**Recent Publications . . .**


**The University of Tennessee College of Veterinary Medicine**

**Research at the University of Tennessee College of Veterinary Medicine.**

**In this issue.**

p2 Research in Australia & South Africa

Awards  
Funding deadlines

p3 Editing services
External funding

**The Business of Research.**

By Dr. Robert Moore.

Trying to understand research reports can be quite confusing since the numbers can be presented in different ways. The most accurate representations of research activity are expenditures and yearly awards. As a young institution, the CVM has research expenditure data that cover the college’s entire lifespan. The data provided in the figure are interesting in that three distinct periods in the college’s short history can be identified. From 1978 through 1991, the gradual increase in research activity and expenditures represent the original growth phase for CVM research. Between 1992 and 2001, research expenditures stabilized at approximately the 1991 level with no growth in the college’s research enterprise. The third phase is a dramatic increase in research expenditures between 2001 and 2005. Expenditures for 2006 and 2007 remained at an elevated level, but appear to represent an ending of the second growth phase. A partial explanation for the abrupt stoppage of the second growth phase is that federal funding decreased sharply in FY2006-07 to approximately the level in FY1990-91. A slight offset to the decrease in federal funding was provided by a large increase in funding from foundations and private sources. The decrease in federal funding was expected and reflects the budget levels of the primary granting agencies, the National Institutes of Health, which are below their 2005 operating levels at a time of extreme competition for funding. Another complicating factor is the absolute limitation of research space in the college.

The second research growth phase was driven by a change in the CVM administration with different expectations and values afforded for research and scholarly work. Progress has been made, and during FY2006-07, approximately 50% of CVM faculty were listed as principal or co-investigators on externally funded awards. Moreover, new competitive awards for FY2007 were a college record of 45, 10 better than FY05 and 26 more than FY01. Enrollment in the Comparative and Experimental Medicine program was at all-time high, while the laboratory animal facility at Cherokee is undergoing major renovations. In short, although there is a depression of research funding from external sources, a variety of positive indicators support the conclusion that research in the college is stronger than it has ever been.

**Success of Research Symposium Sparks Interest in Expanded Event.**

Over 60 people from 11 different departments on campus attended the First Annual Comparative and Experimental Medicine (CEM) Graduate Student Research Symposium held June 6.

Oral and written feedback indicate that participants and attendees enjoyed the opportunity to exchange ideas in an organized setting.

Administrators of the CEM program met with CEM departmental representatives in August to discuss the success of the tentative date of June 17, 2008, has been set. The participant pool has been expanded, and clinics might be altered to emergency-only service to allow more students and clinical faculty to attend.

More information about next year’s program will be announced in upcoming newsletters.

**Innovations and methods for studying cancer are expanding rapidly.**

Participants in this year’s research symposium won travel awards to be used for presenting their work at a meeting of their choosing.

Receiving $1,000 travel awards:
- Dr. Ferenc Toth, Large Animal Clinical Sciences (LACS) Dept.
- Beth Wilson, Nutrition Dept.

Receiving $500 travel awards:
- Amanda Petrich, LACS
- Magdha Sukhthankar, Pathobiology Dept.
- Pranita Sarangi, Microbiology Dept.
- Dr. Angela Lansby, Small Animal Clinical Sciences Dept.

**Innovations and methods for studying cancer are expanding rapidly.**

Participants in this year’s research symposium won travel awards to be used for presenting their work at a meeting of their choosing.

Receiving $1,000 travel awards:
- Dr. Ferenc Toth, Large Animal Clinical Sciences (LACS) Dept.
- Beth Wilson, Nutrition Dept.

Receiving $500 travel awards:
- Amanda Petrich, LACS
- Magdha Sukhthankar, Pathobiology Dept.
- Pranita Sarangi, Microbiology Dept.
- Dr. Angela Lansby, Small Animal Clinical Sciences Dept.

**Innovations and methods for studying cancer are expanding rapidly.**

Participants in this year’s research symposium won travel awards to be used for presenting their work at a meeting of their choosing.

Receiving $1,000 travel awards:
- Dr. Ferenc Toth, Large Animal Clinical Sciences (LACS) Dept.
- Beth Wilson, Nutrition Dept.

