

THRCE.

TULANE HYPERTENSION AND RENAL CENTER OF EXCELLENCE

Spring 2016

Volume 15, Issue 1

Tulane COBRE 2016 Executive Advisory Committee (EAC) Meeting

The Tulane COBRE Executive Advisory Committee (EAC) met on March 30th and 31st, 2016, to review progress of COBRE sponsored research at the Tulane Hypertension and Renal Center of Excellence. EAC members who attended the 2 day events were:

- **Mohan K. Raizada, PhD**, Distinguished Professor of Physiology & Functional Genomics, at the University of Florida, Gainesville, Florida.
- **Maria Luisa S. Sequeira-Lopez, MD**, Harrison Distinguished Associate Professor in Pediatrics, at the University of Virginia, School of Medicine, in Charlottesville, Virginia.
- **R. Ariel Gomez, MD**, Professor of Pediatrics, section of Nephrology, at the University of Virginia, School of Medicine, in Charlottesville, Virginia.

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The March EAC site visit proved very productive, producing many helpful suggestions for the junior faculty investigators supported by the COBRE. The Committee members listened to presentations by junior faculty and provided recommendations for enhancing their projects. The EAC members evaluated the investigators' grant applications and offered constructive suggestions to increase the probability for funding. Throughout the year, The EAC members provide their valuable services by reviewing the research plans of new junior faculty investigators.

INVESTIGATOR PRESENTATION AT THE EAC MEETING

At the 2016 COBRE EAC, along with CORE facility presentations by CORE directors, the following COBRE pilot project investigators presented their research.

- **M-Altaf Khan, PhD:** Assistant Professor of Medicine presented, "Pathophysiology of contrast-induced nephropathy in diabetic and hypertensive mice."
- **Hongbing Liu, PhD.** Assistant Professor Pediatrics & Biochemistry, presented "Histone Deacetylases 1 and 2 Balance Nephron Progenitor Renewal and Differentiation during Kidney Organogenesis."
- **Prerna Kumar, PhD,** Instructor, Department of Physiology presented, "Retinoic Acid- and histone deacetylase inhibitor-mediated Guanylyl Cyclase/ Natriuretic Peptide Receptor A gene Regulation."
- **Renfang Song, PhD:** Postdoctoral Research Fellow, Department of Pediatrics, presented "Prorenin receptor (PRR) in ureteric bud branching morphogenesis."
- **Dewan S. A. Majid, MD, PhD,** Professor of Physiology, presented "Roles of TNF- α receptors in high salt induced exaggerated hypertensive and renal injury responses to Angiotensin II."
- **Zubaida Saifudeen, PhD,** Associate Professor of Pediatrics, Section of Nephrology presented "Energy Metabolism Directs Cell Fate of Nephron Progenitors."



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To commemorate 2016 WKD, THRCE and the Nephrology Division of the Department of Medicine conducted a health screening event in the Lobby of the Tulane Hospital. The goal was to screen participants for blood pressure and the risk for developing kidney disease. In addition, THRCE also hosted a special WKD Seminar by Dr. Henry A. Punzi, at the Punzi Medical Center & Trinity Hypertension Research Institute, Carrollton, Texas. World Kidney Day 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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Grants, Honors & Recognition Awarded to THRC Affiliated Investigators

L. Gabriel Navar, PhD:

- Drs. Navar and Mitchell were awarded an American Heart Association GSA Summer Health Sciences Student Fellowship Award which will provide support for medical student research for 2 years.

Jing Chen, MD:

- Former COBRE Junior faculty Investigator and the Co-Director of the COBRE Clinical Core facility, received the Chairman's Award for Excellence in Research.

Samir El-Dahr, MD:

- Elected to the Board of Directors, Association of Medical School Pediatric Department Chairs (AMSPDC).

Kathleen Hering-Smith, PhD:

- Elected to the Nominating Committee of the SSCI in February, 2016.

M-Altat Khan, PhD:

- Junior Faculty Research Travel Award: American Federation for Medical Research and Southern Society for Clinical Investigation, February 18 – 20, 2016, New Orleans, LA.
- Judged Poster Sessions: Tulane Health Sciences Research Days, April 6 – 7, 2016, Tulane University, School of Medicine, New Orleans, LA.

P Kumar, PhD:

- Recipient of the 2016 SAFMR/SSCI Junior Faculty Research Travel Award.

Sarah Lindsey, PhD:

- Awarded Tulane Program for Bridge Support for her study, "Diverse Estrogens in Female Cardiovascular Health."
- Appointed to the APS Cardiovascular Section Nominating Committee.

Hongbing Liu, PhD:

- Abstract submitted to the Southern Society of Pediatric Research was selected as a winner of the 2016 SSPR Young Faculty Travel Award Recipient.

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Kenneth D., PhD:

- Received the Owl Club Award for Best T1 Professor.

Kayoko Miyada, PhD:

- Recipient of the 2016 Tinsley Harrison Award for her article entitled, "Renoprotective effects of direct renin inhibition in glomerulonephritis" which was published in October 2014 issue of the American Journal of the Medical Sciences, (AJMS). This award is given by the Editors for the best original manuscript published in the AJMS between October 2014 and September 2015.

Minolfa Prieto, PhD:

- Recipient of the 2016 Young Investigator Award of the Renal Section of the American Physiology Society. Also co-chaired the Young Investigator Symposium, "Novel Signaling & Transport mechanisms in the collecting duct."
- Elected a member of the Steering Committee of the Gordon Research Conference and will participate in the organization of the meeting for the 2019 Angiotensin Gordon Research Conference.

T. Cooper Woods, PhD:

- Awarded a 4-year, NIH-NIDDK/NHLBI RO1 grant for his study, "Role of VSMC-Derived Exosomes in the Cardiovascular Complications of Diabetes."
- Appointed to the VA Office of Research & Development's Cardiology-B (CARB; vascular disease) study section panel.
- Selected a Finalist for the 2016 Diabetes Research Leadership Award.
- Nominated for the Owl Club T1 Best PBL Facilitator Award.

Graduate Students & Post-doctoral fellows

Post-doctoral fellows:

- **Venkateswara Reddy Gogulamadi, PhD** (Mentor: Dr. MC Prieto), received 2016 Trainee Research Travel Award.
- **Katherine Mills, PhD** (Mentor: Dr. J He) was awarded the 2016 Tulane Health Sciences Research Days Award for Excellence in Research and Presentation by a Postdoctoral Fellow.
- **Virginia Reverte Ribo, PhD** (mentor: Dr. Prieto):
 - ◊ Received the John F. Perkins, Jr. Memorial Award for International Physiologists from APS which includes a cash award of \$5,000.
 - ◊ Received 2016 SAFMR/SSCI Nephrology Young Investigator Scholar Award.
- **Yashna Singh, MD** (Mentor: Dr. Z. Saifudeen) received 2016 Student Research Travel Award.

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- **Rengfang Song, PhD** (Mentor: Dr. IV Yosypiv) received the 2016 SSPR/APA Trainee Travel Award.
- **Federico J. Teran, MD** (Mentor: Dr. KS Hering-Smith) was the recipient of the 2016 SAFMR/SSCI Junior Faculty Research Travel Award.
- **Margaret Zimmerman, PhD** (Mentor: Dr. S Lindsey) was awarded the AHA Postdoctoral Fellowship grant (15POST2517000) for her study, "Renoprotective Effects of the G Protein- Coupled Estrogen Receptor."

