Hypertension In The News

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Brosnihan Receives Honorary Degree

K. Bridget Brosnihan, Ph.D., a professor in the Hypertension and Vascular Research Center of Wake Forest University Baptist Medical Center, received an honorary degree from the College of Saint Mary in Omaha, Neb., on May 18.

"Dr. Brosnihan's scientific achievements as an independent and pathfinder investigator have received international recognition in the field of cardiovascular regulation," said Maryanne Stevens, M.D., RSM, president of College of Saint Mary. "The honorary degree is given to her because of her commitment to science, medical research and education, and for being a woman walking into the future with faith, courage and conviction."

Brosnihan is co-director of the Molecular Medicine Program, as well as a professor of physiology and pharmacology. She received her doctorate from Case Western Reserve University Medical School in Cleveland, Ohio, and was a post-doctoral fellow at the Cleveland Clinic. Brosnihan has cross appointments in molecular medicine, obstetrics/gynecology, neuroscience, and the Women's Health Center of Excellence.

She was a member of the team that first established the Hypertension and Vascular Research Center at Wake Forest University Baptist Medical Center. Brosnihan serves on the editorial boards of Hypertension, the American Journal of Physiology/Heart and Current Hypertension Review. She has mentored faculty, post-doctoral fellows, graduate students and undergraduates.

Dr. Mark Chappell with Dr. Sarah Lindsey, who won 1st place in the ASPET Junior Scientist competition at the Experimental Biology meeting in April 2009.

New Hire

Manish Bharadwaj, PhD
Research Fellow
Advisor: Dr. Bridget Brosnihan

Dr. Bharadwaj earned his PhD in Biosciences from Nagasaki University, Nagasaki, Japan. His current research revolves around the hypothesis: Ang-(1-7) acts as a local autocrine/paracrine hormone in the uteroplacental unit regulating prostanoids during early and late pregnancy, comprising a crucial feature of cardiovascular regulation during uncomplicated pregnancy. He is studying the expression of Ang-(1-7) and Ang II in early as well as late stages of gestation in pregnancy of normotensive and hypertensive subjects. He will also study the contribution of endogenous and exogenous Ang-(1-7) to prostanoid production during early as well as late gestation in normotensive as well as hypertensive pregnancy. He will be using a new transgenic (TGR) rat model of the renin-angiotensin system [the female human (*h*) angiotensinogen (AGT) mated with the male *h*renin (Ren) TGR] with characteristic features of preeclampsia for these studies.

The Hypertension Core Lab

The WFUSM Hypertension Core Laboratory was recently found in compliance under the Clinical Laboratory Improvement Amendments of 1988 (CLIA) as a result of an onsite survey on March 11, 2009. Dr. K. Bridget Brosnihan is Director of the Laboratory and is certified as a High Complexity Laboratory Director. This laboratory is a reference laboratory for North Carolina Baptist Hospital Pathology Laboratory and conducts clinical and research assays for researchers within the institution, nationally, and internationally.

National Employee Health & Fitness Day

Action Health held their National Employee Health & Fitness Day on May 20, 2009 in the Action Health Corner in the Ardmore Cafeteria. Four of our employees participated in the event. Dr. JaNae Joyner, Ellen Tommasi, Dr. Hossam Shaltout, and Linda Moore performed blood pressures screenings for 179 participants.

6th Annual Red Dress Event

The 6th Annual Red Dress Event for the Hypertension and Vascular Research Center Seminar was held February 26, 2009. The speakers this year were Ms. LaTronya McCollum, Ms. Susan Butler, and Dr. Sarah Lindsey, each with very interesting topics. Lunch was available and door prizes were awarded to eligible participants in red.

