Research News – May 2011

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RESEARCH WEEK: 2011

College’s Annual Advances in Veterinary Medicine Research Day was expanded to “Research Week” and took place April 11 – 14, 2011.
The week began with noon hour seminars featuring exceptional faculty members with strong collaborative research programs with faculty throughout the College. Seminars were given by Dr. Michael Knopp, Professor of Radiology and Novartis Chair of Imaging Research and Director of the Wright Center of Innovation in Biomedical Imaging; Dr. Linda Saif, Distinguished University Professor from the Department of Veterinary Preventive Medicine and the Food Animal Health Research Program; and Dr. Larry Schlesinger, Samuel Saslaw Professor of Medicine, and the Director of the Division of Infectious Diseases, the Center for Microbial Interface Biology, and the Medical Scientist Program. The keynote address on Thursday, April 14th was given by Dr. Guy Palmer, Regents Professor and Creighton Endowed Chair and Director, Paul G. Allen School for Global Animal Health, Washington State, University. The veterinary student attendees were treated to a pizza lunch sponsored by Pfizer Animal Health.

Eight $500 Travel Awards were given to the top poster in each of the categories. The awards are to be used to attend a scientific meeting of the recipient’s choice to present his/her research. The travel awards were sponsored by the College’s Alumni Society, Fischer Scientific, the Center for Clinical and Translational Science, and the Public Health Preparedness for Infectious Diseases Program.

**Research Week Poster Winners**

**Graduate Students**

**Immunology and Infectious Diseases:** Dhohyung Kim, “Insights into the regulatory mechanism controlling the inhibition of vaccine-induced seroconversion by maternal antibodies.” Mentor - Stefan Niewiesk, Department of Veterinary Biosciences
**Molecular and Cellular Biology:** Rami Doueiri, “Identification of the functional domains and cellular binding partners of human t-cell leukemia virus type 2 p28 protein.” Mentor -Patrick Green, Department of Veterinary Biosciences

**Structure/Function (Two Awards – Tie):**

Blake E. Hildreth III, “Effects of deletion of the mid-region, nuclear localization sequence (NLS), and c-terminus of parathyroid hormone-related protein (PTHrP) on the osteogenic, adipogenic, chondrogenic, and myogenic differentiation of murine mesenchymal stem cells (MSC).” Mentors - Tom Rosol and Ramiro Toribio, Department of Veterinary Biosciences and Veterinary Clinical Sciences, respectively.

Lyn Wancket, “Protective effects of MAPK phosphatase 1 (MKP-1) during acute acetaminophen toxicity.” Mentor - Yusen Liu, Departments of Veterinary Biosciences and the Center for Perinatal Research, The Research Institute at Nationwide Children’s Hospital

**Clinical Research:** Elizabeth Lutz, “Effects of aqualase capsule washing on lens epithelial cells and pco formation in vitro following phacoemulsification.” Mentor - David Wilkie, Department of Veterinary Clinical Sciences

**Epidemiology and Applied Research:** Beth Chaffee, “An orthopedic xenograft model of osteosarcoma with metastasis.” Mentor - Matthew Allen, Department of Veterinary Clinical Science

**Veterinary Students**

**Poster Only Category:** Carlin Kelly, VME 4, “P38 MAPK signaling in equine laminitis: the effect of digital hypothermia.” Mentor - James Belknap, Department of Veterinary Clinical Sciences

**Oral Presentation of Poster Category:**

**Clinical/Applied Research:** Brandon Forshey, VME 2, “Effects of lactoferrin on post-breeding uterine inflammation in the mare.” Mentor - Marco da Silva, Department of Veterinary Clinical Sciences

**Basic Research:** Susanne Moesta, VME 2, “Neorickettsia surface antigen recognition by horses with potomac horse fever.” Mentor - Yasuko Rikihisa, Department of Veterinary Biosciences
Dr. Michael Emerman Presented Distinguished Research Award

