



# Physiology News

The UMMC Department of Physiology and Biophysics Newsletter

Issue 3 | February 2018

## Chair's Welcome



John E. Hall, PhD  
Arthur C. Guyton Professor and Chair

We are delighted to provide a report of activities and accomplishments of the Department of Physiology and Biophysics during the past year. This newsletter highlights a few of the many ways that our faculty, fellows, students and staff continue to excel in the education, research, and service missions of the University of Mississippi Medical Center (UMMC) and many professional societies.

We were pleased to welcome **Dr. Joshua Speed** as assistant professor in January 2018. Josh received his PhD in our department in 2011 and completed postdoctoral training at the Medical College of Georgia and the University of Alabama-Birmingham where he was appointed as Instructor in the Department of Medicine, Division of Nephrology in 2015. He returns to Mississippi with a unique set of research skills and a research interest in the pathophysiology associated with a high salt diet, including the possibility that excess salt intake promotes development of obesity. His current research is funded by the National Institutes of Health.



Dr. Joshua Speed

We are delighted to acknowledge the many honors and awards that our faculty, fellows and students continue to receive for their research and education activities. **Dr. Joey Granger**, professor, received the 2017 Leadership Award from the Consortium of Southeastern

Hypertension Control (COSEHC). **Dr. Merry Lindsey**, professor, received the Tiny Heart Hero Award from the Saving Tiny Hearts Society, as well as the UMMC Group on Women in Medicine and Science (GWIMS) Innovation Award. **Dr. Lique Coolen**, professor, was inducted into the Nelson Order for Teaching Excellence at UMMC. **Dr. Thomas Adair**, professor, was inducted into the Evers Hall of Fame by the medical students at UMMC. **Dr. Alejandro Chade**, professor, received the Translational Research Team Award for Excellence in Research at UMMC, as well as the Mid-Career Award for Research Excellence by the Council on Hypertension of the American Heart Association. **Dr. Kristine DeLeon-Pennell**, instructor, received the Emerging Star Award at the 2017 GWIMS award ceremony. Several other important awards were earned by our students, postdoctoral fellows, and faculty and some of these are highlighted in this newsletter.

For the past three years, the department has been selected by the UMMC medical students for the **Carl G. Evers Society Basic Science Department of the Year Award**. These awards, along with the individual awards for education excellence that our faculty receive emphasize that education of undergraduate, graduate, medical, and dental students, along with postdoctoral fellows, remains a critical component of our overall missions.

The department's research productivity has accelerated in the past several years. Despite increased competition for extramural funding, our department members continue to be highly competitive in their applications. For 2017, the department was ranked #4 in funding by the National Institutes of Health (NIH) among all funded physiology departments, despite the relatively

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## Chair's Welcome (continued)

small number of full time faculty compared to other top-ranking departments. Faculty members also published over 100 articles in peer-reviewed journals, numerous book chapters, and many serve as members of national and international professional committees. Several members of the department serve as journal editors/associate editors and 10 members of the department serve on editorial boards of professional journals. Dr. Joey Granger currently serves as the Chair of the Council on Hypertension of the American Heart Association and several members of the department have served in major leadership roles of professional organizations such as the American Physiological Society, the American Heart Association, the Inter-American Society of Hypertension, and others.

Department faculty members currently lead six multi-disciplinary research centers that provide important core services to other departments and investigators at UMMC, as well as training programs for basic and clinical researchers.

It is not just the faculty, students, and fellows who excel. The administrative and research staff continue to be a major resource for UMMC and are often called upon by other departments and by UMMC administration for their expertise. We are blessed with an outstanding group of people who make us proud to be part of the Department of Physiology and Biophysics at the University of Mississippi Medical Center. ■

# Awards

The Department of Physiology and Biophysics received the Carl G. Evers, M.D. Society Basic Science Department of the Year Award for 2016-17.