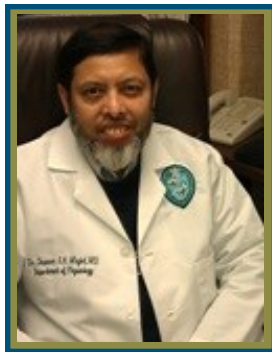
Graduate & Medical Students:

- **Anna Abrams** (Mentor: Dr. Z. Saifudeen) received 2016 SAFMR/SSCI Student Research Travel Award.
- **Michael Cypress** (Mentor: Dr. Sato) received 2016 SAFMR/SSCI Student Research Travel Award.
- **Mohammad Arbab Feroz** (Mentor: Dr. MC Prieto) received 2016 SAFMR/SSCI Student Research Travel Award.
- **Joseph M. Garagliano** (Mentor: Drs. Sato/Navar) was selected as the third place winner for the 2016 SAFMR/SSCI Young Investigator Award for his abstract titled "Advanced Glycation End Products Stimulate Angiotensinogen Expression in Renal Proximal Tubule Cells."
- **Edgington-Giordano** (Mentor: Dr. Z Saifudeen) received:
 - ◊ Michael A. Gerber Prize for Research in Molecular and Cellular Biology sponsored by the Dr. and Mrs. Michael A. Gerber Memorial Fund at the Health Sciences Research Days.
 - ◊ 2016 SAFMR/SSCI Student Research Travel Award.
- **Sabrina Gonzalez** (Mentor: Dr. M. Prieto) received APS Minority Travel Fellowship Award to attend EB 2016 in San Diego, CA.
- **Harrison Lindley** (Mentor: Dr. Z. Saifudeen) received 2016 SAFMR/SSCI Student Research Travel Award.
- **Eamonn Mehaffey** (Mentor: Dr. DSA Majid) Received:
 - ◊ 2016 SAFMR/SSCI Student Research Travel Award.
 - ◊ The Excellence in Professional Student (MD or DO) Research Travel Award to attend EB 2016 in San Diego, CA.
- **Patrick Stuchlik** (Mentor: Dr. L. Bazzano) received 2016 SAFMR/SSCI Student Research Travel Award.

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THRCE sponsor Local, National & International Speakers

THRCE sponsors bi-weekly seminars by scheduling local as well as nationally and internationally recognized investigators and clinicians in the field of hypertension research, treatment and education. From January through April, 2016, the following speakers presented THRCE seminars:



- **Dewan S.A. Majid, MD, PhD, FAHA, FASN**
*Professor, Department of Physiology,
Director, THRCE Mouse Phenotype Core Facility,
Tulane University School of Medicine, New Orleans, LA.*

On January 28th 2016 Dr. Dewan Majid presented, "Differential roles for TNF- α receptors in salt sensitive hypertension."

Summary: While it is often stated as fact, the relationship between dietary salt intake and the development of high blood pressure (hypertension) is complex and has been the subject of continuing debate for decades. Despite abundant epidemiological, experimental and interventional observations demonstrating an association between salt and blood pressure, it has still not been established how mechanistically high salt (HS) intake can be linked to an increased blood pressure. This skepticism is due to the heterogeneity in the blood pressure responses to alterations in salt intake in humans. Inability to explain why high salt intake raises blood pressure in some individuals (salt-sensitive!) but not in others (salt-resistant!) has hampered the development of a comprehensive theory regarding the causes of high blood pressure in most individuals. Most animal studies in the laboratory confirm that HS intake alone induces very minimal or no changes in blood pressure, but exaggerates the hypertension associated with conditions such as the deficiency in nitric oxide (NO) production and elevated angiotensin II (AngII) level. In his talk, Dr. Majid analyzed results from various experimental studies from his laboratory as well as

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others that have been conducted to identify the patho-physiological abnormalities responsible for the heterogeneity of blood pressure responses to HS intake. Collectively, these results demonstrate that the salt sensitivity of blood pressure is particularly linked to dysregulation of intrarenal renin-angiotensin system, oxidative stress and the exacerbation of pro-inflammatory cytokines, particularly the tumor necrosis factor-alpha (TNF- α). Abnormalities in the regulation of these factors modulate kidney function to enhance salt retention in the body that leads to the development of salt-sensitive hypertension. Dr. Majid emphasized the point that salt-sensitivity of blood pressure does not depend on high salt intake alone, per se, but on the co-existing presence of other factors (such as NO deficiency and elevated AngII level) modifying the physiological responses of the kidneys to HS intake. The current experimental data from Dr. Majid's laboratory strongly suggest a differential role for the two TNF- α receptors (type 1 & type 2) in hypertension and renal injury induced by chronic HS intake and AngII treatment in mice. The results from these experiments show that: 1) Increases in TNF- α receptors type 1 (TNFR1) expressions (increase in TNFR1 activity!) in the kidney due to chronic HS intake alone facilitate salt excretion resulting minimal change in blood pressure in response to HS intake, 2) Such HS induced increases in TNFR1 expression/activity was compromised in elevated AngII condition causing more salt retention and thus, induces an exaggerated hypertensive response and 3) HS induced increases in TNF- α receptor type 2 (TNFR2) expression/activity in elevated AngII condition facilitates an enhancement in renal injury response. In summary, these results strongly suggest a differential role for TNF- α receptors in the development of salt-sensitive hypertension.



- **M-Altat Khan, PhD, MSCR**

*Assistant Professor, Department of Medicine,
Section of Nephrology & Hypertension,
Tulane University School of Medicine, New Orleans, LA.*

Dr. Altat Khan presented, "Role of Innate Immunity in the Pathophysiology of Contrast-Induced Nephropathy in Hypertensive and Diabetic Mice." on February 11, 2016.

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Summary: Radio-contrast dyes are frequently used for imaging in diagnostic procedures of cardiac and renal patients. Every year, almost 8 million patients with acute chest pain are admitted to emergency departments for evaluation using contrast imaging diagnosis at an estimated cost of more than \$10 billion. Importantly, contrast dye can cause significant renal injury, known as contrast-induced nephropathy (CIN). Thus, patients with diabetes and cardiac problems appear to be at the highest risk for developing CIN. But an effective preventive strategy for CIN has not been developed yet due to incomplete understanding of the disease mechanism, lack of a reproducible animal model that mimics human CIN, and unidentified CIN-specific drug targets. In this study, Dr. Khan used hypertensive and diabetic aged mice to investigate the role of innate immunity and oxidative stress during CIN development. Although several pharmacologic approaches have been tested to decrease the risk of CIN in patients with preexisting renal disease, few have shown any consistent benefit. This study will contribute to our understanding the pathogenesis of CIN. Our long-term goal is to develop a reliable preventive strategy against CIN and move forward newly identified therapeutics into clinical studies. The expected outcome will have an important impact on the prevention of CIN especially in patients with diabetes and cardiovascular disorders.