The 12th Annual Center for Retrovirus Research Distinguished Career Award was presented to Dr. Michael Emerman of the Human Biology Program at the Fred Hutchinson Cancer Research Center on Thursday April 7th. Dr. Emerman is an internationally renowned investigator making significant scientific contributions to the understanding of the molecular and cellular biology of HIV. Dr. Emerman has published over 100 peer-reviewed articles in the field of molecular virology with an emphasis on the biology of HIV. He was the recipient of an American Foundation for AIDS Research Scholar Award and a National Institute of Allergy and Infectious Diseases Merit Award. Early investigations by his group showed that HIV is different from other viruses in its family by being able to infect non-dividing cells. This property has been exploited by others to develop HIV-like gene transfer vectors. Dr. Michael Emerman grew up in Columbus, Ohio and received his B.S. in Biochemistry at The Ohio State University. Dr. Emerman obtained his Ph.D. in Cellular and Molecular Biology at the University of Wisconsin-Madison in 1986 under the guidance of Dr. Howard Temin, a 1975 Nobel Laureate in Physiology or Medicine, where he used retroviruses to study how gene control elements could interfere with one another. His keynote seminar was entitled "Evolution of Human Immunodeficiency Virus Host Interactions". Dr. Emerman was recognized for his contributions to understanding the molecular and cellular biology of HIV and AIDS. [http://vet.osu.edu/retrovirus-research/award](http://vet.osu.edu/retrovirus-research/award)

Industrial Experts Assist with Research Day

New to Research Day this year, the College invited a panel of industrial leaders to judge posters and
provide advice for commercialization opportunities in the College. The panel included: John E. Sagartz, DVM, PhD, DACVP, President, Seventh Wave Laboratories LLC; Sharell Mikesell, PhD, Associate Vice President, Office of Research, Andrew Dahlem, PhD, Vice President, Chief Operating Officer, Lilly Research Laboratories, Eli Lilly and Company; Michael Rohovsky, DVM, PhD (formerly of Johnson and Johnson), and Susan Giovengo DVM – P&G Pet Care Professional Manager Professional Relations; William Kerns, DVM: Preclinical and Regulatory Practice.

Commercialization Update

Dr. Jean Schelhorn discusses recent Patent Reform Legislation --

Our US Constitution provides rights for the protection of inventions and creations in Article 1, section 8, clause 8 --- “To promote the progress of Science and useful arts, by securing for limited Times to Authors and Inventors the exclusive Right to their respective Writings and Discoveries”. This is the underpinning for US patent and trademark law and policy. On March 8th the US Senate passed a bill which incorporates significant modifications to current patent law. One of the key points in the bill is important for university inventors to understand. The Senate-passed bill changes the rules from “first to invent” to “first to file”. Our current US law protects the “first to invent”. If two or more persons invent and file for a patent covering equivalent inventions --- today, the “first to invent” will be awarded the patent (assuming all other tests for patentability are met). In most of the rest of the world the rule is “first to file”. The mental image I have for “first to file” is “a race to the patent office” and those who are better resourced in preparing and filing patents will typically get there first. Very early filings are more easily made when more resources are available. There are many other rules and considerations one must be aware of when seeking patent protection. However, a shift from “first to invent” to “first to file” is one CVM researchers should keep in mind as they begin to formulate new insights from research. Early frequent discussions with your OSU commercialization resources in our college and in TLC (Technology Licensing and Commercialization) can help you navigate through internal and external processes for invention development and as warranted patent application development. Please connect early and often! We will keep you informed on the status of Patent Reform in the coming months.

