is a powerful antioxidant and anti-inflammatory that could fight or help prevent cancer and ease other human ailments, from arthritis to Alzheimer's disease. One of the most recent studies at the University of Missouri found that curcumin could reduce the cancer risk for post-menopausal women who have undergone hormone treatment. Women who take estrogen and progestin hormone therapy have an increased risk of developing tumors. The MU study found that the spice delayed, decreased and reduced the frequency of tumors. The results show that women “could potentially take curcumin to protect themselves from developing progestin-accelerated tumors,” said **Salman Hyder**, Zalk Missouri Professor of Tumor Angiogenesis. About 6 million women in the United States are using hormone replacement therapy, said Hyder, a professor of biomedical sciences in the College of Veterinary Medicine and the Dalton Cardiovascular Research Center. Previous studies have shown that curcumin appears to slow the spread of cancerous tumors in animals. Curcumin also is being studied as a treatment for Alzheimer's disease, Hyder said. “It is already known that” turmeric “has properties that can prevent cancer,” he added. Turmeric also is used in the East and the West to ease arthritis and joint pain.

Turmeric, the spice that gives curry powder its golden hue, has been used for centuries in Chinese and Indian medicine; it is derived from a ginger-like root and has been used to treat a wide range of ailments, from arthritis to depression. Western scientists have begun to acknowledge the healing possibilities and purifying effects of the spice, a staple in Indian and Pakistani kitchens. Hyder thinks Westerners would certainly benefit from eating more of the foods and spices that are prevalent in Asian diets. “One in eight women gets breast cancer in America,” he said. That number drops significantly in places such as Japan and India, he said. The American diet has strayed from natural, unprocessed foods and compounds, said Hyder, a native of Pakistan. He noted that human clinical trials will determine how much turmeric we need in our diets for it to be beneficial, but he recommends adding it to our diets as a preventative. “Since turmeric is already consumed in South Asia and in the eastern countries and there is evidence for reduced incidence of certain types of cancers in that part of the world, it is possible that one is already consuming enough curcumin that is protective. Turmeric is consumed almost every day, so the blood levels are likely constant in Southeastern countries.”

Hyder and his wife, Rakhshan, often cook with turmeric. Rakhshan, the main cook for the family of four, frequently uses the sharp, earthy spice.



National heart stent research project begins at MU

March 25, 2009 | *Columbia Missourian* (By Laura Herring, writer)

COLUMBIA — New advances in medical research have brought heart stents to the forefront of heart health. Research is now being conducted to improve drug-eluting heart stents to reduce the risk of blood clots forming after stents are placed. A team of researchers is testing whether coating heart stents with a human protein could prevent the re-narrowing of coronary arteries after balloon angioplasty procedures. The project brings together scientists William Fay, a professor of internal medicine, medical pharmacology and physiology, and director of the division of cardiovascular medicine for MU; Daniel Lawrence, a professor of

cardiovascular medicine at the University of Michigan; **Douglas Bowles**, an associate professor of biomedical sciences at MU; and Brian Wamhoff, an assistant professor of cardiovascular medicine and biomedical engineering at the University of Virginia.

A heart stent, an alternative to invasive bypass surgery, is used to reopen blocked arteries. The stents are placed after an angioplasty — a procedure in which a small balloon is fed through the femoral artery to the blocked artery and then inflated to reopen the artery. In the past, angioplasty has been the only treatment. But in recent years, doctors have been using the balloons to place stents, which prop the artery open to keep blood flowing. Bare-metal stents consist of wire mesh without any type of coating. This type of stent can allow the smooth muscle cells that cause arterial blockage to re-form. “Small cells can regrow through a stent like snowflakes getting through chicken wire and building up,” Fay said. Drug-eluting stents are coated with drugs that inhibit cells from dividing and causing re-narrowing in the cleared arteries. “However, these drugs also inhibit the growth of the endothelial cells that coat the inner lining of blood vessels,” Fay said, “which renders the artery vulnerable to blood clot formation, which can cause heart attack.” The researchers hope the human protein being studied, called plasminogen activator inhibitor 1, or PAI-1, will halt the growth of bad cells while still encouraging the good ones to grow, Fay said.

Lawrence, from the University of Michigan, has been studying PAI-1 in his lab for more than 20 years and is hopeful it can control cell growth. The three-year PAI-1 project will be funded through a grant from the MU Life Sciences Research Trust Fund and will be carried out in two parts. Fay and Lawrence will continue their research on PAI-1 and its effects on smooth muscle cells and the effects of drug-eluting heart stents on blocked arteries. On the other end of the project, Bowles, the associate professor of biomedical sciences for MU, will study live results of angioplasty in pigs. Both Fay and Lawrence have worked with mice in the past. But for the studies to advance, “the subjects have to graduate and become something more akin to humans. Pigs are the closest subject for this,” Fay said. The project has been many years in the making. It's being carried out with extreme care for humane treatment of the animals, with the help of MU's vet school, Fay said.

“MU is the only (university) in the state and one of the few in the nation where both (a medical school and veterinary medicine school) exist on the same campus,” Fay said. Advances in medical technology aren't the only goals of the project. The researchers are hopeful the collaboration of multiple scientists across the nation will lead to the creation of more interactive research groups leading to new developments for small businesses that could provide the new technology for these projects, as well. “We're looking beyond our own molecule,” Fay said, “to serve the broader community for advancing science and technology.”

Open Column: Biosafety column's claims inaccurate

July 25, 2009, *Columbia Daily Tribune* (By **George Stewart**, McKee Professor of Microbial Pathogenesis and director of the MU Regional Biocontainment Laboratory)

It is understood by most that editorial columns differ from news articles in that they are “opinions” and as such do not have to meet the same standards of accuracy. Ken Midkiff appears to be someone who does not let facts get in the way of a story. His op-ed piece in yesterday's paper*, “MU biosafety lab on shaky ground,” is fear mongering and inaccurate. He claims that “one end” of the MU Regional Biocontainment Laboratory, MU-RBL “is subsiding much faster than the other one,” which is not true. His claim that this has resulted in pressure alarms going off frequently is also not true. The laboratories are under negative pressure, one of the many safety features they possess. There are *no* pressure stability issues at the MU-RBL.

