

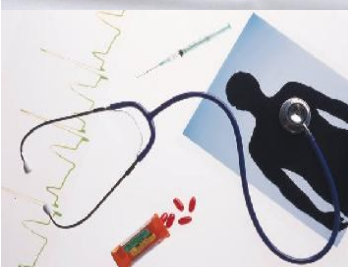
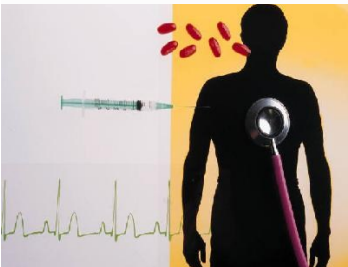


# THRCE

TULANE HYPERTENSION AND RENAL CENTER OF EXCELLENCE

Spring 2019

Volume 18, Issue 1



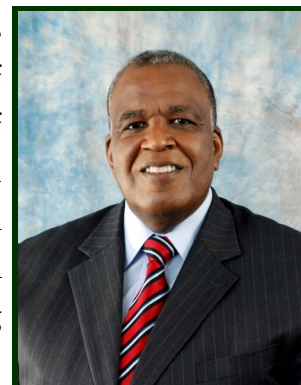
## 2019 WORLD KIDNEY DAY

March 14, 2019 was World Kidney Day (WKD). To commemorate 2019 WKD, THRCE set up a Tulane Kidney Health Screening Fair in a joint collaboration with the Departments of Physiology and Medicine (Section of Nephrology)



Volunteers and organizers of the 2019 World Kidney Day

and the National Kidney Foundation of Louisiana. The event was open to the public and participants were screened for blood pressure & the risk for developing kidney disease. Students from Xavier University's School of Pharmacy and Tulane University's School of Medicine took blood pressure & BMI Measurements and provided information of the various kidney diseases and health risks. LOPA (Louisiana Organ Procurement Agency) also participated at the event. In addition, THRCE hosted a special WKD Seminar by the distinguished Cardiologist, Professor, and the Gerald S. Berenson Endowed Chair in Preventive Cardiology at Tulane, Dr. Keith C. Ferdinand. Dr. Ferdinand is past Chair of the National Forum for Heart Disease and Stroke Prevention and has served as Chief Science Officer and past chair of the Association of Black Cardiologists. He has also served as a board member of the American Society of Hypertension, the Southwest Lipid Association, and the International Society of Hypertension in Blacks. WKD is an international health awareness campaign that focuses on the importance of kidneys and on reducing chronic kidney disease and its associated health problems.



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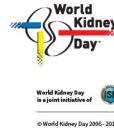
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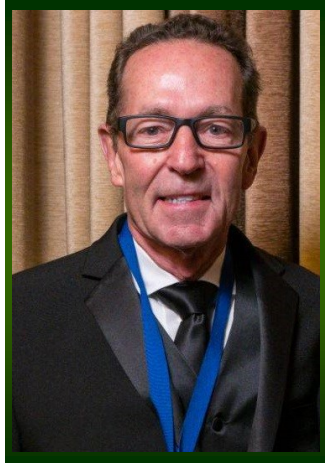
**KIDNEY HEALTH**  
FOR EVERYONE  
EVERYWHERE



*Tulane Medical Student Volunteers (from Left), are Youssef Abdullah, Andrew Antes, Tara Reza, and Yemi Olubowale*

# News

## 2019 MAYERSON DiLUZIO LECTURE



The 2019 Mayerson-DiLuzio Lectureship was awarded to R. Clinton Webb, PhD, who presented, “Mitochondria-derived DAMPs as a trigger of innate immune responses and vascular inflammation in hypertension” on March 11, 2019. A summary of his presentation can be viewed on page 7 in this issue.

Dr. R. Clinton Webb received his PhD from the University of Iowa in 1976, and completed a Physiology Postdoctoral Fellowship in the Department of Physiology at the University of Michigan in 1978. Dr. Webb briefly served as a research associate at the Universitaire Instelling Antwerpen in Antwerp, Belgium before returning to the University of Michigan where he remained for the next 20 years rising to the rank of Professor. In 1999 he joined the Medical College of Georgia where he served as the Robert B. Greenblatt Professor of Endocrinology and as Chair of the Department of Physiology. He was named the Herbert S. Kupperman Chair in 2006 serving in the Departments of Physiology, Surgery and the School of Graduate Studies. In 2011, Dr. Webb was named a Regents’ Professor, a recognition representing the highest academic status bestowed by the University System of Georgia. He also holds a secondary appointment as Professor of Pharmacology and Toxicology.

Over the years, Dr. Webb’s research has been funded by several agencies including the American Heart Association (AHA), the National Institutes of Health (NIH) and various pharmaceutical companies. He is a member of numerous societies chairs the Awards Committee of the Cardiovascular Pharmacology Division, American Society for Pharmacology and Experimental Therapeutics. He served as Chair of the Council for High Blood Pressure Research, and as a member of the association’s Ethnicity and Gender Working Group, Strategic Planning Committee and International Mentoring Program. Dr. Webb also served as Chair of the Association of Chairs of Departments of Physiology, 2009-2010. He has published over 450 peer-reviewed papers and scientific reviews. Dr. Webb serves on numerous editorial boards and is associate editor for the American Journal of Hypertension and Pharmacological Research. He is also a Guest Editor for the Journal Hypertension and a Contributing Editor to the Journal of the African Association of Physiological Sciences.