Receiving $500 travel awards:
- Amanda Petrich, LACS
- Magdha Sukhthankar, Pathobiology Dept.
- Pranita Sarangi, Microbiology Dept.
- Dr. Angela Lansby, Small Animal Clinical Sciences Dept.

**Innovations and methods for studying cancer are expanding rapidly.**

Participants in this year’s research symposium won travel awards to be used for presenting their work at a meeting of their choosing.

Receiving $1,000 travel awards:
- Dr. Ferenc Toth, Large Animal Clinical Sciences (LACS) Dept.
- Beth Wilson, Nutrition Dept.

Receiving $500 travel awards:
- Amanda Petrich, LACS
- Magdha Sukhthankar, Pathobiology Dept.
- Pranita Sarangi, Microbiology Dept.
- Dr. Angela Lansby, Small Animal Clinical Sciences Dept.

**Innovations and methods for studying cancer are expanding rapidly.**

Participants in this year’s research symposium won travel awards to be used for presenting their work at a meeting of their choosing.

Receiving $1,000 travel awards:
- Dr. Ferenc Toth, Large Animal Clinical Sciences (LACS) Dept.
- Beth Wilson, Nutrition Dept.

Receiving $500 travel awards:
- Amanda Petrich, LACS
- Magdha Sukhthankar, Pathobiology Dept.
- Pranita Sarangi, Microbiology Dept.
- Dr. Angela Lansby, Small Animal Clinical Sciences Dept.

**Innovations and methods for studying cancer are expanding rapidly.**

Participants in this year’s research symposium won travel awards to be used for presenting their work at a meeting of their choosing.

Receiving $1,000 travel awards:
- Dr. Ferenc Toth, Large Animal Clinical Sciences (LACS) Dept.
- Beth Wilson, Nutrition Dept.

Receiving $500 travel awards:
- Amanda Petrich, LACS
- Magdha Sukhthankar, Pathobiology Dept.
- Pranita Sarangi, Microbiology Dept.
- Dr. Angela Lansby, Small Animal Clinical Sciences Dept.
play an important role in the development of acid injury in the non-glandular region of the equine stomach. This is especially a problem for Thoroughbred racehorses because vigorous exercise can aggravate GUD.

Scientists long suspected that bacteria could not survive in the stomach because of its acidic atmosphere. However, the non-glandular region of the equine stomach is not as acidic as the rest of the stomach, allowing bacteria to survive and grow, possibly by metabolizing sugar in the diet. Therefore, the next goal of their research is to be able to prevent and treat GUD by manipulating the horse's diet, most likely by lowering its sugar intake. A Rural Industries Research & Development Corporation grant has supported their endeavors since 2004, and they are seeking funding from that Australian government agency once again this year.

What I Did on My Summer Vacation

Not all students involved in the Center of Excellence summer research program spent their entire vacation in a block-walled laboratory. Second-year veterinary students Jayme Peck and Jennifer Bernard spent 40 hours on a plane- and from South Africa, of course. That is where they joined Dr. Melissa Kennedy to investigate coronavirus infections in captive and free-ranging cheetahs at the University of Pretoria. While there, the two students used real-time polymerase chain reaction and indirect fluorescent immunosassays to look at the prevalence and epidemiology of the infections. They were also fortunate to see a demonstration of a cheetah run. A grassy area served as a temporary cheetah racetrack, with a red flag serving as the cheetah's flag at the conclusion of the race. The nearly 70 mph speed of the cheetah made for difficult videography, the students said. Jayme and Jennifer are seen here collecting samples from lions, making friends with a cheetah, and taking a guided (hand-led) horseback ride.

Discovery: Research at the University of Tennessee College of Veterinary Medicine (2007) 2.3

Research Resource Spotlight

Who uses a technical editor? Professors at all levels, native English speakers, and even the most published and funded writers use a technical editor. Anyone whose first language is not English should use a technical editor. Even though most English-as-a-second-language writers know the rules of English better than native speakers, it is easy to confuse some of the subtleties of the language.