After the building was constructed, the systems maintaining the pressure differentials were extensively tested and, as part of the testing, were deliberately failed to ensure that alarm and back-up systems operated properly. All of these systems are operating properly. Ken Midkiff also claims that “officials who operate and manage the lab have advised the building denizens to ignore the alarm.” Again, this is an untrue and outrageous statement. What Ken fails to mention — and again why let facts stand in the way of a good rant — is that there are no BSL-3 agents in the MU-RBL at the current time. Regulatory oversight of biocontainment facilities includes not only local oversight (by MU) but also must pass federal inspections before work with these biosafety Level 3 organisms can begin. We are still in this extensive evaluation period.

Biosafety laboratories, such as the MU-Regional Biocontainment Laboratory, have an outstanding record of safety. It is vitally important to the public health of the citizens of the United States that research on these pathogenic organisms continue to develop needed vaccines and therapeutics. The real threat to the citizens of Mid-Missouri is fear mongering perpetuated by editorialists who do not bother to check the facts when they opine.

*To read Midkiff's column, see below:

<http://www.columbiatribune.com/news/2009/jul/24/mu-biosafety-lab-on-shaky-ground/>

Grants Submitted May - August 2009

PI/Co-Investigator(s)	Project Title	Amt Requested	Sponsor
Daniel Hasset & Deborah Anderson	Development of Vaccine Platform Against Respiratory Biothreat Agents	\$678,834	MRCE (Wash U)
Lela Riley, John Critser, Randy Prather, Craig Franklin & Kevin Wells	National Swine Resource and Research Center	\$1,437,510	NIH
Craig Franklin & Elizabeth Bryda	Postdoctoral Training in Comparative Medicine	\$376,061	NIH
James Cook, Brandon Roller, Crystel Cook, Kei Kuroki, Aaron Stoker, Derek Fox, Sonny Bal, Kevin Marberry, Richard White, Deepak Raghu & Moses Hdeib	Characterization of Pathology of the Knee Menisci for Diagnosis and Treatment of Meniscal Disorders	\$119,252	Natl Football League
Joan Coates & Gary Johnson	Mapping of Additional Genes Associated with Canine Degenerative Myelopathy (ARRA Subcont)	\$91,278	Harvard Univ
Lela Riley, John Critser & Randy Prather	ARRA: National Swine Research and Resource Center (Admin Supplement)	\$981,875	NIH
Lela Riley, John Critser, Randy Prather & Kevin Wells	ARRA: National Swine Research and Resource Center (Admin Supplement)	\$981,421	NIH
John Critser, Lela Riley, Craig Franklin, Elizabeth Bryda & Hongsheng Men	ARRA: Mutant Mouse Resource and Research Center (Admin Supplement)	\$991,223	NIH
John Critser, Lela Riley, Craig Franklin, Elizabeth Bryda & Hongsheng Men	ARRA: Mutant Mouse Resource and Research Center (Admin Supplement)	\$992,929	NIH
John Critser, Lela Riley, Craig Franklin, Elizabeth Bryda & Hongsheng Men	ARRA: Mutant Mouse Resource and Research Center (Admin Supplement)	\$999,186	NIH
George Stewart	ARRA: Assistant Professor/ Arthropod Vector-Microbe Ecology (New Faculty Recruitment)	\$747,500	NIH NIGMS
John Middleton, Lisa Britt & Tessa Marshall	Imaging and Efficacy of Internal Teat Sealant Compounds	\$17,249	DeLevel Mfg
John Critser, Kevin Wells, Lela Riley, Craig Franklin, Elizabeth Bryda & Hongsheng Ma	Development of Humanized Mouse Models using Human Induced Pluripotent Stem Cells	\$2,026,044	NIH
Aaron Stoker & James Cook	Modulating the Development of Osteoarthritis with a High n-3 Polyunsaturated Fatty Acid Diet	\$74,530	Univ of Ga
James Cook, Crystel Cook, Kei Kuroki, Aaron Stoker, Derek Fox, Brett Crist, Theodore Choma, B (Sonny) Bal, Gregory Della Rocca & William Carson	ARRA: Creation of New Musculoskeletal Engineering Faculty Position	\$1,365,092	NIH NIAMS
Carolyn Henry, Neil Olson, Brian Mooney & Charles Caldwell	ARRA: Faculty Recruitment in Comparative Oncology and Translational Medicine Biomarker Discovery	\$1,495,000	NIH NCI
Stan Casteel	Bioavailability Study - Arsenic Soils Juvenile Swine II	\$105,780	Syracuse Res
Frank Booth	ARRA: Satellite Stem Cell Biology Administrative Supplement	\$22,604	NIH NIA

Harold Laughlin	ARRA: Cardiovascular Molecular/Cellular Biology	\$1,222,750	NIH NHLBI
Harold Laughlin	ARRA: Muscle/Exercise and Health	\$1,222,750	NIH NIAMS
Guoquan Zhang	Development of O Antigen-Based Vaccines Against Q Fever	\$1,844,366	NIH
James Cook, Kei Kuroki, Crystel Reeves, Nicole Waters, Brandon Roller & Prakash Jayabalan	Arthrex Biological Suture Anchor Study	\$36,971	Arthrex, Inc
Derek Fox & Aaron Stoker	Cellular Response to Nanomaterial-Collagen Gel Architect	\$24,469	Dermele Skin Care
Charles Carson	EPA Gulf of Mexico Collaboration Program with Univ of Southern Mississippi	\$323,371	Univ of So Mississippi
Heide Scatten	Improvement of Oocyte Quality for IVF Procedures	\$151,500	NIH NICHD
Elizabeth Bryda, John Critser & Hongsheng Men	Development of New PKD Rat Models	\$416,625	NIH
Hongsheng Men & John Critser	A High Throughput Rat Induced Pluripotent Stem Cell System	\$416,625	NIH
Crystel Cook, Brandon Roller, James Cook, Aaron Stoker, Derek Fox, B (Sonny) Bal, Kevin Marberry, Richard White, Deepak Raghu & Moses Hdeib	Characterization of Pathology of the Knee Menisci for Optimizing Diagnosis and Treatment of Meniscal Disorders	\$227,250	NIH NIAMS
RW (Bill) Stich & Guoquan Zhang	Interferences with Microbial Infections in Ticks	\$399,181	USDA AFRI
Dylan Buss, Elizabeth Giuliano & Rajiv Mohan	Equine Corneal Fibroblasts: A Novel in vitro Model for the Investigation of Corneal Fibrosis Secondary to Ulceration	\$10,800	Morris Animal Fdn
James Cook, Keiichi Kuroki, Prakash Jayabalan, Crystel Cook, Nicole Waters & Brandon Roller	Validation of Bone-Tendon Allograft Repair for Rotator Cuff Defects Using a Chronic Canine Model	\$233,579	Community Blood Ctr
Brenda Beerntsen	Mosquito Immune Responses against Pathogens	\$1,874,438	NIH
Heide Schatten	Primary Cilia Signal Transduction Dysfunctions in Aging Cells	\$151,500	NIH
RW Bill Stich	Actin-based Motility and Tick Acquisition of Anaplasmataceae	\$561,291	NIH NIAID
James Cook, Keiichi Kuroki & Crystel Cook	PreClinical, Proof of Concept, Randomized Placeo - Controlled Study to Access the Efficacy of Canine Allogenic Mesenchymal Stem Cells Transduced with Green Florescent Protein in a Surgically Induced Model of Canine Stifle Osteoarthritis	\$78,014	Animal Cell Therapies
Kimberly Selting, Carolyn Henry & Sandra Axiak	Dose Escalation Safety Study of Nanotax® in Dogs	\$50,000	KC Area Life Sci Inst
John Crister & Lela Riley	Comparative Medicine Resource Center Director Meetings	\$272,364	NIH
Alex Bermudez	Classical Swine Fever Surveillance	\$23,287	USDA APHIS

