MESSAGE FROM THE CHAIR – Recruit, Develop, and Deliver

Welcome from the Department of Pharmaceutical Sciences! The first issue of this publication represents another milestone in the development of Lipscomb University’s College of Pharmacy as the first academic year came to a close for the inaugural pharmacy class. Without a doubt, the department’s effort during the academic year played a significant role in the success of the professional program but it was the culmination of a two-year period defined by the maxim “Recruit, Develop, and Deliver” that established the foundation for success. Despite challenges to fill vacant pharmacy faculty positions across the nation, the department was able to recruit both junior and senior faculty members to help establish Middle Tennessee’s first College of Pharmacy at Lipscomb University. As the year long renovation of the A.M. Burton Building gave way to the sights and sounds of new pharmacy classrooms and laboratories outfitted with latest technology, faculty worked diligently to develop core curricular content in the biomedical and pharmaceutical sciences. Administratively the department was recognized within the Institution and College as a formal academic unit on June 1, 2008. While that date is not inherently magical, it did signify a historical moment for the faculty as the reality of the first day of classes was quickly approaching in the Fall. On Wednesday, August 13, 2008, students, faculty, and staff gathered on the steps of the renovated Burton Health Sciences Center to solicit God’s blessings on Lipscomb’s first doctoral program. Now it was time for the faculty to deliver and did they! Pharmaceutical sciences faculty delivered three quarters of the department’s curriculum course load over the first year of the program and student evaluations of faculty and courses were exceptional. In addition to the success in the classroom, faculty also embraced the vision to create unique educational opportunities for student pharmacists to gain hands on experience in conducting laboratory experiments in the Integrated Biomedical Sciences Laboratory. Despite the pressure to effectively deliver the professional curriculum in the first year of a new program, faculty also remained active and productive in advancing the administrative, research, scholarship, and service goals of the department.

Wendell S. Akers, Pharm.D., Ph.D.
Chair and Associate Professor of Pharmaceutical Sciences

DEPARTMENT NEWS

Fowler Receives Spirit Award

Mike Fowler, Ph.D., Associate Professor and Vice Chair of Pharmaceutical Sciences, was awarded Lipscomb University’s first Spirit Award recipient for living out a Christian spirit when he donated one of his kidneys to friend and former colleague Kathy Thompson of Oklahoma Christian University. Fowler was awarded a $1,000 gift during the President’s Convocation, one of numerous special events to kick off the 2008-09 school year at Lipscomb. Fowler worked with Thompson at Oklahoma Christian and played with her in a community orchestra for years, but he had moved on to Nashville by the time Thompson was placed on the kidney transplant list. As Thompson’s condition moved her closer to full-time dialysis, Fowler volunteered this past spring to be tested for donation. Previously in his career, Fowler worked as the director of clinical chemistry at the Oklahoma Children’s Hospital, overseeing all the blood testing at the hospital. Each year he and some of his staff spent time during the summer at Kidney Camp, a residence camp for children on dialysis.

Akers and Mercer Appointed to Vanderbilt Faculty

The Department of Pharmaceutical Sciences will have the opportunity to conduct pharmacological research at Vanderbilt University, thanks to the recent adjunct appointments of two pharmaceutical sciences faculty members in the Vanderbilt School of Medicine. Scott Akers, Pharm.D., Ph.D., Associate Professor and Chair of Pharmaceutical Sciences at Lipscomb University College of Pharmacy, was appointed as an adjunct Associate Clinical Professor in Medicine within the Division of Clinical Pharmacology. Prior to coming to Lipscomb, Akers directed his own platelet research laboratory and was the coordinator of the Clinical and Experimental Therapeutics Graduate Program Track at the University of Kentucky College Of Pharmacy. Susan Mercer, Ph.D., Assistant Professor of Pharmaceutical Sciences, was appointed as an adjunct Assistant Professor in the Department of Pharmacology. Mercer will provide medicinal chemistry skills for Vanderbilt research projects, and in return she will have access to Vanderbilt research facilities for collaborative projects. These appointments recognize the quality of scientific and academic expertise that Drs. Akers and Mercer bring to the College of Pharmacy’s emerging research program in the pharmaceutical sciences. It also opens the door for student pharmacists interested in pursuing a research career to gain access to some of the premier graduate and scientific programs in the world as the department looks to establish a Summer Research Program.