Dr. Davis Invited to TechConnect

Dr. Ian Davis has been invited to present “Treatment of Influenza Virus-Mediated Lung Injury: Blocking the A1-Adenosine Receptor” at the TechConnect Summit to be held in Boston June 14-16, 2011. The mission of the TechConnect Summit is to bring together pre-screened intellectual property and early stage companies with Fortune 500 companies
in a “global marketplace” to promote partnering or funding opportunities or both. Dr. Davis’ will be the first marketing presentation from Ohio State University ever selected for presentation at this annual conference.  http://www.techconnectworld.com/Summit2011/

Feature on Shared Resources: Proteomics

The Proteomics Shared Resources (PSR) is an interdisciplinary unit that supports high-quality cancer research by providing technical expertise and state-of-the-art instrumentation to the OSUCCC-James and the Ohio cancer research community. The PSR supports standard proteomic assays and provides innovative collaborative research opportunities to enhance cancer-relevant studies. It offers cancer investigators the critical tools and expertise needed for identifying proteins, quantifying protein expression levels, discovery of protein modifications and protein biomarkers. OSUCCC Shared Resource Director Dr. Kari Green-Church describes the Proteomics Shared Resource, including types of proteomics analyses, applications and equipment. See video link: http://www.youtube.com/watch?v=T5q7PtjeaSM

COUNCIL FOR RESEARCH ACTIVITIES – UPDATE

The Council for Research met on March 29th and April 19th to evaluate Canine Fund and C. Glenn Barber Graduate Student Fund applications. Canine fund recipients will be announced in early May. Barber Fund recipients included:

- **Dhohuyung Kim** (Stefan Niewiesk Lab) and – “Determining B cell activation an kinetics after vaccination in the presence of maternal antibodies” for 2 years
- **Famke Aeffner** (Ian Davis Lab) – “The role of CD73 in the pathogenesis of H1N1 influenza virus infection in mice” for 3 years.
Clinical Trials Office Update

The Clinical Trials Office provides assistance in the design, execution, and evaluation of veterinary clinical trials of client owned animals, as well as familiarizes those involved in the principles of Good Clinical Practice/ Good Laboratory Practice (GCP/GLP) guidelines. These efforts serve to enhance the ability of all at the College of Veterinary Medicine to successfully undertake clinical investigations in the veterinary patient population. **Issue 7 of the Clinical Trials Newsletter** is now available at [http://vet.osu.edu/research/march-2011](http://vet.osu.edu/research/march-2011). Please let us know if you have any questions and we hope you find it informative.

### Examples of Current Recruiting Clinical Trials

**Ophthalmology**
*Treatment of Canine Keratoconjunctivitis Sicca with an Aqueous Formulation of Cyclosporine*
To evaluate the safety and effectiveness of a new formulation of a topical drug, cyclosporine, currently used to treat Keratoconjunctivitis Sicca (KCS), commonly called "Dry Eye."

**Equine**
*Cell-Mediated Bone Morphogenetic Protein Gene Therapy for Bone Healing in Horses*
To demonstrate an efficacy and safety of cell-mediated molecular therapy for bone disorders and bone regeneration in horses with bone lesions.

**Oncology/Radiation Oncology**
*Maintenance Therapy with Toceranib (Palladia) Following Doxorubicin-Based Chemotherapy in Canine Splenic Hemangiosarcoma*
The goal of this study is to determine the anti-tumor activity of Palladia against canine hemangiosarcoma.

**Radiology**
*Computed Tomography for Evaluation of Canine Intestinal Obstruction*
The goal of this study is to determine if computed tomography (CT) is more accurate for detecting canine intestinal obstruction than abdominal radiographs.

**Orthopedic Surgery**
*Evaluation of Novel Spinal and Orthopedic Devices in the Dog*
The purpose of this study is to evaluate clinical function and evidence of bone healing after implantation of two new devices developed specifically for the dog.

**Cardiology**
*Acute effect of ivabradine, a novel I-f current inhibitor, on dynamic obstruction of the left ventricular outflow tract in cats with preclinical hypertrophic cardiomyopathy*
This randomized, double-blind, active-control single-dose study addresses the hypothesis that ivabradine does reduce dynamic obstruction of the left ventricular outflow tract in cats with Hypertrophic cardiomyopathy (HCM).
New Equine Pilot Grant Program

Based on recommendations from the Department of Veterinary Clinical Sciences Research Committee and other College leaders, residual funds from the Equine Research Fund will now be made available for research grants to faculty. The funds will be made available on a competitive basis to support equine research. Watch for the call for proposals in early May!