**Special THRCE Seminar Jointly Sponsored by THRCE,
Dept. of Endocrinology & Novo Nordisk, Inc.**



Matthias von Herrath, MD

*Vice President & Head, Diabetes R&D Center, Novo Nordisk, Inc.,
Professor/Director, Center for Type 1 Diabetes Research,
La Jolla Institute for Allergy & Immunology,
Adjunct Professor, Dept. of Pediatrics & Medicine,
University of California, San Diego, School of Medicine,
San Diego, La Jolla, CA.*

On February 25th 2016 Dr. Matthias von Herrath presented, “New insights into the pathology of type 1 and 2 diabetes.”

Summary: Since about 7 years we have been studying the pathology of the human pancreas in type 1 diabetes in conjunction with the national pancreatic organ donor network (nPoD). Access to these well-preserved pancreata has offered us novel and unprecedented insights into this disease, often shifting established paradigms. For

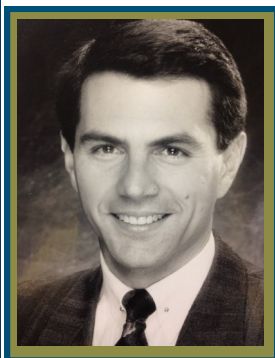
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example, we find islet inflammation (insulinitis) only rarely in multiple antibody positive individuals prior to diagnosis, allowing for the hypothesis, that destruction of beta cells might occur in a relapsing/remitting fashion. Furthermore, the amount of insulin positive cells appears not reduced after already autoantibodies have developed, which might indicate that beta cells can regenerate to a certain extent or That initial autoimmunity is not very destructive, at least in adults. Then, beta cell function is relatively rapidly lost before and around the time of diagnosis, which could require an external trigger such as a virus or recognition of a new antigen from beta cells, for example modified . The immunopathological hallmarks of type 1 islets are upregulation of MHC class I and infiltration by CD8 cells, some of which we have shown are autoreactive. Remarkably, signs of insulinitis and remaining insulin positive beta cells are often found still many years post diagnosis sequestered in a lobular fashion.

Other novel features are that the exocrine pancreas often exhibits signs of cellular infiltration, mainly seen in longer standing cases of type 1 and 2 diabetes. Sometimes, cellular autoreactivity to can also be detected in type 2 diabetes.

Therapeutically, these observations imply that there will be most beta cells still intact, if an intervention were initiated prior to diagnosis (secondary prevention). Furthermore, it will maybe be useful to stabilize and preserve remaining beta cell function after onset. Last, we need to make an effort to understand and define inflammatory and immune reactions in type 2 patients, since such individuals might profit from suitable interventions targeting the immune system.

Special THRCE Seminar in honor of World Kidney Day (WKD)



- **Henry A. Punzi, MD, FCP, FASH**
*Internist, Punzi Medical Center & Trinity
Hypertension Research Institute,
Carrollton, TX.*

On March 10th 2016, to commemorate 2016 WKD, a special THRCE WKD Seminar titled, "Hypertension: How low should we go?" was presented by Dr. Henry A. Punzi.

Special THRCE COBRE EAC Seminar



- **Maria Luisa S. Sequeira-Lopez, MD, FAHA**

Harrison Distinguished

Associate Professor in Pediatrics,

University of Virginia, School of Medicine,

Charlottesville, Virginia.

EAC member, Dr. Maria Luisa Sequeira-Lopez presented “Development of the kidney vasculature” on Wednesday, March 30th, 2016.

Summary: An overall goal of Dr. Maria Luisa S. Sequeira Lopez research is to define the precise cellular origin and mechanisms whereby renal precursor cells lead to the successful formation of the renal vasculature, without which there is no functioning kidney. Dr. Sequeira Lopez’s interest in vascular development led her to identify the earliest renal vascular progenitors and to demonstrate that formation of blood vessels occurs concomitantly with blood generation (hemo-vasculogenesis) throughout the embryo before and during organogenesis (including in the kidney).

Dr. Sequeira Lopez presented data showing that the early embryonic kidney possesses 2 non-overlapping precursors for the formation of the kidney vasculature 1) a progenitor that expresses the winged-forkhead transcription factor 1 (Foxd1+ progenitor) that differentiates into all the mural cells (renin cells, smooth muscle cells, perivascular fibroblasts, and pericytes) and 2) a progenitor marked by the expression of helix-loop-helix transcription factor stem cell leukemia (SCL/Tal1) that gives rise not only to endothelial cells but also to blood precursors with multipotential colony-forming capacity . Furthermore, her studies demonstrated that the appropriate morphogenesis of the kidney vasculature, including glomerular capillary development, arterial mural cell coating, and lymphatic vessel development, required sphingosine 1-phosphate (S1P) signaling via the G protein-coupled S1P receptor 1 in these progenitors.

Finally, Dr. Sequeira Lopez shared recent unpublished data on the identification of hemovascular precursors in the developing heart and the essential role that the S1P receptor 1 plays for normal cardiac development.

intrinsic ability of tissues to manufacture their own blood cells and vessels has the potential to advance the fields of organogenesis, regenerative medicine and tissue engineering.

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Special THRCE COBRE EAC Seminar



- **Mohan K. Raizada, PhD**
*Distinguished Professor,
Department of Physiology & Functional Genomics,
University of Florida, Gainesville, Florida.*

EAC member, Dr. Mohan K. Raizada presented “Brain-bone marrow communication: Implications for hypertension therapeutics” on Thursday, March 31st, 2016.

Summary: Hypertension (HTN) is the most prevalent modifiable risk for cardiovascular disease (CVD) and disorders directly influencing CVD (i.e. obesity, diabetes, chronic kidney disease, obstructive sleep apnea, etc.). Despite aggressive campaign for lifestyle changes and advances in drug therapy, HTN remains an immense health, emotional, and economic challenge. This is due, in part, to the fact that ~50% of HTN patients’ blood pressure remains uncontrolled and ~20% of HTN patients are resistant to or require >3 antihypertensive drugs. This resistant HTN (R-HTN) is primarily neurogenic in origin and is characterized by dysfunctional autonomic nervous system with heightened inflammatory and neuroinflammatory profiles. Unfortunately, few treatment options are available for such patients at the present time. A novel hypothesis was proposed for the development and establishment of R-HTN, validation of which could offer an innovative strategy for the treatment of this group of patients.

Dr. Raizada proposed that a brain-bone marrow (BM) communication is critical in the maintenance of vascular repair and inflammatory status of the cardiovascular system. Autonomic-mediated increase in the sympathetic nerve activity to the BM (sSNA) impairs this balance resulting in an increased production of proinflammatory progenitor cells and decrease in angiogenic progenitor cells. This increases peripheral inflammatory status and compromises vascular repair capabilities, hallmarks of HTN. Furthermore, some of the proinflammatory progenitor cells extravasate into the autonomic brain regions, differentiate into activated microglia, and contribute to neuroinflammation. Neuroinflammation-induced release of cytokines, chemokines, ROS, etc. further elevates autonomic neuronal activity. This perpetual cycle of increased sSNA, proinflammatory progenitors, and neuroinflammation are critical events in the establishment of R-HTN. Evidence will be presented in support of this hypothesis. In addition, role of gut microbiota in HTN will be discussed. Finally, the concept that minocycline-based anti-inflammatory molecule could be a potential target for drug development for R-HTN will be presented.



- **Andrei V. Derbenev, PhD**

Associate Professor,

Department Physiology,

Tulane University School of Medicine, New Orleans, LA.