CVM Receives Over $1 Million for Sponsored Projects Since June

Deadline Sponsor Program $ Amount URL
Oct. 15 American Cancer Society Established & new investigators; post-docs Up to 200,000 www.cancer.org
Oct. 16 NIH R03, R21, R33, R34, & R36 Varies www.nih.gov
Nov. 1 Burroughs Wellcome Fund Pathogenesis of infectious disease Varies www.bwfund.org
Nov. 1 Morris Animal Foundation Established investigators & first awards ~4,000-100,000 www.morrisanimalfoundation.org
Nov. 3 Banfield Charitable Trust Human-animal bond; preventive healthcare for pets, and educating children about animals 2,103-32,000 www.banfieldcharitabletrust.net
Nov. 5 NIH R01 renewals, resubs, & revisions Varies www.nih.gov
Nov. 8 Susan G. Komen For the Cure Foundation Pre-proposals due Oct. 9 Up to 600,000 cms.komen.org/komen
Nov. 16 NIH R03, R21, R33, R34, & R36 renewals, re-submits, & revisions Varies www.nih.gov

Pharmacokinetic and pharmacodynamic effects of an oral and intravenous drug in horses
The efficacy of Steabuchhorn liquid supplement in prevention of gastric ulcers in horses
PPAR-gamma ligands in colorectal cancer
Gene alteration by NSAI Ds
Nutrition technician
Preliminary clinical field trial to evaluate the safety and effectiveness of mis-regulated immunoprecipitated as a treatment of canine aromatic pyredora
Effects of resting insulin sensitivity on the acute response to endotoxin in horses
Evaluation of a multidose drug for the induction and maintenance of anesthesia in dogs
Durie rectal scintigraphy in normal cats—pilot study
Influence of gender and sexual alteration status on feline adipocitokin
Population pharmacokinetics of Carbo platinum in dogs
Sponsored clinical pharmacology residency agreement
Placebo-controlled field efficacy trial of a drug administered orally via transmucosal oral mist in client-owned dogs with osteoarthritis
Clinical evaluation of extracorporeal shock wave therapy for management of canine osteoarthritis of the elbow joint
A randomized, blinded, placebo-controlled, multi-center, confirmatory efficacy field trial for the evaluation of a drug
Center of Excellence in Livestock Diseases and Human Health
IPA work agreement for the US Dept. of Commerce, NOAA, National Marine Fisheries Service
A clinical field study evaluating the safety and efficacy of a drug in dogs with idiopathic epilepsy
Carcinogenesis cellular model for identifying preventive agents

Title PI Agency Start date Type $ Amount
Pharmacokinetic and pharmacodynamic effects of an oral and intravenous drug in horses HS Adair Private industry (additional funds) 6/1/07 Phase 2, Year 1 2,982
The efficacy of Steabuchhorn liquid supplement in prevention of gastric ulcers in horses FM Andrews Seabuck Equine 7/1/07 2/1 6,700
PPAR-gamma ligands in colorectal cancer SJ Back NIH 6/1/07 Year 2 of 5 199,929
Gene alteration by NSAI Ds SJ Back American Cancer Society 7/1/07 2/3 180,000
Nutrition technician JW Bariges Nestle 6/23/07 5/5 31,050
Preliminary clinical field trial to evaluate the safety and effectiveness of mis-regulated immunoprecipitated as a treatment of canine aromatic pyredora LA Frank Immucell 7/11/07 1/1 39,774
Effects of resting insulin sensitivity on the acute response to endotoxin in horses N Frank American Quarter Horse Association 10/1/07 1/1 50,015
Evaluation of a multidose drug for the induction and maintenance of anesthesia in dogs RC Harvey Abbott Laboratory 8/27/07 1/1 5,500
Influence of gender and sexual alteration status on feline adipocitokin CA Kirk Hill’s Pet Nutrition 7/1/07 1/5 30,000
Population pharmacokinetics of Carbo platinum in dogs CA Kirk Morris Animal Foundation 10/1/07 1/1 8,005
Sponsored clinical pharmacology residency agreement TM Jimenez Morris Animal Foundation 10/1/07 1/3 16,578
Placebo-controlled field efficacy trial of a drug administered orally via transmucosal oral mist in client-owned dogs with osteoarthritis DL Millis Novartis Animal Health 7/1/07 1/1 25,750
Clinical evaluation of extracorporeal shock wave therapy for management of canine osteoarthritis of the elbow joint DL Millis Sanwaver 7/31/07 1/1 43,065
A randomized, blinded, placebo-controlled, multi-center, confirmatory efficacy field trial for the evaluation of a drug DL Millis Private industry 6/1/07 1/2 9,900
Center of Excellence in Livestock Diseases and Human Health RN Moore State of Tennessee 7/1/07 Since 1954 566,600
IPA work agreement for the US Dept. of Commerce, NOAA, National Marine Fisheries Service DS Rosenstein Dept. of Commerce—NOAA 6/1/07 3/5 153,760
A clinical field study evaluating the safety and efficacy of a drug in dogs with idiopathic epilepsy WJ Thomas Boehringer Ingelheim 8/20/07 1/1 37,200
Carcinogenesis cellular model for identifying preventive agents H-CR Wang NIH 9/27/07 1/2 72,500
CVM Down Under

