



DEPARTMENT OF PHYSIOLOGY

DEPARTMENT OF PHYSIOLOGY FACULTY

Zhongjie Sun, MD, PhD, FAHA

Professor and Chair
Thomas A. Gerwin Chair of Excellence
in Physiology

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Associate Professor

Julio Cordero-Morales, PhD

Associate Professor

Ioannis Dragatsis, PhD

Professor

Zheng Fan, PhD

Professor

Polly Hofmann, PhD

Professor
Senior Executive Associate Dean,
College of Medicine

Jonathan H. Jaggar, PhD

Maury W. Bronstein Professor

Salvatore Mancarella, PhD

Assistant Professor

Helena Parfenova, PhD

Professor

Kaushik Parthasarathi, PhD

Associate Professor

Gadiparthi N. Rao, PhD

George and Elizabeth Malloy Professor

Nikhlesh Singh, DVM, PhD

Assistant Professor

Donald B. Thomason, PhD

Professor
Dean, College of Graduate Health Sciences

Gabor J. Tigyi, MD, PhD

Van Vleet Professor

Valeria Vásquez, PhD

Assistant Professor

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TIGYI LAB RECEIVES OUTSTANDING PERFORMANCE ON ANNUAL LAB SAFETY INSPECTION REPORT



As part of NIH and governmental regulatory agency requirements, the UTHSC Office of Research Safety Affairs (RSA) evaluated the labs within each of the 17 research departments for compliance with safety requirements. Out of 183 PIs whose labs were inspected, Dr. Gabor Tigyi, Harriet Van Vleet Endowment Professor of Physiology, was among the 27 PIs recognized for outstanding performance on their annual laboratory safety inspection. This determination was based on their lab safety inspection, the nature of hazards managed in their labs, and the number of labs or personnel under Dr. Tigyi's oversight. This recognition demonstrates Dr. Tigyi's

commitment to providing a safe and productive environment for students, employees, and visitors to work and study. Congratulations, Dr. Tigyi!

For more information about Dr. Tigyi's work, please contact him at gtigyi@uthsc.edu. To read more about the UTHSC Office of Research Safety Affairs and to download a copy of the 2019 Laboratory Safety Inspection Report, please visit uthsc.edu/research/documents/protected/safety/lab-safety-inspection-summary-report.pdf (requires sign-in).

DEPARTMENT WELCOMES VANESSA CUNNINGHAM AS ADMINISTRATIVE SERVICES ASSISTANT

Ms. Vanessa Cunningham has joined the Department of Physiology as our newest Administrative Services Assistant. Vanessa will provide administrative support to the Department and will work closely with Dr. Kaushik Parthasarathi on maintaining the departmental shared equipment.

Ms. Cunningham worked previously as administrative assistant for the American Association of Laboratory Science (AALAS) in both the Foundation and Certification departments. Her experience with AALAS sharpened her secretarial, customer service, and problem solving skills. She also worked previously as a research animal technician for Massachusetts General Hospital – CCM in Boston. There, she provided husbandry and research support services primarily on rodents and small animals, and she also had the opportunity to work with larger animals. In addition, Vanessa was a volunteer at New England Ovis, where she helped deliver and care for some of the world's healthiest and cleanest sheep available for research use.

Ms. Cunningham holds an associate degree in science and is currently enrolled in classes to receive her bachelor's in business management. She looks forward to using her administrative experience, along with her science-based background, to contribute to the Department of Physiology's continued success and growth. She will be based in Coleman A302, and can be reached at vcunnin1@uthsc.edu or at 901.448.2670.

DR. SALVATORE MANCARELLA

AWARDED NIH R56 GRANT

Dr. Salvatore Mancarella, Assistant Professor in the Department of Physiology, was recently awarded a \$357,746 R56 High Priority, Short-Term Project grant from the National Institutes of Health (NIH). Dr. Mancarella's R56 project focuses on the role of Orai in cardiac pathophysiology and seeks to manipulate Orai channels to decrease and reverse cardiac functional deterioration in congestive heart failure. Dr. Mancarella's ultimate goal for his research is to understand the fundamental processes that drive cardiac functional and structural deterioration in order to develop novel therapies that will fundamentally affect disease progression. His project has been funded for one year through the National Heart, Lung, and Blood Institute (NHLBI).