Grants Submitted Summer 2009 – Shared Credit w/ CVM

PI/Co-Investigator(s)	Project Title	Amt Requested	Sponsor
Chris Lorson	ARRA: Determinants That Regulate Splicing of SMN-Admin Supplement	\$291,834	NIH NINDS
Douglas Anthony, Chi Shyu and various mentors, incl John Critser, Craig Franklin, Elizabeth Byrda & Harold Laughlin	Translational Pathobiology – A Comprehensive University-wide Approach for the Integration of Pathobiology and Clinical Medicine into Graduate Training Programs in Biomedical Sciences	\$1,000,001	Howard Hughes Med Inst
Chris Lorson	Cooperative Lead Development Program for Treatment of Spinal Muscular Atrophy	\$366,397	Univ of Mass
Martin Katz, Dennis O'Brien & Dietrich Volkman	A Possible Canine Model for Infantile NCL Therapy Development	\$37,326	Battens Disease Support/Res
Kattesh Katti w/various, Sandra Axiak, Stan Casteel, Carolyn Henry, Jimmy Lattimer, Kim Selting & Carlos Souza	Green Nanotechnology for High Throughput Validation and Comparative Oncology Pilot Studies	\$3,104,118	NIH NCI
Majorie Skubic, Marilyn Rantz, Dominic Ho, James Keller, Mihail Popescu & Marc Hamilton	ARRA: Exploring Changes in Energy Expenditure for Early Illness Recognition in Seniors	\$1,293,898	NIH
Shubhra Gangopadhyay, Noah Manring, Shelia Grant, Kattesh Katti, Keshab Gangopadhyay, John Critser, Luis Polo Parada, William Folk, Karen Bennett & Paul Dale	ARRA: Integrated Program on Bio-Nano Technology for Diagnostics, Sensing, Imaging and Drug Delivery	\$1,000,000	NIH NIND
Chris Lorson	Stimulating SMN2 exon 7 Inclusion with Short RNAs	\$271,412	NIH
Cheryl Rosenfeld	Is Pre-Term Birth Influenced by Banter between Maternal Nutrition and Conceptus Metabolomic Responses?	\$50,001	Burroughs Wellcome
Salman Hyder, Yayum Liang & Indira Benakanakera	ARRA: Recovery of Functional p53 as a Therapeutic Approach for Breast Cancer	\$149,500	NIH
Hansjorg Rindt & Chris Lorson	Repairing Huntington Triplet Expansion by Trans-splicing	\$416,625	NIH
Martin Katz, Joan Coates, Gayle Johnson & Crystel Cook	Approaching AAV Gene Therapy for TPP1 Deficiency: Taking Advantage of Vascular and CSF Delivery Methods	\$137,484	Univ of Iowa
Donald Spiers, Robert Weaber, Tim Evans, George Rottinghaus, Craig Roberts & Robert Kallenbach	Managed Reductions of Problems Associated with Fescue Toxicosis at Both Plant and Animal Levels	\$286,675	ARS
Michael Sherman, Raghuraman Kannan, Kattesh Katti, Craig Franklin & Habib Zaghouani	Nanomedicine and Infection: Novel Prevention in Neonates	\$2,208,649	NIH
Charlotte Phillips & Craig Franklin	Type I Collagent in Glomerular Sclerotic Disease	\$1,451,777	NIH NIDDK
Shinghua Ding, Cheryl Heesch, Grace Sun, Mahesh	Role of Gliotransmission in Cerebral Ischemia	\$1,819,093	NIH

Thakkar, Lixin Ma & John Hewitt			
Michael Garcia & Chris Lorson	The Role of Neurofilament Aggregates in the Pathogenesis of SMA	\$396,855	NIH
Robert Duncan, George Stewart, Patricia Stewart & Lonny Dixon	ARRA: MU RBL Emerging Vector-Borne Diseases Containment Suite	\$15,000,000	NIH NCRR
Kattesh Katti, Raghuraman Kannan, Carolyn Henry, Paul Dale, Jimmy Lattimer, Carlos Souza, Sandra Axiak & Cathy Cutler	Biocompatible, Multifunctional Gold Nano Agent for Prostate Tumro Therapy	\$1,136,250	NIH NCI
Kathy Timms, Peter Sutovsky, Susan Nagel, John Critser, Charles Caldwell, Justin Davis & Kristen Taylor	Endometriosis Causes Oocyte and Embryo Anomalies in Adults and in their Daughters	\$3,265,697	NIH
Monir Shababi & Chris Lorson	A Two-Pronged Approach to Develop a Treatment for Spinal Muscular Atrophy (SMA)	\$385,725	NIH
David Kline	The Role of Serotonin in Chronic Intermittent Hypoxia Induced Synaptic Plasticity?	\$90,592	AHA
Salman Hyder & Cynthia Besch-Williford	Targeting a Key Enzyme in the Biosynthesis of Cholesterol as a Novel Therapy for Breast Cancer	\$599,998	Komen St Louis Affilitate
Mark McIntosh & Lela Riley	Swine Genomics and Biodefense Countermeasures Discovery	\$486,295	USDA ARS
Dongsheng Duan, Ronald Terjung & Hsiao (Steve) Yang	ARRA: Dual AAV Vectors for Duchenne Muscular Dystrophy Therapy	\$392,224	NIH NIAMS
Qingsong Yu, Cuihua Zhang, Douglas Bowles & William Fay	Improved Long-Term Biocompatibility of Coronary Stens by Plasma Coating Process	\$466,944	Nanvoa Inc
Martin Katz, Pina Akocra, Hao Li & Kattesh Katti	MRI-R2: Acquisition of a High-Voltage Transmission Electron Microscope (equipment rqst)	\$1,355,008	NSF Div Materials Res
Dongsheng Duan & Deborah Fine	Duchenne Cardiomyopathy Gene Therapy	\$177,617	Parent Muscular Dystrophy 2008

