Greetings WHRC members:

Happy Spring everyone! Hopefully it will stop raining soon, and we can enjoy the new flowers!

We had a productive winter in the WHRC with the submission of the T32 Training Grant to NIH: “Multidisciplinary Training Program in Sex and Gender Differences.” I’d like to thank Mike Lehman for his willingness to serve as a Co-Director. I’d also like to thank all of the potential mentors who provided information for the proposal. Keep your fingers crossed!

We have a roster of speakers lined up for the WHRC Seminar Series this year starting off with Dr. Willis “Rick” Samson from St. Louis University who will speak on April 29, 2013.

Thanks to everyone who came to our “Go Red for Women” breakfast. Find yourself in the pictures in the Newsletter.

Hope you have a productive Spring!

Janie

Our Mission: Women have health care issues that are different from men. Recent research indicates that there are sex differences in the incidence, outcome, and physiological and pathophysiological mechanisms responsible for various diseases. Mississippi has the dubious honor of having one of the highest incidence rates of cardiovascular disease, obesity, diabetes, hypertension, end-stage renal disease, high risk pregnancy, pre-eclampsia (pregnancy induced hypertension), infant mortality and poor child health outcomes in the United States. The Women’s Health Research Center (WHRC) was established in 2009 at the University of Mississippi Medical Center (UMMC) to accomplish the major goal of fostering excellence in basic and clinical research in issues that affect women’s health across their lifespan.

In this Issue:

Message from the Director 1
Spotlight on Research 2
Highlights from the WHRC 3 - 10
Recent Publications 11 - 12
Dr. Marion Wofford, MD, MPH, is the Herbert D. Langford Professor of Medicine, a Hypertension Specialist, and the Director of the Division of Hypertension. Dr. Wofford is a graduate of the University of Mississippi Medical Center. She completed her residency training in the Department of Internal Medicine at UMMC where she also served as Chief Resident. Dr. Wofford received a Master’s of Public Health from Harvard School of Public Health. Dr. Wofford has received the Gold-Level Medal in Research Excellence from UMMC. Dr. Wofford has a strong research interest in hypertension, a major disease burden in Mississippi. Dr. Wofford is currently an investigator in the landmark Systolic Blood Pressure Intervention Trial (SPRINT). This multicenter, randomized clinical trial is designed to test whether a treatment program aimed at reducing systolic blood pressure to a lower goal than currently recommended will reduce cardiovascular disease and death. The study will also evaluate the effect of blood pressure targets on renal disease and dementia. She has published on racial and ethnic differences in the prevalence of hypertension, issues related to the control of resistant hypertension, and the complex relationship between obesity and insulin resistance and hypertension. Her work supports the importance of exercise as a treatment in the prevention of metabolic disease and her studies implicate that an increase in blood pressure may be directly attributable to excess weight gain in obese patients. Her studies also report that public health efforts to increase awareness and treatment of hypertension among African Americans are effective and have influenced higher control rates. She has examined the protective effect of soybean protein on cardiovascular risk factors. She has also indicated the importance of socioeconomic status indicative of education and income in African Americans on nocturnal blood pressure dipping (NBP), a significant predictor of cardiovascular events. Dr. Wofford also has a strong interest in the mechanisms by which blood pressure is elevated in postmenopausal women. The prevalence of hypertension in post-menopausal women is higher than it is in men with 41% of postmenopausal women becoming hypertensive. In addition, although women are more likely to have their blood pressure measured, hypertension is less well-controlled in women relative to men. Dr. Wofford’s research interests continue to highlight interventions and the need to improve therapeutic approaches for treatment in order to improve the quality of life and prevent CV disease outcome.
Dr. Babbette LaMarca, Ph.D., Associate Professor of OB-GYN, recently received funding from Ferring Pharmaceuticals for her project entitled, “Inhibiting AT1-AA; potential therapy for preeclampsia.” Ferring Pharmaceuticals is a research-driven biopharmaceutical company devoted to identifying, developing and marketing innovative products in the fields of infertility, obstetrics, urology, gastroenterology, endocrinology and osteoarthritis. Ferring Pharmaceuticals is active in the development of pioneering technologies and often engages in partnerships with academic institutes. The goal of this project is to test a novel peptide in an in vivo model of pregnancy-induced hypertension.

