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Discovery Spring 2011

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THE UNIVERSITY of TENNESSEE
INSTITUTE of AGRICULTURE
COLLEGE of VETERINARY MEDICINE

Knowledge DISCOVERY Compassion

Changes for the UTCVM Office of Research

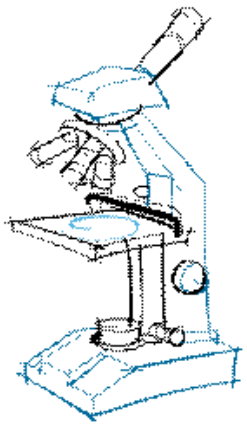
by Dr. Michael McEntee

The Greek philosopher Heraclitus said the only thing constant is change. As with everything in life, this idea holds true for the UTCVM Office of Research and Graduate Studies, as well. In February, Dr. Leon Potgieter, Interim Associate Dean, retired and transferred his interim title onto Dr. Michael McEntee until a search for a non-interim replacement is complete.

The college has set research/discovery and clinical service as priorities in strategic planning for the next 5 years. With discovery, it is important to examine our strengths and build on them, recognizing that we lack the infrastructure and critical mass of larger institutions. While we do have productive, well-funded research programs in basic biomedical, translational, and clinical medicine, there has been relatively little collaboration between groups to provide the synergy necessary to achieve the broader scope that might attract funding for program or training grants, or significant foundational support.

As we go forward in building our research enterprise, it will be important to consider how to buttress and expand our current areas of strength with strategic hires and development of collaborations across campuses and the state. This will not happen overnight and will require a college-wide discussion about where our strengths reside and where we might consider focusing in the longer term. Should we direct efforts toward major funding agencies (NIH, USDA, DOD), our clinical strengths, and/or what would arguably benefit Tennesseeans and their agriculture? What do we have now in people, facilities, or location that gives us an edge in addressing problems that are backed by funding sources?

Just as important is to ensure veterinarians have an increasing role in biomedical research, not only for the health of our profession, but because DVMs can contribute a unique perspective and knowledge-base highly relevant to a wide range of topics from human and animal health to the environment. How do we in the UTCVM help increase the number of DVMs actively engaged in scientific discovery and contributing to our global health?



We have a small research footprint compared to many other colleges of veterinary medicine, and we lack the engine of a robust local biomedical research environment often provided by larger medical schools; so we need to build a strength internally (difficult to imagine more than one or two overlapping) and/or develop stronger collaborative ties with our neighbors, which will happen only when they understand what we have to offer. In summary, we can do a lot to increase research productivity and graduate training within the CVM, and the introduction of a fresh perspective in the form of a new Associate Dean for Research will no doubt help realign our efforts and strengthen our programs. ☙

OIT's Analysis System Offers Variety of Research Software for Little to Nothing

The Office of Information Technology (OIT) at UT offers the analysis.utk.edu system, which allows users to run both quantitative and qualitative research analysis software as if it were installed on their own computer. The software runs on a server and displays an image of itself on the user's computer. With it, users may open and save files on their own computer's disk drive and print to their own printer, and it works from any Windows, Macintosh, Linux, or Solaris computer.

Students may access these tools using their Net ID and password. Faculty and staff must purchase a client access license through the Bookstore Technology Center for a one-time fee of $17. Software available on Analysis includes Amos, ATLAS.ti; Clementine, EQS; ImageJ, JMP, Maple, Mathematica, MATLAB, Mestrenova, Mplus, N6/NUD*IST, Origin, QDA Miner, R, SAS, SAS Enterprise Guide, SAS Enterprise Miner, SAS Text Miner, Scientific Notebook, SigmaPlot, SigmaScan, Simstat, SPSS, Stata, and SUDAAN.