SUMMER RESEARCH PROGRAM – UPDATE

Alicia Griffin Cattaneo was recently awarded the Winner’s Circle Scholarship from the American Association of Equine Practitioners (AAEP) for her work on a project entitled: Hormonal Response to Resuscitation Solutions in Horses. Specifically, she evaluated how hypertonic saline and hetastarch solutions stimulate the hypothalamus, pituitary and adrenal glands to release hormones that modulate blood pressure and renal function. Alicia was a participant in the Summer Veterinary Student Research Program (2010) and her mentor was Dr. Ramiro Toribio.

RECENT GRANT AWARDS & PUBLICATIONS

- **GRANT AWARDS**

  - Drs. Sam Hurcombe, Ed Cooper and Margaret Mudge, Morris Animal Foundation Evaluation of large colon viability using sidestream dark field microscopy in horses with colic
  
  - Dr. Ronaldo DaCosta, Great Dane Club of America Anatomic and functional characterization of the cervical spine of Great Danes with and without signs of cervical spondylomyelopathy
  
  - Dr. Alicia Bertone, Biomet Evaluation of autologous solution derived from whole blood in treatment of horses with Osteoarthritis
  
  - Dr. Paivi Rajala-Schultz, USDA NIFA Formula Funds Animal health formula fund 2011: Prevalence and characteristics of methicillin-resistant staphylococcus aureus (MRSA) in Ohio dairy herds
SELECTED RECENT PUBLICATIONS


SEMINARS, MEETINGS, AND WORKSHOPS

- **OSU CCTS Annual Scientific Meeting** is scheduled for Tuesday May 24, 2011 from 8-5 in the Biomedical Research Tower. The CCTS Scientific Meeting will focus on new paradigms in therapeutics, how to engage academia in translational therapeutics/diagnostics, and how to best create and foster a culture of innovation. There will be poster sessions and networking opportunities for CCTS researchers from all scientific disciplines. [http://ccts.osu.edu/content/ccts-second-annual-scientific-meeting](http://ccts.osu.edu/content/ccts-second-annual-scientific-meeting)


- **Frontiers in Retrovirology 2011 Conference** in Amsterdam, Netherlands, Oct. 3-5. Dr. Lairmore will be a featured speaker. [http://www.frontiers-of-retrovirology.com/](http://www.frontiers-of-retrovirology.com/)

- **Upcoming training offered through the Office of Sponsored Programs**
  - [http://osp.osu.edu/training/](http://osp.osu.edu/training/)
    - Clinical Trials Budgeting Discussion and Resource Sharing – May 3
    - Cost Sharing on Sponsored Programs – May 3
    - Grant Writing and Mentoring – May 17
    - Cayuse Introduction – May 17
    - Grantwriting and Mentoring Panel Discussion – May 17
    - IRB Forms Help-Biomedical and Cancer – May 18
    - Research Funding Opportunities – May 20
    - A large number of online topics available as well; see website for more information
GRANT SUPPORT OFFICE – UPDATES

In the last month, 6 USDA proposals were processed through the CVM Grant Support Office (GSO). Seven ePA005s were generated for investigators and 18 ePA005s were reviewed for approval. E-certs, PETS and monthly Problem Projects were managed along with requests for project extensions. I handled multiple requests for extramural funding data for faculty annual evaluations. At present, a T32 competitive renewal, 2 NIH K awards, 1 USDA grant, 2 postdoctoral fellowships and 1 R01 are in process. Program initiatives include development of a pre-review grant evaluation format for CVM investigators, a brown bag education and training seminar series.

UPCOMING FUNDING OPPORTUNITIES

Intramural Grants:

Canine and Equine Fund Proposals: June 15, 2011.

