



Tulane Hypertension and Renal Center of Excellence

Spring 2005

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COBRE grant External Advisory Committee returns to Tulane

In late February, the COBRE investigators were pleased to welcome the External Advisory Committee members back to Tulane's campus. We were fortunate that the entire Committee was able attend at the same time. All five of the original members were present, **Thomas Coffman, MD**, from Duke University Medical Center, **Allen Cowley, PhD**, from the Medical College of Wisconsin, **Ariel Gomez, MD**, from the University of Virginia, **Michael Klag, MD**, from John Hopkins University, **John McGiff, MD**, from New York Medical College, and a new member, **Norman Rosenblum MD**, from the Hospital for Sick Children in Toronto, Ontario. The EAC is an important part of the COBRE grant; the members review the progress of the junior investigators and make recommendations to strengthen the investigator's projects. This year, each of the junior investigators had submitted an RO1 grant application to NIH prior to the EAC meeting. The EAC members were able to evaluate the grant applications and offer constructive suggestions to increase the grant's potential for funding.

The visit began in the evening on February 21st at the Hotel Monteleone in the French Quarter with presentations by Dr. Paul Whelton, Senior Vice-President of the Health Sciences Center, Dr. Ian Taylor, Dean of the School of Medicine, Dr. Laura Levy, Associate Senior Vice-President for Research, Dr. L. Lee Hamm, Director of the Hypertension and Renal Center and Chief of the Section of Nephrology, and Dr. L. Gabriel Navar, Co-Director of the Hypertension and Renal Center and Chairman of the Department of Physiology. On February 22nd, the five COBRE junior investigators presented their progress to the committee. The junior investigators were able to meet one-on-one with their EAC member to review their projects and grant applications in detail. The site visit proved very productive, producing several helpful suggestions for the junior faculty investigators on the COBRE.

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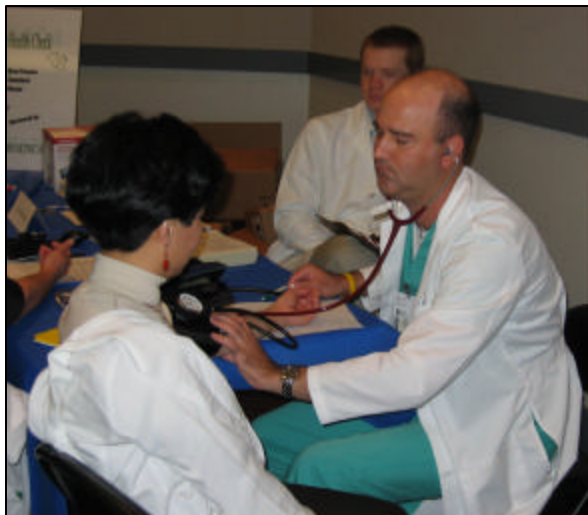


Pictured from left: Dr. McGiff, Dr. Gomez, Dr. Coffman, Dr. Klag, Dr. Cowley and Dr. Rosenblum

Hypertension Center staff participates in employee benefits fair at Tulane University Health Sciences Center

One of the initiatives of the Hypertension and Renal Center is to increase awareness of high blood pressure and renal disease among the public. A part of this initiative is participating in health fairs and screenings that serve different populations of the public. The Center staff was pleased to participate in the employee benefits fair here at Tulane on March 8th, conducting blood pressure measurements for staff. Members of Dr. Al Dreisbach's research project, Melissa Parenti, RN, Brian Mahl, RN, and Arthur Hess, volunteered to conduct the measurements. Center administrative staffers, Jose Alcaine and Kathryn Henderson, manned a table providing materials on basic health information and resources under the banner of the Hypertension and Renal Center. Attendance at the benefits fair was strong and the volunteers were kept very busy conducting blood pressure measurements with a continuous line of people waiting. The fair was also attended by the Tulane School of Medicine Section of Cardiology and the Tulane University Hospital.

news



Pictured from left: Lin Yuan having her blood pressure taken by Brian Mahl, RN, as Arthur Hess looks on.



Pictured from left: Arthur Hess, Jose Alcaine, and Kathryn Henderson at the Center booth and table.