E-mail *StatHelp@utk.edu* if problems are encountered in accessing the system. ☙

Kalck, Newkirk, Whitlock Recipients of ITC Faculty First Grants

The Innovative Technology Consulting division at UT accepts proposals each year for projects involving technology in teaching. Two recipients of this year's grants are Large Animal Clinical Sciences faculty **Dr. Karen Kalck** and **Dr. Brian Whitlock** and Pathobiology faculty **Dr. Kim Newkirk**.

Kalck's project, entitled "Choose your own adventure in equine medicine," will allow veterinary students to encounter cases through Web-based modules developed from previous hospital cases. The format will include rewards and consequences for procedure, diagnosis, and treatment choices, and the program will increase student opportunities to learn about equine medicine at a time when economic uncertainty is slowing the incoming caseload.

Newkirk's award will allow easy Web-based access to gross pathology images for faculty to use in teaching. A self-quiz feature will allow veterinary students to enhance their classroom learning of pathology. Her project title is "Development of a Web-based searchable archive for pathology images."

Whitlock's plan, "Mobile teaching and learning module for VM893 (Field Services)," is to develop a clinical, case-based learning module with interactive comprehension assessments that can be used in a mobile (truck) environment like the one in field services, when students spend a considerable amount of time driving from farm to farm. The assessment portion of the project will allow Whitlock to evaluate student comprehension in the field and in the classroom, as well. ☙

Recent Publications

Anis E, O'Neill S, Newkirk K, Brahmbhatt R, Abd-Eldaim M, Frank L, Kania S. Molecular characterization of human and feline papillomavirus L1 genes from cats with premalignant and malignant epithelial lesions. *Am J Vet Res* 2010;71:1457–1461.

Atkins RM, **Hecht S**, Westermeyer HD, McLean NJ. What is your diagnosis? – Zygomatic salivary mucocele in a dog. *J Am Vet Med Assoc* 2010;237:1375–1376.

Baek SJ, Whitlock NC. (2011) Molecular targets of resveratrol in carcinogenesis. In: Cho WCS, ed. *Evidence-based Anticancer Herbal Medicine*. Dordrecht, Netherlands: Springer;313–340.

Baron ML, **Hecht S,** Westermeyer HD, **Mankin JM, Novak JM, Donnell RL.** Intracranial extension of retrobulbar blastomycosis (*Blastomyces dermatitidis*) in a dog. *Vet Ophthalmol* 2011;14:137–141.

Choudhary S, Rathore K, Wang H-CR. Differential induction of reactive oxygen species through Erk1/2 and Nox-1 by FK228 for selective apoptosis of oncogenic H-Ras-expressing human urinary bladder cancer J82 cells. *J Cancer Res Clin Oncol* 2011;137:471–480.

Choudhary S, Wang K-KA, **Wang H-CR**. Oncogenic H-Ras, FK228, and exogenous H_2O_2 cooperatively activated the ERK pathway in selective induction of human urinary bladder cancer J82 cell death. *Mol Carcinogenesis* 2011;50:215–219,

Clemans JM, Deitz KL, Riedsel EA, Yaeger MJ, **Legendre AM.** Retroperitoneal pyogranulomatous and fibrosing inflammation secondary to fungal infections in two dogs. *J Am Vet Med Assoc* 2011:238:213–219.

Cox S, Yarbrough J. Determination of firocoxib in equine plasma using high performance liquid chromatography. *J Chromatogr B* 2011;879:205–208.

Flatland B, Fry MM, LeBlanc CJ, Rohrbach BW. Leukocyte and platelet changes following low-dose lipopolysaccharide administration in five dogs. *Res Vet Sci* 2011;90:89–94. [A summary of this article appeared in VerticalNews Veterinary. Available at: http://veterinary.verticalnews.com/articles/4877942.html. Accessed on March 17, 2011.]

Haines D, Newkirk K. Analyzing histology images with Photoshop Extended CS3 and CS4. *J Biocommun*. 2010;36:E52–E56.