Canine research funds

Legislation allocating money for this research states that it can be used for research and study of diseases of dogs, particularly those transmissible to man. It also provides for research of other diseases of dogs that, by their nature, will provide information applicable to the prevention and treatment of both human and canine illnesses. A portion (25%) of the funds will be targeted for research in areas as they relate to shelter medicine, including but not limited to epidemiology, behavior, infectious disease, and population control.

Equine research funds New Pilot Grant Project!

Ohio State law provided for the creation of special funds generated from pari-mutual wagering. These funds may be used "for research projects directed toward improving the breeding, raising, racing and health and soundness of horses in the State and toward education or promotion of the industry.

Extramural Funding Opportunities

American Association of Equine Practitioners is accepting grant proposals May 1, 2011 see http://www.aaep.org/foundation_funding_grants.htm
American Kennel Club ACORN Grants Open Submission These are small grants ($12,000 or less (plus 8% indirect costs) for up to 1 year. Applications may be submitted at any time, and notice of award decisions will be made within 90 days of application submission. The ACORN program is designed to allow researchers to complete small, relatively short timeframe projects, test research hypotheses, and/or generate preliminary data for possible future grant proposals as larger scale or longer term studies. Payments for ACORN grants are made in two equal payments upon the start of the grant and upon completion. A progress report is required to be submitted at the completion of the project. The Final Payment is dependent on the timely submission and approval of progress report.

The Damon Runyon-Rachleff Innovation Award provides funding for extraordinary early career researchers who have an innovative, new idea but lack sufficient preliminary data to obtain traditional funding. The research supported by the award must be novel, exceptionally creative and, if successful, have the strong potential for high impact in the cancer field.

Eligible applicants (including non-U.S. citizens) must be conducting independent research at a U.S. institution. Basic and translational/clinical projects will be considered and individuals with a background in multiple disciplines are especially encouraged to apply. The awards will provide $450,000 in direct costs during a three year award term. A complete award program description and application guidelines are available on our website (www.damonrunyon.org). Pre-proposals are due June 1, 2011.

USDA Opportunities

Reminder: AFRI Programs Proposals Due 5/2/11 (LOIs were required last February) http://www.csrees.usda.gov/fo/agricultureandfoodresearchinitiative.cfm


Sustainable Agriculture Research and Education Program (SARE), Proposal Due July 14, 2011 http://www.csrees.usda.gov/fo/sustainableagricultureresearchandeducation.cfm
*new* DoD Breast Cancer Research Program solicitations
The BCRP challenges the scientific community to design innovative, high-impact research that will address critical issues and foster new directions toward the vision of eradicating breast cancer.

- BCRP Era of Hope Scholar Award
- BCRP Idea Award
- BCRP Innovator Award
- BCRP Transformative Vision Award

*new* DoD Ovarian Cancer Research Program Solicitations
The overall goal of the FY11 OCRP is to eliminate ovarian cancer by supporting innovative, high-impact research.

- OCRP Pilot Award
- OCRP Teal Innovator Award
- OCRP Translational Leverage Award
- OCRP Translational Pilot Award

**NIH Funding Opportunities**

**Biomarkers of Infection-Associated Cancers (R01 & R21)**
National Cancer Institute Due June 5, 2011
http://grants.nih.gov/grants/guide/pa-files/PA-11-158.html (R01)

**Research Education Program for Laboratory Animal Medicine Veterinarians (R25)**
(RFA-RR-11-003) National Center for Research Resources Due Date: June 09, 2011

**NIH Pathway to Independence K99/R00 Career Transition Award**
The objective of the NIH Pathway to Independence Award (K99/R00) initiative is to assist postdoctoral investigators in transitioning to a stable independent research position with NIH or other independent research funding. New Parent Funding Opportunity Announcement just released: http://grants1.nih.gov/grants/guide/pa-files/PA-11-197.html Standard due dates apply: June 12, October 12, February 12