The Department of Pharmaceutical Sciences e-Newsletter is an electronic publication from the Lipscomb University College of Pharmacy. You are currently subscribed to receive this publication. If you received this newsletter and would like to UNSUBSCRIBE or if you were forwarded the newsletter by a friend and would like to be a SUBSCRIBER, please send an email to Kelly Graves at pharm.sci@lipscomb.edu.
Mercer Receives Seton Hill Leadership Award
Susan Mercer, Ph.D., Assistant Professor of Pharmaceutical Sciences and Vanderbilt Adjunct Assistant Professor, as been recently awarded the Seton Hill University Alumni Leadership Award. The award is yearly presented to eight alumnae who have demonstrated outstanding achievement and leadership in one (or more) of the following areas: education, business and professions, science and technology, arts, voluntary service, and philanthropy. Mercer received her B.S. in Chemistry at Seton Hill University in 2004 and her Ph.D. in Pharmaceutical Sciences at the University of Maryland in 2008. The award was given to Mercer because of her passion for teaching and conducting research as a medicinal chemist, a position she began immediately after receiving her Doctor of Philosophy degree from the University of Maryland's School of Pharmacy. Currently, she teaches students in the pharmaceutics and pharmacological basis of therapeutics courses and the integrated biomedical sciences laboratory in the department of pharmaceutical sciences. Additionally, Mercer mentors student pharmacists in the laboratory on medicinal chemistry and rational drug design projects.

FOCUS ON EDUCATION AND TRAINING
Integrated Biomedical Sciences Laboratory
The Integrated Biomedical Sciences Laboratory comprises 1200 sqft of space that is equipped with basic and state-of-the-art research equipment. This is a two-semester laboratory course taught in three sections per week to accommodate 25 first year students per section. Computer simulations and wet lab experiments are designed by individual faculty members in their area of expertise that emphasize core biomedical and pharmaceutical sciences concepts. This laboratory course embodies the educational concept of active learning principles where experiments are designed to facilitate teamwork in groups of four and develop problem skills in experimental design, data analysis, and data interpretation related to drug design, drug delivery, drug disposition, and drug response. Computer simulations and laboratory experiments are strategically scheduled to coincide with related content being delivered in ongoing lecture-based courses. Another intended outcome of the laboratory course is to evaluate and identify student pharmacists that may be interested in participating in the department’s Summer Research Program or in pursuing a research career in the biomedical or pharmaceutical sciences.

2009 Summer Research Program Awardees
The Department of Pharmaceutical Sciences is pleased to announce the establishment of its Summer Research Program. This program is a 10-week summer research experience offered in collaboration with faculty members in the Department of Pharmaceutical Sciences at Lipscomb University College of Pharmacy and the Department of Pharmacology at Vanderbilt University. The purpose of the summer research program is to identify and introduce student pharmacists to the excitement and importance of biomedical and pharmaceutical sciences research through a mix of educational and research activities. All recipients were awarded a competitive stipend to pursue research opportunities. This year’s Summer Research Program Award recipients include: Li Li, Patrick Nickell, Kelly Radford, Christopher Thomas, and Lauren Van Atta.

RESEARCH AND SCHOLARSHIP NEWS
Faculty Enhancement Grant Recipients
Four faculty members in the Department of Pharmaceutical Sciences were each awarded a $1000 internal Faculty Enhancement Grant by the University. Dr. Mike Fowler proposed to develop a series of manual and computer-assisted blood flow tracing problems designed to introduce first-year student pharmacists to physiological principles of blood flow and the absorption, distribution, metabolism, and excretion of select drugs. Dr. Dennis Matlock proposed to develop a procedure based on published statistical methods to assess the quality and subsequent improvement of multiple-choice questions used on various examinations with the College of Pharmacy. Dr. Jeff McCormack proposed to evaluate a proprietary technology called microculture kinetic assay used to establish a drug sensitivity profile of human tumor cells that could provide a foundation for implementing a cancer drug discovery platform. Dr. Susan Mercer proposed to conduct studies to determine the abuse potential of transdermal methylphenidate patches used for the treatment of attention deficit hyperactivity disorder.