On April 21st 2016 Dr. Andrei V. Derbenev presented, "The role of sodium-activated potassium channels in presympathetic RVLM neurons."

Summary: The rostral ventrolateral medulla (RVLM) is an important integrate center in the brain for central control of the sympathetic nervous system (SNS) activity, and therefore is greatly involved in the regulation of arterial blood pressure and cardiovascular function. Previous numerous in vivo studies demonstrated that RVLM regulates the sympathetic outflow largely by tonic GABAA current, which was revealed by the microinjection of bicuculline into this area. Our previous data showed that the excitation of the sympathetic premotor neurons in RVLM are under the control of a large tonic GABAA current which is sensitive to bicuculline. In order to identify the subunits or channels mediating the tonic current, in this study we used whole-cell patch-clamp recordings from presympathetic kidney-related RVLM neurons identified with retrograde viral labeling and tested the pharmacological characteristics of the large tonic current in RVLM neurons. First, we tested zolpidem, a benzodiazepine binding site agonist for GABAA receptors containing $\alpha 1$ or $\alpha 2$ and $\alpha 3$ (less affinity) subunits, on tonic current recording, but zolpidem $1\mu\text{M}$ failed to shift the baseline current. Second, to test the contribution of δ subunit containing GABAA receptors to the tonic current, we used THIP (4,5,6,7- tetrahydroisoxazolo(5,4-c)pyridin-3-ol) which is δ subunit containing GABAA receptors agonist. THIP $10\mu\text{M}$ did not change the tonic current. Then we tested the broad-spectrum potassium channel blockers 4-aminopyridine (4-AP) and quinidine. 4-AP and quinidine induced a significant inward resting baseline current, corresponding a $32.5\pm 3.3\text{pA}$ change and $78.5\pm 8.5\text{pA}$ change respectively. In summary, our data demonstrate that the big tonic current sensitive to bicuculline in RVLM is driven by potassium channel which may regulate the sympathetic outflow and suggest a potential control mechanism of SNS activity.

Recent Publications

Publications

- **Amdur RL, Mukherjee M, Go A, Barrows IR, Ramezani A, Shoji J, Reilly MP, Gnanaraj J, Deo R, Roas S, Keane M, Master S, Teal V, Soliman EZ, Yang P, Feldman H, Kusek JW, Tracy CM, Raj DS; CRIC Study Investigators.** Interleukin-6 Is a Risk Factor for Atrial Fibrillation in Chronic Kidney Disease: Findings from the CRIC Study. *PLoS One*. 2016 Feb 3;11(2):e0148189. PMID: 26840403; PMCID: PMC4739587.
- **Anwar IJ, Miyata K, Zsombok A.** Brain stem as a target site for the metabolic side effects of olanzapine. *J Neurophysiol*. 2016 Mar 1;115(3):1389-98. doi: 10.1152/jn.00387.2015. Epub 2015 Dec 30. PMID: 26719086; PMCID: PMC4808124.
- **Bansal N, Xie D, Tao K, Chen J, Deo R, Horwitz E, Hsu CY, Kallem RK, Keane MG, Lora CM, Raj D, Soliman EZ, Strauss L, Wolf M, Go AS; CRIC Study.** Atrial Fibrillation and Risk of ESRD in Adults with CKD. *Clin J Am Soc Nephrol*. 2016 Apr 12. [Epub ahead of print] PMID: 27073197.
- **Caner T, Abdalnour-Nakhoul S, Brown K, Islam MT, Hamm LL, Nakhoul NL.** Mechanisms of Ammonia and Ammonium Transport by Rhesus Associated Glycoproteins. *Am J Physiol Cell Physiol*. 2015 Dec 1;309(11):C747-58. PMID: 26354748.
- **Chang TI, Evans G, Cheung AK, Cushman WC, Diamond MJ, Dwyer JP, Huan Y, Kitzman D, Kostis JB, Oparil S, Rastogi A, Roumie CL, Sahay R, Stafford RS, Taylor AA, Wright JT Jr, Chertow GM; SPRINT Study Research Group.** Patterns and Correlates of Baseline Thiazide-Type Diuretic Prescription in the Systolic Blood Pressure Intervention Trial. *Hypertension*. 2016 Mar;67(3):550-5. PMID: 26865200; PMCID: PMC4755350.
- **Chen J, Mohler ER, Xie D, Shlipak M, Townsend RR, Appel LJ, Ojo A, Schreiber M, Nessel L, Zhang X, Raj D, Strauss L, Lora CM, Rahman M, Hamm LL, He J; CRIC Study Investigators.** Traditional and non-traditional risk factors for incident peripheral arterial disease among patients with chronic kidney disease. *Nephrol Dial Transplant*. 2015 Dec 18. [Epub ahead of print]. PMID: 26682964.
- **Derbenev AV, Zsombok A.** Potential therapeutic value of TRPV1 and TRPA1 in diabetes mellitus and obesity. *Semin Immunopathol*. 2016 May;38(3):397-406. PMID: 26403087; PMCID: PMC4808497.
- **Deo R, Shou H, Soliman EZ, Yang W, Arkin JM, Zhang X, Townsend RR, Go AS, Shlipak MG, Feldman HI.** Electrocardiographic Measures and Prediction of Cardiovascular and Noncardiovascular Death in CKD. *J Am Soc Nephrol*. 2016 Feb;27(2):559-69. PMID:26160896; PMCID: PMC4731112.
- **Derbenev AV, Zsombok A.** Potential therapeutic value of TRPV1 and TRPA1 in diabetes mellitus and obesity. *Semin Immunopathol*. 2016 May;38(3):397-406. PMID: 26403087; PMCID: PMC4808497.
- **Foster MC, Coresh J, Hsu CY, Xie D, Levey AS, Nelson RG, Eckfeldt JH, Vasan RS, Kimmel PL, Schelling J, Simonson M, Sondheimer JH, Anderson AH, Akkina S, Feldman HI, Kusek JW, Ojo AO, Inker LA; CKD Biomarker Consortium and the CRIC Study Investigators.** Serum β -Trace Protein and $\beta(2)$ -