Hecht S. MRI diagnosis: Ventral intraspinal cyst in a dog. American College of Veterinary Radiology CT/MRI Society Case of the month-February 2011. Available at: http://mirc.veterinaryradiology.net/cases/documents/20110121223237788/1/MIRCdocument.xml. Accessed March 17, 2011.

Hecht S, Lawson SM, Lane IF, Sharp DE, Daniel GB. 99mTc-DTPA diuretic renal scintigraphy in dogs with nephroureterolithiasis. *Can Vet J* 2010;51:1360–1366.

O'Neill SH, Frank LA, Reynolds LM. Effect of an anti-inflammatory dose of prednisone on thyroid hormone monitoring in hypothyroid dogs. *Vet Dermatol* 2011;22:202–205.

O'Neill SH, Newkirk KM, Anis EA, Brahmbhatt R, Frank LA, Kania SA. Detection of human papillomavirus DNA in feline premalignant and invasive squamous cell carcinoma. *Vet Dermatol* 2011;22:68–74.

Rogers ED, Henry TB, Twiner MJ, **Gouffon JS,** McPherson JT, Boyer GL, Sayler GS, Wilhelm SW. Global gene expression profiling in larval zebrafish exposed to microcystin-LR and microcystis reveals endocrine disrupting effects of cyanobacteria. *Environ Sci Technol* 2011;45:1962–1969.

Souza MJ, Cox S. Tramadol use in zoologic medicine. *Vet Clin N Am Exot Anim Pract* 2011;14:117–130.

Souza MJ, Martin-Jimenez T, Jones MP, Cox SK. Pharmacokinetics of oral tramadol in red-tailed hawks (*Buteo jamaicensis*). *J Vet Pharmacol Ther* 2011;34:86–88.

Tobias KM. Nasopharyngeal polyps. In: Cote E, ed. *Clinical Veterinary Advisor: Dogs and Cats*. 2nd ed. St. Louis, MO: Mosby Elsevier;2011:751–752.

Tobias KM. Hypoplastic trachea. In: Cote E, ed. *Clinical Veterinary Advisor: Dogs and Cats*. 2nd ed. St. Louis, MO: Mosby Elsevier;2011:581–582.

Tobias KM. Foreign body, respiratory tract. In: Cote E, ed. *Clinical Veterinary Advisor: Dogs and Cats*. 2nd ed. St. Louis, MO: Mosby Elsevier;2011:411–413.

Tobias KM. Laryngeal paralysis. In: Cote E, ed. *Clinical Veterinary Advisor: Dogs and Cats*. 2nd ed. St. Louis, MO: Mosby Elsevier;2011:635–637.

Westermeyer HD, Hendrix DV, Ward DA. Long-term evaluation of the use of Ahmed gonioimplants in dogs with primary glaucoma: Nine cases (2000-2008). *J Am Vet Med Assoc* 2011;238:610–617.

Westermeyer HD, Hendrix DV, Ward DA, Cox SK. Tear, cornea, and aqueous humor concentrations of ciprofloxacin and moxifloxacin after topical ocular application in ophthalmologically normal horses. *Am J Vet Res* 2011;72:398–403.

Whitlock NC, Bahn JH, Lee S-H, Eling TE, **Baek SJ**. Resveratrol-induced apoptosis is mediated by early growth response-1, Krüppel-like factor 4, and activating transcription factor 3. *Cancer Prev Res* 2011;4:116–127. ☙

Research Resource Spotlight

PMID to PMCID Converter

All NIH-funded research articles are now required to be deposited into PubMed Central. Most journals provide this service free to authors; others require the authors to pay if they wish to use the service; and still others require the authors to submit the articles to PubMed Central themselves.

These PubMed Central identification numbers (PMCIDs) must then be included in NIH grant applications and progress reports when an author references his or her own NIH-funded publications, both in the references section and in the biosketch.