**Grants Awarded May - August 2009
Totaling \$5,102,473***

PI/Co-Investigator(s)	Project Title	Sponsor	Current Award
Bob Backus, George Rottinghaus, Marybeth Brown & Duane Keisler	Use of Hop Phytoestrogen for Prevention and Treatment of Post-Neutering Weight Gain (Phase 1) (start 10/01/2008)	Affinity-Petcare	\$18,449
Deborah Fine	Evaluation of Clinical Efficacy and safety of the B1-Selective Andrenoceptor Blocker BAY 41-9202 Oral Solution under Field Conditions for the Treatment of Canine Heart Disease due to Chronic Valvular Heart Disease	Bayer Corp	\$114,160
Michael Calcutt	Comparative Genomics of M. bovis Isolates (start 2/01/2009)	Boehringer Ingelheim Vetmed	\$18,501
John Critser, Hongbin Ma & Xu Han	Method and Device for Rodent Germplasm Vitrification (start 4/15/2009)	NIH	\$224,250

John Critser	Development of High Temperature Cryopreservation Medium (start 8/1/2008)	Impact Biolabs	\$48,360
James Cook	Computational Simulation of Canine Biomechanically Induced Unicom-partmental Osteoarthritis: A Concurrent Multiscale Approach (start 1/1/2009)	Mo Life Sci Res Bd	\$107,263
John Critser, Lela Riley, Craig Franklin, Beth Bauer & Elizabeth Bryda	Rat Resource and Research Center	NIH	\$1,423,255
Stan Casteel	Bioavailability Study – Arsenic Soils Juvenile Swine II	Syracuse Res Corp	\$105,780
Joan Coates, Gary Johnson & Rachael Cohen (scholar)	Veterinary Student Scholar Small Companion Animal Project	Morris Animal Fdn	\$4,000
Kimberly Selting, Carol Reiner & Carolyn Henry	Comparison of Percentage of T Regulatory Cells in Dogs with Spontaneously-Occurring Lymphoma Following Oral versus Intravenous Cyclophosphamide	AKC Canine Health Fdn	\$12,852
John Middleton, Lisa Britt & Tessa Marshall	Imaging and Efficacy of Internal Teat Sealant Compounds	DeLaval Mfg	\$17,249
Deborah Anderson	Regulation of Yersenia pestis Virulence Gene in Response to Host Cell Contact	NIH NIAID	\$183,751
Deborah Anderson	Development of Novel Genetic Tools for Metabolic Selection in Yersinia pestis	NIH NIAID	\$16,206
Guoquan Zhang	ARRA: The Role of Antibody-Mediated Protective Immunity Against Q Fever	NIH NIAID	\$214,582
Joan Coates, Gayle Johnson, Dennis O'Brien & Martin Katz	A Canine Model of Therapy Development for ALS	ALS Fdn	\$40,000
John Dodam	St. Louis Zoological Park Residency in Zoo Animal Medicine	St. Louis Zoo	\$104,037
Rebecca Johnson & Tony Mann	Caring for Both Ends of the Leash: Effects of Owners Visiting Their Dogs Hospitalized in an Intensive Care Unit	Waltham Fdn	\$15,000
Craig Franklin & Beth Bauer	Bedding Dilution Effects in Sentinel Monitoring of MPV	ACLAM	\$25,000
Ronald Terjung	Exercise & Health: Integration from Molecule to Patient	NIH NIAMS	\$261,911
Craig Franklin & Elizabeth Bryda	Postdoctoral Training in Comparative Medicine	NIH	\$344,675
Lela Riley, John Critser, Randall Prather, Craig Franklin, Kevin Wells, Hongsheng Men & Eric Walters	Nationa Swine Resource and Research Center	NIH	\$1,437,510
Yuksel Agca	ARRA: Rat Sperm Cryobanking for Genetic Resources	NIH	\$180,935
Carolyn Henry, Kim Selting, James Cook, Jimmy Lattimer, Dennis O'Brien & Linda Berent	The University of Missouri Pfizer-CCOGC Biospecimen Procedure Program (start 4/15/09)	Canine Comp Oncol & Genomics	\$19,300
Bob Backus & Ellen Dierenfeld	Dietary Need for Sulfur-Containing Amino Acids in Giant Anteaters	Morris Animal Fdn	\$22,226
Leah Cohn	Educational Commission for Foreign Veterinary Graduates Clinical Proficiency Examination	AVMA	\$56,250

James Cook, Kei Kuroki, Christi Cook, Nicole Waters, Brandon Roller & Prakash Jayabadan	Arthrex Biological Suture Anchor Study	Arthrex	\$36,971
Charles Carson	Testing of a Nanotechnology-Based Device to Reduce Infant Mortality Caused by Group B Streptococcus	MU Inst for Clinical & Translational Science	\$50,000

***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 May - August 2009

R. Michael Roberts & Angela Walker (Fellow), "Regulation and Function of Novel Type I Interferon in Cattle." USDA CSREES, 01/01/2009 - 12/31/2010, \$125,000.

Christian L. Lorson, "Analysis of Botanicals in Spinal Muscular Atrophy (SMA)." MDA, 01/01/2009 - 12/31/2009, \$120,758.

Christian L. Lorson, "Generation of a SMN Read-Through Mouse." SMA Fdn, 12/01/2007 - 06/30/2009, \$126,087 (amendmt).

Christian L. Lorson, "Determinants that Regulate Splicing of SMN." NIH NINDS, 06/01/2009 - 05/31/2010, \$326,620 (continuation).

Christian L. Lorson, "Testing Efficacy of GNF Compounds in vivo." Genomics Inst of Novartis Res Fdn, 05/12/2008 - 12/31/2009, \$12,180 (awarded 8/7/09).