- Microglobulin as Predictors of ESRD, Mortality, and Cardiovascular Disease in Adults With CKD in the Chronic Renal Insufficiency Cohort (CRIC) Study. *Am J Kidney Dis.* 2016 Mar 3. [Epub ahead of print] PMID: 26948990.
- **Gonzalez AA, Cifuentes-Araneda F, Ibaceta-Gonzalez C, Gonzalez-Vergara A, Zamora L, Henriquez R, Rosales CB, L. Gabriel Navar, Prieto MC.** Vasopressin/V2 receptor stimulates renin synthesis in the collecting duct. *Am J Physiol Renal Physiol.* 2016 Feb 15;310(4):F284-93. PMID: 26608789.
 - **He J, Mills KT, Appel LJ, Yang W, Chen J, Lee BT, Rosas SE, Porter A, Makos G, Weir MR, Hamm LL, Kusek JW; Chronic Renal Insufficiency Cohort Study Investigators.** Urinary Sodium and Potassium Excretion and CKD Progression. *J Am Soc Nephrol.* 2016 Apr;27(4):1202-12. PMID: 26382905; PMCID: PMC4814179.
 - **Hsu RK, Chai B, Roy JA, Anderson AH, Bansal N, Feldman HI, Go AS, He J, Horwitz EJ, Kusek JW, Lash JP, Ojo A, Sondheimer JH, Townsend RR, Zhan M, Hsu CY; CRIC Study Investigators.** Abrupt Decline in Kidney Function before Initiating Hemodialysis and All-Cause Mortality: The Chronic Renal Insufficiency Cohort (CRIC) Study. *Am J Kidney Dis.* 2016 Jan 29. PMID: 26830447.
 - **Itani HA, Xiao L, Saleh MA, Wu J, Pilkinton MA, Dale BL, Barbaro NR, Foss JD, Kirabo A, Montaniel KR, Norlander AE, Chen W, Sato R, Navar LG, Mallal SA, Madhur MS, Bernstein KE, Harrison DG.** Cd70 Exacerbates Blood Pressure Elevation and Renal Damage in Response to Repeated Hypertensive Stimuli." *Circ Res* 118, no. 8 (2016): 1233-43. *Circ Res.* 2016 Apr 15;118(8):1233-43. PMID: 26988069; PMCID: PMC4833561.
 - **Kopkan L, Husková Z, Jířhová Š, Červenková L, Červenka L, Saifudeen Z, El-Dahr SS.** Conditional knockout of collecting duct bradykinin B2 receptors exacerbates angiotensin II-induced hypertension during high salt intake. *Clin Exp Hypertens.* 2016;38(1):1-9. PubMed PMID: 26151827; NIHMSID: 769012
 - **Kurella Tamura M, Pajewski NM, Bryan RN, Weiner DE, Diamond M, Van Buren P, Taylor A, Beddhu S, Rosendorff C, Jahanian H, Zaharchuk G; SPRINT Study Research Group.** Chronic kidney disease, cerebral blood flow, and white matter volume in hypertensive adults. *Neurology.* 2016 Mar 29;86(13):1208-16. PMID: 26920359; PMCID: PMC4818564.
 - **Kurella Tamura M, Vittinghoff E, Yang J, Go AS, Seliger SL, Kusek JW, Lash J, Cohen DL, Simon J, Batuman V, Ordonez J, Makos G, Yaffe K.** Anemia and risk for cognitive decline in chronic kidney disease. *BMC Nephrol.* 2016 Jan 28;17:13. PMID: 26823182; PMCID: PMC4730636.
 - **Kurella Tamura M, Yaffe K, Hsu CY, Yang J, Sozio S, Fischer M, Chen J, Ojo A, DeLuca J, Xie D, Vittinghoff E, Go AS; Chronic Renal Insufficiency Cohort (CRIC) Study Investigators.** Cognitive Impairment and Progression of CKD. *Am J Kidney Dis.* 2016 Mar 10. [Epub ahead of print] PMID: 26972681.
 - **Liu L, Kashyap S, Murphy B, Hutson DD, Budish RA, Trimmer EH, Zimmerman MA, Trask AJ, Miller KS, Chappell MC, Lindsey SH.** GPER activation ameliorates aortic remodeling induced by salt-sensitive hypertension. *Am J Physiol Heart Circ Physiol.* 2016 Apr 15;310(8):H953-61. doi: 10.1152/ajpheart.00631.2015. Epub 2016 Feb 12. PMID: 26873963; PMCID: PMC4867339.

- **Maiti AK, Islam MT, Satou R, Majid DS.** Enhancement in cellular Na⁺K⁺ATPase activity by low doses of peroxynitrite in mouse renal tissue and in cultured HK2 cells. *Physiol Rep.* 2016 Apr;4(7). pii: e12766. PMID: 27081160; PMCID: PMC4831332.
- **Mani I, Garg R, Pandey KN.** Role of FQQI motif in the internalization, trafficking, and signaling of guanylyl-cyclase/natriuretic peptide receptor-A in cultured murine mesangial cells. *Am J Physiol Renal Physiol.* 2016 Jan 1;310(1):F68-84. doi: 10.1152/ajprenal.00205.2015. Epub 2015 Sep 16. PMID: 26377794; PMCID: PMC4675805.
- **Navaneethan SD, Roy J, Tao K, Brecklin CS, Chen J, Deo R, Flack JM, Ojo AO, Plappert TJ, Raj DS, Saydain G, Sondheimer JH, Sood R, Steigerwalt SP, Townsend RR, Dweik RA, Rahman M; Chronic Renal Insufficiency Cohort Investigators.** Prevalence, Predictors, and Outcomes of Pulmonary Hypertension in CKD. *J Am Soc Nephrol.* 2016 Mar;27(3):877-86. PMID: 26386072; PMCID: PMC4769189.
- **Navar LG.** 2016 Young Investigator Award of the American Physiological Society Renal Section. *Am J Physiol Renal Physiol.* 310: F805-F806, 2016 Mar. [Epub ahead of print] PMID: 26984952.
- **O'Leary R, Penrose H, Miyata K, Satou R.** Macrophage-derived IL-6 contributes to ANG II-mediated angiotensinogen stimulation in renal proximal tubular cells. *Am J Physiol Renal Physiol.* 2016 May 15;310(10):F1000-7. doi: 10.1152/ajprenal.00482.2015. Epub 2016 Mar 23. PMID: 27009340. [PubMed - in process]
- **Osis G, Handlogten ME, Lee HW, Hering-Smith KS, Huang W, Romero MF, Verlander JW, Weiner ID.** Effect of NBCe1 deletion on renal citrate and 2-oxoglutarate handling. *Physiol Rep.* 2016 Apr;4(8). PMID: 27117802; PMCID: PMC4848728.
- **Pajewski NM, Williamson JD, Applegate WB, Berlowitz DR, Bolin LP, Chertow GM, Krousel-Wood MA, Lopez-Barrera N, Powell JR, Roumie CL, Still C, Sink KM, Tang R, Wright CB, Supiano MA; SPRINT Study Research Group.** Characterizing Frailty Status in the Systolic Blood Pressure Intervention Trial. *J Gerontol A Biol Sci Med Sci.* 2016 May;71(5):649-55. PMID:26755682.
- **Pingili, AK, Thirunavukkarasu S, Kara M, Brand DD, Katsurada A, Majid DSA, Navar LG, Gonzalez FJ, Malik KU.** 6 β -Hydroxytestosterone, a Cytochrome P450 1B1-Testosterone-Metabolite, Mediates Angiotensin II-Induced Renal Dysfunction in Male Mice. *Hypertension.* 2016 May;67(5):916-26. PMID: 26928804; PMCID: PMC4833582.
- **Gonzalez AA, Cifuentes-Araneda F, Ibaceta-Gonzalez C, Gonzalez-Vergara A, Zamora L, Henriquez R, Rosales CB, L. Gabriel Navar, Prieto MC.** Vasopressin/V2 receptor stimulates renin synthesis in the collecting duct. *Am J Physiol Renal Physiol.* 2016 Feb 15;310(4):F284-93. PMID: 26608789.
- **Ricardo AC, Roy JA, Tao K, Alper A, Chen J, Drawz PE, Fink JC, Hsu CY, Kusek JW, Ojo A, Schreiber M, Fischer MJ; CRIC Study Investigators.** Influence of Nephrologist Care on Management and Outcomes in Adults with Chronic Kidney Disease. *J Gen Intern Med.* 2016 Jan;31(1):22-9. PMID: 26138006; PMCID: PMC4700009.