National Heart, Lung,
and Blood Institute

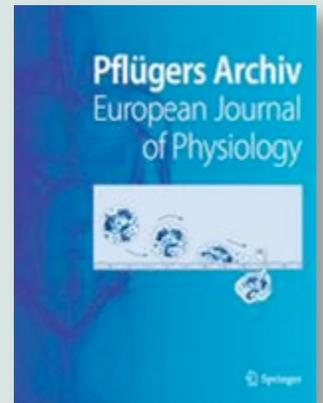
Dr. Mancarella received his PhD in Human Pathological Anatomy from the Federico II University in Naples, Italy, in 2007. He did his postdoctoral training in the labs of Drs. Donald Gill and Steven Houser at Temple University where he focused on the role of the newly discovered STIM1 protein in the cardiovascular system. Dr. Mancarella joined the University of Tennessee Health Science Center as Assistant Professor in the Department of Physiology in 2014, and his current research focuses on understanding cellular signaling in cardiovascular diseases, unveiling mechanisms involved in regulating cardiac function and remodeling.

To learn more about Dr. Mancarella's research, please contact him at smancare@uthsc.edu.

DR. MANCARELLA PUBLISHES ARTICLE IN PFLÜGERS ARCHIV: EUROPEAN JOURNAL OF PHYSIOLOGY

Dr. Salvatore Mancarella recently published an article in Pflügers Archiv: European Journal of Physiology. His article, titled "TREK-1 protects the heart against ischemia-reperfusion-induced injury and from adverse remodeling after myocardial infarction," showed that loss of TREK-1 exacerbated myocardial IR injury resulting in increased myocardial damage and worsening functional recovery during reperfusion; provided evidence that TREK-1 could be protective against post-MI maladaptive remodeling; and demonstrated that TREK-1 actively regulated cardiac repolarization and intracellular Ca²⁺ clearance by shortening the APD. The article appears online in the September 12, 2019, issue at <https://doi.org/10.1007/s00424-019-02306-y>.

For more information, please contact Dr. Mancarella at smancare@uthsc.edu.



DR. MANCARELLA PRESENTS POSTER AT THE BCVS SCIENTIFIC SESSIONS 2019

Dr. Salvatore Mancarella presented a poster at the American Heart Association's Basic Cardiovascular Sciences 2019 Scientific Sessions held from July 29 to August 1 in Boston, Massachusetts. Dr. Mancarella's poster was titled "Cardiac-specific Deletion of Orai3 Channel Causes Dilated Cardiomyopathy." The Basic Cardiovascular Sciences Conference has become the major annual meeting in the world for basic research in cardiovascular biology and disease and, for many investigators and trainees, has become the premier cardiovascular conference of choice. This meeting attracts the field's best and brightest researchers from across the globe with the common goal

of discovering pathways to cardiovascular therapeutics and promoting cardiovascular health.

The goal of the BCVS meeting is to showcase the frontiers of basic and translational cardiovascular science, enhance collaborations among investigators with diverse geographic locations, disciplines and career stages, catalyze new ideas and directions, and inspire the next generation of researchers in cardiovascular science.

To learn more about the BCVS or to access a copy of the 2019 conference program, please visit professional.heart.org/idc/groups/ahamah-public/@wcm/@sop/@scon/documents/downloadable/ucm_504466.pdf.



American Heart Association®

Basic Cardiovascular Sciences

DR. LEONARD “RUSTY” JOHNSON

RECEIVES CLARENCE A. JACKSON DISTINGUISHED CAREER ACHIEVEMENT AWARD

Dr. Leonard “Rusty” Johnson, Distinguished Professor Emeritus and former Department of Physiology Chair, was recently recognized by the National Association of Wabash Men, who bestowed him with the Clarence A. Jackson Distinguished Career Achievement Award from Wabash College. This award is presented to a Wabash alumnus who has distinguished himself by outstanding service to his chosen vocation. Dr. Johnson was one of five alumni who received awards at a ceremony held on Saturday, September 27, 2019, at Wabash College’s Pioneer Chapel in Crawfordsville, Indiana. The Wabash Men extolled Dr. Johnson for his extensive grant support, his more than 250 research publications, his textbook *Gastrointestinal Physiology* – which is the most widely used book in medical school – and his being bestowed with a Merit Award from the NIH.

