Greetings from the WHRC!!

The Fall looks to be very busy for all of us with students, Fellows, grants, clinics and the like.

On October 22 at 4 PM in Room 6A, Dr. Jennifer Pollock will visit from Georgia Health Sciences University in Augusta. She will share her data on developmental programming of cardiovascular disease in a model of mild maternal deprivation syndrome.

On December 3, at 4PM, Dr. Michael Lehman, the new chair of Neurobiology and Anatomical Sciences will be our speaker. Read the write-up in this newsletter about Dr. Lehman’s research and then come hear him in December.

Hope you have a productive Fall!

Janie

From the Director

Jane F. Reckelhoff
**Spotlight on Research**

Dr. Michael N. Lehman, PhD, recently joined UMMC as the new Chair of the Department of Neurobiology and Anatomical Sciences. Dr. Lehman received his Ph.D. in Neuroscience in 1982 from the University of Michigan. Following his postdoctoral work, he accepted a faculty position at the University of Cincinnati College of Medicine, eventually becoming Professor and Director of the Neuroscience Graduate Program. From 2005-2010, he was the Chair of the Department of Anatomy and Cell Biology at the University of Western Ontario in London, Ontario. In 2011, he returned to the University of Michigan, where he was Professor in the Department of Molecular and Integrative Physiology, and the Department of Obstetrics & Gynecology, and co-Director of the Reproductive Sciences Program, the program where he had trained as a postdoctoral fellow.

Dr. Lehman’s research includes a major focus on basic and translational research related to women’s reproductive health. His NIH-funded lab has made major advances in understanding the brain’s control of female reproduction, including the role of gonadotropin-releasing hormone (GnRH) and other neurons in the regulation of the estrous/menstrual cycle. In addition, as part of an active NIH Program Project Grant, his lab has been studying developmental programming of reproduction with a focus on understanding the causes and mechanisms of polycystic ovarian syndrome (PCOS), the most common reproductive disease affecting adult women. He has also been extremely active at an international level as an advocate for biomedical research training and career development for women and minorities in science. As Chair at UMMC, he plans to work at a university-wide level to build interdisciplinary neuroscience research and education, and in his Department is in the process of creating a Division of Clinical Anatomy to foster the career support for educational scholarship in anatomy.
HIGHLIGHTS from the WHRC

Kudos

Dr. Babbette LaMarca, PhD., an Associate Professor in the Department of Obstetrics and Gynecology and Dr. Jussara Do Carmo, PhD., an Assistant Professor in the Department of Physiology and Biophysics, are 2 of the 3 finalists for the Harry Goldblatt Award for New Investigators for the Council for High Blood Pressure Research (HBPR) of the American Heart Association. This award recognizes new independent investigators working in hypertension or cardiovascular research who have significantly contributed to the understanding of the causes of hypertension and related cardiovascular disease. Three finalists are selected by the HBPR Council’s Awards Committee from applicants who have submitted abstracts accepted for presentation at HBPR 2012 Scientific Sessions, along with other materials. The winner will be chosen after the oral abstract presentations at the conference which will be held in September 2012 in Washington DC. This award is named after Dr. Harry Goldblatt, a pathologist who established the first animal model of hypertension in 1934. This model provided researchers with the tools to delineate the renin-angiotensin system of blood pressure control and, eventually, to design enzyme inhibitors for the treatment of chronic hypertension.
The following trainees have been selected as recipients of the Young Investigator Award from the Council for Kidney in Cardiovascular Disease (KCVD) of the American Heart Association. This award is presented up to 10 outstanding new investigators who are members of this Council and who have abstracts selected for presentation at the annual conference. Each Awardee will receive a $1000 travel grant to help defray expenses to Annual High Blood Pressure Research 2012 Scientific Sessions to be held in Washington, DC in September 2012.

*Dr. Ying Ge, PhD,* is a Postdoctoral Research Fellow in the Laboratory of Dr. Richard Roman in the Department of Pharmacology and Toxicology.

*Dr. Malikarjuna Pabbidi, PhD,* an instructor in the laboratory of Dr. Richard Roman in the Department of Pharmacology and Toxicology.

