Greetings WHRC members!

Summer is fast approaching and labs will be filling up with summer students.

The abstract deadline for our APS conference, Metabolic, Cardiovascular, and Renal Disease: Physiology & Gender, is June 26, 2015. Thanks to a Faculty Scholarship Exchange grant, we have 20 travel awards for UMMC faculty and trainees to help offset the costs of attending the conference. If you’re interested in applying for a travel award, submit your abstract to the conference website and then forward it to me with your confirmation (jreckelhoff@umc.edu).

Thank you for your support of the WHRC.
Have a great summer!

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.

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SAVE THE DATE!
The Fifth International Conference on Sex and Gender
Sponsored by the American Physiological Society and
the Women’s Health Research Center
Metabolic, Cardiovascular, and Renal Disease: Physiology & Gender

Annapolis Sheraton, November 17-20, 2015

Abstract deadline: June 26, 2015
Travel award deadline: July 8, 2015
Registration deadline: October 16, 2015
Hotel registration deadline: October 18, 2015

Travel awards available for UMMC researchers!

WOMEN’S HEALTH RESEARCH CENTER
Dr. Kim Gratz is a Professor in the Department of Psychiatry and Human Behavior here at UMMC. Dr. Gratz serves as Director of both Personality Disorders Research and the Dialectical Behavior Therapy Clinic. She was also recently appointed Director of the newly established Division of Gender, Sexuality, and Health within the Department of Psychiatry. Dr. Gratz received her PhD in Clinical Psychology from the University of Massachusetts Boston in 2003, following completion of her pre-doctoral internship training at McLean Hospital/ Harvard Medical School. After being awarded the Psychosocial Fellowship from McLean Hospital/ Harvard Medical School in July 2003, she served as a Clinical and Research Fellow in the Center for the Treatment of Borderline Personality Disorder at McLean Hospital from 2003-04, and an Assistant Research Psychologist from 2004-05. In 2005, Dr. Gratz joined the Clinical Psychology Program at the University of Maryland (where she served as Director of the Personality Disorders Division of the Center for Addictions, Personality and Emotion Research for three years), and was awarded the Young Investigator's Award of the National Education Alliance for Borderline Personality Disorder.

Dr. Gratz's clinical and research interests focus on the role of emotion dysregulation, or maladaptive ways of responding to emotions, in borderline personality disorder (BPD), self-injury, and other risky behaviors (including suicidal behaviors, substance misuse, and risky sexual behaviors) in women. In particular, her research focuses on understanding the nature and consequences of emotion dysregulation in these conditions (through the use of novel behavioral/experimental paradigms), and applying this understanding to the development of more effective treatments. She is also interested in the intergenerational transmission of BPD-relevant personality traits and emotion regulation capacity from mothers to infants. Dr. Gratz currently serves as Co-Principal Investigator or Co-Investigator on 5 federal grants examining mother-child relationships, emotion dysregulation, BPD, and/or substance use, including a longitudinal laboratory-based investigation of emotion dysregulation as a prospective predictor of sexual revictimization in young adult women.

Dr. Gratz’s most recent awards include the 2015 Mid-Career Investigator Award from the North American Society for the Study of Personality Disorders and the 2014 Gold Level for Excellence in Research from UMMC.

The WHRC is proud to have Dr. Kim Gratz as an active member!
Jane Reckelhoff, Ph.D., has been selected as President-Elect for the American Physiological Society (APS), and will serve in that capacity for one year, then begin serving her term as President after the Experimental Biology 2016 meeting (April 6, 2016).

In addition, Dr. Reckelhoff was honored by the Water and Electrolyte Homeostasis Section of APS with the 2015 Ernest H. Starling Distinguished Lecturer. She received her award in Boston at the 2015 Experimental Biology Meeting.

Dr. Reckelhoff has been a leader in research related to understanding how sex steroids and gender differences impact the development of hypertension and renal disease.

Congratulations, Dr. Reckelhoff!
Ellen E. Gillis, mentored by Jenny Sasser in the Department of Pharmacology, was selected by the Water and Electrolyte Homeostasis Section winner of the Predoctoral Research Recognition Award. She presented her research at the 2015 Experimental Biology meeting in Boston. Ellen is also the recipient of the American Society of Nephrology Kidney TREKS Award, UMMC Excellence in Medical Pharmacology Award and the UMMC SGSHS Dean’s Service Award. In addition, Ms Gillis was recently awarded an American Heart Association Predoctoral Fellowship.

Keep up the excellent work, Ellen!

Tarek Ibrahim, a 2nd year graduate student in the laboratory of Dr. Babbette LaMarca, was awarded the 2014 American Society of Nephrology Kidney STARS program travel award. Congratulations, Tarek!

Jessica Faulkner, a 4th year graduate student in the laboratory of Dr. Babbette LaMarca, was awarded the American Physiological Society Water and Electrolyte Homeostasis Section Research Recognition Award and the Society for Experimental Biology and Medicine Young Investigator Award at the 2015 Experimental Biology in Boston.

Congratulations, Jessica!

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.