## Faculty



**Dr. Thomas Adair**, Professor

- Evers Hall of Fame inductee by medical students of the University of Mississippi Medical Center



**Dr. Jussara do Carmo**, Assistant Professor

- Gold Medallion Award, Excellence in Research Awards from the University of Mississippi Medical Center

**Dr. Alejandro Chade**, Professor

- Translational Research Team Award, Excellence in Research Awards from the University of Mississippi Medical Center



**Dr. Eric George**, Assistant Professor

- APS Early Career Advocacy Fellowship, American Physiological Society



**Dr. Kristine DeLeon-Pennell**, Instructor

- Emerging Star Award, 2017 GWIMS Award Ceremony

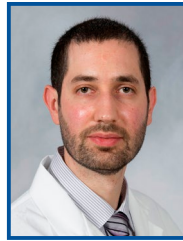


**Dr. Joey Granger**, Professor

- Leadership Award, 2017 Consortium for Southeastern Hypertension Control (COSHEC)

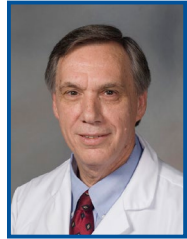
**Dr. Romain Harmancey**, Assistant Professor

- Silver Medallion Award, Excellence in Research Awards from the University of Mississippi Medical Center



**Dr. James Wilson**, Professor

- Platinum Medallion Award, Excellence in Research Awards from the University of Mississippi Medical Center

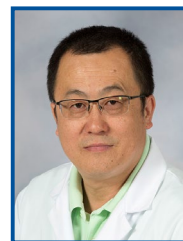


**Dr. John Hall**, Arthur C. Guyton Professor and Chair

- Carl G. Evers Basic Science Professor of the Year, selected by UMMC medical students

**Dr. Ji Li**, Associate Professor

- Gold Medallion Award, Excellence in Research Awards from the University of Mississippi Medical Center

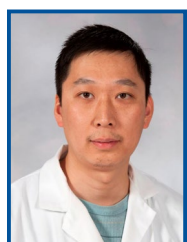


**Dr. Merry Lindsey**, Professor

- 2016 Tiny Heart Hero Award, Saving Tiny Hearts Society
- Platinum Medallion Award, Excellence in Research Awards from the University of Mississippi Medical Center
- Innovation Award, 2017 GWIMS Award Ceremony

**Dr. Erin Taylor**, Instructor

- Caroline tum Suden/Frances Hellebrandt Professional Opportunity Award, American Physiological Society



**Dr. Zhen Wang**, Instructor

- Caroline tum Suden/Frances Hellebrandt Professional Opportunity Award from the American Physiological Society

## Students and Postdoctoral Fellows



**Samuel Adeosun**, Postdoctoral Fellow

- Poster of Distinction, Programming Committee of the Gastrointestinal and Liver Section of the American Physiological Society

**Gwendolyn Davis**, Ph.D. Student

- Steven M. Horvath Professional Opportunity Award from the American Physiological Society



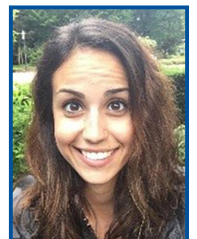
**Adrian Eddy**, Ph.D. Student

- Caroline tum Suden/Frances Hellebrandt Professional Opportunity Award from the American Physiological Society
- Water & Electrolyte Homeostasis Research Distinction Award from the American Physiological Society



**Erika Guise**, Ph.D. Student

- Caroline tum Suden/Frances Hellebrandt Professional Opportunity Award from the American Physiological Society





**Ashley Newsome**, M.D./Ph.D. Student

- Caroline Ruth L. Kirschstein National Research Service Award (NRSA) Fellowship from the National Institutes of Health/National Institute of Diabetes and Digestive and Kidney Diseases

- Student Poster Presentation Award Winner at the 2016 UMMC School of Graduate Studies Research Day



**Dr. Jussara do Carmo**, Assistant Professor

- do Carmo received a distinction in scholarship in the *American Journal of Physiology – Endocrinology and Metabolism* for the article “Role of autonomic nervous system in chronic

CNS-mediated antidiabetic action of leptin” by the APS select of the American Physiological Society

**Victoria Wolf**, Ph.D. Student

- Student Poster Presentation Award Winner at the 2016 UMMC School of Graduate Studies Research Day



**Dr. David Stec**, Professor

- Stec was promoted from associate professor to professor in July 2017.



## Achievements



**Dr. Barbara Alexander**, Professor

- Alexander was named Top Reviewer of 2016 by Hypertension, Journal of the American Heart Association.



**Dr. Erin Taylor**, Instructor

- Taylor was promoted from post-doctoral fellow to instructor in 2017.