*Dr. Yan Lu, PhD,* is a Postdoctoral Research Fellow in Dr. Ruisheng Liu’s Laboratory in the Department of Physiology and Biophysics.

*Dr. Jennifer Sasser, PhD,* an Assistant Professor of Pharmacology and Toxicology at UMMC and member of the WHRC, recently received a NIH Pathway to Independence Award (K01R00) from the NIH NIDDK. The primary purpose of the K01 Award is to increase and maintain a strong cohort of new and talented NIH-supported independent investigators. The program is designed provide support for career development leading to research independence. The title of her grant is “Mechanisms of Renoprotection by Relaxin in Hypertension.”
**Dr. James N Martin, Jr, MD**, Professor and Chair of Maternal Fetal Medicine in the Department of OB-GYN recently chaired the first meeting of the CMS Expert Panel as Co-Chair on ‘Improving Maternal and Child Outcomes with Medicaid and CHIP’ held in Baltimore, MD in June 2012. He was recently honored as the ‘Kenneth Gottesfeld Lecturer’ for the Colorado OBGYN ACOG Section Meeting in June 2012 speaking on “Best practices for managing the preeclampsia–challenged patient” and “ACOG in transition: responding to the world around us.” Dr. Martin also attended the Annual meeting for ISSHP (International Society for the Study of Hypertension in Pregnancy) held in Geneva, Switzerland in July 2012 where he presented two lectures entitles “ACOG’s 2012 Hypertension in Pregnancy Work Group: Guidelines Coming for today’s best practice” and “ACOG’s New Guidelines for the management of hypertensive pregnancy: a chance to build global consensus.”

**Dr. Karen Crews, DMD**, Professor and Director of the Division of Oral Oncology and Bio-behavioral Medicine in the Department of Otolaryngology, was recently honored with the 2012 Humanitarian of the Year Award from the Mississippi Dental Association at the annual meeting held in June. Dr. Crews is the Director of the UMMC ACT Center for Tobacco Treatment, Education, and Research. The ACT Center, located in multisite statewide, has treated more than 20,000 patients since its opening in 1999. This award is presented annually to someone who has demonstrated the highest level of unselfish devotion to dental service. Dr. Crew volunteers annually for the Oral Cancer Awareness Week, and she is active in the American Heath Association’s Circle of Red and Red Dress Campaign.
The following trainees have been selected to present their research abstracts as an oral presentation at the 2012 Scientific Sessions of the Council for High Blood Pressure Research to be held in Washington DC in September 2012.

**Tiffany Slaughter**, a graduate assistant in the laboratory of Dr. Jan Williams in the Department of Pharmacology and Toxicology will also present her research on “MMP-2 and Renal Disease.”

**Emily Gilbert**, a graduate assistant in the Department of Physiology and Biophysics in the laboratory of Dr. Michael Ryan will present her research project entitled, “Disparate temporal regulation of blood pressure by estrogens during systemic lupus erythematosus.”

**Fouad Zouein**, a graduate assistant in the laboratory of Dr. George Booz in the Department of Pharmacology and Toxicology will present his work entitled, “STAT3 affects myofibrillar structure and its loss may contribute to heart failure in hypertension.”

**Dr. Andy Chen, PhD**, a post-doctoral research fellow in the laboratory of Dr. Richard Roman in the Department of Pharmacology and Toxicology will present his work in a presentation entitled, “TGR-beta 1 Zinc Finger KO and Renal Injury.”

**Dr. Ying Ge, PhD**, a post-doctoral research fellow in the laboratory of Dr. Richard Roman in the Department of Pharmacology and Toxicology will present her work entitled, “20-HETE and Myogenic Tone.”

**Dr. Eric George, PhD**, an Instructor in the Department of Physiology and Biophysics will present an oral presentation on his work entitled “Hypoxia-induced Heparanse Regulates sFlt-1 Release from Placental Chorionic Villi.”