Publications, Abstracts, Posters, and Presentations


FACULTY AND STAFF

Scott Akers, Pharm.D., Ph.D., Associate Professor and Chair of Pharmaceutical Sciences
Dr. Akers received his Pharm.D. from the University of Tennessee in 1991 and his Ph.D. in Clinical Pharmaceutical Sciences from the University of Kentucky in 1998. While at the University of Kentucky, Dr. Akers was a faculty member in the Department of Pharmacy Practice and Science, served on graduate student advisory committees as full member of the Graduate Faculty, and coordinated the graduate program track in Clinical and Experimental Therapeutics in the Department of Pharmaceutical Sciences. Dr. Akers also directed a research program focused on differential regulation of angiotensin II receptor subtypes in pre-clinical models of myocardial ischemia-reperfusion injury and established a platelet pharmacodynamic laboratory to investigate mechanisms contributing to individual variability of antiplatelet drugs.

Joe Deweese, Ph.D., Assistant Professor of Pharmaceutical Sciences
Dr. Deweese received his B.S. in Biochemistry from Freed-Hardeman University in 2004 and his Ph.D. in Biochemistry from Vanderbilt University in 2009. During his graduate career, he was trained in the enzymology of DNA topoisomerases. His graduate research focused on the DNA cleavage mechanism of human type II topoisomerases and involved the development of a method for isolating topoisomerase II-mediated DNA scission from ligation. Dr. Deweese taught as an adjunct instructor for Lipscomb University’s Biology Department in 2007 and 2008. During graduate school, he tutored medical school students in Biochemistry and trained and supervised both undergraduate and graduate students in his mentor’s research laboratory. His research interests include characterizing the mechanism of anti-cancer agents and enzymes that function on DNA.

Holli H. Dilks, Ph.D., Assistant Professor of Pharmaceutical Sciences
Dr. Dilks received her PhD in Molecular Physiology and Biophysics at Vanderbilt University in 2002 and subsequently completed a 3 year postdoctoral Cancer Research Training Award in the Laboratory of Genomic Diversity at the National Cancer Institute. During her time as a postdoctoral fellow she also served as a visiting scientist at the Broad Institute of MIT and Harvard where she collaborated with scientists on projects related to genetic analysis of HIV/AIDS. For the past 3 years, Dr. Dilks has served as a Program Director at SRI International where she was responsible for identifying, evaluating, and deploying novel technologies for large-scale molecular biology and microbiology experiments. Her research interests focus on utilizing candidate gene approaches and genome-wide association studies to discover HIV/AIDS restriction genes and potential determinants of antiretroviral treatment responses.

Mike Fowler, Ph.D., Vice Chair and Associate Professor of Pharmaceutical Sciences
Dr. Fowler received his Ph.D. in Physiological Chemistry from the Ohio State University in 1973 and completed a two year postdoctoral position in the Department of Laboratory Medicine and Toxicology at Oklahoma Children’s Hospital in 1978. Since then he has held various clinical and academic appointments over the past 30 years. From 1981 until 2001, he progressed in academic rank from Associate Professor to Distinguished Professor of Biology and Chemistry at Oklahoma Christian University, served as the Department Chair of Natural Science for five years, and the Dean of the College of Science and Engineering for four years. More recently Fowler was a Professor of Biology and Chemistry in the College of Natural and Applied Sciences and served as the coordinator of the Pre-Clinical Nursing Program at Lipscomb University.
Dennis Matlock, Ph.D., Associate Professor of Pharmaceutical Sciences
Dr. Matlock received his Ph.D. in Biochemistry and Molecular Biology from the Saint Louis University School of Medicine in 2000. Since then he progressed in academic rank to an Associate Professor in the Department of Chemistry at Harding University. His research interests are in the development and validation of biophysical methods aimed at the characterization of protein-DNA interactions important for transcription and translational in prokaryotic and viral systems. His most recent research has focused on characterizing and elucidating the mechanism of an enzyme that is a key therapeutic target in the genome of the hepatitis C virus while working as Faculty Fellow in the Department of Biochemistry and Molecular Biology at the University of Arkansas.