## Continued...

Dr. Webb has received several awards including the inaugural recipient of the Bodil M. Schmidt-Nielsen Distinguished Mentor and Scientist Award from the American Physiological Society's Women in Physiology Committee in 2004. He received the Carl J. Wiggers Award from the cardiovascular section of the American Physiological Society in 2012 and the AstraZeneca Award from the International Society for Hypertension in 2012. In 2013, he received the Irvine Page and Alva Bradley Lifetime Achievement Award from the Council for Hypertension, AHA. Dr. Webb received the 2015 Georgia Regents Research Institute Lifetime Achievement Award. In 2016, he became a fellow of the American Society of Hypertension and in 2017 received the Distinguished Research Award from the Graduate School at Augusta University. Dr. Webb gave the Inaugural Sibley Hoobler Lecture in 2017 at the Frankel Cardiovascular Center, University of Michigan. Most recently, he received the 2018 Excellence Award in Hypertension Research from the Council on Hypertension of the AHA.

The Mayerson-DiLuzio Lectureship was established in 1990 to honor the memories of Drs. Hyman S. Mayerson and Nicholas R. Di Luzio, who presided as Chairmen of the Tulane Physiology Department.



May is  
National High  
**Blood Pressure  
Education**  
Month

May is National High Blood Pressure Education Month, and the National Heart, Lung, and Blood Institute (NHLBI) encourages everyone to take steps, however small, to prevent or control high blood pressure.

**NHLBI's The Heart Truth® program** is featuring a variety of new educational resources that focus on healthy lifestyle changes you can make, little by little, to help you in your efforts. For more information, tips, and ideas to keep heart healthy, visit the NHLBI's High Blood Pressure web page (<https://www.nhlbi.nih.gov/health-topics/education-and-awareness/high-blood-pressure>). Our Hearts Are Healthier Together! Encourage a friend, family member, or coworker to join you on your journey to a healthier heart. Research has shown that having strong social support can make it easier to stay motivated and reach your health goals.

*Continued...*

## GRANTS, HONORS & RECOGNITION AWARDED TO THREE AFFILIATED INVESTIGATORS

### L. GABRIEL NAVAR, PHD

- Dr. Navar was appointed to the Editorial Board of the International Journal of Cardiology Hypertension, February 2019.
- Served as judge at the Tulane Health Sciences Research Days held in March 2019.
- Presented, “Importance of Animal Research to Understand High Blood Pressure and Kidney Function” at the Biomedical Research Awareness Day (BRAD) held on April 18, 2019 at Tulane School of Medicine.
- Participated in the Graduate Student Recruitment Opportunity representing the graduate programs with emphasis on the Tulane SOM programs from the Department of Physiology at the 2019 Experimental Biology (EB) Meeting.
- Participated as a mentor in the Renal Section Trainee Mixer on April 7 during the 2019 EB meeting held in Orlando, Florida in April 2019.
- Presented, as an invited Speaker, “The Intrarenal Renin-Angiotensin System in Development of Hypertension and Diabetes” at the Texas Tech University Health Sciences Center, El Paso, TX on February 13, 2019.

### DEWAN S. A. MAJID, MD, PHD

- Served as judge at the Tulane Health Sciences Research Days held in March 2019.
- On April 21<sup>st</sup>, served as a judge on the 2019 EB meeting’s Trainee Award Finalist Competition sponsored by Water & Electrolyte Section of American Physiological Society (APS).

### STUDENTS, POST-DOCTORAL FELLOWS, & RESEARCH SCIENTISTS II

#### POST-DOCTORAL FELLOWS:

- **Bruna Visniauskas, PhD** (Mentor: Dr. Prieto)
  - ◊ The 2019 Juan Carlos Romero Postdoctoral Research Recognition Award Finalist at the 2019 EB meeting. The award was sponsored by the Water Electrolyte Homeostasis Section of the APS.
  - ◊ Received the Southern Society for Clinical Investigation (SSCI) Nephrology Young Investigator Scholar Award at the SSCI/Southern Regional Meetings held in February 2019.
- **Adrien JR Molinas, PhD** (Mentor: Dr. Zsombok)
  - ◊ Received the Mead Johnson Award from APS Endocrinology and Metabolism section at the 2019 EB meeting.
  - ◊ Received the Award for Research in Neuroscience at the Tulane Health Sciences Research Days.

## Continued...

- **Supaporn Kulthinee, PhD** (Mentor: Dr. Navar)
  - ◇ Presented an abstract and a talk at the 18<sup>th</sup> Annual SSCI Nephrology Young Investigators' Forum during the 2019 SSCI/Southern Regional Meetings.
  - ◇ Received the 2019 AFMR Henry Christian Award at the 2019 SSCI/Southern Regional Meetings.



