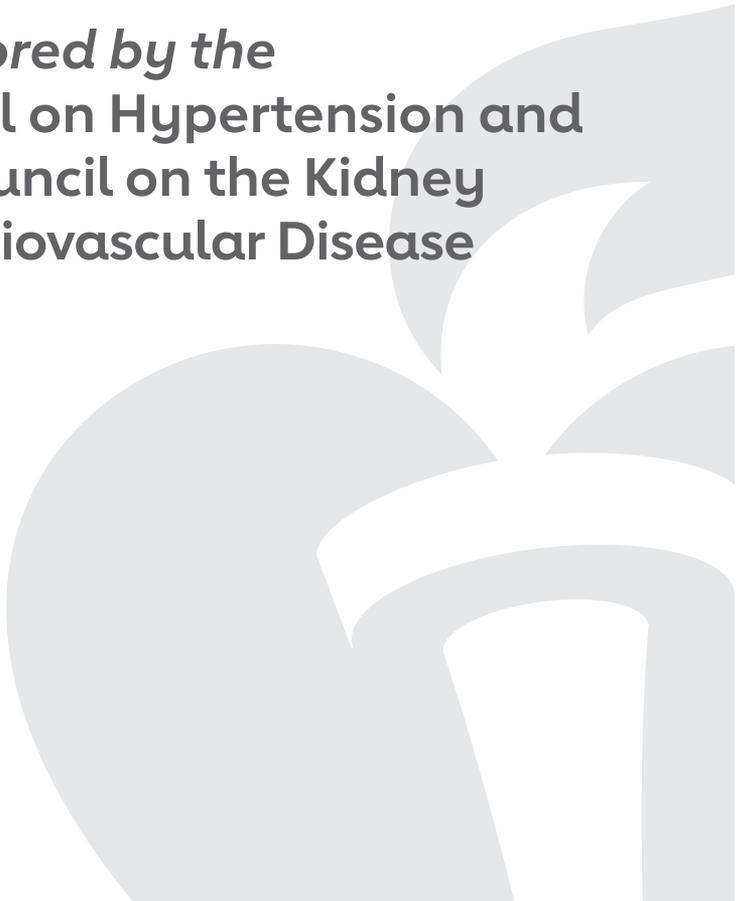




American
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Hypertension Scientific Sessions 2021

Sponsored by the
**Council on Hypertension and
the Council on the Kidney
in Cardiovascular Disease**



■ EXCELLENCE AWARD FOR HYPERTENSION RESEARCH



Alan Kim Johnson, PhD, FAHA

Neuroplasticity, Sensitization, and the Etiology of Hypertension

Alan Kim Johnson is the F. Wendell Miller Distinguished Professor, Departments of Psychological and Brain Sciences, Pharmacology and Neuroscience, and Health and Human Physiology at the University of Iowa.

Prof. Johnson's research meets at the intersection of integrative physiology, neuroscience, and behavior. His early work on the neural basis of thirst and sodium appetite led to the discovery

that the periventricular region surrounding the anteroventral third cerebral ventricle (AV3V) was essential for eliciting drinking to centrally administered angiotensin II. This finding provided the rationale for studies conducted with his colleagues at Iowa (MJ Brody, GD Fink & J Buggy) demonstrating that the integrity of the AV3V was necessary for expression of many forms of experimental hypertension in the rat.

Since beginning his research on the neural control of body fluid and cardiovascular homeostasis, his laboratory has investigated the:

- Location and function of key nodes in neural networks controlling thirst, salt appetite, vasopressin release and sympathetic tone
- Mechanisms translating environmental stressors into hypertension
- Reasons for the high comorbidity between psychological depression and heart failure
- Sites of estrogen and brain estrogen receptor interaction responsible for protection against hypertension
- Protective anti-hypertensive actions of Angiotensin [1-7] in the female brain
- Central nervous system immune and proinflammatory factors mediating hypertension and heart failure
- Effects of prior exposure to stressors inducing salt sensitivity
- Role of perinatal stress in the sensitization and expression of adult hypertension
- Role of neuroplasticity and memory in the induction and maintenance the sensitization of the hypertensive response.

Research in Prof. Johnson's laboratory has been supported by grants from the NIH National Heart Lung and Blood Institute and National Institute of Mental Health, NASA, the Office of Naval Research, and the American Heart Association.