Dr. Christine Maric-Bilkan, PhD, Associate Professor in the department of Physiology is the recent recipient of a research grant from the American Diabetes Association. The purpose of the ADA’s Research Program is to further their mission to prevent and cure diabetes and improve the lives of all people affected by diabetes. The focus of this project will be to investigate whether C-peptide is beneficial to the kidney after prolonged diabetes and to determine the mechanisms by which C-peptide protects the kidney in prolonged type 1 diabetes.

Dr. Eric George, PhD, an Instructor and post-doctoral fellow in the laboratory of Dr. Joey P. Granger in the department of Physiology was recently awarded a NIH Pathway to Independence (PI) Award (K99/R00). The primary, long-term goal of the PI Award Program is to increase and maintain a strong cohort of new and talented, NIH-supported independent investigators.
Highlights from the WHRC

Kudos

Dr. Keisa Mathis, PhD, an Instructor and post-doctoral fellow in the laboratory of Dr. Michael Ryan in the department of Physiology was recently awarded a Ruth L. Kirschstein National Research Service Award (NRSA) from the National Institutes of Health. Dr. Kirschstein’s scientific accomplishments in polio vaccine development, and becoming the first women director of an NIH Institute, she was a champion of research training and a strong advocate for the inclusion of underrepresented individuals in the scientific workforce. The title of Dr. Mathis’s funded project is “The Role of T Lymphocytes in Hypertension During Chronic Inflammatory Disease”. Her research will investigate whether immune cells in the kidney cause high blood pressure in an experimental model of SLE.

Dr. Yan Lu, MD, an Instructor and post-doctoral fellow in the laboratory of Dr. Ruishing Liu in the department of Physiology was recently awarded a post-doctoral fellowship grant from the American Heart Association. The focus of his grant will be to investigate how nitric oxide derived from the macula densa protects against angiotensin II-induced hypertension. The purpose of this fellowship is to assist trainees as they initiate a career in cardiovascular and stroke research while working under the supervision of a sponsor.

Dr. Kedra Wallace, PhD, an Instructor and post-doctoral fellow in the laboratory of Dr. Babbette LaMarca in the department of OB-GYN is a recipient of a 2013 Research Recognition Award from the Central Nervous System Section of the American Physiological Society. This award recognizes meritorious research by young investigators who participate in the Experimental Biology meeting.
**Highlights from the WHRC**

**Kudos**

**Dr. Lucio Miele, MD, PhD,** Ergon Professor in the Departments of Medicine, Pharmacology, Biochemistry and Radiation Oncology, and the Director of the UMMC Cancer Institute was recently awarded the *P. C. Ray Gold Medal Award* from the Indian Society for Science and Culture located in the Bose Institute in Calcutta, India. Prafulla Chandra Ray was the founder of Indian academic chemistry. Awarded to pioneers in their disciplines, Dr. Miele was honored for his pioneering cancer research in Mississippi. Dr. Miele was presented with a ceremonial shawl and medal.

**Dr. Jennifer Sasser, Ph.D.,** an Assistant Professor in the department of Pharmacology and Toxicology received the *Dean Franklin Award* from the American Physiological Society. These award was established by Data Sciences International (DSI) in recognition of Franklin’s role in the development of instrumentation to monitor physiological function in conscious research animals and humans. The award is presented to a junior faculty member who is pursuing *in vivo* physiological research and is in the process of establishing an independent laboratory. Dr. Sasser will receive a travel award to attend the annual Experimental Biology meeting to present her research, and she will receive a DSI instrumentation starter kit (approximate value $20,000).