2019 AFMR Henry Christian Awardee, Dr. Supaporn Kulthinee with her mentor, Dr. Gabriel Navar

### GRADUATE & MEDICAL STUDENTS:

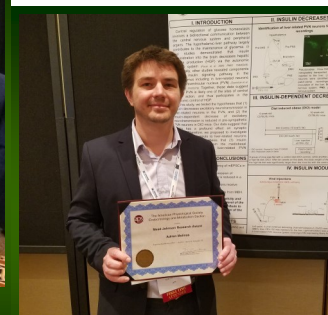
- **Owen Richfield** (Mentor: Dr. Navar)
  - ◇ Received the NIH NIDDK Ruth L. Kirschstein National Research Service Award F31, a 2 years Research Fellowship Award, for his project, "Development of a computational biomechanics model of the glomerulus to assess risk of mechanical stress-induced glomerular injury in conditions of reduced afferent arteriole vasoconstrictive response."
  - ◇ Presented a talk at the 2019 SSCI/Southern Regional Meetings.
  - ◇ Presented a poster at the 2019 EB meeting held in Orlando, Florida.
  - ◇ Received the "Best Student Poster Presentation Award" during the 2019 BMES/FDA Frontiers in Medical Devices Conference that was held in Washington, DC in March 2019.
  - ◇ Was a SAFMR/SSCI Student Research Travel Award Winner.
- **Andrew Curnow** (Mentor: Dr. Prieto), won the SSCI Young Investigator Award.
- **Stacy Yanofsky** (Mentor: Dr. Satou), was awarded the SAFMR/SSCI Student Research Travel Award at the 2019 SSCI/Southern Regional Meetings.
- MEDICAL STUDENTS AWARDED ASPIRE GRANTS FOR 2019 SUMMER RESEARCH:
  - ◇ **Annie Bell** (Mentor: Dr. Navar).
  - ◇ **Stephanie McNamara** (Mentor: Dr. Zsombok).
  - ◇ **Youssef Abdullah** (Mentor: Drs. Majid and Navar).



SSCI Young Investigator Awardee, Andrew Curnow with his mentor, Dr. Minolf Prieto



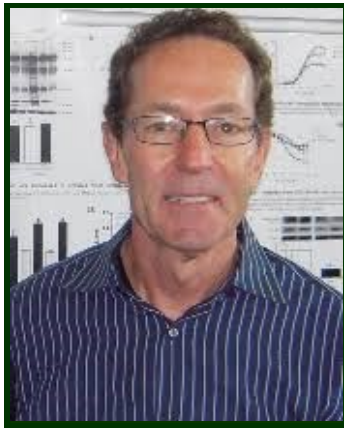
Drs. Hamm & Navar at the 2019 SSCI/Southern Regional Meetings with Graduate students, Stacy Yanofsky, Owen Richfield & Andrew Curnow, and Postdoctoral Fellows, Drs. Supaporn Kulthinee & Bruna Visniauskas



Dr. Adrién Molina awarded the EB Mead Johnson Research Award in Endocrinology

## THRCE SPONSORED PRESENTATIONS

Speakers who present a THRCE Seminar-sponsored presentation are asked to provide a brief summary of their talk that we can share with our newsletter audience. From January through April 2019, the following speakers presented THRCE-sponsored seminars:



- **R. CLINTON WEBB, PHD**  
*Herbert Kupperman Chair in Cardiovascular Disease,  
Regents' Professor of the Department of Physiology  
Medical College of Georgia, Augusta University,  
Augusta, Georgia.*

On March 11<sup>th</sup>, Dr. Clinton Webb presented the 2019 Mayerson-DiLuzio Lectureship that was Co-Sponsored by THRCE and the Department of Physiology titled, "Mitochondria-derived DAMPs as a trigger of innate immune responses and vascular inflammation in hypertension."

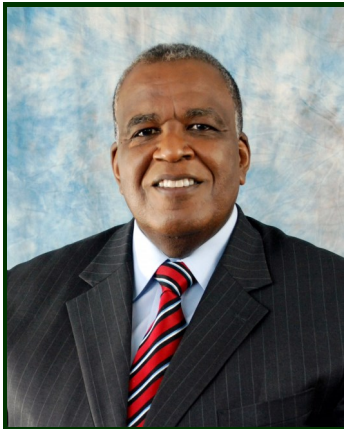
### **SUMMARY OF PRESENTATION:**

A study of the innate immune response in hypertension: Toll-like receptors (TLRs) are a component of the innate immune system that respond to exogenous infectious ligands (pathogen-associated molecular patterns, PAMPs) and endogenous molecules that are released during host tissue injury/death (damage-associated molecular patterns, DAMPs). Interaction of TLRs with their ligands leads to activation of downstream signaling pathways that induce an immune response by producing inflammatory cytokines, type I interferons (IFN), and other inflammatory mediators. TLR activation affects vascular function and remodeling and these molecular events prime antigen-specific adaptive immune responses. Despite the presence of TLRs in vascular cells, the exact mechanisms

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whereby TLR signaling affects the function of vascular tissues are largely unknown. Cardiovascular diseases (CVD) are considered chronic inflammatory conditions and accumulating data show that TLRs and the innate immune system play a determinant role in the initiation and development of CVDs. This evidence unfolds a possibility that targeting TLRs and the innate immune system may be a novel therapeutic for these conditions. TLR inhibitors and agonists are already in clinical trials for inflammatory conditions such as asthma, cancer and autoimmune diseases but their study in the context of CVDs is in its infancy. In this seminar, Dr. Webb reviewed the current knowledge of TLR signaling in the cardiovascular system with an emphasis on atherosclerosis, hypertension, and cerebrovascular injury. Further, he addressed the therapeutic potential of TLR as pharmacological targets in cardiovascular disease and consider intriguing research questions for future study.

**Special THRCE Seminar in honor of World Kidney Day (WKD)  
Jointly Sponsored by THRCE & the Department of Physiology**



- **KEITH C. FERDINAND, MD**  
*Gerald S. Berenson Endowed Chair in Preventive Cardiology,  
Professor of Medicine,  
Tulane University, School of Medicine,  
New Orleans, Louisiana.*

March 14<sup>th</sup> 2019 was World Kidney Day (WKD). To commemorate WKD, THRCE hosted a special seminar by Dr. Keith Ferdinand. The title of the 2019 WKD THRCE Seminar was, "Identification and Eliminating Disparities in CKD and ESRD."