■ EXCELLENCE AWARD FOR HYPERTENSION RESEARCH



Daniel Levy, MD, FAHA

Our Evolving Understanding of Hypertension

Daniel Levy, M.D. is Director of the Framingham Heart Study, Chief of the Population Sciences Branch of the National Heart, Lung, and Blood Institute, and Professor of Medicine, Boston University School of Medicine.

His main areas of research include the epidemiology and genetics of hypertension, heart disease, and heart failure. As one of the founders of an international genetics'

consortium, he has led genome-wide association studies that have identified many of the known genes associated with hypertension. He leads the Systems Approach to Biomarker Research in Cardiovascular Disease (SABRe CVD) initiative, which seeks to integrate big data resources from thousands of Framingham Heart Study participants using genetic variation in their DNA, gene expression, microRNA expression, proteomics, metabolomics, and DNA methylation to identify casual genes, proteins, and pathways contributing to cardiovascular disease.

Dr. Levy has twice received the National Institutes of Health Director's Award for his research accomplishments. In November 2009, he was the recipient of the American Heart Association's highest recognition for research achievements in epidemiology, the Population Research Prize. He has published over 700 articles in leading medical journals. From 2014-2020, he was named by Thomson-Reuters/Clarivate Analytics as one of the world's most highly cited scientists based on his publication of multiple papers ranking in the top 1% by citations, considering both year and field of research. In addition, he is ranked among the world's top 100 medical researchers in terms of the scientific impact of his publications.

He authored an acclaimed book about the revolution in our understanding the causes of heart disease titled *A Change of Heart* (published by Alfred A. Knopf) and served as Editor-in-Chief of the *Journal of the American Society of Hypertension*. From 2014-2018 and currently, Dr. Levy serves as Editor-in-Chief of *The International Journal of Cardiology: Hypertension*. He served on multiple U.S. guideline committees for hypertension and cholesterol treatment and has delivered keynote addresses at scores of national and international conferences.

■ EXCELLENCE AWARD FOR HYPERTENSION RESEARCH



Jane F. Reckelhoff, PhD, FAHA

Sex and Gender Differences in
Control of Blood Pressure

Dr. Reckelhoff is currently the Billy S. Guyton Professor and Chair of the Department of Cell and Molecular Biology, and Director of the Women's Health Research Center at the University of Mississippi Medical Center (UMMC) in Jackson. She received a B.S. in Chemistry from the College of William and Mary, and Ph.D. in Biochemistry from Medical College of Virginia/Virginia Commonwealth University. Reckelhoff

completed postdoctoral fellowships at Texas Southwestern and West Virginia University, before joining the faculty at the UMMC as an assistant professor.

Reckelhoff's research focuses on the mechanisms responsible for the sex differences in blood pressure control and renal disease, postmenopausal hypertension, and hypertension in polycystic ovary syndrome. Her research has been continuously funded by NIH since 1993. The impact of Reckelhoff's work has been to raise awareness on the roles played by sex steroids and gender in hypertension and renal disease with a goal to improve health outcomes with precision medicine in both men and women.

Reckelhoff has received numerous awards, including the Harry Goldblatt Award, Lewis K. Dahl Award, Harriett Dustan Award, and the Distinguished Achievement Award from the American Heart Association Council on Hypertension, and the Ernest Starling Lecture from the American Physiological Society (APS), she also served as President of the APS.

Dr. Reckelhoff is also Director and Principal Investigator of the Mississippi Center of Excellence in Perinatal Research COBRE, the world's top 100 medical researchers in terms of the scientific impact of his publications.

■ ARTHUR C. CORCORAN MEMORIAL LECTURE



Markus P. Schlaich, MD, FAHA, FESC, ISHF
Neuromodulation for Hypertension and
Cardiometabolic Disease

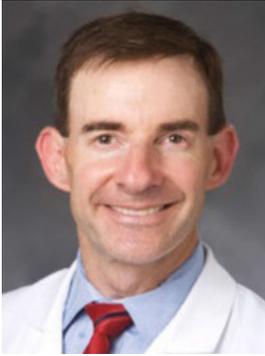
Markus P. Schlaich is the Dobney Chair in Clinical Research at the Dobney Hypertension Centre, School of Medicine - Royal Perth Hospital Unit Faculty of Medicine, Dentistry & Health Sciences, The University of Western Australia. Professor Schlaich is a renal physician and a European Society of Hypertension (ESH) accredited hypertension specialist with a strong background in clinical research. His main scientific interests

focus on pathophysiologic aspects of hypertension, involvement of the kidneys, and hypertension mediated organ damage. Professor Schlaich has a specific interest in treatment modalities targeting the sympathetic nervous system and has contributed to the development of renal denervation and carotid body modulation as alternative therapeutic approaches for hypertension, and more recently hepatic denervation for modulation of glucose metabolism.