The National Center for Biotechnology Information (NCBI) offers a PubMed ID (PMID) to PMCID converter for easier reporting. This converter will return results for up to 2,000 PMIDs in either PMCIDs or NIHMS IDs, if they exist. PubMed users may perform a search of their published articles and produce a PMID list to copy and paste to the converter by choosing "PMID List" from the "Format" options in the "Display Settings" drop-down arrow located at the top of the search results page.

The PMID: PMCID Converter is located at *http://www.ncbi.nlm.nih.gov/sites/pmctopmid.* ꕥ

Depositing a Manuscript into PubMed Central
Hands-on Workshop
Thursday, April 14, 1–2 pm
A335 Vet Med Bldg
Led by Misty Bailey

CEMPH Research Symposium June 20 & 21

This year's Comparative & Experimental Medicine and Public Health Research Symposium will take place on June 20 & 21 in the Veterinary Medicine Building.

Once again, we expect around 100 new investigator presentations related to human and animal health, with presenters from four different UT campuses. The format for these talks will be 10-minute oral presentations, followed by 5 minutes for questions.

Of the four featured speakers, we are especially excited to welcome Dr. Franziska Grieder, Director of the Division of Comparative Medicine at the National Center for Research Resources (NIH). Dr. Grieder will present "One health, one medicine: Veterinary research scientists for the 21st century" on Monday morning.

Information about other speakers, as well as the call for abstracts, may be found at *http://www.vet.utk.edu/research/symposium/*. We will continue to update the Web site with more information as it becomes available. ꕥ

Dr. Franziska Grieder of NCRR will give Monday's keynote address.

Open Access Publishing Support Available

Publishing in an open-access journal is easier than ever thanks to the UTK Office of Research and University Libraries. They are continuing to offer up to $3,000 per article toward article-processing fees for open-access publishing.

Applications are funded on a first-come, first-served basis, and authors must request a waiver or reduction of fees from the publisher before applying for this internal award.

More information, as well as the application form, may be found at *http://www.lib.utk.edu/openpub/program.html.* ꕥ

UTCVM Investigators Bring in $860,664 for Recent Sponsored Projects

Title	PI	Agency	Start	Type	$ Amount
Investigation of a novel approach to forensic analysis using neutron imaging techniques	M Cekanova	UT-Battelle/ORNL	1/28/11	Yr 1/1	147,213
Genomic resources for the control of canine pyoderma	S Kania	AKC Canine Health Foundation	1/1/11	1/1	42,466
Mechanisms in herpetic keratitis	B Rouse	NIH	1/1/11	4/5	314,449
T-regulatory cells in HSV immunity and immunopathology	B Rouse	NIH	2/1/11	4/5	356,536

Recent Presentations

Bartges J. Small animal case studies. Presentation at: UTCVM Annual Conference; February 2011; Knoxville, TN.

Callens A. Getting on the right tract: Urinary tract issues. Presentation at: UTCVM Annual Conference; February 2011; Knoxville, TN.

Craig L. Synovial tumours in dogs. Presentation at: New Zealand Society for Veterinary & Comparative Pathology Annual Conference; February 13, 2011; Palmerston North, New Zealand.

Davis J. Dermatology techniques and special tips lab. Presentation at: UTCVM Annual Conference; February 2011; Knoxville, TN.

Frank L. Alopecia–Is it hormonal?; The itchy cat; Managing canine otitis. Presentations at: UTCVM Annual Conference; February 2011; Knoxville, TN.

Gray MJ, Duffus ALJ, **Miller DL.** Ecology and pathology of ranaviruses. Workshop presented at: Southeastern Partners in Amphibian and Reptile Conservation Annual Meeting; February 2011; Louisville, MS.

Hecht S. Small animal applications of magnetic resonance imaging–Update. Presentation at: UTCVM Annual Conference; February 2011; Knoxville, TN.

Kennedy M. Immunology. Lectures presented at: Western States Veterinary Conference; February 24, 2011; Las Vegas, NV.

LeBlanc A. PET/CT in veterinary oncology: Evidence for clinical use. Presentation at: Northern California Oncology Forum; February 4, 2011; Redwood City, CA.