**SUMMARY OF PRESENTATIONS:**

Health, life expectancy, and care improved dramatically for Americans over last century, but distribution of benefits has not occurred equitably. In his presentation, Dr. Ferdinand highlighted that the mortality gap between blacks and whites has been persistent since 1960. African Americans have a higher risk for hypertension,



*Continued...*

diabetes, obesity, premature myocardial infarction, stroke, chronic kidney disease, end stage renal disease (ESRD), and cardiovascular mortality, especially premature cardiac death. Dr. Ferdinand, in his seminar, emphasized the social determinants of health and described how socioeconomic status, environment and access to health services impact chronic kidney disease. The presentation pointed out that the ApolipoproteinL1 variants in African Americans are associated with focal segmental glomerulosclerosis and hypertensive ESRD.



- **HEATHER A. DRUMMOND, PHD**  
*Professor, Department of Physiology & Biophysics,  
 Director: Confocal Microscopy Facility & Histology Core,  
 University of Mississippi Medical Center,  
 Jackson, Mississippi.*

Dr. Heather Drummond presented two talks on Monday March 25<sup>th</sup>, 2019 that were co-sponsored by THRCE and the Department of Physiology. The talks, “History and future of Vascular Degenerins” was presented at the Renal & Vascular Workshop and “Vascular Degenerins in Renal Hemodynamics” was presented at the Physiology Noon Seminar Series meeting.

**SUMMARY OF PRESENTATIONS:**

**“History and future of Vascular Degenerins”**

The workshop introduced the simple heuristic of mechanosensing signaling steps. Dr. Drummond discussed the evolutionary and functional evidence supporting degenerin protein family members as mechanosensors. She also addressed the lack of evolutionary evidence supporting C, M and V Trp family proteins, integrins and GPCRs as mechanosensors in lower order species. The workshop also addressed the large extracellular domain present in degenerin, but not Trp or GPCRs, fits the needs of a mechanosensor and the large intracellular domains of Trp and GPCRs fits the needs of signal amplifiers. The workshop concluded with the hypothesis that degenerins, Trps and GPCRs are all required for

## *Continued...*

mechanosignaling in VSMCs, however, they likely play different roles in signaling where the degenerins are the sensors and the GPCRs/Trp channels may act as amplifiers.

### **“Vascular Degenerins in Renal Hemodynamics”**

Pressure-induced constriction (also known as the “myogenic response”) is an important mechanodependent response in small renal arteries and arterioles. The response is initiated by vascular smooth muscle cell (VSMC) stretch due to an increase in intraluminal pressure and leads to vasoconstriction. The myogenic response has two important roles as a mechanism of local blood flow autoregulation and protection against systemic blood pressure-induced microvascular damage. However, the molecular mechanisms underlying initiation of myogenic response are unresolved. Although several molecules have been considered initiators of the response, Dr. Drummond’s laboratory has focused on the role of degenerin proteins because of their strong evolutionary link to mechanosensing in the nematode. Her research has addressed the hypothesis that certain degenerin proteins act as mechanosensors in VSMCs. This presentation discussed the importance of a specific degenerin protein, b-Epithelial Na<sup>+</sup> Channel (bENaC), in pressure-induced vasoconstriction, renal blood flow and susceptibility to renal injury. She and her research team propose that loss of the renal myogenic constrictor response delays the correction of renal blood flow that occurs with fluctuations in systemic pressure, which allows pressure swings to be transmitted to the microvasculature, thus increasing the susceptibility to renal injury and hypertension. The role of bENaC in myogenic regulation is independent of tubular bENaC and thus represents a non-tubular role for bENaC in renal-cardiovascular homeostasis.

## **UPCOMING MEETINGS & EVENTS:**

- **American Heart Association's Council on Hypertension**  
~ New Orleans, LA, September 5-8, 2019
- **American Society of Nephrology | Kidney Week 2019**  
~ Washington, DC, November 7 - 10, 2019
- **American Heart Association Scientific Sessions 2019**  
~ Philadelphia, PA, Nov 16 - 18, 2019.

*The following recent publications acknowledges either the COBRE grant, the THRCE center, or one of the center's CORE facilities.*