Over 19,000 horse races took place last year in Australia, with nearly $306 million in prize money awarded. Considering the popularity of Thoroughbred horses, it is no surprise that Dr. Frank Andrews research on equine gastric ulcer disease (GUD) is so popular there.

A research partnership with Dr. Rafat Al Jassim led Dr. Andrews to Queensland and Freemantle, Australia, in July to deliver several lectures (see Presentations on p. 4). Drs. Andrews and Al Jassim are working to characterize the bacterial diversity in the equine stomach. They have found that bacterial fermentation products like lactic acid play an important role in the development of acid injury in the non-glandular region of the equine stomach. This is especially a problem for Thoroughbred racehorses because vigorous exercise can aggravate GUD.

Scientists long suspected that bacteria could not survive in the stomach because of its acidic atmosphere. However, the non-glandular region of the equine stomach is not as acidic as the rest of the stomach, allowing the bacteria to survive and grow, possibly by metabolizing sugar in the diet.

Therefore, the next goal of their research is to be able to prevent and treat GUD by manipulating the horse’s diet, most likely by lowering its sugar intake. A Rural Industries Research & Development Corporation grant has supported their endeavors since 2004, and they are seeking funding from that Australian government agency once again this year.

“What I Did on My Summer Vacation”

Not all students involved in the Center of Excellence summer research program spent their entire vacation in a block-walled laboratory. Second-year veterinary students Jayme Peck and Jennifer Bernard spent 40 hours on a plane to and from South Africa, of course. That is where they joined Dr. Melissa Kennedy to investigate coronavirus infections in captive and free-ranging cheetahs at the University of Pretoria.

While there, the two students used real-time polymerase chain reaction and indirect fluorescent immunostains to look at the prevalence and epidemiology of the infections. They were also fortunate to see a demonstration of a cheetah run. A grassy area served as a temporary cheetah racetrack, with a red flag serving as the cheetah’s fixation at the moment. The nearly 70 mph speed of the cheetah made for difficult videography, the students said.

Jayme and Jennifer are seen here collecting samples from lions, making friends with a cheetah, and taking a guided (hand-led) horseback ride.

Discovery: Research at the University of Tennessee College of Veterinary Medicine (2007) 2.3

Research Resource Spotlight

Editing Services
All CVM faculty and staff have free access to a technical editor. Misty Bailey, whose office is in A306, edits mostly manuscripts for publication and grant proposals, and in just under two years, she has already worked with around 40 different employees at the college. Misty works on a first-come-first-served basis, and her turn-around time is usually a week or less for any type of document.

Who uses a technical editor?
Professors at all levels, native English speakers, and even the most published and funded writers use a technical editor.

Anyone whose first language is not English should use a technical editor. Even though most English-as-a-second-language writers know the rules of English better than native speakers, it is easy to confuse some of the subtleties of the language.