Hypertension & Vascular Research Center Opportunities for Research Experiences - Emphasis on Increasing Diversity in Graduate Training

Planning for the incoming 2009 Post-baccalaureate Research Education Program (PREP) Scholars: Beginning in August of 2001, a post-baccalaureate research training program for minority students (WFUSM PREP Scholars) funded by the National Institute of General Medical Sciences (NIGMS) and directed by Dr. Debra Diz has provided 1-2 years of research, coursework and GRE preparation to under-represented minority students interested in careers in the biomedical sciences. The program, renewed in March 2009, is underway to again provide intensive research experiences for students from under-represented groups, with the goal of encouraging them to apply to graduate programs. The program, which will start in July 2009, will host 9 trainees. In addition to providing research experience, the program provides a chance to take prerequisite courses, remedy weaknesses in specific subject areas and gain assistance with the GRE. Students participate in a journal club and an individualized program of coursework to complement the research. The session will end next June with a poster symposium event featuring a prominent minority scientist as speaker. Historically, thirty-six trainees have participated in the program from 2001-2007. Thirty-one of the 36 participants entered graduate or professional programs directly from PREP. Fourteen students were offered positions and eleven entered programs at WFUSM (8 PhD, 1 MD and 2 Master's), ten entered PhD programs elsewhere (NC State, University of Houston, University of North Texas, University of South Carolina, Emory, Colorado State), one completed a Master's of biomedical engineering program (Georgia Tech), one a Master's in physiology (East Tennessee State University), one a Master's in Science Education, and four others are in Master's programs elsewhere (NC State, University of North Carolina-Greensboro, University of Maryland-Baltimore Campus, University of Glasgow). *To summarize the success of the program, 29 trainees entered graduate programs (19 PhD and 10 Master's) with an 88% retention rate, 7 entered professional schools, 2 are technicians and 4 are teaching math or science. The majority of these participants were African American (78%). Six students have already completed the PhD, with another 5 scheduled for completion of their PhD in 2009, 3 have completed the Master's, and 2 have obtained their teaching certificates.*

Summer Undergraduate Students Arrive: In addition to the PREP, a Short-Term Training program for Minority Students from National Heart, Lung and Blood Institute (NHLBI) entitled Excellence in Cardiovascular Sciences Summer Research Program for minority students (EICS) is in its 17th year. The Program Directors, Drs. Debra Diz and Ann Tallant, oversee the program with 12 annual summer research internships. The program provides short- term training for minority undergraduate students and the participants are 77% African American, 14% Hispanic, 3% Native American and 9% Asian/Pacific Islander. The focus is on research training in the basic sciences as related to the cardiovascular system. The program takes advantage of the broad, multidisciplinary cardiovascular research established at Wake Forest University School of Medicine (WFUSM).

Graduate Training con't

The program includes faculty members from the Hypertension & Vascular Research Center, Department of Physiology & Pharmacology, Comparative Medicine, Molecular Genetics Program, Molecular Medicine Program, Molecular & Cellular Pathology Program, Perinatal Biology, Biomedical Engineering, Radiation Oncology, Neurosciences Program, Divisions of Medicine and Surgery, and the Offices of Multicultural Affairs and the Graduate School of Arts & Sciences at WFUSM as well as colleagues at Winston-Salem State University.

The success of the EICS program includes the fact that from years 1-15, 180 students participated in the program. Of the students who have finished their undergraduate degree, 73% have remained in science careers: medical or other professional schools (26%),graduate school (35% - half in PhD programs and half in Master's programs) or industry/technical (12%) positions.

"The program provides research opportunities and cultural experiences to students under-represented in foreign exchange programs.

End of the 2009 Spring Us-Brazil Biomedical Sciences Student Exchange Program: June 19th is the end of the current semester of the exchange program that has brought 9 exchange students from Brazil to the US. Students come from Universidade Säo Judas Tadeu, Universidade Federal do Rio Grande do Sul, Universidade Federal de Minas Gerais, and Universidade Federal de Sao Paulo in Brazil. Over the past two years 8 students from the US (Winston-Salem State University, Wright State University) have gone to schools in Sao Paulo, Rio Grande do Sul and Belo Horizonte for research internships in the biomedical sciences. The program provides research opportunities and cultural experiences to students under-represented in foreign exchange programs.