- **Garagliano JM, Katsurada A, Miyata K, Derbenev AV, Zsombok A, Navar LG, Satou R.** Advanced Glycation End Products Stimulate Angiotensinogen Production in Renal Proximal Tubular Cells. *Am J Med Sci.* 2019 Jan; 357(1):57-66. doi: 10.1016/j.amjms.2018.10.008. PMID: 30466736.
- **Gonsalez SR, Cortês AL, Silva RCD, Lowe J, Prieto MC, Silva Lara LD.** Acute kidney injury overview: From basic findings to new prevention and therapy strategies. *Pharmacol Ther.* 2019 Apr 6. pii: S0163-7258(19)30058-0. doi: 10.1016/j.pharmthera.2019.04.001. [Epub ahead of print] Review. PMID: 30959059
- **Kemp BA, Howell NL, Keller SR, Gildea JJ, Shao W, Navar LG, Carey RM.** Defective Renal Angiotensin III and AT2 Receptor Signaling in Prehypertensive Spontaneously Hypertensive Rats. *J Am Heart Assoc.* 2019 May 7;8(9):e012016. doi: 10.1161/JAHA.119.012016. PMID: 31039659.
- **Molinas AJR, Desmoulins LD, Hamling BV, Butcher SM, Anwar IJ, Miyata K, Enix CL, Dugas CM, Satou R, Derbenev AV, Zsombok A.** Interaction between TRPV1-expressing neurons in the hypothalamus. *J Neurophysiol.* 2019 Jan 1;121(1):140-151. doi: 10.1152/jn.00004.2018. PMID: 30461371, PMCID: PMC6383661.
- **Nowak KL, Chonchol M, Jovanovich A, You Z, Bates J, Foy C, Glasser S, Killeen AA, Kostis J, Rodriguez CJ, Segal M, Simmons DL, Taylor A, Lovato LC, Ambrosius WT, Supiano MA; SPRINT Research Group.** Serum Sodium and Pulse Pressure in SPRINT. *Am J Hypertens.* 2019 Apr 12. pii: hpz055. doi: 10.1093/ajh/hpz055. [Epub ahead of print]. PMID: 30977767.
- **Oxlund CS, Pareek M, Rasmussen BSB, Vaduganathan M, Biering-Sørensen T, Byrne C, Almarzooq Z, Olsen MH, Bhatt DL.** Body Mass Index, Intensive Blood Pressure Management, and Cardiovascular Events in the SPRINT Trial. *Am J Med.* 2019 Feb 2. pii: S0002-9343(19)30133-0. doi: 10.1016/j.amjmed.2019.01.024. [Epub ahead of print]. PMID: 30721655.
- **Paige JT, Kremer M, Landry J, Hatfield SA, Wathieu D, Brug A, Lightell DJ, Spiller KL, Woods TC.** Modulation of inflammation in wounds of diabetic patients treated with porcine urinary bladder matrix. *Regen Med.* 2019 Apr 25. doi: 10.2217/rme-2019-0009. [Epub ahead of print]. PMID: 31020913.
- **Pareek M, Vaduganathan M, Biering-Sørensen T, Byrne C, Qamar A, Almarzooq Z, Pandey A, Olsen MH, Bhatt DL.** Pulse Pressure, Cardiovascular Events, and Intensive Blood-Pressure Lowering in the Systolic Blood Pressure Intervention Trial (SPRINT). *Am J Med.* 2019 Jan 16. pii: S0002-9343(19)30060-9. doi: 10.1016/j.amjmed.2019.01.001. [Epub ahead of print]. PMID: 30659811.
- **Sobieraj P, Lewandowski J, Siński M.** Low on-treatment diastolic blood pressure is not independently associated with increased cardiovascular risk: an analysis of

the SPRINT trial. *Eur Heart J*. 2019 Apr 21. pii: ehz225. doi: 10.1093/eurheartj/ehz225. [Epub ahead of print]. PMID: 31006014.

- **SPRINT MIND Investigators for the SPRINT Research Group, Williamson JD, Pajewski NM, Auchus AP, Bryan RN, Chelune G, Cheung AK, Cleveland ML, Coker LH, Crowe MG, Cushman WC, Cutler JA, Davatzikos C, Desiderio L, Erus G, Fine LJ, Gaussoin SA, Harris D, Hsieh MK, Johnson KC, Kimmel PL, Tamura MK, Launer LJ, Lerner AJ, Lewis CE, Martindale-Adams J, Moy CS, Nasrallah IM, Nichols LO, Oparil S, Ogrocki PK, Rahman M, Rapp SR, Reboussin DM, Rocco MV, Sachs BC, Sink KM, Still CH, Supiano MA, Snyder JK, Wadley VG, Walker J, Weiner DE, Whelton PK, Wilson VM, Woolard N, Wright JT Jr, Wright CB.** Effect of Intensive vs Standard Blood Pressure Control on Probable Dementia: A Randomized Clinical Trial. *JAMA*. 2019 Feb 12;321(6):553-561. doi: 10.1001/jama.2018.21442. PMID: 30688979. PMCID: PMC6439590.
- **Woods TC, Satou R, Miyata K, Katsurada A, Dugas CM, Klingenberg NC, Fonseca VA, Navar LG.** Canagliflozin Prevents Intrarenal Angiotensinogen Augmentation and Mitigates Kidney Injury and Hypertension in Mouse Model of Type 2 Diabetes Mellitus. *Am J Nephrol*. 2019;49(4):331-342. doi: 10.1159/000499597. Epub 2019 Mar 28. PMID: 30921791, PMCID: PMC6475450.

#### ABSTRACTS:

- **Castillo A, Khan A, Shindler I, Navar LG, Majid DSA.** Inverse circadian pattern in the renal generation of tumor necrosis factor- $\alpha$  (TNF $\alpha$ ) and angiotensinogen (AGT) in salt-sensitive hypertension (SSH) induced by angiotensin II (AngII) in mice. *Hypertension*. 2018;72:AP380.
- **Kulthinee S, Shao W, Brand G, Franco M, Navar L.** Dominance of purinergic P2X1 and P2X7 receptors mitigates angiotensin AT1 receptors influence on renal microvascular resistance in angiotensin II dependent hypertension. *J Investig Med* 67:639, 2019. #721.
- **Majid DSA, Ekpo PE, Talwar S, Abdel-Mageed AB, Castillo A.** The protein expression of TNF- $\alpha$  receptor type 1 (TNFR1) is reduced by nitric oxide (NO) synthase inhibition in cultured renal proximal tubular (HK-2) cells. *FASEB J*, 33:A 569.15
- **Richfield O, Cortez R, and Navar LG.** Glomerular capillary wall shear stress in the diabetic rat: A modeling study. *J Investig Med* 67:616, 2019. #662.
- **Richfield O, Cortez R, and Navar LG.** Glomerular capillary wall shear stress in the diabetic rat: A modeling study. *Faseb J*. Volume 33, Issue 1, supplement, Apr 2019.