**Dr. John Clemmer**, Instructor

- Clemmer was promoted from postdoctoral fellow to instructor in 2017.



**Dr. Heather Drummond**, Professor

- Drummond was promoted from associate professor to professor in July 2017.

# Grants Awarded

## Faculty

### **Dr. Alejandro Chade**, Professor

- American Heart Association Established Investigator Award, Year 4, “Novel Therapeutic Interventions in Renovascular Disease”
- National Institutes of Health, “STTR-A preclinical trial of therapeutic angiogenesis plus angioplasty and stenting for renal vascular disease”

### **Dr. John Clemmer**, Instructor

- American Heart Association, “Computational Modeling and Predictive Analytics to Improve the Treatment of Resistant Hypertension in African Americans”

### **Dr. Lique Coolen**, Professor

- Department of Defense, Year 2, “Determining Sensory Plasticity and Developing Recovery for Sexual Dysfunction in Chronic Spinal Cord Injured Male Rats”

### **Dr. Eric George**, Assistant Professor

- American Heart Association Grant-In-Aid, Year 2, “Novel Therapy for Preeclampsia”

### **Dr. Joey Granger**, Professor

- National Institutes of Health Training Grant, Year 2, “Hypertension and Cardiorenal Disease Research Training Program”

### **Dr. John Hall**, Chair and Professor

- National Institutes of Health Program Project Grant, Year 3, “Cardiovascular Dynamics and Their Control”
- National Institutes of Health Center of Biomedical Research Excellence Grant, Year 4, “Cardiorenal and Metabolic Diseases Research Center”

### **Dr. Romain Harmancey**, Assistant Professor

- National Institutes of Health Research Transition Award, Year 3, “Unexpected Consequences of Insulin Resistance for the Heart”

### **Dr. Robert Hester**, Professor

- HC Simulation, LLC, “A Computer Model of Renal Physiology for use as a FDA Medical Device Development Tool”

### **Dr. Ji Li**, Associate Professor

- American Diabetes Association, “Activated Protein C Modulates Glucose Transport in the Ischemic Heart”
- National Institutes of Health Research Grant, Year 2, “AMPK-SIRT1 Signaling in the Adaptive Metabolic Response”
- National Institutes of Health, Subcontract with University of Louisville, “A Novel Mechanism of Stromal Cell-Derived Factor 1 Protection Against Diabetic Cardiomyopathy”

### **Dr. Merry Lindsey**, Professor

- National Institutes of Health Research Grant, Year 2, “Systems Biology of Macrophage Polarization Following Myocardial Infarction”
- National Institutes of Health Research Grant, Year 1, “Systems Biology of Fibroblast Activation Following Myocardial Infarction”
- National Institutes of Health Specialized Center Cooperative Agreement, Subcontract with UCLA, “A Community Effort to Translate Protein Data to Knowledge: An Integrated Platform”

### **Dr. Yonggang Ma**, Assistant Professor

- American Heart Association Scientist Development Grant, Year 3, “Neutrophil Polarization in Post-myocardial Infarction Cardiac Remodeling”

### **Ashley Newsome**, Ph.D. Student

- National Institutes of Health, “Low Birth Weight, Blood Pressure, and Kidney Diseases”

### **Dr. Michael Ryan**, Professor

- National Institutes of Health, “Placental Ischemia, Hypertension and Vascular Function”
- National Institutes of Health Education Project, Year 4, “Mississippi Diversity in Hypertension and Cardiorenal Researchers Program”

### **Dr. Erin Taylor**, Instructor

- American Heart Association, “Autoantibodies and the pathogenesis of hypertension in systemic lupus erythematosus”

**Dr. Zhen Wang**, Instructor

- National Institutes of Health, “Synergistic Interactions of Hypertension and Diabetes in Promoting Kidney Injury”

**Dr. James G. Wilson**, Professor

- National Institutes of Health Specialized Center Cooperative Agreement, “Mississippi Center for Clinical and Translational Research”
- National Institutes of Health Research Grant, Subcontract with Massachusetts General Hospital, “Metabolomic Predictors of Insulin Resistance and Diabetes”
- National Institutes of Health Research Grant, Subcontract with the University of Washington, “CHARGE Consortium- Gene Discovery for CVD and Aging Phenotypes”