He has authored more than 400 articles and book chapters in peer reviewed journals and has received several research prizes and awards. He currently serves as President of the High Blood Pressure Research Council of Australia and on the Scientific Council of the International Society of Hypertension (ISH) and is an invited member of the ISH College of Experts.

He is a founding member of the European Society of Hypertension Working Group on Interventional Treatment of Hypertension. He has been involved in guideline development both nationally in Australia and internationally as part of the writing committee of the 2020 International Society of Hypertension Global Hypertension Practice Guidelines. He serves on the Editorial Board of *Hypertension* and *Journal of Hypertension*.

■ LEWIS K. DAHL MEMORIAL LECTURE



Steven D. Crowley, MD, FAHA

The Immune System in Hypertension:
A Lost Shaker of Salt

Steven Crowley was raised in Columbus, Georgia. He received an undergraduate degree in Applied Mathematics from Harvard College in 1989 and a medical degree from Duke University in 1996. He completed internal medicine residency at Duke in 1999 and entered in Nephrology Fellowship training at Duke from 2001-2003. During that time, he trained in the study of hypertension and the renin angiotensin system (RAS) in the

laboratory of Dr. Thomas Coffman. He joined the Duke Nephrology Faculty in 2003 and has remained on staff at Duke until the present time.

Steven's projects under Dr. Coffman established that type 1 (AT1) receptors inside and outside the kidney regulate normal blood pressure homeostasis but that AT1 receptors in the kidney mediate a dominant contribution of angiotensin II to chronic hypertension. After establishing an independent laboratory, Steven elucidated mechanisms through which inflammatory cells and cytokines promote kidney damage and fibrosis during RAS activation. He has identified surprising protective effects of immune cell AT1 receptors in the pathogenesis of hypertension, kidney fibrosis, and acute kidney injury. He established cell-specific functions of inflammatory cytokines to regulate renal sodium handling in hypertension. He has similarly identified cell-specific roles for transcriptional factors downstream of the RAS to regulate the severity of hypertension and chronic kidney disease. By establishing functions of the innate and adaptive immune system that impact hypertensive renal disease, Dr. Crowley's experiments have laid the groundwork for precise, immune-based therapies to limit hypertension and associated kidney fibrosis.

■ HARRIET DUSTAN AWARD AND LECTURE



Ulrike Muscha Steckelings, MD, PhD, FAHA Of Women and AT₂-Receptors

Ulrike Muscha Steckelings is a Professor of Pharmacology at the University of Southern Denmark, Odense, Denmark. She received her MD from the University of Heidelberg, Germany and worked as PostDoc at the Dept. of Pharmacology, University of Heidelberg, the Dept. of Medicine, University of Melbourne, Australia, and the Dept. of Cardiovascular Research, Ciba Geigy, Bale, Switzerland. Muscha has a specialisation in Dermatology and a PhD

(Habilitation) in Experimental Pharmacology from Charité – Medical Faculty, Berlin, Germany.

Dr. Steckelings is a world-leading expert on the angiotensin AT₂-receptor (AT₂R) and has performed a broad spectrum of investigations related to the AT₂R ranging from studies on receptor pharmacology and signalling to studies in preclinical disease models and in recent years the involvement in the clinical development of the angiotensin AT₂-receptor agonist C21. Her work has significantly contributed to laying the groundwork for the clinical development of C21, which is currently being tested in a Phase II clinical trial in idiopathic pulmonary fibrosis and in a Phase III clinical trial in COVID-19.

Dr. Steckelings is past-president of the European Council for Cardiovascular Research, member of the Editorial Board of Hypertension and a regular peer reviewer for numerous cardiovascular journals including the AHA journals *Hypertension*, *Circulation* and *Circulation Research*.

She is a member of the Council and the Executive Committee of the International Society of Hypertension (ISH) and Chair of the ISH Women in Hypertension Research Committee. Furthermore, she is a member of the Steering Committee of the Gordon Research Conference on Angiotensin and has served on the organising committees of various satellite meetings on the RAS in association with meetings of ISH, IUPS and ICE.

Dr. Steckelings has been an invited speaker at international conferences on multiple occasions and is the author of more than 110 peer-reviewed publications.