Jeff McCormack, Ph.D., Director of Development and Associate Professor of Pharmaceutical Sciences
Dr. McCormack received his Ph.D. in Microbiology and Immunology from the University of Oklahoma Health Sciences Center in 1989 and completed a four year research associate postdoctoral position in the Department of Immunology at St. Jude Children’s Research Hospital in 1993. After this training he held various clinical positions as an assistant director and/or director of an HLA and Transplant Immunology Laboratory at Emory University Hospital, Baylor University Medical Center, and Scott & White Memorial Hospital from 1993-1998. Since then he has held several clinical and academic appointments, most recently as a visiting professor at Lipscomb University in the College of Natural and Applied Sciences. Dr. McCormack’s scientific interests focus on the pathogenesis of infectious disease and the immunologic mechanisms integral to human transplantation.

Susan Mercer, Ph.D., Assistant Professor of Pharmaceutical Sciences
Dr. Mercer received her B.S. in Chemistry at Seton Hill University in 2004 and a Ph.D. in Pharmaceutical Sciences at the University of Maryland in 2008. Her graduate training provided both breadth and depth in every phase of classical drug discovery that included organic synthesis, medicinal chemistry, pharmacology, drug metabolism, pharmacokinetics and pharmacodynamics. During her training she supervised both undergraduate and Pharm.D. students in the research laboratory and was a graduate teaching assistant for Medicinal Chemistry I and II and Physical Chemistry courses in the professional program. She joined the founding faculty of Lipscomb University College of Pharmacy in the fall of 2008 and teaches in the Pharmaceutics and Pharmacology courses. In addition to her work with Lipscomb University, Dr. Mercer is an Adjunct Assistant Professor in the Department of Pharmacology at Vanderbilt University.

Fancy Thomas, Ph.D., Assistant Professor of Pharmaceutical Sciences
Dr. Thomas received her B.S. in Pharmaceutical Sciences at the Goa College of Pharmacy, India in 2002 and her Ph.D. in Pharmaceutical Sciences at the Texas Tech University Health Sciences Center in 2008. During her graduate training she was a research and teaching assistant, and was involved in teaching the Drug Delivery Systems laboratory and Case Studies to Pharm.D. students. She also trained graduate and undergraduate students in the research laboratory where she worked. She has worked in the pharmaceutical industry at Abbott Laboratories and Ranbaxy Laboratories in India. Her research interests focus on drug delivery to the brain and the role of transporters expressed at the blood-brain barrier, in the brain uptake of chemotherapeutic agents.

Lori Cagle, Laboratory Coordinator
Cagle began work at Lipscomb in January 2008, in the Development office. She came to Lipscomb from Auburn University where she served as a Research Assistant in the Animal Sciences Department in the College of Agriculture. There she provided research support, graduate and undergraduate instruction, as well as laboratory coordination for the Meat Science and Muscle Biology disciplines. Cagle holds a bachelor’s degree from Auburn University in Animal and Dairy Sciences with graduate studies in Meat Science and Muscle Biology.

Kelly Graves, Administrative Assistant, Department of Pharmaceutical Sciences
Graves earned a degree in Elementary Education from Lipscomb in 2000. Previous to working at Lipscomb, Graves was a teacher at White House Christian Academy where she taught 1st grade for 5 years, and kindergarten for 2 years. She is the administrative assistant for the department of Pharmaceutical Sciences.

PROFESSIONAL AFFILIATIONS
American Association for Clinical Chemistry
American Association of Colleges of Pharmacy
American Association of Pharmaceutical Scientists
American Chemical Society
American College of Clinical Pharmacology
American Society of Human Genetics
Rho Chi Honor Society
Society for Forensic Toxicologists
Tennessee Pharmacists Association

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