- National Institutes of Health Research Grant, Subcontract with the University of Washington, “Community-based Evaluation of APOL1 Testing in African-Americans”
- National Institutes of Health Research Grant, Subcontract with the University of Washington, “Rare Variants and NHLBI Traits in Deeply Phenotyped Cohorts”
- National Institutes of Health, Subcontract with the University of Washington, “Thrombosis Genetics in African Americans”
- National Institutes of Health, “Aptamer Proteomics of Cardiometabolic and Renal Traits in African Americans”

## Departmental Activities

### Physiology Understanding (PhUn) Week

PhUn Week is an outreach program sponsored by the American Physiological Society (APS). The goals of PhUn Week are to help students gain an interest in physiology, to show the importance of physiology in daily life, to connect physiologists to students in their community,



and to help teachers recognize the importance of physiology within their science curriculum.



**Dr. Michael Ryan, Dr. Barbara Alexander and Dr. Jennifer Sasser** organized the PhUn Week activity at the Mississippi Children’s Museum on Nov. 11, 2017. More than 370 patrons engaged in hands-on activities to teach kidney, lung, heart and gastrointestinal structure and function.

### Dragon boat regatta

The Dragon boat regatta is a fundraiser event for the city of Ridgeland that takes place on the Ross Barnett Reservoir each May. Teams of 20 compete in brightly colored boats to see who will be first to cross the finish line.

Our department’s team, “Mighty-Chondria,” participated in the race for the third year in a row. Several members from our department, including faculty, staff, postdoctoral fellows and students, took part in the event.



# Staff News

## Calvin Torrey

Calvin Torrey celebrated 35 years of service at the University of Mississippi Medical Center in July 2017. He first came to UMMC in 1982 as a storeroom clerk in the Dietician Department. He transferred to the Laboratory Animal Facility in 1984 as an assistant animal technician and was soon promoted to a veterinarian assistant. Calvin began working in the Department of Physiology and Biophysics in August 1989 as a researcher with Dr. John Hall. His 35 years of dedication to UMMC, the department and the research mission is greatly appreciated.

A reception was hosted by the department to celebrate Calvin's years of outstanding service. Physiology faculty and staff, along with well-wishers from other departments throughout the hospital attended to celebrate alongside Calvin.



*Calvin Torrey, center, pictured with Dr. John Hall (left) and Dr. Andrew Grady (right) who is the Director of the Laboratory Animal Facilities at UMMC*



*Haiyan Zhang (right) with Dr. Barbara Alexander*

## Haiyan Zhang

Haiyan Zhang celebrated 25 years of service to the University of Mississippi Medical Center in October 2017. She first joined UMMC in 1992 as a researcher working with Dr. Manis Smith in the Assay and Analytical Core of the Department of Physiology and Biophysics. After nearly a decade with Dr. Smith, Haiyan worked briefly with Dr. Jiping Tang before working with Dr. Barbara Alexander who became director of the Assay Core in 2002. Haiyan's 25 years of commitment to the department and its research programs has been a tremendous asset to UMMC.

A reception was hosted by the department to thank Haiyan for her years of dedicated service. Faculty and staff throughout the department joined together to commemorate this achievement with Haiyan.

# Research Centers

Faculty in the Department of Physiology and Biophysics currently lead six research centers. Additional information on the centers can be found below.



## **Cardiovascular-Renal Research Center (CRRC)**

**Dr. Joey Granger** serves as director of the Cardiovascular-Renal Research Center. The CRRC was established to integrate the various cardiovascular and renal research programs at UMMC. The CRRC's missions are to foster excellence in basic and clinical cardiovascular and renal research at the University of Mississippi Medical Center; to promote the education of basic researchers, physicians and the general public in the area of cardiovascular and renal diseases; to develop resources to enhance cardiovascular and renal research at the University of Mississippi Medical Center; and to utilize the resources, including new research findings of the Cardiovascular-Renal Research Center, to reduce the morbidity and mortality associated with cardiovascular and renal diseases in the state of Mississippi. For more information, visit the CRRC website by [clicking here](#).