Eileen Hasser, David Kline & Catharine Clark (Fellow), "The Role and Mechanism of Brain Derived Neurotrophic Factor on Autonomic and Cardiovascular Function." AHA Midwest Affiliate Predoctoral Fellowship, 07/01/2009 - 6/30/2011, \$52,000

BL Roller, JL Cook, CR Cook, AM Stoker, BS Bal, KM Marberry, RA White, K Kuroki, DB Fox & DR Raghu, "Characterization of Pathology of the Knee Menisci for Optimizing Diagnosis and Treatment of Meniscal Disorders." MU Institute for Clinical and Translational Science, 7/1/2009-7/31/2010, \$10,000.

ML Katz, JR Coates, DP O'Brien, KL Narfstrom & DH Volkmann. "Canine Model of Late Infantile Neuronal Ceroid Lipofusclerosis." NIH NIHDS, 05/01/2009 - 04/28/2011, \$394,700.

Special Recognition and Honors, Summer 2009

- Dr. Charles Brown**, Associate Professor, VPB, was appointed to the Advisory Council of the Autumn Immunology Conference, to be held in Chicago IL, November 2009.
- Dr. Derek Fox**, Assistant Professor, VMS, was keynote speaker and invited lecturer, presenting "The CORA Methodology for Angular Limb Deformity Correction," at the 2009 Association for Veterinary Orthopedic Research and Education Meeting, Stevenson WA, July 2009.
- Dr. Craig Franklin**, Associate Professor, VPB, gave the invited lecture, "Rodent Helicobacters: From Diagnostic to Animal Modeling," at the 2009 Merck-Merial-NIH-NCRR National Veterinary Scholars Symposium, Raleigh NC, August 2009.
- Dr. Carolyn Henry**, Professor, VMS, presented "Veterinary Oncology Screening Tests and Biomarkers-Where's the Evidence?" at the 2009 American College of Veterinary Internal Medicine Annual Forum, Montreal, Quebec, Canada, June 2009. She also presented "Clinical Application of Veterinary Cancer Biomarkers," at the Biomarkers in Veterinary Medicine Conference, BioCity, Nottingham, United Kingdom, July 2009. Dr. Henry will lecture during the Nippon Animal Hospital Association Companion Animal Oncology Seminar Series in Japan, August-September 2009.
- Dr. John Middleton**, Associate Professor, VMS, received the West Agro Award for Contributions to Mastitis Research and Milk Quality at the joint meeting of the American Dairy Science Association, the Canadian Society of Animal Science & the American Society of Animal Science, Montreal, Quebec, Canada, July 2009.
- Dr. Kristina Narfstrom**, Professor, VMS, was invited lecturer for the One Medicine Symposium, "Canine Models of Inherited Neurologic Disease," at Experimental Biology 2009, New Orleans LA, April 2009.
- Dr. Dennis O'Brien**, Professor, VMS, gave the invited lecture, "Canine Models of Inherited Neurologic Disease, at the One Medicine Symposium, Experimental Biology 2009, New Orleans LA, April 2009.
- Dr. Charles Wiedmeyer**, Assistant Professor, VPB, was an invited speaker at the Children with Diabetes, Friends for Life Conference, Orlando FL, July 2009.
- New Postdocs!** Dr. Victoria Blaho (Weill-Cornell); Dr. Tristan Coady (Columbia University Motor Neuron Center); Dr. Virginia Mattis (University of Wisconsin, Waisman Center for Stem Cell and Regenerative Medicine Center); and Dr. Frankie Rose.



Comparative Orthopedic Laboratory 2009 Arthritis Benefit

Featuring Cyclist Floyd Landis

Where: Orr Street Gallery

When: November 14, 2009; 6:00 pm

Benefits: Arthritis Research. Will feature a silent auction, dinner and keynote address by Mr. Landis



CVM Development Officer Has Other Talents



Kimberly Guilford was the fourth-place winner. Brittany Marso won the audience over at the end of the show with her tap dance routine and won third-place. A violinist, Tamara Kitchen, took home the second-place prize. Kitchen would not be the last act to get the audience's attention. **Kelley Marchbanks** gave a fun and energetic performance of the song "The Wizard and I" from the musical "Wicked." Marchbanks said that she chose the song because it allows her to stretch her vocal range and still have a lot of fun on stage. Marchbanks' energetic performance won her **first-place** in the competition at the 2009 Boone County Fair. "My whole family comes," Marchbanks said. "My daughter is into performing, as is my husband."

Recent Publications

(Extracted from PubMed, a service of the National Library of Medicine, and received from faculty, May-August 2009. Items to be included in future issues, please forward to Donna Stearns, W203 Veterinary Medicine or by email to StearnsD@missouri.edu.)

Agca C, M Lucy and Y Agca. Gene expression profile of rat ovarian tissue following xeno transplantation into immune-deficient mice. *Reproduction* 137(6):957-967, 2009.

Agca C, C Seye, CM Kashuba-Benson, AW Chan, S Rikka, GA Weisman and Y Agca. Development of a novel transgenic rat over-expressing the P2Y2 nucleotide receptor using a lentiviral vector. *J. Vasc. Res.* 46(5):447-458, 2009.

Atkinson K, D Fine, L Thombs, J Gorelick and H Durham. Evaluation of pimobendan and N-terminal pro-brain natriuretic peptide in the treatment of pulmonary hypertension secondary to degenerative mitral valve disease in dogs. *J. Vet. Int. Med.* (in press), 2009.

Blaho VA, MW Buczynski, CR Brown and EA Dennis. Lipidomic analysis of dynamic eicosanoid responses during induction and resolution of lyme arthritis. *J. Biol. Chem.* 284:21599-21612, 2009.

Booth FW and KA Zwetsloot. Basic concepts about genes, inactivity and aging. *Scand. J. Med. Sci. Sports* (in press), 2009.

Booth FW, MJ Laye and EE Spangenburg. Gold standards for scientists who are conducting animal-based exercise studies. *J. Appl. Physiol.* (in press), 2009.

Bozynski CC, TJ Evans, DY Kim, G Johnson, JM Hughes-Hanks, WJ Mitchell, GE Rottinghaus, J Perry and JR Middleton. Copper toxicosis with hemolysis and hemoglobinuric nephrosis in three adult Boer goats. *J. Vet. Diag. Invest.* 21(3):395-400, 2009.

Cohn LA, AE Declue, RL Cohen and CR Reinero. Effects of fluticasone propionate dose in an experimental model of feline asthma. *J. Feline Med. & Surg.* (in press), 2009.