Dr. Johnson’s profound impact on the UTHSC Physiology Department was also recognized by the Wabash Men, who took note of his contributions as Thomas Gerwin Chair of Physiology to growing the Physiology Department into a top-ranked, internationally prominent program.

Dr. Johnson received his bachelor’s degree in Zoology from Wabash in 1963, and he joined the UTHSC in 1989 as Chair of the Department of Physiology, where he served until 2005 before becoming Vice Chancellor for Research.

All of us in the Department of Physiology are extremely proud of Dr. Johnson and congratulate him on receiving this truly wonderful honor from his alma mater.

To learn more about Dr. Johnson, please contact him at ljohns28@uthsc.edu.

Wabash College, Crawfordsville, Indiana.



Dr. Rusty Johnson (center), with Marc Nichols (left), President of the National Association of Wabash Men, and Rob Shook (right), Past President of the NAWM.



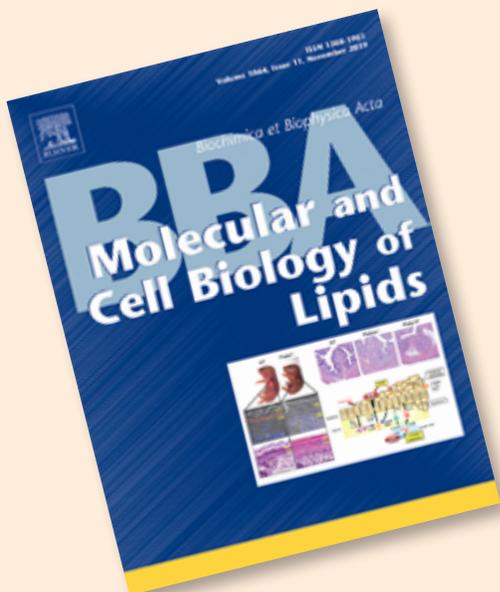
DR. GABOR TIGYI

RECEIVES CERTIFICATE OF EXCELLENCE FROM BBA - MOLECULAR AND CELL BIOLOGY OF LIPIDS

Dr. Gabor Tigyi, Harriet Van Vleet Endowed Professor of Physiology, was recently awarded a Certificate of Excellence for his service on the editorial board of the *Biochimica et Biophysica Acta (BBA) - Molecular and Cell Biology of Lipids*. Dr. Shazia Khan, Scientific Editor for the journal, praised Dr. Tigyi for his contributions to the editorial board and recognized him for the excellent quality of his peer review.

Dr. Tigyi's research is aimed at elucidating the structure and function as well as the signal transduction mechanism of a family of endogenous phospholipids with growth factor-like properties. Dr. Tigyi has shown that serum contains a set of lipid factors that are the major source of mitogenic stimuli present in serum. The best characterized member of this group of lipid mediators is lysophosphatidic acid (LPA). Dr. Tigyi's group has made pioneering contributions to the current understanding of the pharmacology of phospholipid growth factors. His current work is aimed at drug discovery targeting the LPA GPCR and autotaxin, the lysophospholipase that generates LPA in biological fluids. His group has made important strides in developing radiation countermeasures that protect mice and nonhuman primates from radiation injury. They also identified the role of LPA1 and LPA5 GPCR expressed in the tumor microenvironment in the metastatic process.

Dr. Tigyi received his MD and PhD from the University Medical School of Pécs, Hungary, in 1982 and joined the Department of Physiology at the University of Tennessee Health Science Center in 1992. For more information about Dr. Tigyi's research, please contact him at gtigyi@uthsc.edu. To learn more about *BBA - Molecular and Cell Biology of Lipids*, please visit journals.elsevier.com/biochimica-et-biophysica-acta-molecular-and-cell-biology-of-lipids.