Graduates, Shea Gilliam-Davis, David Soto Pantoja, and Aaron Trask with former graduate, Jyo Menon.

Three Receive Ph.D. in May 2009

Three Ph.D. students were in the graduating class of 2009 for the Graduate School of Arts & Sciences.

Shea Gilliam Davis graduated and is a post-doctoral fellow at Wake Forest University School of Medicine, Hypertension & Vascular Research Center.

David Soto Pantoja graduated and accepted a position as a post-doctoral fellow at the National Cancer Institute in Washington DC.

Aaron Trask graduated in December accepted a position as a post-doctoral position at Nationwide Children's Hospital in Columbus, Ohio.

Recent Publications

Journal Articles

Alfany-Fernandez I, Casillas-Ramirez A, Bintanel-Morcillo M, Brosnihan KB, Ferrario CM, Serafin A, Rimola A, Rodés J, Roselló-Catafau J, Peralta C. Therapeutic targets in liver transplantation: angiotensin II in nonsteatotic grafts and angiotensin-(1-7) in steatotic grafts.Am J Transplant. 2009 Mar;9(3):439-51.

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Joyner J, Neves L, Ferrario C, Brosnihan K. Administration of D-Alanine-[Ang-(1-7)] (A-779) Prior to Pregnancy in Sprague Dawley Rats Produces Antidiuresis in Late Gestation. J Am Soc Hypertens. 2008;2(6):425-430.

Lindsey SH, Cohen JA, Brosnihan KB, Gallagher PE, Chappell MC. Chronic Treatment with the GPR30 Agolnist G-1 Decreases Blood Pressure in Ovariectomized mRen2.Lewis Rats. Endocrinology. 2009 Apr 16. [Epub ahead of print]

Pendergrass KD, Gwathmey TM, Michalek RD, Grayson JM, Chappell MC. The angiotensin II-AT1 receptor stimulates reactive oxygen species within the cell nucleus. Biochem Biophys Res Commun. 2009 Jun 26;384(2):149-54.

Pulgar VM, Hong JK, Jessup JA, Massmann AG, Diz DI, Figueroa JP. Mild chronic hypoxemia modifies expression of brainstem angiotensin peptide receptors and reflex responses in fetal sheep. Am J Physiol Regul Integr Comp Physiol. 2009 June 10. [Epub ahead of print]

Soto-Pantoja DR, Menon J, Gallagher PE, Tallant EA. Angiotensin-(1-7) inhibits tumor angiogenesis in human lung cancer xenografts with a reduction in vascular endothelial growth factor. Mol Cancer Ther. 2009 June;8(6):1676-83.

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Recognition Awards

Graduate student Kate Cook presented a poster at the Ninth Annual Graduate Student Research Day and won runner up for the best translational poster.

Dr. JaNae Joyner to participate in the Epidemiology and Prevention of Cardiovascular Disease 35th Ten Day Seminar in Tahoe City, CA, receiving a $500 travel award.

Dr. Aaron Trask was awarded the Sundberg Award. The award memorializes Dr. Dave Sundberg as a respected colleague who enriched lives as a joyous friend and mentor to students.

Dr. Manisha Nautiyal was awarded the COSEHC Warren Trust Fellowship. She will start in July in Dr. Debra Diz' lab investigating signaling pathways involved in baroreflex function.

Grant Awards

The Consortium for Southeastern Hypertension Control (COSEHC), www.cosehc.org, headquartered in Winston-Salem, North Carolina, has launched a major three-year project funded by a medical education grant from Pfizer Pharmaceutical, Inc., designed to improve the prevention and treatment of cardiovascular disease and reduce heart attacks and strokes in the Southeast.

https://www1.wfubmc.edu/onlinegift/default.aspx?id=28&fund=Hypertension+and+Vascular+Research+Center+Development+Fund

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