Cook JL, F Lafeber, K Kuroki, D Visco, J-P Pelletier, L Schulz and T Aigner. The OARSI histopathology initiative - Recommendations for histological assessments of osteoarthritis in the dog. *Osteoarthritis & Cartilage* (in press), 2009.

Cook JL, JK Luther, J Beetem, J Karnes and CR Cook. Clinical comparison of a novel extracapsular stabilization procedure and tibial plateau leveling osteotomy for treatment of cranial ligament deficiency in dogs. *Vet. Surg.* (in press), 2009.

Cook JL. Cranial cruciate ligament disease: Biology versus biomechanics. *Vet. Surg.* (in press), 2009.

Declue AE, EK Schooley, LA Nafe and CR Reinero. feG-COOH blunts eosinophilic airway inflammation in a feline model of allergic asthma. *Inflamm. Res.* 58(8):457-462, 2009.

Declue AE, KJ Williams, CR Sharp, C Haak, E Lechner and CR Reinero. Systemic response to low dose endotoxin infusion in healthy cats. *Vet. Immun. & Immunopath.* (in press), 2009.

Eberhardt JM, AE DeClue and CR Reinero. Chronic use of the immunomodulating tripeptide feG-COOH in experimental feline asthma. *Vet. Immun. & Immunopath.* (in press), 2009.

Fleener BS and DK Bowles. Exercise training decreases the size and alters the composition of the neointima in a porcine model of percutaneous transluminal coronary angioplasty (PTCA). *J. Appl. Physiol.* (in press), 2009.

Fox DB et al. Effects of growth factors on equine synovial fibroblasts seeded on synthetic scaffold for avascular meniscal tissue engineering. *Res. Vet. Sci.* (in press), 2009.

Glazar MI, SF Mullen, J Liu, JD Benson, JK Critser, EL Squires and JK Graham. Osmotic tolerance limits and membrane permeability characteristics of stallion spermatozoa treated with cholesterol. *Cryobiology* (in press), 2009.

- Hyder SM, Y Liang, J Wu and V Welbern. Regulation of thrombospondin-1 by natural and synthetic progestins in human breast cancer cells. *Endcr. Relat. Cancer* 16(3):809-817, 2009.
- Hyder SM, Y Liang, and J Wu. Estrogen regulation of thrombospondin-1 in human breast cancer cells. *Int. J. Cancer* 125(5):1045-53, 2009
- Kutz R, J Sampson, LB Pompeu, DR Ledoux, J Spain, M Vazquez-Anon and GE Rottinghaus. Efficacy of Solis, Novasil Plus, and MTB-100 to reduce aflatoxin M1 levels in milk of early to mid lactation dairy cows fed aflatoxin B₁. *J. Dairy Sci.* 92:3959-3963, 2009.
- Laye MJ, RS Rector, SO Warner, SP Naples, AL Perretta, GM Uptergrove, MH Laughlin, JP Thyfault, FW Booth and JA Ibdah. Changes in visceral adipose tissue mitochondrial content with type 2 diabetes and daily voluntary wheel running in OLETF rats. *J. Physiol.* 587(Pt 14):3729-3739, 2009.
- Liu J, S Mullen, Q Meng, J Critser and A Dinnyes. Determinaton of oocyte membrane permeability coefficients and their application to cryopreservation in a rabbit model. *Cryobiology* (in press), 2009.
- Luther JK, CR Cook and JL Cook. Meniscal release in cruciate ligament intact stifles causes lameness and medial compartment cartilage pathology in dogs 12 weeks post operatively. *Vet. Surg.* 38:520-529, 2009.
- Mattis VB, AD Ebert, MY Fosso, CW Chang and CL Lorson. Delivery of a read-through inducing compound, TC007, lessens the severity of a SMA animal model. *Hum. Mol. Genet.* (in press), 2009.
- Myers JP, FS vom Saal, BT Akingbemi, K Arizono, S Belcher, T Colborn, I Chahoud, DA Crain, F Farabollini, LJ Guillette Jr, T Hassold, SM Ho, PA Hunt, T Iguchi, S Joblin, J Kanno, H Laufer, M Marcus, JA McLachlan, A Nadal, J Oehlmann, N Olea, P Palanza, S Parmigiani, BS Rubin, G Schoenfelder, C Sonnenschein, AM Soto, CE Talsness, JA Taylor, LN Vandenberg, JG Vandenberg, S Vogel, CS Watson, WV Welshons and RT Zoeller. Why public health agencies cannot depend on good laboratory practices as a criterion for selecting data: the case of bisphenola A. *Environ. Health Perspect.* 117:309-315, 2009.
- Nott SL, Y Huang, X Li, BR Fluharty, X Qin, WV Welshons, S Yeh and M Muyan. Genomic responses from the estrogen-responsive element-dependent signaling pathway mediated by estrogen receptor alpha are required to elicit cellular alterations. *J. Biol. Chem.* 284:15277-15288, 2009.
- O'Brien DP, RA Packer, GE Moore, CY Chang, GA Zello, S Abeysekara, JN Naylor, JM Steiner and JS Suchodolski. Serum d-lactic concentrations in cats with gastrointestinal disease. *ACVIM Proceedings*, 2009.
- Pope ER and GM Constantinescu. Brachycephalic upper airway syndrome in dogs. In *Kirk's Current Veterinary Therapy, XIV*, JD Bonagura & DC Twedt, Eds, WB Saunders Press, pp. 619-621, 2009.
- Qin W, W Zhu, H Shi, JE Hewitt, RL Ruhlen, RS MacDonald, GE Rottinghaus, YC Chen and ER Sauter. Soy isoflavones have an antiestrogenic effect and alter mammary promoter hypermethylation in healthy premenopausal women. *Nutrit. & Cancer* 61(2):238-244, 2009..
- Reilly TJ, DL Chance, MJ Calcutt, JJ Tanner, RL Felts, SC Waller, MT Henzl, TP Mawhinney, IK Ganjam and WH Fales. Characterization of a unique class C acid phosphatase of *Clostridium perfringens*. *Appl. Environ. Microbiol.* 75(11):3745-3754, 2009.
- Reinero CR, AE Declue and P Rabinowitz. Asthma in humans and cats: Is there a common sensitivity to aeroallegen in shared environments? *Environ. Res.* 109(5):634-640, 2009.
- Roberts C, R Kallenbach, N Hill, GE Rottinghaus and TJ Evans. Ergot alkaloid concentrations in tall fescue hay during production and storage. *Crop Sci.* 49:1496-1502, 2009.