Tulane COBRE Receives Research Recognition Award from Health Sciences Center

Tulane's Center of Biomedical Research Excellence in Hypertension and Renal Biology Principal Investigator was recognized at the Health Sciences Center Research Recognition Awards on January 25, 2005. **Dr. L. Gabriel Navar** was presented with an award from the Tulane University Health Sciences Center and Board of Governors for outstanding achievement and commitment to excellence in total competitive research funding for the year 2003-2004. This is the second time that the Center has been recognized by Tulane and the Board of Governors for our success in receiving competitive funding.



Pictured from left: Dr. Ian Taylor, Dr. Navar, and Dr. Paul Whelton

Recent Publications

Alper AB Jr, Chen W, Yau L, Srinivasan SR, Berenson GS, Hamm LL. Childhood uric acid predicts adult blood pressure: the Bogalusa Heart Study. *Hypertension*. 45(1):34-8, 2005.

Cao Y, Baig MR, Hamm LL, Wu K, Simon EE. Growth factors stimulate kidney proximal tubule cell migration independent of augmented tyrosine phosphorylation of focal adhesion kinase. *Biochem Biophys Res Commun*. Mar 11;328(2):560-6, 2005.

Chen J, Wildman RP, Hamm LL, Muntner P, Reynolds K, Whelton PK, He J. Association between inflammation and insulin resistance in US nondiabetic adults: Results from Third National Health and Nutrition Examination Survey. *Diabetes Care*. 12:2960-2965, 2004.

Cook NR, Kumanyika SK, Cutler JA, Whelton PK, for the Trials of Hypertension Prevention Collaborative Research Group. Dose-response of sodium excretion and blood pressure change among overweight, nonhypertensive adults in a 3-year dietary intervention study. *Journal of Human Hypertension*. 19:47-54, 2005.

Fan H, Harrell J, Dipp S, Saifudeen Z, and El-Dahr SS. A novel pathological role of p53 in kidney development revealed by gene-environment interactions. *Am. J. Physiol (Renal Physiol)*. 288: F98-F107, 2005.

Feng MG and Navar LG. Angiotensin II-mediated constriction of afferent and efferent arterioles involves T-type Ca²⁺ channel activation. *Am J Nephrol* 24: 641-648, 2004.

Johnson FK, Johnson RA, Peyton KJ, Durante W. Arginase inhibition restores arteriolar endothelial function in Dahl rats with salt-induced hypertension. *Am J Physiol Regul Integr Comp Physiol* 2005; doi: 10.1152/ajpregu.00758.2004 (in press)

Gonzalez-Villalobos R, Klassen RB, Allen PL, Navar LG and Hammond TG. Megalin binds and internalizes Angiotensin II. *Am J Physiol Renal Physiol* 288: F420-F427, 2005.

Kearney PM, Whelton M, Reynolds K, Muntner P, Whelton PK, He J. Global burden of hypertension: analysis of worldwide data *Lancet* 365:217-223, 2005.

Kumanyika SK, Cook NR, Cutler JA, Belden L, Brewer A, Cohen JD, Hebert PR, Lasser V, Raines J, Raczynski J, Shepek L, Diller L, Whelton PK, Yamamoto M, for the Trials of Hypertension Prevention Collaborative Research Group. Sodium reduction for hypertension prevention in overweight adults: Further results from the Trials of Hypertension Prevention Phase II. *Journal of Human Hypertension*. 19:33-45, 2005.

Navar LG and Bell PD. Romancing the macula densa at UAB. *Kidney Int Suppl* S34-S40, 2004.

Saifudeen Z, Dipp S, Fan H, and El-Dahr SS. Combinatorial control of the bradykinin B2 receptor promoter by p53, CREB, KLF-4 and CBP: Implications for terminal nephron differentiation. *Am J Physiol (Renal Physiol)*. In press. [This article was selected for an Editorial Focus, which will appear in the same issue of the journal].

