

# **GOOD NEWS!**

Wake Forest School of Medicine Cardiovascular Science Center

### **Summer 2021**

# WELCOME TO THE NEWEST MEMBERS **OF THE CARDIOVASCULAR MEDICINE FACULTY!**



Dr. Vallabhajosyula



We are excited to welcome two new members to the Wake Forest family, Dr. Oguz Akbilgic and Dr. Saraschandra Vallabhajosyula.

Dr. Vallabhajosyula is our newest faculty member at Cogden Heart and Vascular Center-High Point. He joins us as Assistant Professor in Cardiovascular Medicine specializing in Interventional and Critical Care Cardiology and serves as the Medical Director of the CICU. Dr. Vallabhajosyula attended medical school at Manipal University in Manipal, India, trained in Internal Medicine at Creighton University School of Medicine in Omaha Nebraska, Critical Care Medicine at Mayo Clinic in Rochester Minnesota, Cardiovascular Diseases at Mayo Clinic in Rochester Minnesota, and Interventional Cardiology at Emory University School of Medicine in Atlanta Georgia. He also

received his Master's of Science in Clinical and Translational Science from the Mayo Clinic Graduate School of Biomedical Sciences in Rochester Minnesota. He is a clinician and outcomes researcher whose work encompasses the fields of cardiogenic shock, acute myocardial infarction, cardiac arrest, high-risk percutaneous coronary intervention, percutaneous mechanical circulatory support, non-cardiac organ failure, septic shock, septic cardiomyopathy, and circulatory shock. In his spare time, he loves to play and watch cricket, watch movies, read fiction and non-fiction books, and spend time with his wife, Pranathi, and children, Brihati (5) and Agastya (3)."

Dr. Akbilgic will be joining us this September as an Associate Professor in Cardiovascular Medicine. In addition, he will also assume the role of Associate Director of EPICARE and work with Dr. Elsayed Soliman to support the ongoing operational and academic activities of this important research core and as a WFBMI faculty member. Dr. Akbilgic is a health informaticist focusing on artificial intelligence applications in medicine, especially on cardiovascular disease detection and prediction. He obtained a Bachelor of Science degree in Mathematics (2001) from Istanbul University, Master of Science degree in Statistics (2005) from Mimar Sinan University, and Ph.D. in Quantitative Methods (2011) from Istanbul University. He carried out postdoctoral studies in Machine Learning and Statistics at the University of Tennessee, Knoxville and University of Calgary (2013-15). He has worked at the Center for Biomedical Informatics, University of Tennessee Health Sciences Center, Memphis, TN as an Assistant Professor (2015-19). He is currently working as an Associate Professor at the Department of Health Informatics and Data Science, Loyola University Chicago and he is the Director for the Public Health Division of Cardiovascular Research Institute. Oguz is married and a father of one baby boy. He likes playing soccer and hiking in his free time.



## FUNDING AND AWARDS

During the months of April-July, CVSC members were awarded a total of 37 new grants. 12 different departments were represented in this count and 16 CVSC members served as PIs of these projects. Below we highlight a few of these awards.



• **Dr. Dalane Kitzman** and a team of others comprised of faculty from both Wake Forest and Atrium Health, including Dr. Cyrille-Superville at Sanger Heart and Vascular Clinic, recently received the news that their project titled, "Role of Metformin on Physical Function, Leaky Gut and

Inflammation in Patients with HFpEF," was selected as the recipient of the Wake Forest School of Medicine's Translational Research Initiative Joint Pilot Project. The 1-year project will recruit up to 20 patients, 10 each at Wake Forest and Atrium Health, and the award totals \$40,000 dollars.

- A grant entitled "Creating a Diverse, Equitable and Inclusive Research Culture and Environment: The Wake Forest Faculty Institutional Recruitment for Sustainable Transformation (WFFIRST) Cohort Program" was submitted with Drs. Michael Olivier, Goldie Byrd and Debra Diz as Multi-Pls. The grant is for recruitment of 15 early career stage faculty from groups underrepresented in the biomedical sciences over a 3-year period in clusters with research areas in CVSC, CDOM and Center for Healthy Aging and Alzheimer's Prevention, and within the overarching areas of Center for Precision Medicine and MACHE.
- A CVSC Pilot award was given to Dr. Liliya Yamaleyeva, Pl and Co-I's Drs. Katherine Loree Cook, Nildris Cruz-Diaz and Brian Westwood. The title of the grant is "Gut Microbiome Dysbiosis and Arterial Stiffness in Response to Simulated Weightlessness." Also awarded with a CVSC Pilot award was Dr. Ashish Khanna, Pl and Co-I Dr. Christopher Schaich. The title of the grant is "Association of baseline and post-treatment circulating renin levels and clinical outcomes in patients with septic shock".

• **Dr. Christopher Schaich's** K01 grant application "Cardiac Autonomic Function, Cognitive Performance, and Neurocognitive Outcomes" received a fundable score and is currently pending.