■ DONALD SELDIN LECTURE



David L. Mattson, PhD, FAHA

Environment, Salt and Inflammation
in Development of Hypertension and
Renal End-Organ Damage

Dr. Mattson's research is focused upon the role of the kidney in the control of arterial blood pressure with an emphasis of understanding mechanisms of hypertension and renal disease.

Dr. Mattson has made numerous contributions to cardiovascular/renal science.

His initial work focused on the importance of blood flow in the renal medullary circulation

as a controller of sodium and water excretion, fluid and electrolyte homeostasis, and arterial blood pressure regulation. Over the past decade, Dr. Mattson's laboratory has focused on renal immune mechanisms as mediators of salt-sensitive hypertension and its associated renal damage. He has shown that salt-sensitive rats fed a high salt diet develop hypertension, renal damage, and greater renal immune cell infiltration. They demonstrated that infiltrating immune cells amplify the development of salt-sensitive hypertension and renal damage and showed that elevated perfusion pressure is the primary stimulus for this immune cell infiltration. He went on to describe the importance of free radicals and cytokines as mediators of these immune effects.

More recently, his lab has explored environmental factors that influence the development of salt-sensitive hypertension and renal damage and the role of dietary protein as well as maternal diet in the pathogenesis of salt-sensitive hypertension. He has found that these effects involve changes in the microbiota, microbial metabolites, DNA methylation, gene expression, and immune cell activation. This work has been supported by continuous, independent NIH funding since 1997 and has resulted in the publication of over 140 peer reviewed manuscripts with an h-index of 57 (per Google Scholar).

■ COUNCIL ON HYPERTENSION MID-CAREER AWARD FOR RESEARCH EXCELLENCE



Jennifer Pluznick, PhD

Renal Olfactory Receptors and
Blood Pressure Regulation

Jen Pluznick received her PhD in Renal Physiology from the University of Nebraska Medical Center (Omaha, NE) in 2005. She then spent 5 years as a postdoctoral fellow at Yale University (New Haven, CT), where she studied both renal physiology and sensory biology systems (in particular, olfaction). In 2010, Dr. Pluznick moved to Johns Hopkins School of Medicine, where she is now an Associate Professor of Physiology.

Dr. Pluznick is interested in better understanding the roles of understudied G-protein coupled receptors in the kidney, as well as in the cardiovascular system, and in uncovering how these receptors aid in the maintenance of homeostasis. Her lab has discovered that a subset of these G-protein coupled receptors respond to compounds produced by gut microbes, and act to regulate blood pressure. Thus, her lab has also developed an interest in the role of the gut microbiota to modulate host blood pressure control.

Dr. Pluznick is an active member of the of the American Heart Association, the American Physiological Society, and the American Society of Nephrology, and is Associate Editor of the *American Journal of Physiology – Renal Physiology*. She has given a TED talk on her work and has been the recipient of numerous awards, including the Henry Pickering Bowditch Award Lectureship and the Hamilton Smith Award for Innovative Research.

■ HARRY GOLDBLATT AWARD FOR EARLY CAREER INVESTIGATORS



Stephen P. Juraschek, MD, PhD

Orthostatic Hypotension in Hypertensive Adults

Dr. Stephen Juraschek is a physician investigator at Beth Israel Deaconess Medical Center and an Assistant Professor at Harvard Medical School. He is also the research director of the AHA-Certified Hypertension Center of Excellence at Healthcare Associates.

Dr. Juraschek has a doctorate in cardiovascular disease epidemiology through the Johns Hopkins Bloomberg School of Public Health and underwent internal medicine training at Johns Hopkins Hospital. He developed his passion for hypertension research during a general medicine fellowship in the Johns Hopkins ProHealth Clinical Research Center (founded by Paul Whelton with Larry Appel and Jeanne Charleston). He has published over 115 manuscripts (60 as senior or first author).

Dr. Juraschek's work on orthostatic hypotension has challenged conventions about its measurement and perceptions about the link between hypertension treatment and orthostatic hypotension. He is now the principal investigator of two subsequent R01s to study orthostatic hypotension, ambulatory blood pressure monitoring, and home blood pressure monitoring in the ARIC study in relation to dementia and cardiovascular disease, representing one of the largest prospective blood pressure studies among older adults in the U.S.

Dr. Juraschek is also funded to examine the DASH diet and sodium intake on cardiac injury and blood pressure regulation and has piloted several translational interventions to improve access to DASH-style groceries in urban food deserts. Dr. Juraschek is currently a site Principal Investigator of the AHA's Health Equity Research Network to Prevent Hypertension, where he and his team will be examining a DASH grocery intervention to prevent hypertension in Boston.