*From January through April 2019 investigators and physicians affiliated with T.H.R.C.E. participated in the following meetings.*

***Scientific Computing Around Louisiana (SCALA) Conference, Tulane University, NO, LA; Feb. 15-16, 2019***

- **Richfield O.** A Computational Biomechanics Model of the Rat Glomerulus - Oral Presentation.

***18<sup>th</sup> Annual Southern Society for Clinical Investigation Nephrology Young Investigators' Forum, NO, LA; Feb. 20, 2019***

- **Visniauskas B.** Activation of Prorenin Receptor (PRR) stimulates production of TNF $\alpha$  and IL-6 in murine macrophages. - Oral Presentation.

***Southern Regional Meeting, NO, LA; Feb. 21-23, 2019***

- **Chu C, Yancovich SE, Doan D, El-Dahr SS, Baliga R.** Previously unreported KLHL3 Variant in an infant with Gordon Syndrome. Abstract 723.
- **Curnow A, Gonzalez SR, Yisniauskas B, Crabtree SL, Gogulamudi VR, Simon EE, Lara Morcillo LD, Prieto MC.** Nitric Oxide Synthase inhibition stimulates Renin synthesis independent of CGMP in collecting duct cells. Abstract 545C & Abstract 669. (SSCI Young Investigator Award Winner)
- **Kulthinee S, Shao W, Brand G, Franco M, Navar L.** Dominance of Purinergic P2X1 and P2X7 receptors mitigates Angiotensin-AT1 receptors influence on renal microvascular resistance in Angiotensin-II dependent hypertension. Abstract 721. (AFMR Henry Christian Awardee) - Oral Presentation.
- **Hughes JB, LI T, Brumfield I, El-Dahr SS, Saifudeen Z.** The Mevalonate/Cholesterol Biosynthesis Pathway in Nephron Progenitor cell renewal. Abstract 719. (SSPR Trainee Travel Award Winner)
- **Razavi AC, Fernandez C, Mi X, He J, Bazzano L, Nierenberg J, Li S, Kelly TN.** Metabolomic analysis of left ventricular remodeling: The Bogalusa heart Study. Abstract 8. (SAFMR/SSCI Student Research Travel Award Winner)
- **Richfield O.** Glomerular capillary wall shear stress in the diabetic rat: A modeling study. Abstract 662. (SAFMR/SSCI Student Research Travel Award Winner) - Oral Presentation.
- **Samivel R, Chen H, Subramanian U, Zhao H, Pandey KN.** Blockade of Cardiac Hypertrophy and Fibrosis by TGF-BETA 1 receptor antagonist in NPR1 Gene-Knockout mice. Abstract 6. (SAFMR/SSCI Student Research Travel Award Winner)
- **Singh S, Yosypiv I, Kidd L.** Thin Basement Membrane Disease (TBMD) in a pediatric patient with Crohn's disease. Abstract 543.
- **Thakore P, Matthew K, Anderson M, Akingbola O, Yosypiv I.** An infant with severe hypokalemic metabolic alkalosis. Abstract 388.

## Continued...

- **Velez JC.** Hepatorenal acute kidney injury: Hemodynamic and Parenchymal mechanisms. *State-of-the-Art Speaker.*
- **Yan Y, Li S, Liu Y, Bazzano L, He J, Mi J, Chen W.** Temporal relationship between inflammation and insulin resistance and their joint effect on hyperglycemia: The Bogalusa Heart Study. Abstract 676. (*SAFMR/SSCI Junior Faculty Research Travel Award Winner*).
- **Yanofsky SM, Dugas CM, Katsurada A, El-Dahr SS, Saifudeen Z, Satou R.** Angiotensin-II biphasically regulates cell differentiation in induced pluripotent stem cell-derived human kidney organoids. Abstract 665. (*SAFMR/SSCI Student Research Travel Award Winner*).
- **Visniauskas B Crabtree, SL, Castro N, Acosta M, Curnow A, Prieto MC.** Activation of prorenin receptor (PRR) stimulates production of TNF-alpha and IL-6 in murine macrophages. Abstract 667. (*SSCI Nephrology Young Investigator Scholar Award Winner*) - Oral Presentation.
- **Zhang A, Teran F. Zhang R.** Long-term outcomes of induction therapies with Alemtuzumab, Basiliximab, or Methylprednisolone in kidney transplant patients with delayed graft function. Abstract 722. (*SAFMR/SSCI Student Research Travel Award Winner*).

### *30<sup>th</sup> Annual Health Sciences Research Days, Tulane University, NO, LA; March 18-19, 2019*

- **Albuck A.** Peroxynitrite induces depolarization and impairments of respiration in isolated murine brain mitochondria.
- **Curnow A.** Nitric Oxide synthase inhibition stimulates renin synthesis independent of cGMP in collecting duct cell.
- **Desmoulins L.** TRPV1-expressing neurons of the caudal Hypothalamus project to thermoregulatory POA neurons.
- **Drouin A.** A relatively immunocompetent mouse model for improved understanding of dengue virus pathology.
- **Evans W.** Insulin-induced hypoglycemia directly affects the cerebral microvasculature in vivo.
- **Hong J.** Soluble prorenin receptor (sPRR) is increased in plasma of obese diabetic women but not in men.
- **Kremer M.** Modulation of inflammation in wounds of Diabetic patients treated with porcine urinary bladder matrix.
- **You Lu Y.** A novel way to design pharmaceutical drugs.
- **Molinas A.** Insulin-dependent decrease of excitatory neurotransmission in pre-autonomic PVN neurons is reduced in diet-induced obese mice.