Your help is greatly appreciated!
Maryam Syed, a graduate student in the lab of Dr. Damian Romero in the Department of Biochemistry, received a Research Recognition Award from the American Physiological Society Endocrinology and Metabolism Section for her research project presentation, entitled “Early administration of 17-hydroxyprogesterone caproate to Reduced Uterine Perfusion Pressure (RUPP) rat model of preeclampsia improves inflammation, uterine artery vasoconstriction and blood pressure during pregnancy.”

Congratulations, Maryam!

Paula Warrington, PhD., was awarded The Central Nervous System Section Research Recognition Award. This award recognizes meritorious research by young investigators. Dr Warrington received her award at the 2015 Experimental Biology meeting in Boston.

Congratulations, Paula!

Lorena Amaral, Ph.D., was awarded WEH/American Journal of Physiology: Regulatory, Integrative, and Comparative Physiology Trainee Abstract Award, at the 2015 Experimental Biology meeting in Boston. Her abstract was entitled “MicroRNA-21 Ablation Exacerbates Aldosterone-Mediated Cardiac Injury, Remodeling and Dysfunction” at the 2015 Experimental Biology Meeting in Boston, MA.

Congratulations, Lorena!

These authors hypothesized that the Dahl salt sensitive (S) rat, a genetic model of hypertension and kidney disease, is a spontaneous model of superimposed preeclampsia. The Dahl S was compared to Sprague Dawley (SD) rat, a strain with a well-characterized normal pregnancy, and the Spontaneously Hypertensive Rat (SHR), a genetic model of hypertension that does not experience a preeclamptic phenotype despite preexisting hypertension. Mean arterial pressure (MAP, measured via telemetry) was elevated in the Dahl S and SHR prior to pregnancy, but hypertension was exacerbated during pregnancy only in Dahl S. In contrast, SD and SHR exhibited significant reductions in MAP consistent with normal pregnancy. Dahl S rats exhibited an increase in urinary proteinuria, glomerulomegaly, placental hypoxia, sFlt-1, and placental TNF-α. The Dahl S did not exhibit the expected decrease in uterine artery resistance during late pregnancy in contrast to the SD and SHR. Dahl S pups and litter sizes were smaller than in the SD. Therefore, the authors conclude that the Dahl S phenotype is consistent with many of the characteristics observed in human superimposed preeclampsia, and should be considered as a spontaneous model of superimposed preeclampsia in order to better to identify and test new therapeutic targets for its treatment.


As part of a larger study using 454 pyrosequencing to investigate the vaginal microbiota of women with bacterial vaginosis (BV), these authors found an association between a novel BV-associated bacterium (BVAB1) and high Nugent scores and propose that BVAB1 is the curved Gram-negative rod traditionally identified as Mobiluncus spp. in vaginal Gram stains.
**HIGHLIGHTS from the WHRC**


PHRF1 functions as an essential component of the TGF-β tumor suppressor pathway by triggering degradation of the homeodomain repressor factor TGIF. This leads to redistribution of cPML into the cytoplasm, where it coordinates phosphorylation and activation of Smad2 by the TGF-β receptor. In acute promyelocytic leukemia (APL), acquisition of PML-RARα is known to impede critical aspects of TGF-β signaling, including myeloid differentiation. Although these defects are thought to rely on suppression of cPML activity, the mechanisms underlying this phenomenon remain enigmatic. Here, we find that an abnormal function of PML-RARα is to interfere with TGIF breakdown, presumably by competing with PHRF1 for binding to TGIF, culminating in cPML sequestration and inactivation. Enforcing PHRF1 activity is sufficient to restore TGF-β cytostatic signaling in human blasts and suppress APL formation in a mouse model of APL, providing proof-of-concept data that suppression of PHRF1 activity by PML-RARα represents a critical determinant in APL pathogenesis.


The purpose of this study was to report the prevalence and risk factors for retinopathy in African Americans with impaired fasting glucose (IFG) and type 2 diabetes in the Jackson Heart Study and to determine if P-selectin plasma levels are independently associated with retinopathy in this population. To do so a prospective, cross-sectional observational study of 629 patients with type 2 diabetes and 266 participants with impaired fasting glucose were compared. Bilateral, 7-field fundus photographs were scored by masked readers for diabetic retinopathy (DR) level. The prevalences of any retinopathy among participants with IFG and type 2 diabetes were 9.4% and 32.4%, respectively. Among those with type 2 diabetes, in multivariate models adjusted for age, sex, and other traditional risk factors, higher P-selectin levels were associated with any DR (odds ratio = 1.11, 95% confidence interval = 1.02-1.21, P = .02) and proliferative DR (odds ratio = 1.23, 95% confidence interval = 1.03-1.46, P = .02). To further investigate the relationship between P-selectin and DR, we examined the association between P-selectin genotype and DR. Minor allele homozygotes for the variant rs6128 were less likely to develop DR. The authors overall conclusion were that both serologic and genetic data indicates an association between P-selectin and DR in the Jackson Heart Study which may provide insight into the pathogenesis of retinopathy.