**Independent Scientist Award K02**
The K02 award provides three, four, or five years of salary support and “protected time” for newly independent (see IC provisions) scientists who can demonstrate the need for a period of intensive research focus as a means of enhancing their research careers. http://grants.nih.gov/grants/guide/pa-files/PA-11-191.html Standard due dates apply: June 12, October 12, February 12

**Short Term Research Career Enhancement Opportunities for Established Veterinarians (K18)** (RFA-RR-11-002) NCRR: provides a short term (6-24 m) specialized research career opportunity for an established veterinarian with an interest in comparative
medicine and translational research. Due June 14, 2011

The Infant Immune System: Implications for Vaccines and Response to Infections (R01)
(RFA-AI-11-010) National Institute of Allergy and Infectious Diseases. Due July 08, 2011

International Research in Infectious Diseases, including AIDS (R01) (PAR-11-145)
National Institute of Allergy and Infectious Diseases Due June 23, 2011

Systems Approach to Immunity and Inflammation (U19) (RFA-AI-11-017)
National Institute of Allergy and Infectious Diseases Due August 30, 2011

US Army Opportunities

BAA for Extramural Medical Research – Research Areas of interest: Medical Biological Defense Research Program: Viral, Toxin and Bacterial Studies, Vaccine development, Development of improved methods for delivery of vaccines, Drug Development, Identification and Diagnosis. Telemedicine and Advanced Technology Program: Medical Imaging Technologies, Chronic Disease and Integrative Medicine, Infectious Disease, Neuroscience, Regenerative Medicine, Nanomedicine and Biomaterials. Solicitation #: W81XWH-BAA-11-1
due date: continuous; white paper submission required, full proposal by invitation

BAA for Basic & Applied Research, FY07-FY11 –Life Sciences: Biochemistry, Molecular Genetics and Genomics, Microbiology and Biodegradation, Neurophysiology and Cognitive Neuroscience, Social and Behavioral Science; Solicitation #: W911NF-07-R-0003-04
Due date: continuous; white paper submission required, full proposal by invitation

WHAT YOU NEED TO KNOW

Policy Updates

NIH to Reduce Electronic Grants System Contractors. The National Institutes of Health (NIH) has announced it is eliminating 20 percent of the contractors who help run its electronic grant system. "In the strained budget climate," said NIH Deputy Director for Extramural Research Sally Rockey, NIH's Electronic Research Administration (eRA) "has been dealt a major reduction in its budget." The eRA system handles hundreds of thousands of grant applications,
awards and other documents. The cuts will result in a delayed eRA response and many curtailed projects. AAAS / Science

– Responsible Conduct of Research (RCR) update

New requirements for responsible conduct of research (RCR) training have been issued by the National Science Foundation (NSF) and the National Institutes of Health (NIH), affecting all NSF awards and selected categories of NIH awards. In order to meet these guidelines fully, new course options for graduate and undergraduate students and postdocs must be developed.

- New: all proposals submitted to NSF must provide a means for all graduate and undergraduate students and postdocs appointed on the grant to complete training in responsible conduct of research. In the short term, students and postdocs can meet the NSF requirement by completing the CITI Responsible Conduct of Research training program for their broad disciplinary areas.

- Expanded guidance from NIH states that all trainees, fellows, participants, and scholars receiving support through any NIH training, career development award (individual or institutional), research education grant, and dissertation research grant must receive instruction in responsible conduct of research. NIH requirements are such that CITI training alone will not satisfy the requirement in the short or long term.

- The training must have discipline-specific components. In addition, substantial face-to-face discussions, a combination of didactic and small-group discussions, and participation of research training faculty members are strongly encouraged.

- These requirements cannot be met with a single, centrally-provided course. The College will be developing courses or helping revise existing courses that provide the case studies and discipline-specific information required by the federal guidance.

For more information please contact Dr. Kate Hayes-Ozello, College of Veterinary Medicine Grants Support Office at Kathleen.Hayes-Ozello@cvm.osu.edu or Ms. Michele Morscher at Michele.Morscher@cvm.osu.edu