## *Continued...*

- **Ogola B.** Angiotensin II Induced Hypertension and Arterial Stiffness Increases with G Protein-Coupled Estrogen Receptor Deletion in Female Mice.
- **Peterson N.** Superoxide producing nNOS isoform in endothelial cells mediates adverse actions of hyperglycemia and hypoglycemia.
- **Razavi A.** Serum Metabolites from the Trimethylamine Pathway Associate with Left Ventricular Diastolic Function: The Bogalusa Heart Study.
- **Sun Y.** Computer based drug screening for identification of novel T-type calcium channel specific blockers.
- **Visniauskas B.** Bradykinin levels and Kallikrein 1 activity are reduced in mice with prorenin receptor (PRR) deficiency in the collecting duct.
- **Werner C.** Identification of subsets of neurons projecting from the hypothalamus to both pancreas and interscapular brown adipose tissue.

### *Biomedical Engineering Society and FDA Frontiers in Medical Devices Conference, Washington, DC, March, 2019*

- **Richfield O.** A Glomerular Capillary Hypertrophy in the Diabetic Rat Normalizes Wall Shear Stress: A Modeling Study. (Travel Award, and Best Poster Award Winner) - Oral Presentation.

### *Experimental Biology, Orlando, Florida, April 6-9, 2019*

- **Albuck AL, Sakamuri SSVP, Sperling JA, Sure VN, Zheng S, Katakam PVG.** Peroxynitrite Induces Depolarization and Impairments of Respiration in Isolated Murine Brain Mitochondria. (C509/850.10).
- **Aguerre IM, Gentry KM, Lindsey SH.** Role of Sex and GPER in Renal Damage Induced by Ang II Hypertension. (D173/569.3).
- **Chan KJ, Swan KF, Narayanappa A, Mersereau C, Intapad S.** Imbalance of Sphingolipids Synthesis/ Degradation Pathway in Preeclamptic Mouse Placenta and Kidney of Intrauterine Growth Restricted Mouse Fetus. (E679/593.3).
- **Chandra PK, Rutkai I, Kim H, Braun SE, Abdel-Mageed AB, Mondal D, Busija DW.** Latent-HIV-1 Exosome Blockade Mitophagy Flux in Human Brain Microvascular Endothelial Cells. (A59/802.59).
- **Chen AL, Sakamuri SSVP, Sure VN, Evans WR, Zheng S, Katakam PV.** Hyperglycemia impairs mitochondrial respiration in human brain microvascular endothelial cells. (C288/529.1).
- **Dolan RM, Hodges NA, Phelps EA, Murfee WL.** An Ex Vivo Model for Investigating Transplanted Pancreatic Islet Vascular Integration. (C230/685.10).

## Continued...

- **Evans WR, Sakamuri SVP, Sperling JA, Sure VN, Busija DW, Mostany R, Katakam PVG.** Insulin-induced hypoglycemia directly affects the cerebral microvasculature in vivo. (C254/688.12) .
- **Hyndman KA, Speed JS, El- Dahr SS, Olson E, Pollock DM, Pollock JS.** Renal Medullary Histone Deacetylase Dependent Regulation of Fluid-Electrolyte Homeostasis during High Salt Feeding. (D87/866.5).
- **Hodges NA, Shang H, Guevara RR, Porvasnik SL, Schmidt C, Katz AJ, Murfee WL.** Stromal Vascular Fraction Vasculogenesis, Vessel Incorporation, and Integration with Intact Angiogenic Microvascular Networks in an Ex Vivo Cultured Tissue Model. (C193/517.5).
- **Kumar P.** Inhibition of DNA Methylation Regulates Guanylyl Cyclase/Natriuretic Peptide Receptor-A Gene Expression. (E67/621.8).
- **Kumar P, Pandya K, Pandey KN.** Regulation of Natriuretic Peptide Receptor-A Expression in Gene-targeted Mice via Modulation of Histone 3 Acetylation and Methylation Levels. (E696/595.3)
- **Lindsey S.** GPER Signaling in Vascular Disease. Presented Tuesday, April 9th, 2019.
- **Mahalingam P, Sakamuri SSVP, Sperling JA, Sure VN, Katakam PVG.** Arginase exhibits negative regulation of respiration in isolated murine cardiac mitochondria independent of mitochondrial nitric oxide synthase. (C313/531.20)
- **Majid DSA, Ekpo PE, Talwar S, Abdel-Mageed AB, Castillo A.** The protein expression of TNF- $\alpha$  receptor type-1 (TNFR1) is reduced by nitric oxide (NO) synthase inhibition in cultured renal proximal tubular (HK-2) cells. (D185/569.15)
- **Mauvais-Jarvis F.** Repurposing Estrogens for Diabetes Prevention in Women.
- **Molinas A.** Insulin-dependent Decrease of Excitatory Neurotransmission in Preautonomic PVN Neurons Is Reduced in Diet-induced Obese Mice. *Mead Johnson Research Award in Endocrinology.*
- **Molinas AJR, Desmoulins LD, Gao H, Zsombok A.** Insulin-dependent Decrease of Excitatory Neurotransmission in Preautonomic PVN Neurons Is Reduced in Diet-induced Obese Mice. (D56/555.1).
- **Mukerjee S, Gao H, Zsombok A, Lazartigues E.** ACE2 expression on inhibitory neurons controls neuronal excitability of the PVN. (C503/850.4).
- **Mummidi S, Das NA, Carpenter AJ, Yoshida T, Mostany R, Izadpanah R, Higashi Y, Sukhanov S, Delafontaine P, Siebenlist U, Randy SR, Bysani C.** RECK suppresses interleukin-17/TRAF3IP2- mediated MMP-13 activation and human aortic smooth muscle cell migration and proliferation. (E316/644.3)
- **Nakhoul NL, Hering-Smith K, Hamm LL, Abdulnour-Nakhoul S.** Renal Adaptive Changes in Response to Chronic Metabolic or Respiratory Acidosis: Regulation of Expression of Acid-base Transporters and Enzymes. (C505/544.19).