Pictured left to right are: Slaughter, Gilbert, Zouein, Chen, Ge, and George.
Dr. Guri Tzivion, PhD, Associate Professor of Biochemistry and the Cancer Institute, will present an oral presentation entitled “Regulation of C-Raf kinase by phosphorylation and protein-protein interactions” at the Conference on the “Biochemistry, Biology and Pathology of MAP Kinases” to be held in Maale Hachamisha, Jerusalem Hills, Israel in October 2012. This meeting will be devoted exclusively to MAP Kinases including the structural and mechanistic features of MAP Kinase, roles played by MAP Kinases in various organisms, and the importance of these kinases in development and disease.

Dr. Michael Lehman, PhD, Professor and Chair of the Department of Neurobiology and Anatomical Sciences, will present a talk at the upcoming 2nd World conference of Kisspeptin Signaling in the Brain, to be held in Tokyo, November 2012. The title of his talk is “KNDY cells: testing their role in the GnRH pulse generator and beyond.” This Conference will focus on various aspects of the kisspeptin neurons related to kisspeptin signaling in the brain.

Dr. Babbette LaMarca, PhD, an Associate Professor of OB-GYN, was recently selected as a full member of the Perinatal Research Society. The Perinatal Research Society was established to foster scientific interactions in the area of perinatal medicine and developmental biology. A main goal of the Society is to foster communication and collaboration between young investigators and established investigators who share a common research interest in perinatal biology. Membership is limited to 165 active scientists from three disciplines: obstetrics, pediatrics, and basic sciences.
Blood Pressure is typically lower in premenopausal women than in men. However, after menopause, the prevalence of hypertension in women is higher than it is in men; almost 41% of postmenopausal women become hypertensive. Hypertension is a major risk factor for cardiovascular disease in women and men, but cardiovascular disease is the leading cause of death in women. Furthermore, there is evidence that blood pressure may not be as well-controlled in women as in men, despite the fact that most women adhere better to their therapeutic regimens and medications than do men, and have their blood pressures measured more frequently than do men. This review describes possible mechanisms by which blood pressure may be increased in postmenopausal women.


The objective of this study was to characterize the syndrome for patients with life-threatening, progressively worsening hemolysis-elevated-liver-enzymes-and-platelet (HELLP) syndrome-like diseases and with thrombotic microangiopathies. This was a retrospective study design involving patients who underwent postpartum plasma exchange (PPEX) for preeclampsia-related, and microangiopathy/coagulopathy illnesses unresponsive to medical therapy. Results indicated that patients treated with PPEX had a 78% maternal survival. Treatment with PPEX also increased platelet levels, decreased serum lactic dehydrogenase, and decreased aspartate aminotransferase. Thus, these data suggest that early PPEX is worth considering as part of the treatment regimen of a postpartum patient who expresses a complete or incomplete HELLP syndrome-like disease complicated by single or multiple organ injuries and fails to respond to greater than 24 hour treatment with dexamethasone.

Women’s health issues are underfunded and understudied. Help support women’s health research by making a tax-deductible contribution. Contact the Development Office at UMMC at 601-815-7473

The Dahl salt-sensitive (S) rat is a widely studied model of salt-sensitive hypertension that develops proteinuria, glomerulosclerosis, and renal interstitial fibrosis. Previous work identified eight genomic regions linked to renal injury in the S rat and one protective locus on chromosome 11. In this study, the “protective” locus in the S rat was replaced with the SHR genomic segment conferring “susceptibility” to kidney injury generating the S.SHR(11) congenic strain. The aim of this study was to characterize blood pressure and renal injury in the S.SHR(11) relative to the S rat. Data from this study indicate that genetic modification of the S rat generated a model of accelerated renal disease which may lead to the identification of genetic variants involved in kidney injury and progression to renal failure.


Intrauterine growth restriction (IUGR) alters fetal development and is associated with neurodevelopmental abnormalities. This study tested the hypothesis that growth restriction induced by placental insufficiency would predispose neonatal rats to inflammatory brain injury. IUGR and control pups were injected with LPS as a model of periventricular leukomalacia (PVL). LPS elevated proinflammatory cytokines in all rat pup brains, but chemoattractant protein-1 (MCP-1), as well as microglia activation, were significantly higher in LPS-treated IUGR which demonstrated increased brain damage. This study suggests that placental insufficiency may sensitize the innate immune system in the immature brain and reveals a possible link between brain inflammation and injury.