Saifudeen Z, Diavolitsis V, Dipp S, Fan H, and El-Dahr SS. Spatiotemporal switch from DNp73 to TAp73 isoforms during nephrogenesis: impact on differentiation gene expression. *J Biol Chem* (in press)

(Continued on page 6)

Tulane Investigators Participate in International, National, and Regional Meetings

Southern Medical Association 98th Annual Scientific Assembly, New Orleans, Louisiana, November 2004

Whelton, PK. "Clinical outcomes in ALLHAT Antihypertensive Trial Participants with type2 diabetes, impaired fasting glucose, and normoglycemia"

Resuscitation Science Symposium - American Heart Association National Meeting - November, 2004

Johnson RA, Appleton SD, Johnson FK, Majid DSA. Hemorrhagic shock promotes heme oxygenase-mediated endothelial dysfunction in rat arterioles. *Circulation* 2004;110:III-1098. (Abstract)- invited presentation

American Society of Hypertension, Gulf Central Regional Chapter Meeting New Orleans, Louisiana, January 2005

Hamm, LL. "Hypertension in Patients with Kidney Disease"

Whelton, PK. "Benefits of Lifestyle Intervention in Prevention and Treatment of Hypertension"

Award: Whelton, PK. Presidential Award, for outstanding contributions to the field of hypertension

Southern Regional Meeting of the American Federation for Medical Research - February 24-26, 2005

Arise KK and Pandey KN, Transcriptional repression of guanylyl cyclase/natriuretic peptide receptor-A gene by vasoactive hormone angiotensin II

Jackson KE, Durante W, Peyton KJ, Johnson RA, Johnson FK. L-arginine restores coronary endothelial function in obese Zucker rats.

Newsom RR, Appleton SD, Johnson FK, Johnson RA. Neural endogenous carbon monoxide lowers blood pressure via suppression of peripheral sympathetic neurons.

Opay, AL, JJ Mullins, and KD Mitchell. Blood pressure and renal functional responses to COX-1 and COX-2 inhibition in Cyp1a1-Ren2 rats with inducible malignant hypertension

Patterson, ME, CR Mouton, JJ Mullins, and KD Mitchell. Interactive effects of Neuronal NOS and COX-2 on renal hemodynamics in Cyp1a1-Ren2 transgenic rats with malignant hypertension

Stevenson BK, Johnson RA, Jackson KE, Peyton KJ, Durante W, Johnson FK. Heme-derived carbon monoxide promotes endothelial dysfunction and hypertension in obese Zucker rats.

Awards:

Kiran K. Arise (graduate student) - SAFMR/SSCI Student Research Award winner - mentor Dr. Kailash Pandey

Keith E. Jackson, PhD - SAFMR/SSCI Trainee Research Award winner - research supported by NRSA Fellowship and COBRE grant

Robert R. Newsom III (T2 medical student)- SAFMR/SSCI Student Research Award winner - research supported by American Heart Association summer student fellows

Allison L. Opay (T3 medical student)- SAFMR/SSCI Student Research Award winner - mentor Dr. Kenneth D. Mitchell

Matthew E. Patterson (T2 medical student)- SAFMR/SSCI Student Research Award winner - mentor Dr. Kenneth D. Mitchell

Blake K. Stevenson (T2 medical student)- SAFMR/SSCI Student Research Award winner - research supported by COBRE grant

Presentations continued

Frank C Cruz, M.D., Fellow, Section of Nephrology and Hypertension - SAFMR/SSCI Trainee Research Awards "Treatment of Catheter-Associated Bacteremia in Patients Undergoing Hemodialysis.

Monica R Ianosi-Irimie, M.D., Ph.D., Section of Nephrology and Hypertension - SAFMR/SSCI Trainee Research Awards "Role of Nitric Oxide in the Pathogenesis of a Preeclampsia-Like Syndrome in Rats.

Candice A Pridjian, Student - SAFMR/SSCI Student Research Awards "Altered Expression of Renal Na/KATPase in Hypertensive Pregnant Rats Treated with Metolazone." Dr Jules Puschett, mentor

Ivo Lukitsch, M.D., Fellow, Section of Nephrology and Hypertension - SSCI Nephrology Young Investigator Scholar Award Winner for "Growth Factor Stimulation of Migration of Human Renal Proximal Tubule Cells After Oxidant Stress"

American Society of Clinical Pharmacology and Therapeutics annual meeting, March 2-5, 2005 in Orlando, Florida

Dreisbach, A. "Prevalence of CYP2C8, 2C9, 2J2, and Soluble Epoxide Hydrolase Polymorphisms in African-Americans with Hypertension"

Dreisbach, A. "Prevalence of CYP2C9, 2J2, and Soluble Epoxide Hydrolase Polymorphisms in African-Americans on Hemodialysis"

Seventeenth Annual Tulane Research Days - March 9-10, 2005

Johnson FK. Heme oxygenase-1-mediated endothelial dysfunction during hypertension - *The "Tulane University Health Sciences Center Auxiliary Endowment for Excellence in Research Award" Lecture*