## Continued...

- **Ogola B.** Membrane-Initiated Estrogenic Signaling and Vascular Remodeling.
- **Periyasamy R, Das S, Pandey KN.** Genetic disruption of guanylyl cyclase/natriuretic peptide receptor-A upregulates renal (pro)renin receptor expression in Npr1 null mutant mice. (E593/576.3).
- **Richfield O, Cortez R, Navar LG.** Glomerular Capillary Hypertrophy in the Diabetic Rat Normalizes Wall Shear Stress: A Modeling Study. (E551/748.13).
- **Rutkai I, Evans WR, Bess N, Salter-Cid T, Cikic S, Katakam PV, Mostany R, Busija DW.** Longitudinal examination of mitochondrial dynamics in vivo in cerebral vascular endothelial cells. (C243/688.1).
- **Saito S, Zhuang Y, Lasky J, Liu Y.** Anti-Fibrotic Effects of HDAC8 Inhibitor in Bleomycin-Induced Pulmonary Fibrosis Mouse Model-Whole Transcriptome Analysis Using RNA-seq. (E268/474.12).
- **Sakamuri SSVP, Evans WR, Sure VN, Sperling JA, Zheng S, Katakam PV.** Acute Hypoglycemia Induces Mitochondrial Dysfunction in the Isolated Brain Microvessels: Possible Role of Endothelial Nitric Oxide Synthase. (C280/830.11).
- **Samivel R, Subramanian U, Oakes JM, Chen H, Zhao H, Gardner JD, Pandey KN.** Blockade of Cardiac Hypertrophy and Fibrosis by TGF-Beta 1 Receptor Antagonist in Npr1 Gene-Knockout Mice. (C303/531.10).
- **Snarski P, Danchuk S, Sukhanov S, Yoshida T, Higashi Y, Shai SY, Chandrasekar B, Delafontaine P.** Macrophage Insulin-Like Growth Factor 1 Downregulated Matrix Metalloproteinases and Promoted Features of a Stable Atherosclerotic Plaque. (23/522.6).
- **Sure VN, Sakamuri SSVP, Evans WR, Sperling JA, Peterson NR, Chen AL, Zheng S, Katakam PVG.** Effect of NOS inhibition on mitochondrial function in Brain Microvascular endothelial cells under normoxia and oxygen-glucose deprivation-reoxygenation (OGD-R). (C241/524.6).
- **Visniauskas B, Wong CT, Crabtree SL, Hong J, Reverte V, Rosales CB, Mejia-Gomez H, Mostany R, Prieto MC.** High plasma soluble prorenin receptor (sPRR) levels correlate with systolic blood pressure in aged male but not in female mice. (E633/758.7) - Oral Presentation: April 6, 2019 & Poster presentation: April 8, 2019.
- **Wilkinson MM, Lindsey SH.** Hormonal Regulation of Estrogen Receptors. (E597/577.2).
- **Xu J, Molinas A, Zsombok A, Lazartigues E.** ADAM17 on Glutamatergic Neurons Contributes to Peripheral Immune Activation through Increasing Sympathetic Activity. (D123/740.6).

## CORE FACILITIES & SERVICES

Tulane Hypertension and Renal Center of Excellence (THRCE) houses 2 research core facilities that were developed during COBRE phases I and II and are now maintained and supported by a COBRE Phase III grant awarded by the NIH/NIGMS. These core facilities are essential for the support of basic, clinical, and translational research in hypertension and renal biology and provide unique research opportunities for emerging leaders by establishing an enriched environment in which to develop investigators in both the clinical and basic hypertension research. The resources and services provided by the Center's COBRE Core facilities can be utilized by both COBRE and other investigators within Tulane and other institutions for hypertension, cardiovascular and renal research. The 2 research Core facilities are:

- **The Molecular, Imaging, and Analytical Core:** Serves as the resource for instruments and equipment needed to perform advanced molecular biology, semi-quantitative immuno-histochemistry and bio-analytical experiments.
- **Mouse Phenotyping Research Core (MPRC):** Contains resources to support high-tech data collection capabilities that are unique in the State of Louisiana and essential to research requiring the utilization of an array of methodologies to perform measurements of cardiovascular, blood pressure and renal function in mice.

Other activities of the Center include the sponsorship of local and regional meetings on hypertension and public education programs to increase awareness of the dangers of hypertension.

### T.H.R.C.E.

*Tulane Hypertension & Renal Center of Excellence (THRCE) will appreciate any support for the continual development of the center and its CORE Facilities, the publication of the THRCE newsletters, and the support of the THRCE bi-weekly seminars series. All donations to the center and its activities are considered tax-deductible.*

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*The directors invite faculty members interested in participating in the activities of the T.H.R.C.E. to submit your name, phone number, fax number, and e-mail address to the Senior Administrative Program Coordinator, Nina R. Majid, by e-mail at [htnctr@tulane.edu](mailto:htnctr@tulane.edu) or regular mail to the address provided. Also, please forward all information (awards, publications, presentations and other news items) to this email address for inclusion in the next newsletter.*

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