Shanely RA, KA Zwetsloot, TE Childs, SJ Lees, RW Tsika and FW Booth. IGF-1 activates the mouse type IIb myosin heavy chain gene. *Am. J. Cell Physiol.* (in press), 2009.

Stahlhut RW, WV Welshons and SH Swan. Bisphenol A data in NHANES suggest longer than expected half-life, substantial nonfood exposure, or both. *Environ. Health Perspect.* 117:784-789, 2009.

Tudor D, GM Constantinescu, IA Constantinescu and N Cornila. *Nomina Histologica si Embryologica Veterinaria: International and Romanian Terminology*, Bilingual Edit., Editura Vergiliu, 2005.

Uguz C, O Varisli, C Agca and Y Agca. Effects of nonylphenol on rat sperm motility, mitochondrial membrane potential, acrosomal and chromatin integrity. *Reprod. Toxicology* (in press), 2009.

Varisli O, C Uguz, C Agca and Y Agca. Effect of chilling on rat sperm motility and acrosomal integrity in the presence of various extenders. *J. Lab. Anim. Sci.* (in press), 2009.

NIH ANNOUNCEMENTS --

Recovery Act 2009: Information on Quarterly Reporting Requirements

Purpose:

To remind ARRA recipients of the quarterly reporting requirement, announce the posting of a new NIH ARRA website specific to this requirement, and to provide NIH ARRA grantees with contact information for questions concerning this quarterly report.

Section 1512 Reporting Requirements:

As noted in the [HHS ARRA Award Terms and Conditions](#), prime recipients of all NIH extramural grant and cooperative agreement awards funded by the American Recovery and Reinvestment Act of 2009 (ARRA) are subject to the quarterly reporting provisions of Section 1512 of [the Act](#), as are any subrecipients delegated reporting responsibility by a prime recipient.

Reporting Timeline:

Section 1512 requires a quarterly report, due no later than 10 calendar days after each calendar quarter in which the recipient receives the award (Jan 10, April 10, July 10, and Oct 10). Reports are cumulative each quarter and include standard data elements as defined by the Act. On June 22, 2009 OMB issued a [guidance memorandum](#) providing more information on grantee reporting requirements and clarifying that **the first quarterly report will be due on October 10, 2009**. The HHS-Approved Standard Terms and Conditions for NIH ARRA Awards have been revised to reflect this guidance, see updated Notice [NOT-OD-09-120](#).

NIH Informational Resources Now Available:

NIH has developed NIH-specific resources to help extramural grant and cooperative agreement award recipients fulfill their reporting requirements. These resources include an extensive list of FAQs that will be regularly updated, applicable Guide Notices, and links to OMB guidance and Webinars. In addition, to aid in data quality of the information reported by grantees, NIH is coordinating with HHS to develop a tool to provide award recipients access to data required in this quarterly report that is already available in our systems. All of these resources can be found by visiting http://grants.nih.gov/recovery/recipient_reporting.html, a subpage of the [ARRA Grant Funding Opportunities Web page](#).

Reminder of NIH Requirements for Submission of Financial, Administrative, and Scientific Closeout Reports in a Timely and Accurate Fashion

Purpose

Reminder that NIH grantees are obligated to provide timely and accurate final closeout reports on the financial, programmatic, and administrative aspects of their grant within 90 days after the project period end date. A summary of the requirements for submitting the required documents to NIH are provided below.

Policy Reminder:

NIH recipients shall submit within 90 calendar days after the last day of the final budget period a Final Financial Status Report (FSR), a Final Progress Report, and a Final Invention Statement and Certification (as applicable). It is important to note that unless the Grants Management Officer (GMO) of the respective awarding component approves an extension of this 90-day reporting window in writing, grantees must submit the final reports within the prescribed timeframe.

NIH encourages grantees to submit all documents through the eRA Commons and grantees are required to submit an electronic final FSR through the eRA Commons (see NIH Guide Notice [NOT-OD-07-078](#) for more information on this requirement). Additionally, all non-financial closeout documents (such as the final progress report and HHS 568 Final Invention Statement and Certification) not submitted through the eRA Commons are required to be submitted to the following address.

NIH Centralized Processing Center
6705 Rockledge Drive
RM 2207, MSC 7987
Bethesda, MD 20892 (for regular or US Postal Service Express mail)
Bethesda, MD 20817 (for other courier/express deliveries only)
Fax: (301) 480-2304
E-mail: DeasCentralized@od.nih.gov

1. The Financial Status Report (FSR) – (Standard Form 269 or 269A, whichever is applicable)
2. The Final Invention Statement and Certification (HHS 568)
3. The Final Progress Report

Compliance Reminder:

Failure to submit timely and accurate final reports may adversely affect future funding to the organization. Accordingly, NIH may impose sanctions on institutions that fail to correct recurring reporting problems. Such sanctions may include, but are not limited to, corrective actions, removal of authorities, and/or delay or withholding of further awards to the project or program.

Clarification: NHLBI Does Not Accept R21 Applications Primarily Related to Cancer Research

Purpose is to update [NOT-HL-08-113](#) and advise investigators who plan to submit applications under the parent FOA ([PA-09-164](#)) for the NIH Exploratory/Developmental Research Grant (R21) award mechanism that the NHLBI does not accept the assignment of applications which focus primarily on cancer. There are some areas of overlapping interest, *e.g.*, basic aspects of lung malignancies intersecting with the pathogenesis of various lung disorders, or the use of lung cancer therapies that may impact on other lung diseases, hematological malignancies resulting from disruptions in hematopoiesis, myeloproliferative and myelodysplastic disorders, or the use of hematopoietic stem cell transplantation and other cellular therapies. Therefore, applicants are strongly encouraged to contact the NHLBI before submitting an application in response to this FOA.

Reminder: Investigators Should Update their eRA Commons Profiles to Include Degree and Residency Completion Dates

Early Stage Investigator Policy

The NIH previously announced a change in NIH New Investigator policies designed to encourage early transition to independence. Under this policy, New Investigators within ten years of completing their terminal research degree or within ten years of completing their medical residency are designated Early Stage Investigators (ESIs). Traditional NIH research grant (R01) applications from New Investigators and ESIs will be so identified and the career stage of the applicant will be

considered at the time of review and award. More information on this policy is available on the [New and Early Stage Investigator Website](#).