**Dr. Rodrigo Maranon, PhD,** an Instructor and post-doctoral fellow in the laboratory of Dr. Jane F. Reckelhoff in the department of Physiology received the *Steven M Horvath Professional Opportunity Award*. The Horvath Award provides funds for junior physiologists to attend the Experimental Biology meeting. The Horvath award is granted to as many as 2 male or female ethnic or racial minority graduate students or postdoctoral fellows.
Kudos

Dr. Paula Warrington, PhD, a post-doctoral fellow in the laboratory of Dr. Joey P. Granger in the department of Physiology received the Fleur L. Strand Professional Opportunity Award. The Fleur L Strand Award was established to recognize the achievements of a young physiologist, enabling the recipient to attend the APS annual meeting at the Experimental Biology meeting. The Strand award is granted to the top ranked Caroline tum Suden/Frances Hellebrandt Professional Opportunity Award applicant.

Dr. Keisa Mathis, PhD, an Instructor and post-doctoral fellow in the laboratory of Dr. Michael Ryan in the department of Physiology is a 2013 Finalist for the Juan Carlos Romero and Water & Electrolyte Homeostasis Section Postdoctoral Research Recognition Award. The winner will be selected from three post-doctoral finalists that submitted an abstract to an APS Water & Electrolyte Homeostasis Section sponsored topic category at the 2013 EB meeting. The winner will be based on oral presentations presented at EB to be held in April 2013. The top scored finalist will receive the Research Recognition Award.

Dr. Keisa Mathis, PhD, an Instructor and post-doctoral fellow in the laboratory of Dr. Michael Ryan in the Department of Physiology, Dr. Denise Cornelius, PhD, a post-doctoral fellow in the laboratory of Dr. Babbette LaMarca in the department of OB-GYN and Dr. Kedra Wallace, PhD, an Instructor and post-doctoral fellow in the laboratory of Dr. Babbette LaMarca in the department of OB-GYN are 2013 recipients of an American Physiological Society/NIDDK Minority EB Travel Fellowship Award. This award was designed to encourage highly qualified women, racial/ethnic minorities, persons with disabilities, and other individuals who traditionally have been underrepresented in science to pursue professional careers in the physiological/biomedical sciences.
Kudos

Emily Gilbert, a MD/PhD student in the laboratory of Dr. Michael Ryan in the department of Physiology will be awarded the Caroline tum Suden/ Frances Hellebrandt Professional Opportunity Award presented by the American Physiology Society. This award provide funds for junior physiologists to attend and participate in the annual Experimental Biology meeting to be held in April 2013.

Peter Mittwede, a graduate student in the laboratory of Dr. Robert Hester in the Department of Physiology is a 2013 Finalist for the Water & Electrolyte Homeostasis (WEH) Section Predoctoral Research Recognition Award. Three finalists were selected from abstracts submitted to the WEH section for presentation at the annual EB to be held in April 2013 in Boston, MA. The winner will be selected from an oral presentation competition at the meeting and the winner will be announced at the WEH Business Luncheon during EB.

Fouad Zouein, a graduate student in the laboratory of Dr. George Booz in the department of Pharmacology and Toxicology recently received the Junior Initiative Award from the European Cytokine Society (ECS) for his review article “LIF and the Heart: Just Another Brick in the Wall?” The ECS promotes a Junior Publication Initiative that has a goal to publish timely review papers by junior scientists.

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 for more information.
Highlights from the WHRC

In the News

Dr. Chindo Hicks, Associate Professor of Medicine, Director of the Cancer Bioinformatics Core in the UMMC Cancer Institute and Director of Translational Genomics and Bioinformatics for the Children’s Cancer Center, has been selected by the National Cancer Institute to serve on the Review Board for the Specialized Programs of Research Excellence (SPOREs). The SPORE (P50) is a Specialized Center grant mechanism for the support of a multi-project, interdisciplinary and often multi-institutional research program. The NCI SPORE program was initiated through a special appropriation from Congress in 1992. It is the largest Specialized Center grant mechanism awarded by the NCI.