Arise K and Pandey KN. "Transcriptional repression of guanylyl cyclase/natriuretic peptide receptor-A gene by vasoactive hormone expression"

Bellew C and El-Dahr SS. "Spatiotemporal expression of histone deacetylases during murine organogenesis and kidney development"

Feng M-G and Navar LG. Nitric oxide synthase inhibition recruits L-type Ca²⁺ channels in post-glomerular arterioles"

Fuller AJ, Hauschild BC, Awayda M, Gonzalez-Villalobos R, Imig JD, Inscho EW, and Navar LG. "Early activation of calcium and chloride channel activation by angiotensin II (ANG-II)-AT1 receptors in preglomerular vascular smooth muscle cells"

Galassi A, Reynolds K and He J. "Metabolic syndrome and cardiovascular disease: a meta-analysis of observational studies"

Gonzalez-Villalobos R, Klassen RB, Allen PL, Johanson K, Navar LG, and Hammond TG. "Interaction between megalin and angiotensin peptides"

Graciano ML, Mouton C, Patterson ME, Mullins JJ and Mitchell KD. "Renal vascular and tubulointerstitial inflammation and proliferation in CYP1A1-REN2 transgenic rats with malignant hypertension"

Green T, Rodriguez J, and Navar LG. "Renal hemodynamic responses to cyclooxygenase-2 inhibition in rats during acute and chronic ace inhibition"

Haque MZ, Castillo A, and Majid DSA. "Attenuated renal vasoconstrictor response to NO blockade in GP91^{phox} knockout mice"

Hyre AD, Muntner P, DeSalvo K, Whelton PK, and He J. "Factors associated with hypertension awareness in the US adult population"

Kawasaki L, Muntner P, Hampton K, Sanne S, and DeSalvo K. "Group visits-if you build it, who will

Presentations continued

come?"

Kopkan L, Wellen K, Castillo A, and Majid DSA. "Enhancement of superoxide activity contributes to salt-sensitivity in rats during chronic nitric oxide synthase inhibition"

Licea H, Harrison-Bernard LM, Oliverio MI, Coffman TM and Navar LG. "Hypotension persists in mature AT1A receptor deficient mice"

Patterson ME, Mouton CR, Mullins JJ, and Mitchell KD. "Interactive effects of neuronal NOS and COX-2 on renal hemodynamics in CYP1A1-REN2 transgenic rats with malignant hypertension"

Prieto-Carrasquero M, Botros F, Cabrera MA, Rauv ML and Navar LG. "Collecting duct renin expression in goldblatt hypertensive rats"

Saifudeen Z, Stefkova J, and El-Sahr SS. "P53 regulates multiple steps of renal development"

Shen B and El-Dahr SS. "The Bradykinin B2 receptor (B2R) in an angiotensin II (ANG-II)-regulated gene in renal collecting duct cells"

Stevenson BK, Johnson RA, Jackson KE, Peyton KJ, Durante W, Johnson FK. Heme-derived carbon monoxide promotes endothelial dysfunction and hypertension in obese Zucker rats.

Vellaichamy E and Pandey KN. "Enhanced expression and activation of matrix metalloproteinases accompanied with cardiac hypertrophy and fibrosis in mice lacking guanylyl cyclase/natriuretic peptide receptor –A role of CGMP signaling"

Awards:

Fruzsina K. Johnson, MD - Tulane University Health Sciences Center Auxiliary Endowment for Excellence in Research Award

Miguel Graciano, PhD—Senior Vice-President for Health Sciences Award for Excellence in Research and Presentation by a Postdoctoral Fellow

Torrance Green—Basic Sciences Research Award in Integrated Biology by a Graduate Student

Matthew A. Patterson—Dean of School of Medicine Award for Excellence in Research and Presentation by a Medical Student

Invited Speakers:

PK Whelton, Tulane University Health Sciences Center, "170 years as a community resource", January 2005

PK Whelton, New Orleans Rotary Club, "Tulane University Health Sciences Center: An economic engine for the community", January 2005

Publications continued

Teran FJ, Johnson RA, Stevenson BK, Peyton KJ, Jackson KE, Appleton SD, Durante W, Johnson FK. Heme oxygenase-derived carbon monoxide promotes arteriolar endothelial dysfunction and contributes to salt-induced hypertension in Dahl salt-sensitive rats. *Am J Physiol Regul Integr Comp Physiol* 288:R615-R622, 2005.