- **Satou R, Navar, LG.** Kidney angiotensinogen as a cardinal risk factor in hypertension. *Atlas of Science. Lay Summary.* Epub link: <http://atlasofscience.org/kidney-angiotensinogen-as-a-cardinal-risk-factor-in-hypertension/>. Jan. 12, 2016 (2016): 1-2.
- **Sen A, Kumar P, Garg R, Lindsey SH, Katakam PV, Bloodworth M, Pandey KN.** Transforming growth factor β 1 antagonizes the transcription, expression and vascular signaling of guanylyl cyclase/natriuretic peptide receptor A - role of δ EF1. *FEBS J.* 2016 May;283(9):1767-81. doi: 10.1111/febs.13701. Epub 2016 Apr 5. PMID: 26934489 [PubMed - in process]
- **Song R, Preston G, Kidd L, Bushnell D, Sims-Lucas S, Bates CM, Yosypiv IV.** Prorenin receptor is critical for nephron progenitors. *Dev Biol.* 2016 Jan 15;409(2):382-91. PMID: 26658320; PMCID: PMC4724493.
- **SPRINT Research Group, Wright JT Jr, Williamson JD, Whelton PK, Snyder JK, Sink KM, Rocco MV, Reboussin DM, Rahman M, Oparil S, Lewis CE, Kimmel PL, Johnson KC, Goff DC Jr, Fine LJ, Cutler JA, Cushman WC, Cheung AK, Ambrosius WT.** A Randomized Trial of Intensive versus Standard Blood-Pressure Control. *N Engl J Med.* 2015 Nov 26;373(22):2103-16. PMID: 26551272; PMCID: PMC4689591.
- **Thomas HN, Evans GW, Berlowitz DR, Chertow GM, Conroy MB, Foy CG, Glasser SP, Lewis CE, Riley WT, Russell L, Williams O, Hess R; SPRINT Study Group.** Antihypertensive medications and sexual function in women: baseline data from the SBP intervention trial (SPRINT). *J Hypertens.* 2016 Jun;34(6):1224-31. PMID: 27032074; PMCID: PMC4859426.
- **Thomas G, Xie D, Chen HY, Anderson AH, Appel LJ, Bodana S, Brecklin CS, Drawz P, Flack JM, Miller ER 3rd, Steigerwalt SP, Townsend RR, Weir MR, Wright JT Jr, Rahman M; CRIC Study Investigators.** Prevalence and Prognostic Significance of Apparent Treatment Resistant Hypertension in Chronic Kidney Disease: Report From the Chronic Renal Insufficiency Cohort Study. *Hypertension.* 2016 Feb;67(2):387-96. PMID: 26711738; PMCID: PMC4713320.
- **Wang GJ, Shaw PA, Townsend RR, Anderson AH, Xie D, Wang X, Nessel LC, Mohler ER, Sozio SM, Jaar BG, Chen J, Wright J, Taliercio JJ, Ojo A, Ricardo AC, Lustigova E, Fairman RM, Feldman HI, Ky B; CRIC Study Investigators.** Sex Differences in the Incidence of Peripheral Artery Disease in the Chronic Renal Insufficiency Cohort. *Circ Cardiovasc Qual Outcomes.* 2016 Jan;9(1):S86-93. PMID: 26908866; PMCID: PMC4770580.
- **Yang P, Xu G.** Serum Fractalkines and Cardiovascular Outcomes in the CRIC Study Cohort. *Am J Kidney Dis.* 2016 Feb;67(2):342. PMID: 26802332.
- **Zhang Y, Fava GE, Wang H, Mauvais-Jarvis F, Fonseca VA, Wu H.** PAX4 Gene Transfer Induces α -to- β Cell Phenotypic Conversion and Confers Therapeutic Benefits for Diabetes Treatment. *Mol Ther.* 2016 Feb;24(2):251-60. doi: 10.1038/mt.2015.181. Epub 2015 Oct 5. PMID: 26435408; PMCID: PMC4817809.
- **Zhuo JL, Kobori H, Li XC, Sato R, Katsurada A, Navar LG.** Augmentation of angiotensinogen expression in the proximal tubule by intracellular angiotensin II via AT1a/MAPK/NF- κ B signaling pathways. *Am J Physiol Renal Physiol.* 2016 Feb. [Epub ahead of print]. PMID: 26864937.

From January through April 2016 investigators and physicians affiliated with T.H.R.C.E. participated in many regional, national, & international meetings.

AFMR Southern Regional Meeting, NO, LA; Feb. 18-20, 2016

- **Abrams A, Singh Y, Liu J, Saifudeen Z.** Metabolic control of nephron progenitor cell renewal and differentiation. Abstract 571 (*SAFMR/SSCI Student Research Travel Award Winner*).
- **Batuman G, Khan A, V Batuman V.** Pathogenic role of innate immunity in aristolochic acid- induced nephrotoxicity.
- **Bazzano L, Pollock B, Chen W, Harville E.** Associations between Hunter Type A/B personality traits and cardiovascular risk factors from childhood to young adulthood. Abstract 5 (*SAFMR/SSCI Student Research Travel Award Winner*).
- **Carr C, Bazzano L, Harlan T.** Mediterranean diet pattern adherence and leukocyte telomere length in NHANES 1999-2002. Abstract 448 (*SAFMR/SSCI Student Research Travel Award Winner*).
- **Cypress M, Sato R, Navar LG.** Angiotensinogen is upregulated under high glucose conditions in renal proximal tubular cells. *J Investig Med* 64:682, 2016. Abstract 473 (*SAFMR/SSCI Student Research Travel Award Winner*).
- **Edgington-Giordano F, Liu J, Singh Y, Saifudeen Z.** Inhibition of glycolysis accelerates nephrogenesis in embryonic kidneys. Abstract 572 (*SAFMR/SSCI Student Research Travel Award Winner*).
- **Feroz MA, Rosales CB, Arita D, Thethi T, Fonseca V, Prieto MC.** Levels of plasma soluble prorenin receptor (SPPR) in obese patients are associated with type-2 diabetes mellitus (T2DM) in women but not in men. Abstract 509 (*SAFMR/SSCI Student Research Travel Award Winner*). ORAL PRESENTATION.
- **Garagliano JM, Derbebev AV, Zsombok A, Navar LG, Sato R.** Advanced glycation end products stimulate angiotensinogen expression in renal proximal tubule cells. *J Investig Med* 64:636 and 682, 2016. Abstract 472. (*SSPR/SSCI Young Investigator Award Winner*).
- **Gogulamudi V, Arita D, Bourgeois C, Sato R, Prieto MC*.** Hyperglycemia induces augmentation of the prorenin receptor (PRR) at the cell plasma membrane in the collecting duct. Abstract 517 (*SAFMR/SSCI Trainee Research Travel Award Winner*).
- **Hua Y, Wang F, Zhang T, Li S, Shen W, Fernandez C, Harville E, Bazzano L, Srinivasan S, GS Berenson GS, Chen W.** Association between birth weight and heart rate in childhood, adolescence and adulthood in blacks and whites: The Bogalusa Heart Study Abstract 482 (*SAFMR/SSCI Student Research Travel Award Winner*).

Continued...