CVM Receives Over $1 Million for Sponsored Projects Since June

Deadline Sponsor Program $ Amount URL
Oct. 15 American Cancer Society Established & new investigators; post-docs Up to 200,000 www.cancer.org
Oct. 16 NIH R03, R21, R33, R34, & R36 Varies www.nih.gov
Nov. 1 Burroughs Wellcome Fund Pathogenesis of infectious disease Varies www.bw.fund.org
Nov. 1 Morris Animal Foundation Established investigators & first awards ~4,000-100,000 www.morrisanimalfoundation.org
Nov. 3 Banfield Charitable Trust Human-animal bond, preventive healthcare for pets, and educating children about animals 210-32,000 www.banfieldcharitabletrust.net
Nov. 5 NIH R01 renewals, reubismins, & revisions Varies www.nih.gov
Nov. 8 Susan G. Komen For the Cure Foundation Pre-proposals due Oct. 9 Up to 600,000 cms.komen.org/komen
Nov. 16 NIH R03, R21, R33, R34, & R36 renewals, reubismins, & revisions Varies www.nih.gov

Pharmacokinetic and pharmacodynamic effects of an oral and intravenous drug in horses
The efficacy of Seabuckthorn liquid supplement in prevention of gastric ulcers in horses
PPAR-gamma ligands in colorectal cancer
Gene alteration by NSAIDs
Nutrition technician
Preliminary clinical field trial to evaluate the safety and effectiveness of mis-impregnated rinses as a treatment of canine bacterial pyodermas
Effects of resting insulin sensitivity on the acute response to endotoxin in horses
Evaluation of a multidose drug for the induction and maintenance of anesthesia in dogs
Duretic renal scintigraphy in normal cats–pilot study
Influence of gender and sexual alteration status on feline adiponectin
Nutrition resident agreement
Population pharmacokinetics of Carboptin in dogs
Sponsored clinical pharmacology residency agreement
Placebo-controlled field efficacy trial of a drug administered orally via transmucosal oral mist in clients-owned dogs with osteoarthritis
Clinical evaluation of extracorporeal shock wave therapy for management of canine osteoarthritis of the elbow joint
A randomized, blinded, placebo-controlled, multi-center, confirmatory efficacy field trial for the evaluation of a drug
Center of Excellence in Livestock Diseases and Human Health
IPA work agreement for the US Dept. of Commerce, NOAA, National Oceanic and Atmospheric Services
A clinical field study evaluating the safety and efficacy of a drug in dogs with idiopathic epilepsy
Carcinogenesis cellular model for identifying preventive agents

Discovered an Award-Winning Newsletter

Discovery has earned one of the 2007 Awards for Publication Excellence (APEX). The newsletter was entered in the “Best New Newsletter” category for this yearly competition for communication professionals.

Around 1/3 of the nearly 5,000 entries across categories won recognition for excellence.

Misty Bailey is the editor for the newsletter. She and Anik Vasington were also co-authors on a “letter” category for this yearly competition for Publication Excellence (APEX). The award was sponsored by Posters & Technology Networks.

Funding Deadlines Drawing Near

Dhar, Hance & Plummer Receive Best Poster Award

Dr. Howard Plummer accepted Best Poster Award for “Tobacco carcinogen stimulate G-protein inwardly rectifying potassium channel 1 (GIRK1) protein expression in a small cell lung cancer cell line,” presented Sept. 11 at the Ion Channel Targets conference in Boston. Dr. Mathu Dhar and Michael Hance, PhD candidate, were co-authors on the poster.

The award was sponsored by ePosters.net (The Online Journal of Scientific Posters) and Technology Networks.

Dhar, Hance & Plummer Receive Best Poster Award
In this Issue

p2 Research in Australia & South Africa

Awards

Funding deadlines

p3 Editing services

External funding

Research at the University of Tennessee College of Veterinary Medicine

The Business of Research

By Dr. Robert Moore.

Trying to understand research reports can be quite confusing since the numbers can be presented in different ways. The most accurate representations of research activity are expenditures and yearly awards.