Miller DL, Gray MJ. Pathological changes associated with ranaviral disease. Invited presentation at: 36th Annual Eastern Fish Health Workshop; March 28–April 1, 2011; Mt. Pleasant, SC.

Miller DL, Duffus ALJ, Gray MJ. Disease surveillance and biosecurity techniques. Workshop presented at: Southeastern Partners in Amphibian and Reptile Conservation Annual Meeting; February 2011; Louisville, MS.

Pedigo A, Aldrich T, **Odoi A.** Neighborhood disparities in stroke and heart attack mortality in East Tennessee. Poster presented at: Cardiovascular Disease Epidemiology and Prevention 2011 Scientific Sessions; March 24, 2011; Atlanta, GA.

Pedigo A, Aldrich T, **Odoi A**. Place matters! Disparities in ambulance response and transport times for stroke and heart attack patients in East Tennessee. Oral presentation at: Cardiovascular Disease Epidemiology and Prevention 2011 Scientific Sessions; March 25, 2011; Atlanta, GA.

Pluchino L, Wang H-CR. The role of HSD11B2 in the regulation of cellular properties. Poster presented at: The University of Tennessee/Oak Ridge National Laboratory Graduate School of Genome Science & Technology Annual Retreat; March 4, 2011; Knoxville, TN. Abstract 26.

Rathore K, Wang H-CR. Green tea catechins at non-cytotoxic levels suppress cellular carcinogenesis induced by environmental carcinogens. Poster presented at: The University of Tennessee/ Oak Ridge National Laboratory Graduate School of Genome Science & Technology Annual Retreat; March 4, 2011; Knoxville, TN. Abstract 27.

Schumacher J. There is a snake in room #!#!: Handling and clinical procedures for snakes; Hypothermia is not appropriate reptile anesthesia: Reptile anesthesia and analgesia; A review of selected surgical cases in reptiles; Ultrasound and CT–Practical uses for the reptile patient; Lions, tigers and bears – Oh my! Large carnivore sanctuary medicine; Getting hands-on: Restraint and immobilization of wild animals in your clinic. Presented at: North American Veterinary Conference; January 2011; Orlando, Florida.

Tobias K. Small animal soft tissue surgery. Lecture presented at: Colonial Veterinary Conference; December 2010; Williamsburg, VA.

Tobias K. Small animal soft tissue surgery. Lecture presented at: North American Veterinary Conference; January 2011; Orlando, FL.

Van Amstel S. Medical conditions of pet pigs; Surgical conditions of pet pigs; Lameness in commercial and pet pigs. Invited presentations at: North American Veterinary Conference; January 16, 2011; Orlando, FL.

Van Amstel S, Shearer JK, Cooper VL**.** Clinical signs, histopathology and treatment of atypical digital dermatitis in cattle. Presented at: International Ruminant Lameness Symposium; March 3, 2011; Rotorua, New Zealand.

Van Amstel S, Shearer JK. Pathogenesis and differentiation of toe lesions in cattle. Presented at: International Ruminant Lameness Symposium; March 3, 2011; Rotorua, New Zealand.

Wang H-CR. In vitro progressive cellular carcinogenesis model. Invited presentation at: NIMBioS Investigative Workshop – Solid Tumor Modeling; January 2011; Knoxville, TN.

Wells J. Acute renal failure. Presentation at: UTCVM Annual Conference; February 2011; Knoxville, TN.

Whittemore J. Presumptive steroid hepatotoxicity in dogs and cats. Presented at: Comparative Gastroenterology Society Annual Conference; March 2011; Manuel Antonio, Costa Rica.

Wilson M. Small animal oncology: The veterinary technician's role. Presentation at: UTCVM Annual Conference; February 2011; Knoxville, TN.

Wyatt N. Small animal behavior rounds–How the veterinary technician can be involved. Lab presented at: UTCVM Annual Conference; February 2011; Knoxville, TN.

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