- **Khan A, Teran FJ, Hering-Smith KS, Fisher MC, Majid DSA, Batuman V.** Streptozotocin-induced type 2 diabetes in endothelial nitric oxide synthase-deficient mice. Abstract 356.
- **Khan A, Seyrek N, Batuman V.** Innate immunity regulated by toll-like receptors activate inflammatory pathways in myeloma kidney. Abstract 474 (*SAFMR/SSCI Junior Faculty Research Travel Award Winner*).
- **Kumar P, Periyasamy R, Pandey K.** Attenuation of renal fibrosis and inflammation in natriuretic peptide receptor A gene-targeted mice by epigenetic mechanisms of sodium butyrate-and retinoic acid. Abstract 2 (*SAFMR/SSCI Junior Faculty Research Travel Award Winner*).
- **Lindley HB, Liu J, Saifudeen Z.** Energy metabolism profile in nephron progenitor cell. Abstract 570 (*SAFMR/SSCI Student Research Travel Award Winner*)
- **Liu H, Chen S, Yao X, Saifudeen Z, El-Dahr SS.** Histone Deacetylases 1 and 2 balance nephron progenitor renewal and differentiation during kidney organogenesis. Abstract 357 (*SSPR Young Faculty Award Winner*).
- **Mehaffey EP, Castillo A, Navar LG, Majid DS.** Augmentation of intrarenal angiotensinogen production induced by chronic angiotensin II and high salt intake in mice lacking TNF-alpha receptor type 1 or TNF-alpha receptor type 2. *J Investig Med* 64:681, 2016. Abstract 470 (*SAFMR/SSCI Student Research Travel Award Winner*).
- **Miyata K.** Renoprotective effects of direct renin inhibition in glomerulonephritis. *SAFMR/SSCI Meeting Special Award: TINSLEY HARRISON AWARD*.
- **Reverte Ribo V, Rosales CB, Gallaty MR, Seth D, McDonough AA, Prieto MC.** Prorenin receptor in collecting duct maintains renal function and the development of angiotensin II-dependent hypertension. Abstract 471 (*SSCI Nephrology Young Investigator Scholar Award Winner*). ORAL PRESENTATION.
- **Song R, Preston G, Kidd L, Yosypiv IV.** Prorenin receptor signaling promotes nephron induction during mouse kidney development. *J Investig Med* 64:633, 2016 (Abstract 359) (*SSPR/APA Trainee Travel Award Winner*).
- **Stuchlik P, Allen N, Harville E, Chen W, Bazzano L.** Cardiovascular risk factor trajectories from childhood to adulthood and depression in middle age. Abstract 390 (*SAFMR/SSCI Student Research Travel Award Winner*).
- **Teran FJ, Huang W, LL Hamm LL*, Hering-Smith KS.** NADC1 knockout: Effects on blood pressure and urine PH. Abstract 573 (*SAFMR/SSCI Junior Faculty Research Travel Award Winner*).
- **Walker R, Coleman-Barnett J, Hamm LL, Hering-Smith KS*.** Calcium-sensitive dicarboxylate transport is regulated via GQ in OK cells. Abstract 475.
- **Williams L, Joyce C, Sarpong D, Bazzano L, Morisky D, Peacock E, Muntner P, Krousel-Wood M.** Differences in determinants of self-reported medication

Continued...

adherence among gender-race subgroups of older insured adults with hypertension. Abstract 398 (SAFMR/SSCI Junior Faculty Research Travel Award Winner).

- **Zhang T, Zhang H, Li S, Li Y, Fernandez C, Harville E, Bazzano L, He J, Srinivasan S, Berenson, Chen W.** Temporal relationship between childhood obesity and hyperinsulinemia and its impact on adult hypertension: The Bogalusa Heart Study. Abstract 391.

Experimental Biology 2016, San Diego, CA, April 2 - 6, 2016

- **Cypress M, Satou R, Hopfer U, Navar LG.** Proximal Tubular Cell Angiotensinogen Upregulation by High Glucose Is Mediated by Reactive Oxygen Species and Not Dependent on AT1 Receptor Activation. FASEB J 30: #B198 740.9.
- **Gao H, Derbenev AV.** Bicuculline Sensitive Tonic Current in RVLM Neurons.
- **Gonzalez AA, Reverte-Ribo V, Katsurada A, Rosales CB, Gallaty M, McLellan M, Gentile O, Veiras LC, Seth DM, Ichihara A, Mc Donough AA, Mamenko M, Pochynyuk OM, Navar LG, Prieto MC.** Lack of the Prorenin Receptor in the Collecting Duct Blunts the ENaC Responses to Chronic Angiotensin II. FASEB J 30: #B215 741.1.
- **Itani HA, Xiao L, Saleh MA, Wu J, Pilkinton M, Dale BL, Barbaro N, Foss J, Kirabo A, Montaniel K, Norlander A, Chen W, Sato R, Navar LG, Mallal S, Madhur M, Bernstein K, Harrison D.** Immunological Memory Exacerbates Responses to Repeated Hypertensive Stimuli. FASEB J 30: #B158 959.5.
- **Mehaffey EP, Castillo A, Navar LG*, Majid DSA.** Intrarenal Angiotensinogen Production Induced by Chronic Angiotensin II and High Salt Intake Is Augmented in Tumor Necrosis Factor-Alpha Receptor Type 1 Knockout Mice. FASEB J 30: #B127 1216.13.
- **Reverte Ribo V, Gogulamudi VR, Gonzalez AA, Rosales CB, Gallaty MR, Castillo A, Ichihara A, Navar LG, Prieto MC.** Deletion of the Prorenin Receptor in the Collecting Duct Impairs Renal Function and Attenuates Blood Pressure in Chronic Angiotensin II-Infused Mice. FASEB J 30: #B604 1260.1.
- **Reverte V, McDonough A, Rosales CB, Gallaty M, Gogulamudi V, Musial D, Seth D, Prieto M.** Role of Prorenin receptor in collecting duct in the maintenance of correct renal function and ang II-dependent hypertension.
- **Shao W, Prieto M, Gonzalez-Arancibia C, Navar LG.** Effects of Serelaxin on Renal Microcirculation in Rats under Control and High Angiotensin Environments. FASEB J 30: #B86 952.10.
- **Zimmerman MA, Lindsey SH.** Double Edged Sword: Sex Hormones and Renal Health.

Continued...