■ THE MARVIN MOSER CLINICAL HYPERTENSION AWARD



Jeanne B. Charleston, PhD, BSN, RN

Dr. Charleston is the Director of Clinical Research Operations at Johns Hopkins ProHealth; a faculty member in Johns Hopkins University Bloomberg School of Public Health (Department of Epidemiology), the School of Medicine (Division of General Internal Medicine), and the School of Nursing. She has over 20 years of experience in the conduct of CVD clinical trials with an emphasis on community-based recruitment and retention and appropriate staff training. She has played a key role in the conduct of several

landmark trials, including the Trials of Hypertension Prevention (TOHP), Trials of Non-Pharmacologic Intervention in the Elderly (TONE), Diabetes Prevention Study (DPP), the Weight Loss Maintenance Study, PREMIER, Look AHEAD, POWER and ACHIEVE; as well as smaller feeding and supplementation trials, such as OmniHeart, OmniCarb, and GO-FISH. Dr. Charleston's expertise has been recognized nationally and internationally, she has served as a consultant to the NIH to assist in enhancing the recruitment of minority and other participants to trials.

Dr. Charleston also serves as the Founder and Executive Director of a 501(c)3 nonprofit, Health Freedom, Inc. Health Freedom, and its associated, precedent programs, have shared the best health practices in the prevention and treatment of CVD, evidence-based resources, motivation, peer support, and linkage to care with the people of Baltimore and Maryland for more than four decades. Together with her medical partners, health education specialists, nutritionist consultants, and social workers, they have trained over 4,500 volunteers to promote best practices in CVD health. Mrs. Ina Glenn-Smith, Health Freedom's Program Director, has worked with the program and its precedents since 1979, bringing with her experience, understanding of resources and networks, as well as the trust of the communities that Health Freedom has served over the years. Health Freedom, Incorporated's Board of Directors consists of representatives of Maryland's health, education, and faith-based communities. Over the last two decades, more than 600 faith-based and community-based organizations have been established as Health Freedom partners offering free blood pressure/CVD risk screenings, health assessment, monitoring and health education classes in Maryland.

■ IRVINE PAGE-ALVA BRADLEY LIFETIME ACHIEVEMENT AWARD



Italo Biaggioni, MD, FAHA

Dr. Biaggioni is Professor of Medicine and Pharmacology and the David Robertson Professor in Autonomic Disorders. His research focused on the interaction between neural (autonomic) metabolic (renin- angiotensin, insulin) and local (adenosine, nitric oxide) mechanisms involved in the pathophysiology of hypertension and autonomic disorders.

Dr. Biaggioni's research program has had continued NIH funding for over 30 years and has resulted in over 325 peer-reviewed publications. By eliminating autonomic buffering, he showed that endogenous nitric oxide normally restrains blood pressure by about 30 mmHg, and that nitric oxide contributes significantly to the orthostatic hypotension of autonomic failure. His research in obesity has shown that hypertension and endothelial dysfunction can be reversed, and insulin resistance can be improved, by autonomic removal. His group discovered four novel genetic autonomic disorders: dopamine-beta-hydroxylase deficiency, CYB561 deficiency, norepinephrine reuptake deficiency, and mutations of the neural nicotinic receptor causing autonomic ganglionopathy. His discovery that the norepinephrine precursor droxidopa reverses the norepinephrine deficiency of dopamine-beta-hydroxylase deficiency, ultimately led to its development for the treatment of orthostatic hypotension, only the second FDA-approved drug for this purpose.

Dr. Biaggioni also direct the Vanderbilt's Autonomic Dysfunction Center, which provides a multidisciplinary care (internal medicine, clinical pharmacology, neurology, cardiology, and geriatrics) for patients with debilitating autonomic disorders. The Center has about 2,500 outpatient evaluations per year from all over the country and abroad, an inpatient consult service and its own inpatient admission service. Finally, he has trained numerous young investigators that are now leaders in the field.

■ STEPHANIE WATTS CAREER DEVELOPMENT AWARD

Sponsored by the Council on Hypertension's Trainee Advocacy Committee (TAC) and Data Sciences International (DSI)

This award honors the advocacy work of Dr. Stephanie Watts. Dr. Watts is an exemplary mentor, who is avid to assist her trainees and many others to reach their career goals and become accomplished scientists.

Finalists will present their project pitch during a special session where one winner will be selected. The winner will receive a complete Data Sciences International (DSI) 4-animal telemetry system.