NSF ANNOUNCEMENTS -

The **National Science Foundation's Major Research Instrumentation (MRI)** program is designed to increase access to scientific and engineering equipment for research and research training in our nation's institutions of higher education, research museums and non-profit research institutions..

The **MRI** program seeks to improve the quality and expand the scope of research and research training in science and engineering, and to foster the integration of research and education by providing instrumentation for research-intensive learning environments. It encourages the development and acquisition of research instrumentation for shared inter- and/or intra-institutional use and in concert with private sector partners. The program assists in the acquisition or development of major research instrumentation that is, in general, too costly for support through other NSF programs. For proposals over \$2 million, requests **must** be for the **acquisition of a single instrument**. For proposals requesting \$2 million or less, investigators may seek support for instrument development or for acquisition of a single instrument, a large system of instruments, or multiple instruments that share a common or specific research focus. Proposals will be considered for instrumentation used for any NSF-supported field of science, mathematics, and engineering. The research activities using this instrumentation need not be supported by NSF or the federal government.

Because the number of proposals MU will be allowed to submit is expected to be limited (with at least one of the proposals being for instrument development), **letters of intent must be submitted to the Office of Research, ltsub@missouri.edu, no later than 4:00 pm Friday, October 2, 2009**. Letters of intent should be no longer than three pages and include 1) the investigators, types of research and sources of funding expected to use the equipment; 2) a brief description of the instrumentation; 3) a rationale for acquiring or developing the instrumentation and its potential impact on research at MU; 4) the anticipated cost of the project and sources of the required cost share; and 5) whether the application will be for instrument acquisition or development.

NSF Deadline: Letters of intent are required for all requests above \$2 million. We expect letters of intent to be due to NSF in early December. MRI deadlines are annually the fourth Thursday in January. In 2010, this will be January 28th.

Amounts: The maximum request is \$4 million for acquisition proposals or \$2 million for development proposals. Acquisition proposals over \$2 million must be for single instruments only. The minimum request is \$100,000 for all fields except the mathematical, social, behavioral, or economic sciences. For MU, 30% cost sharing is required.

URL for more information: The most recent RFA is available at <http://www.nsf.gov/pubs/2008/nsf08503/nsf08503.htm>

USDA ANNOUNCEMENTS -

2009 CSREES Grantsmanship Workshops and Writing Winning Grants Workshops

Grantsmanship workshops will be held this fall to highlight the competitive programs in USDA-CSREES and help grant writers improve their overall success. The workshops will be offered together in Washington, DC on Nov 16 - 17 and in **Kansas City, MO on Nov 10 - 11**.

During the CSREES Grantsmanship Workshop program directors from CSREES will provide an overview of funding programs within the Agriculture and Food Research Initiative (AFRI) and other competitive programs and the 2010 AFRI Request for Applications. There will also be breakout discussion on specific program areas as well as a mock review panel to provide insights on successful grants and the review process.

The Writing Winning Grants Workshop, presented by Drs Thomas Fretz and Michael Harrington, will feature topics that include: Where to look for funds, Principles of grant writing, Organizing integrated proposals, Developing the grant budget, Ethics in grant writing, and Common short-comings in the grant application.

Washington DC Workshop: November 16 - 17, Crystal Gateway Marriott, Arlington, VA

Cosponsored by the Southern Association of Agricultural Experiment Station Directors, the Northeast Regional Research Association, and USDA-CSREES. Please visit the workshop website for information on registration, hotels and program agenda: <http://www.cpe.vt.edu/usdagrant/index.html>

Kansas City, MO Workshop: November 10 – 11, Embassy Suites, Kansas City, MO

Cosponsored by University of Missouri, the Western Association of Agricultural Experiment Station Directors, and USDA-CSREES. Please visit the workshop website for information on registration, hotels and the program agenda: <http://muconf.missouri.edu/usda-csrees/index.html>

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 CSREES Funding Opportunities – click on the link below:

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

FY10 - 28.87% FY12 - 30.63%

FY11 - 29.74% FY13 - 31.55%

Note: FY10 Federal Funding fringes are 29.05%
(Med Schl is 26.25%)

Personnel employed ≤ 75% FTE 7.65%

UMC graduate students - tuition & insurance

UMC undergraduate students - exempt

Graduate Student Fees

2009-10 \$298.70/cr hr

2010-11 \$307.66/cr hr

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

2009-10 Academic Yr \$5,376.60 Summer \$1,194.80

2010-11 Academic Yr \$5,537.90 Summer \$1,230.64

Graduate Student Medical Insurance

25% FTE (12 mos) \$1,036.50

50% FTE (12 mos) \$2,073.00

Recent Changes to Grant Fact Sheet Information:

FA Rates (effective July 1, 2009/Agreement Date 6/12/09)

Research on Campus 51.5%

Instruction 48.0%

Other Sponsored Activity 30.0%

All training grants must use the departmental grants
INSTRUCTION deptid 11.

Upcoming Research Deadlines & Dates

Sept 1, 2009

Amer College Vet Ophthalmologists

Sept 1 & Nov 2, 09

MU Research Council

September 14, 2009

CVM USDA AHFF Proposals

September 29, 2009 (Columbia campus due date)

MU Research Board

September 25, 2009

NIH "T" Grants

NIH "PPG"/Center Grants

October 1, 2009

Grayson-Jockey Club Research Fdn

Veterinary Orthoped Society

MU Research Leave

October 5, 2009

NIH R01 New

October 12, 2009

NIH "K" Series New

October 16, 2009

NIH "R21" New

October 26, 2009

Richard Wallace Res Incentive Grants
(MU Alumni Assoc)

November 1, 2009

Alpaca Research Fdn Pre-Proposals

November 2, 2009

Grayson-Jockey Club, Storm Cat

November 3, 2008

Am College Vet Surgeons SIT Proposals

November 13, 2009

Morris Animal Fnd Wildlife Proposals

November 16, 2009

NIH "R21" Renew, Revision

December 1, 2009

Am Quarterhorse Assn.

December 5, 2009

NIH SBIR/STTR Proposals

December 8, 2009

NIH "F" Series Proposals

December 11, 2009

Am College Lab Animal Med Preproposals

December 14, 2009

Winn Feline Foundation

December 15, 2009

MDA Grants Letters of Intent

Am Assoc of Feline Practitioners Proposals

January 1, 2010

Cavalier Health Fdn Proposals

AKC ACORN grants accepted anytime
CVM COR 2010 FacRes & ClinSci Call ~ October 10

For Additional Funding Opportunities/Dates
Check Research Office Website

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