Health Sciences Research Days, Tulane, NO, LA; April 6-7, 2016

- **Abrams A, Singh Y, Liu J, Saifudeen Z.** Metabolic control of nephron progenitor cell renewal and differentiation. Abstract A15.
- **Carr C, Bazzano L, Harlan T.** Mediterranean diet pattern adherence and leukocyte telomere length in NHANES 1999-2002. D2. Edgington-Giordano F, Liu J, Singh Y, Saifudeen Z. Inhibition of glycolysis accelerates nephrogenesis in embryonic kidneys. Abstract A17.
- **Batuman G, Khan AM, Batuman V.** Pathogenic role of innate immunity in aristolochic acid-induced nephrotoxicity. D13.
- **Edgington-Giordano F, Liu J, Singh Y, Saifudeen Z.** Inhibition of glycolysis accelerates nephrogenesis in embryonic kidneys. A17.
- **Khan A, Teran FJ, Hering-Smith KS, Fisher MC, Majid DSA, Batuman V.** Streptozotocin-induced type 2 diabetes in endothelial nitric oxide synthase-deficient mice. A18.
- **Teran FJ, Huang W, Hamm LL, Hering-Smith KS.** NaDC1 Knockout: Effects on Blood Pressure and Urine pH. A23.
- **Walker R, Coleman-Barnett J, Hamm LL, Hering-Smith KS.** Calcium-sensitive dicarboxylate transport is regulated via GQ in OK cells. A24.
- **Lindley HB, Liu J, Saifudeen Z.** Energy metabolism profile in nephron progenitor cell. Abstract A20.
- **Majid NR.** Hypertension & Renal center of Excellence: CORE Facilities, Activities, & Research.
- **Mehaffey EP, Castillo A, Navar LG, Majid DSA.** Intrarenal Angiotensinogen Production Induced by Chronic Angiotensin II and High Salt Intake Is Augmented in Tumor Necrosis Factor-Alpha Receptor Type 1 Knockout Mice. D9.
- **Mills KT, Bundy JD, Kelly TN, Reed J, Kearney PM, Reynolds K, Chen J, He J.** Global disparities of hypertension prevalence and control: A systematic analysis of population-based studies from 90 countries. A15
- **Stuchlik P, Harville E, Chen W, Bazzano L.** Systolic Blood Pressure Trajectories From Childhood to Adulthood and Depression in Middle Age: The Bogalusa Heart Study. A21.

THRCE investigators and physicians were invited to lecture at various national and international events.

L. Gabriel Navar, PhD:

- Presented Nephrology Grand Rounds at Winthrop University Hospital, Mineola, NY on April 28, 2016. His talk was, "Augmentation of the Intrarenal Renin-Angiotensin System in Hypertension and Diabetes."

Andrea V. Derbenev, PhD:

- "The role of sodium-activated potassium channels in presympathetic RVLM neurons." THRCE Seminar on April 21, 2016

M-Altaf Khan, PhD:

- "Role of Innate Immunity in the Pathophysiology of Contrast-Induced Nephropathy in Hypertensive and Diabetic Mice." THRCE Seminar on February 11, 2016

Sarah Lindsey, PhD:

- Presented "Eliciting Estrogen's Protective Vascular Effects" as Keynote Speaker at LSU Department of Comparative Biomedical Sciences Graduate Student/Postdoctoral Fellow Annual Retreat held January 12, 2016 in Baton Rouge, LA.

Dewan S.A. Majid, MD, PhD:

- "Differential roles for TNF- α receptors in salt sensitive hypertension." THRCE Seminar on January 28, 2016

THRCE Seminars

April 7, 2016

NO MEETING

*Date conflicts with Two Events
Experimental Biology Meeting, San Diego, Ca - April 2-6 &
Tulane Research Days, New Orleans, LA - April 6-7, 2016*

April 21, 2016

ANDREI V. DERBENEV, PHD

Associate Professor, Department of Physiology,
Tulane University, School of Medicine, New Orleans, LA.
*"The role of sodiumactivated potassium channels in
presympathetic RVLM neurons."*

May 5, 2016

MEHARVAN SINGH, PHD

Professor and Dean,
Department of Pharmacology & Neuroscience
University of North Texas (UNT)
Health Science Center, Fort Worth, TX.
*"Novel mechanisms of progesterone-induced brain protection:
Implications for Alzheimer's disease."*

May 7, 2016 **

Special THRCE Seminar

Co-Sponsored by THRCE & the Department of Pediatrics

MAXIME BOUCHARD, PHD

Associate Professor, Department of Biochemistry,
Rosalind & Morris Goodman Cancer Research Center,
McGill University, Montréal, Québec, Canada.
"Apoptotic control of urinary tract morphogenesis"

May 19, 2016

IHOR V. YOSYPIV, MD

Associate Professor, Department of Pediatrics,
Chief, Division of Pediatric Nephrology,
Tulane University School of Medicine, New Orleans, LA.
*"Translational studies on the role of the renin-angiotensin system in
congenital anomalies of the kidney and urinaray tract (CAKUT)."*

June 2, 2016

WALTER LEE MURFEE, PHD

Assistant Professor, Department of Biomedical Engineering,
Tulane University School of Engineering, New Orleans, LA.
*"Applications of Computational and Experimental Approaches for
Investigating Microvascular Structure and Remodeling."*

June 16, 2016

HONGBING LIU, PHD

Assistant Professor, Division of Pediatrics Nephrology,
Department of Pediatrics & Department of Biochemistry,
Tulane University School of Medicine, New Orleans, LA .
*"Histone deacetylases 1 and 2 balance nephron progenitor
renewal and differentiation during Kidney organogenesis."*

Continued...

June 30, 2016

PAUL MUNTNER, MD

Co-director, Pharmacoepidemiology & Economics Research (PEER) Unit,
 Director, Lister Hill Center for Health Policy,
 Professor & Vice Chair for Faculty Affairs, Dept. of Epidemiology,
 Adjunct Professor, Dept. of Medicine, Division of Nephrology,
 PhD Program Director, Division of Epidemiology,
 University of Alabama at Birmingham, Birmingham, AL

Talk: TBA

July 14, 2016

RUIHENG LIU, MD, PHD

Professor,
 Department of Molecular Pharmacology & Physiology
 University of South Florida, Tampa, FL.

"Novel Mechanism and Therapeutic Target for Salt-Sensitive Hypertension."

July 28, 2016

MINOLFA C. PRIETO, MD, PHD

Associate Professor, Department of Physiology,
 Co-Director: THRCE Molecular CORE Facility,
 Tulane University School of Medicine, New Orleans, LA.

TBA

August 11, 2016

SAMIR EL-DAHR, MD

Jane B. Aron Professor of Pediatrics,
 Chair, Dept. of Pediatrics,
 Section Chief, Pediatric Nephrology,
 Tulane University School of Medicine, New Orleans, LA.

TBA

August 25, 2016

Speaker: TBA

Talk: TBA

September 8, 2016

KAILASH N. PANDEY, PHD

Professor, Department of Physiology,
 Director, COBRE Transgenic Core Facility,
 Tulane University School of Medicine, New Orleans, LA.

TBA

September 22, 2016

ZUBAIDA SAIFUDEEN, PHD

Assistant Professor, Department of Pediatrics,
 Section of Nephrology,
 Tulane Cancer Center Contributing Member: Genetics Program,
 Tulane University School of Medicine, New Orleans, LA.

TBA

*Conferences are held alternative Thursdays at 4:00pm in the Tulane Medical School,
 Pharmacology Library, Room 4700*

*** Denotes the seminar date is not our normally scheduled day*

CORE Facilities & Services

National Institute of
General Medical Sciences



Tulane Hypertension and Renal Center of Excellence (THRCE) houses 4 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 4 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.
- **Animal and Gene-Targeted Core:** Maintains and generates new breeding pairs, performs genotyping, and maintains colonies of genetically manipulated mice and rats.
- **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.
- **Clinical and Translational Core:** Promotes and facilitates clinical and translational studies in hypertension, kidney disorders, and related cardiovascular diseases.

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. For further information regarding the Core Facilities, please access <http://tulane.edu/som/thrce/core.cfm/>

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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Comments are welcome:
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<http://tulane.edu/som/thrce/>

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 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.