Dr. Hicks

The Women’s Health Research Center recently supported the American Heart Association’s National WEAR RED DAY by hosting a breakfast. The AHA created the Go Red for Women campaign in 2004 to challenge women to know their risk for heart disease and use the tools provided by the Go Red for Women campaign to reduce their personal risk for cardiovascular disease.
The WHRC celebrates WEAR RED DAY on Feb. 1!

America went red on Feb 1st to celebrate the initiative to empower women to take charge of their heart health.
Highlights from the WHRC

Meeting Announcements

April 25-27, Lincoln Harbor, Weekawken, New Jersey

The Organization for the Study of Sex Differences

EB 2013
Experimental Biology
April 20-24, 2013
Boston Convention & Exhibition Center

Registration Now Open!
Renal Hemodynamics: Integrating with the nephron and beyond
June 30 - July 5, 2013
Saxtons River, Vermont

For more information please visit our website at:
www.faseb.org/src

The mammalian serine/threonine kinase family, Raf, is part of the phosphorylation cascade of the *mitogen-activated protein kinase* (MAPK) pathway. The MAPK pathway is involved in the regulation of a large variety of cellular physiological functions and increased activation of the MAPK pathway is seen in more than 50% of all human cancers. Raf activation involves multiple protein–protein interactions and phosphorylation events that are not yet fully understood. This study provides compelling evidence supporting the existence of an alternative pathway for C-Raf activation that involves MEK and suggests that this mechanism could be of significance in pathological conditions or cancers.

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**Recent Publications**


“HELLP” syndrome describe a high risk group of pregnant patients with hemolysis, elevated liver enzymes and low platelets. This study examined the prevalence of Composite Major Maternal Morbidity (CMMM) for patients with severe preeclampsia (SPRE) and each class or category of HELLP syndrome. It utilized a retrospective cohort study from 2000-2010, and the review of maternal charts of patients categorized with complete or partial HELLP syndrome. From 2005-2007 the maternal charts for every patient with a diagnosis of severe preeclampsia without HELLP syndrome were also evaluated for comparison. The CMMM for each patient group included cardiopulmonary; hematologic/coagulation, central nervous system/visual, hepatic or renal complications. A significant difference in major maternal morbidity was noted between patients with class 1 HELP and all other HELLP groups or patients with severe preeclampsia. Classification of patients with HELLP is important as patients with class 1 HELLP syndrome have significantly higher CMMM. Avoiding this most advanced stage of HELLP syndrome may minimize the development of new MMM and serve as a measure of medical management and a tool to assess overall quality of care.
Recent Publications


Obesity continues to affect African Americans in epidemic proportions, particularly among women and adolescent females. Perceptions, beliefs, behaviors, and body sizes of adolescents are associated with those of their mothers, yet little is known about the transgenerational meanings and experiences of obese African American adolescent girls and their mothers. An interpretive phenomenological study was conducted with seven African American adolescents between the ages of 11 and 17, and their adult female caregivers. Audio-taped interviews were transcribed and analyzed by a multicultural interpretive team. Two constitutive patterns and associated themes were identified. One pattern, 'Framing: sizing it up; sizing it down', noted that mothers and daughters are engaged in multiple common practices in which they self-define body size, while protecting their self-esteem and self-image. This pattern illustrates how the women and girls created an image of their bodies as they confronted and acknowledged their self-perceptions, compared themselves to others in their environment, and evaluated themselves against specific parameters of acceptable size.


Cataracts are a major cause of blindness. The most common forms of cataracts are age- and UV-related and develop mostly in the elderly, while congenital cataracts appear at birth or in early childhood. The Dahl salt-sensitive (SS/Jr) rat is an extensively used model of salt-sensitive hypertension that exhibits concomitant renal disease. In the mid-1980s, cataracts appeared in a few animals in the Dahl S colony, presumably the result of a spontaneous mutation. This study identified the genetic cause in this novel cataract model and may provide an opportunity to understand the etiology of cataracts, particularly in the context of hypertension.

WOMEN’S HEALTH RESEARCH CENTER

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