As a young institution, the CVM has a research expenditure data that covers the college’s entire lifespan. The data provided in the figure are interesting in that three distinct periods in the college’s short history can be identified. From 1978 through 1991, the gradual increase in research expenditures represents the early growth phase for CVM research. Between 1992 and 2001, research expenditures stabilized at approximately the 1991 level with no growth in the college’s research enterprise. The third phase is a dramatic increase in research expenditures between 2001 and 2005. Expenditures for 2006 and 2007 remained at an elevated level, but appear to represent an ending of the second growth phase.

A partial explanation for the abrupt stoppage of the second growth phase is that federal funding decreased sharply in FY06-07 to approximately the level in FY01-02. A slight offset to the decrease in federal funding was provided by a large increase in funding from foundations and private sources. The decrease in federal funding was expected and reflects the budget levels of the primary granting agencies, the National Institutes of Health, which are below their 2005 operating levels at a time of extreme competition for funding. Another complicating factor is the absolute limitation of research space in the college.

The second research growth phase was driven by a change in the CVM administration with different expectations and values afforded for research and scholarly work. Progress has been made, and during FY06-07, approximately 50% of CVM faculty were listed as principal or co-investigators on externally funded awards. Moreover, new competitive awards for FY07 were a college record of 45, 10 better than FY05 and 26 more than FY01. Enrollment in the Comparative and Experimental Medicine program has doubled with all-time high, while the laboratory animal facility at Cherokee is undergoing major renovations. In short, although there is a depression of research funding from external sources, a variety of positive indicators support the conclusion that research in the college is stronger than it has ever been.

Recent Publications . . .


Cox SK. Allometric scaling of marbofloxacin, moxifloxacin, danofloxacin and difloxacin pharmacokinetics: A retrospective analysis.


In September, at the International Conference on Communication in Veterinary Medicine in Washington, DC, Drs. India Lane, Elizabeth Majowicz, and Nancy Howell also contributed to the presentation.

In June, at the Society of Veterinary Soft Tissue Surgery 6th Annual Meeting in Breckenridge, CO, Dr. Karen Tobin presented three lectures: postoperative management of extensive gastrectomy in dogs, the radiologist/surgeon relationship, and palate repairs.

At the July Animal Disaster Response Seminar in Knoxville, Dr. Mark Welborn presented “Euthanasia techniques for livestock.” He also contributed to the Agriculture and Food Production Safety Assessment Training Course in Chattanooga in August.

Dr. Robert Moore, Vice Provost,向东大学

The University of Tennessee College of Veterinary Medicine

College of Veterinary Medicine

Success of Research Symposium Sparks Interest in Expanded Event

Over 60 people from 11 different departmental on-campus attended the First Annual Comparative and Experimental Medicine (CVM) Graduate Student Research Symposium held June 12-13.

Oral and written feedback indicates that participants and attendees enjoyed the opportunity to exchange ideas in an organized setting.

Admirators of the CVM program met with CVM departmental representatives in August to discuss the possibility of expanding the event. On the tentative date of June 17, 2008, has been set. The participant pool has expanded, and clinics might be allowed to present emergency-on-call service to allow more students and clinical faculty to attend.

More information about next year’s program will be announced in upcoming newsletters.

Dr. Marcy Souza presented “Pharmacokinetics of tranadol in bald eagles (Haliaeetus leucocephalus)” at the Association of Avian Veterinarians Annual Conference in Providence, RI, August 6-9, 2007. Drs. Michael Jones and Jerry Cox also contributed to the presentation.

In June, at the Society of Veterinary Soft Tissue Surgery 6th Annual Meeting in Breckenridge, CO, Dr. Karen Tobin presented three lectures: postoperative management of extensive gastrectomy in dogs, the radiologist/surgeon relationship, and palate repairs.

At the July Animal Disaster Response Seminar in Knoxville, Dr. Mark Welborn presented “Euthanasia techniques for livestock.” He also contributed to the Agriculture and Food Production Safety Assessment Training Course in Chattanooga in August.

All graduate students presenting at this year’s research symposium won travel awards to be used for presenting their work at a meeting of their choice.

Dr. Ferenc Toth, Large Animal Clinical Sciences (LACS) Dept.

Dr. Beth Wilson, Nutrition Dept.

Pranita Sarangi, Nutrition Dept.

Dr. Angela Lasby, Small Animal Clinical Sciences Dept.