Justin P. Van Beusecum, PhD

Dr. Van Beusecum is a Research Health Scientist at Ralph H. Johnson VAMC and an Assistant Professor in the Division of Nephrology at the Medical University of South Carolina. His research interests are investigating endothelial and immune cell crosstalk in the development of hypertension. He is interested in the role of growth arrest specific-6 (GAS6)/Axl

signaling in its role in the pathogenesis of this disease. He completed his graduate studies under the mentorship of Dr. Edward Inscho at UAB and completed a postdoctoral fellowship under the mentorship of Dr. David G. Harrison at VUMC investigating the role of innate immunity and hypertension. He studied how dendritic cells are activated in *in vivo* models of hypertension, including angiotensin II and L-NAME/High salt feeding. Moreover, he interrogated the physiological mechanisms of dendritic cell activation using *in vitro* and *ex vivo* models of hypertensive stimuli including endothelial cell stretch and high sodium environments on the activation of both murine and human monocytes and dendritic cells. Dr. Van Beusecum was recently awarded a VA Career Development Award to investigate the role of GAS6/Axl signaling in the development of hypertension. He is currently a member of the AHA's Council on the Kidney in Cardiovascular Disease Membership and Communications Committee and serves as an Early Career Editorial Fellowship member for AJP-Renal.



Jing Wu, PhD

Dr. Wu was trained in vascular biology and immunobiology in hypertension. His PhD thesis was focused on immune cells in the pathogenesis of arterial stiffening in hypertension. In his postdoctoral research he studied vascular PPAR γ and its downstream target Cullin3 in vascular function and

renal hemodynamics, which led to an AHA postdoctoral fellowship and the recent funding of a NIDDK K01 award (Jan 2021–Nov 2025). His efforts as a junior faculty were dedicated to independent research investigating the roles of T cell PPAR γ and Cullin3 in hypertension and metabolic disorders. Using the inducible cre-loxP system, he has created mouse models with genetic modifications in PPAR γ and Cullin3 selectively in T lymphocytes. Loss of PPAR γ and Cullin3 function in T cells increases the susceptibility to hypertension and target organ inflammation. Moreover, T cell Cullin3 deficiency results in an unexpected lean phenotype with decreased adiposity and hypoglycemia. These models are valuable tools to understand the nature of vascular-immune cell interface in renal physiology, the ability of the immune cells to regulate the function of metabolic organs (pancreas, liver, adipose tissue), and the vulnerability of these processes to genetic mutations, oxidative stress, and inflammation. Dr. Wu's ultimate career goal is to apply his findings to translational research and develop novel therapies for cardiovascular and metabolic diseases.



Tao Yang, PhD

Dr. Yang obtained his PhD degree from the University of Florida with a research interest in gut microbiota and blood pressure regulation. He finished his post-graduate training at the University of Florida and the University of Toledo. Currently, he is in a transition into Assistant Professor to establish his independent research project. Dr. Yang current research interest

falls in two aspects: (1) the brain-gut axis in regulation of blood pressure. Gut microbiota plays an important role in control of blood pressure through its effects on metabolism, immune responses, and autonomic nervous system. Modification of gut microbiota impacts blood pressure. His research interest is to investigate the mechanism how gut microbiota regulated blood pressure through any of the pathways described above. (2) interaction between gut microbiota and anti-hypertensive drugs. The recent publication found anti-hypertensive drug administration altered gut microbiota and brain neuronal activity in the cardioregulatory regions, indicating the potential effects of anti-hypertensive on blood pressure through brain-gut axis. In addition, gut microbiota has been demonstrated to be important for efficacy of a variety of drugs. His research interest is to investigate how the gut microbiota interacts with drugs, and whether this interaction could be manipulated to enhance the efficacy of anti-hypertensive drugs to treat hypertension.

AHA Professional Membership

AHA Professional Members are an engaged group of cardiovascular and brain health professionals who actively participate in the discovery and dissemination of science. We have 16 scientific councils, covering an array of specialties, that support and foster health science.

Members participate in writing groups that produce scientific statements and guidelines. They lend their voice and expertise to science strategies to improve health equity. Members are involved in committees that determine how our research funding is allocated, as well as determine which programs and abstracts will be presented at our scientific meetings. You will also find them actively engaged in networking and mentoring with early career members to continue the advancement of science.

Through these science contributions, and much more, we have a continually evolving base of science professionals who are at the heart of AHA Professional Membership.

Learn more and Join or Renew today!



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