## **Center for Computational Medicine (CCM)**

**Dr. Robert Hester** serves as director of the Center for Computational Medicine. The major objectives of the center are to 1) add computational medicine for use in the training of medical students and residents; 2) integrate and support faculty for the development of simulation tools for research, education and clinical service; 3) develop programs to facilitate communication and interaction among researchers interested in computational medicine at and outside UMMC; 4) increase funding from industry, national and foundation resources to support the unique integrative environment and strengths of the researchers performing computational medicine research at UMMC; 5) establish a training program for pre-doctoral and postdoctoral fellows and for medical students, residents and fellows interested in issues relating to computational medicine; and 6) increase the national prominence of the University of Mississippi Medical Center as the preeminent center for computational medicine research. For more information, visit the CCM website by [clicking here](#).



## **Mississippi Center for Heart Research (MCHR)**

**Dr. Merry Lindsey** is director of the Mississippi Center for Heart Research. The broad mission of the MCHR is to promote collaborative research in cardiac research, with special emphasis on translational research. The center is dedicated to performing cardiovascular research that involves 1) developing multidimensional approaches to examine the mechanisms whereby the heart responds to injury or stress; 2) applying the knowledge gained to develop diagnostic tools and therapeutic strategies to prevent, slow or reverse cardiac disease progression; 3) disseminating our results to scientific, medical and general communities; and 4) educating the next generation of scientists. For more information, visit the MCHR website by [clicking here](#).





### **Mississippi Center for Clinical and Translational Research (MCCTR)**

**Dr. James Wilson** serves as director of the Mississippi Center for Clinical and Translational Research (MCCTR). The MCCTR is an obesity-focused multi-institutional partnership involving UMMC, the University of Southern Mississippi and Tougaloo College. The center was created to establish a research center to study questions from basic biology to issues of diet and lifestyle; to seek treatments, including diet and exercise interventions, that can reduce obesity and related disorders; and to address racial and ethnic disparities related to obesity. The goals of the Mississippi CCTR are to

1) provide the infrastructure needed to support a portfolio of research and a cadre of investigators that will succeed in addressing obesity and related disorders throughout Mississippi; 2) increase collaboration among disciplines and institutions that will integrate basic, clinical and translational research on obesity and related disorders; and 3) improve health and health outcomes among Mississippians through new approaches to the prevention, diagnosis and treatment of obesity and obesity related disorders. For more information, visit the MCCTR website by [clicking here](#).



### **Mississippi Center for Obesity Research (MCOR)**

**Dr. John Hall** serves as director of the Mississippi Center for Obesity Research (MCOR). The vision for the MCOR is “healthier and more prosperous lives for all Mississippians.” The mission of the MCOR is “to improve lives through discovery, innovation, education, improved patient care and prevention of obesity and related disorders.” For more information, visit the MCOR website by [clicking here](#).

### **Cardiorenal and Metabolic Diseases Research Center (CMDRC)**

Dr. Hall also serves as director of the Cardiorenal and Metabolic Diseases Research Center, which is supported by a five-year award (P20GM104357) from the National Institute of General Medical Sciences (NIGMS). The NIGMS is part of the National Institutes of Health (NIH) that supports thematic, multidisciplinary Centers of Biomedical Research Excellence (COBRE) across the country through its Institutional Development Award (IDeA) program. A major objective in developing the center is to provide infrastructure for a multidisciplinary, diverse group of basic, clinical and populationscientists working on the common synergistic theme of obesity, cardiorenal and metabolic diseases and to facilitate their collaborations. For more information, visit the CMDRC website by [clicking here](#).

# Miscellaneous

## Recent Publications

If you would like to check out the department's latest list of publications, please visit our website by [clicking here](#).

## Former Faculty, Postdoctoral Fellows, and Alumni

We would love to hear where life has taken you since leaving our department. To update us with your most current information, please visit our website by [clicking here](#).

### MAKE A DONATION

**I would like to make the following contribution to:**

\$ \_\_\_\_\_ Arthur C. Guyton Chair

\$ \_\_\_\_\_ Arthur C. Guyton Research and Lecture Fund

\$ \_\_\_\_\_ Physiology and Biophysics Research & Teaching Fund

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Spouse / Partner name if a joint gift: \_\_\_\_\_

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**Inside, I have enclosed:**

**Check** *(Make payable to UMMC and include the fund(s) name in the memo section)*

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c/o Stephanie Lucas, Director of Operations  
University of Mississippi Medical Center  
2500 North State Street  
Jackson, MS 39216

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