• \$50,000 funded by the Wake Forest Atrium COVID-19 Pilot Research Projects and is entitled "A Non-human Primate Model of Cognitive Dysfunction and Recovery from Post-Acute Sequelae of SARS CoV2 (PASC)". The team involved is **Dr. James Daunais (PI)**, Drs. John

Sanders (Co-I), Jennifer Stapleton Kotloski (Co-I), Jared Rowland (Co-I), Dwayne Godwin (Co-I) all from Wake Forest. Dr. Rowland is also with the W.G. "Bill" Hefner VA Medical Center.

• **Dr. Reto Asmis** received an RO1 award for \$3.2M from the NHLBI entitled, "Role of Monoamine Oxidase A and Diet-Induced Monocyte Dysfunction, Macrophage Reprogramming, and Atherosclerosis."



• **Dr. Nichole Allred** received an R01 to examine NAFLD using WGS data. DK128871: Identification and Characterization of Loci Associated with Non-alcoholic Fatty Liver Disease. The objective of this application is to identify additional rare variants with effects on NAFLD through whole

genome sequencing (WGS) in ethnically diverse populations. In addition, CRISPR/Cas9 will be used to identify and test genes for effects on hepatic steatosis. Results from our work will help us to understand the genetic architecture of NAFLD and link these associations to genes that can be targeted for therapeutic intervention.

### **ANNOUNCEMENTS**

#### EPICARE ECG Reading Center Recognized as an Institutional Shared Resource

The Epidemiological Cardiology Research Center (EPICARE) has been a uniquely valuable resource for the institution. Its national and international reputation is unrivaled, with over 25 years of contributions to some of the most significant cardiovascular trials and cohort studies in the United States. Therefore, the Intramural Research Support Committee (IRSC) has recommended funding EPICARE as an institutional shared resource. The institutional core funding will help EPICARE continue as the trusted ECG reading center for major NIH-funded studies, and also seek new opportunities to expand the scope of the center's current services. This includes exploring the possibility of getting involved in industry-sponsored FDA safety studies, utilizing ECG machine/deep learning models to improve prediction of cardiovascular outcomes, and developing innovative methods for acquiring and analyzing telehealth (remote/wearable/mobile) data. Effective July 1, EPICARE Center will move from the Division of Public Health Sciences to Section on Cardiovascular Medicine under the leadership of Dr. Elsayed Soliman.

#### **Cardiovascular Sciences Center Membership Drive**

In an ongoing effort to keep the Cardiovascular Sciences Center (CVSC) thriving, we are conducting a membership drive to ensure that all who have an interest in cardiovascular research have the opportunity to serve and to be recognized by way of appointment to the CVSC. We recently emailed potential members who have been on our mailing lists but did not have membership status in their faculty profiles for the CVSC. We are currently collecting CVs from all who are interested in being an official member. Once received, we will submit the proper documentation to the Office of Faculty Affairs (OFA) so they can present the requests to the Faculty Executive Council (FEC) for approval. We will submit names for the next FEC meeting, currently scheduled for August 11, 2021. If you or a colleague are interested in membership, please submit your CVs to Pam Stafford and cc your department chair so they are aware of the impending appointment and can provide additional documentation if required by the OFA.

We would like to have your CVs in hand by **Friday, October 1, 2021**, in order to have adequate time to submit the proper paperwork and to do any necessary follow-up prior to the FEC meeting.

If you are unsure if you are an official member of the CVSC, search your name on the website below. Memberships will be shown as in the pictures here:

If you would like to review the Center's information, including mission, goals, and current membership, please refer to the following link: https://school. wakehealth.edu/Departments/Internal-Medicine/Cardiovascular-Medicine/ Cardiovascular-Sciences-Center





Debra I. Diz, PhD Director, Hypertension and Vascular Research Center Co-Director, Cardiovascular Sciences Center Professor, Hypertension

ddiz@wakehealth.edu Centers and Institutes

Cardiovascular Sciences Center - Center on Diabetes, Obesity, and Metabolism Maya Angelou Center for Health Equity -Hypertension and Vascular Research Center



### David M. Herrington, MD, MHS

Professor, Cardiology Centers and Institutes

Cardiovascular Sciences Center · Hypertension and Vascular Research Center J. Paul Sticht Center for Healthy Aging and Alzheimers Prevention · Center for Precision Medicine

Research Interests Heart Diseases - Genomics - Clinical and Population Research -Hormone Therapy - Pathogenesis and Prevention of Atherosclerosis

View Profile

### **AUSTIN'S DATA, TIPS & TOOLS**



### Comparing Survival Curves using the Log Rank Test

When conducting Survival (or Time to Event) Analysis, a common practice is to stratify the survival probabilities by different subgroups of interest and plot the survival curves. When doing this, it is good practice to go beyond visual inspection of the curves and test for any statistically significant differences. The Log Rank Test is a common method for doing this. This a non-parametric test, that makes no assumptions about the underlying survival distribution. The null hypothesis, is that the survival curves are identical. It is similar to a Chi Square Test in that it compares the observed number of events in each group to what would

be expected if the null hypothesis were true(no difference in curves).