DR. LEAH AKINSEYE

AWARDED \$6,000 RESEARCH GRANT FROM LE BONHEUR CHILDREN'S HOSPITAL

Dr. Leah Akinseye, intern and medical resident in the lab of Dr. Zhongjie Sun, Chair of the Department of Physiology, was recently awarded \$6,000 in funding by the Research Grants Program for Clinical Fellows at Le Bonheur Children's Hospital and the UTHSC Department of Pediatrics. The Research Grants Program promotes meritorious clinical and basic investigation carried out by pediatric fellows. It is designed to promote clinical and basic investigation - especially by individuals in the early stages of their research career and those initiating new lines of investigation. Dr. Akinseye's award-winning project is titled "Role of histone demethylase KDM6A in epigenetic regulation of *Klotho*."

Dr. Akinseye is a medical graduate of Ladoko Akintola University of Technology in Nigeria. She completed her pediatric residency training at Flushing Hospital Medical Center in New York and her MPH at the City University of New York (CUNY) Graduate School of Public Health and Health Policy. She is currently a pediatric endocrine fellow at the UTHSC, and she joined Dr. Sun's lab in 2019 as part of her basic laboratory research training and project.

To learn more about Dr. Akinseye and her research, please contact her at lakinsey@uthsc.edu. For more information about Le Bonheur's Research Grant Program, please visit lebonheur.org/research/investigator-resources.

DR. VALERIA VÁSQUEZ

TO RECEIVE 2020 MARGARET OAKLEY DAYHOFF AWARD

Dr. Valeria Vásquez, Assistant Professor in the Department of Physiology, will receive the 2020 Margaret Oakley Dayhoff Award from the Biophysical Society (BPS). Dr. Vásquez is being recognized for her pioneering work toward understanding how the functions of sensory ion channels are modulated by bioactive lipids and natural toxins. The Dayhoff Award honors the memory of Margaret Dayhoff, former President of the Biophysical Society, Professor of Biophysics at Georgetown University, and Director of Research at the National Biomedical Research Foundation. The award is given to a woman who holds very high promise or has achieved prominence while developing the early stages of a career in biophysical research within the purview and interest of the Biophysical Society.

BPS President Dave Piston noted, "It takes a significant individual and researcher to be selected for an award honoring the achievements of a pioneering woman biophysicist such as Margaret Oakley Dayhoff. Valeria is precisely such an individual. We are proud to recognize her exceptional research and mentorship, and to add her name to the list of celebrated women scientists." Dr. Vásquez will be honored at the Society's 64th Annual Meeting at the San Diego Convention Center in San Diego, California, on February 15-19, 2020.

To learn more about Dr. Vásquez and her research, please contact her at vvasquez@uthsc.edu. To find out more about the Biophysical Society, please visit biophysics.org.



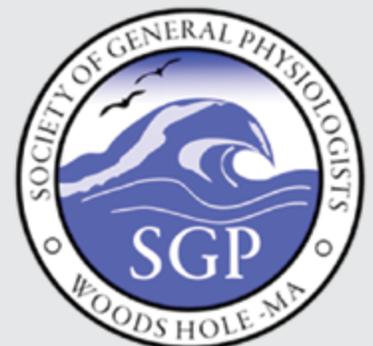
DR. VÁSQUEZ ELECTED PRESIDENT OF SOBLA

Dr. Valeria Vásquez, Assistant Professor of Physiology, was recently elected President of the Society of Latin American Biophysicists (SOBLA). SOBLA's mission is to catalyze interactions among Latin American biophysicists worldwide, providing young scientists with the opportunity to reach biophysicists in Latin America and abroad to establish collaborations and/or internships, in order to promote the development of biophysics.

Dr. Vásquez received her PhD in Molecular Physiology and Biological Physics from the University of Virginia while working in the lab of Dr. Eduardo Perozo. Dr. Vásquez did her postdoctoral training in the lab of Dr. Miriam B. Goodman at Stanford University where she worked with the mechano-electrical transduction channel complex present in *C. elegans* touch receptor neurons. Dr. Vásquez joined the University of Tennessee Health Science Center as Assistant Professor in the Department of Physiology in March 2014, and her current research focuses on understanding the functional and structural basis of mechano-dependent gating of the ion channels responsible for touch, pain, and proprioception. To learn more about SOBLA, please visit sobla.net.



**Sociedad de Biofísicos
Latino Americanos**



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