Whelton PK. Hypertension curriculum review: epidemiology and the prevention of hypertension. *Journal of Clinical Hypertension*. 11:636-642, 2004.

Whelton SP, Hyre AD, Pedersen B, Yi Y, Whelton PK, He J. Effect of dietary fiber intake on blood pressure: A meta-analysis of randomized, controlled clinical trials. *Journal of Hypertension*. 23:475-481, 2005.

T.H.R.C.E.

CONFERENCES

January 6

Eric Lazartigues, Ph.D.
University of Iowa-College of Medicine
"Models and tools to study the brain renin-angiotensin system"

January 20

Gerald Berenson, M.D.
Tulane University Health Sciences Center
"Racial (black/white) differences that can influence treatment and prevention: Lessons from the Bogalusa Heart Study"

February 3

Douglas Silverstein, M.D.
Louisiana State University Health Sciences Center
"Expression of the NMDA Receptor in the Kidney and its Role in Renal Toxicity"

February 17

Kenichiro Kitamura, M.D., Ph.D, FASN
Kumamoto University Graduate School of Medical Sciences, Japan
"Regulation of epithelial sodium channels by a serine protease prostaticin"

February 24

R. Ariel Gomez, M.D.
University of Virginia
"Origin and fate of the renin cell, implications for homeostasis"

March 3

Jasmina Varagic, M.D., Ph.D
Ochsner Clinic Foundation
"Salt Excess and Hypertensive Heart Disease "

March 17

Christopher White, M.D.
Ochsner Clinic Foundation
"Optimizing Renal Intervention: Predicting response to renal revascularization"

March 31

Canceled

April 14

Frank Park, Ph.D
Louisiana State University Health Sciences Center
"Targeting gene transfer to the vasculature using modified lentiviral vectors"

Conferences are held every other Thursday at 4:00 pm in the Medical School Building room 4700

Other happenings

Dr. L. Lee Hamm appeared on the WTIK 690 Radio show "Health Connections" with Susan Bernecker to discuss hypertension in December.

Dr. Samir El-Dahr has been appointed Chief of the Section of Pediatric Nephrology. He has also joined the editorial boards of two major renal journals: the *American Journal of Physiology (Renal)* and *Pediatric Nephrology*.

Dr. L. Lee Hamm will begin his duties as the Interim Chair of Medicine on July 1, 2005 when outgoing chair, **Dr. Jules Puschett** assumes his responsibilities as the Associate Dean developing Tulane on the North Shore. **Dr. Vecihi Batuman** will serve as the Interim Chief of the Nephrology and Hypertension Section during Dr. Hamm's tenure as Interim Chair of Medicine. Also, **Dr. Eric Simon** will be Program Director of the Nephrology and Hypertension Fellowship Program.

Dr. Al Driesbach received the Paul Teschan Research Grant from Dialysis Clinic Inc entitled "The Effect of Genetic Polymorphisms in Epoxygenase Pathway on Salt Loading in Salt-Sensitive and Salt-Resistant Hypertension" for \$50,000/yr for two years starting in March 2005.

Dr. L. Gabriel Navar has been appointed to the Administrative Board of the Council of Academic Societies, a part of the Association of American Medical Colleges.

Ms. Bing Shen received the Endocrinology and Metabolism Section Research Recognition Award of the American Physiological Society for her abstract "Bradykinin B2 Receptor (B2) is an angiotensin II (ANG II)-responsive gene in renal collecting duct cells." The award will be presented at the Endocrinology and Metabolism business meeting and awards reception April 3rd in San Diego, CA.

We would like to thank **Takeda** for their continuing support.

news



TULANE HYPERTENSION AND RENAL CENTER OF EXCELLENCE

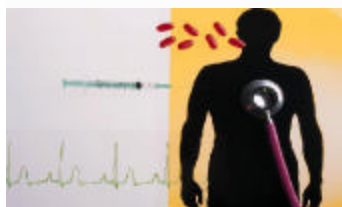
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The directors invite faculty members interested in participating in the activities of the T.H.R.C.E. to submit your name, phone number, fax number, and e-mail address to the Program Coordinator by e-mail at khender@tulane.edu or regular mail to the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