The Log Rank Test can be applied in SAS as an option of the STRATA statement in the PROC LIFETEST procedure. This procedure has options for similar test as well. The Log Rank Test is also available in the widely used 'Survival' package in R. If you have any questions how about this survival analysis can applied to your data don't hesitate to contact me!

Austin Seals, MSA | 601-383-2073 | aseals@wakehealth.edu

### **INVITED PRESENTATIONS**

**Yismeilin Mosquea**, a graduate student in **Dr. David Soto-Pantoja** and **Dr. Katherine Cooke's** lab, gave a poster presentation at the Interdisciplinary Nutrition Sciences Symposium, a virtual conference sponsored primarily by UNC, on June 21-22. The title of her presentation was, "Diet Impacts Triple Negative Breast Cancer Growth and the Development of Chemotherapy-induced Cardiac Damage." Another of Dr. Cook's graduate students, Alana Arnone, also presented her poster on cardiometabolic – cancer interactions at the symposium which was titled, "Endocrinetargeted Therapy and Diet Interactions on Gut Permeability and the Microbiome."



**Dr. Olivia Gilbert** was invited to give a talk on VuMedi, a video education platform for medical providers. She spoke about the 2021 Update to the 2017 ACC Expert Consensus Decision Pathway for Optimization of Heart Failure Treatment. Dr. Gilbert is also an Official Reviewer for ACC Solution Set Oversight

Committee for the paper with this same title, which was published in the Journal of American College of Cardiology.

Dr. Olivia Gilbert, Assistant Professor of Cardiovascular Medicine at Wake Forest, served as the Chair for the American College of Cardiology's Heart House Roundtable on Advanced in Hypertrophic Cardiomyopathy, which was held on June 8, 2021. Dr. Gilbert also served as lead moderator for the National System group within the breakout session covering Population Health-Creating Thoughtful and Efficient Pathways for Success. Also included in the planning committee for this roundtable discussion was Dr. Mahesh Chandrasekhar, fellow in Cardiovascular Medicine at Wake Forest. Dr. Chandrasekhar was the lead moderator for the Current Standards and Frontiers group within the breakout session titled, Sudden Cardiac Death Risk Stratification and Arrhythmia/Device Management. Other participants in the round table included **Dr. David** Zhao, Chief of CV Medicine at Wake Forest and Dr. Dermot Phelan, Medical Director or CV Imaging and Director of Sports Cardiology at Atrium Health Sanger Heart & Vascular Institute.

Wake Forest and Sanger Heart and Vascular Institute made tremendous contributions to this year's American College of Cardiology Virtual Scientific Sessions, held May 15-17, 2021. Collectively, Atrium Health/Wake Forest Baptist Enterprise Heart and Vascular had more than 30 presentations, panel discussants, and/or session moderators, including a late breaking clinical trial by **Dr. Dalane Kitzman**. This is a credit to all of the hard work across the Enterprise and shows what remarkable potential there is for the future as our teams continue to build collaborations and grow our combined research capacity.



Drs. David Zhao and Michael Shapiro

presented "From Cardiovascular Intervention to Cardiovascular Disease Prevention: Advances in

Preventive Cardiology" at the Wake Forest School of Medicine Dean's Forum on May 13, 2021.



**Dr. Prashant Bhave** was invited to give a presentation at the 2021 Heart Rhythm Society Meeting in July. The title of his talk is "Atrial Arrhythmias after Heart Transplant."

**Dr. Bharathi Upadhya** has been invited to give a talk at the South Atlantic Cardiovascular Society Focus on Adult Congenital Heart Disease, which was held July 15-18 in South Carolina. The topic of her talk with focus on interesting Adult Congenital Heart Disease (ACHD) cases.



**Dr. Mary Branch** has been invited to participate as a panelist for the Cardio-Oncology meeting hosted by Rush University, which is planned for early October, 2021. Dr. Branch will be discussing, "Overview of Short and Long Term Management of Cardiovascular Disease in the Cancer Patient: Research-

Driven Guidance for the Clinician."

**Dr. Dalane Kitzman** gave an interview to Medscape on May 24, 2021. Dr. Kitzman spoke about REHAB-HF laying the groundwork for recovery of function in post heart failure. See the full interview here: https://www.medscape.com/viewarticle/950968

**Dr. Giselle Melendez** and **Dr. Mary Branch** have both been invited to participate in the virtual Cardio-Oncology Summit scheduled for September 30-October 1, 2021. This annual meeting is hosted by the International Cardio-Oncology Society (ICOS). Recognized as an expert in the area, Dr. Melendez will be speaking on the topic of, "Year in Review: Key Developments in Cardio-Oncology (Basic and translational Science Perspective). Dr. Branch has been invited to participate as a panelist and will be discussing, "Fellowship Training Programs in Cardio-Oncology."

**Dr. Michael Shapiro** presented at the Israeli Atherosclerosis Society meeting held virtually on June 24, 2021. The topic of his talk was, "Therapeutic Approaches to Antagonizing PCSK9."



**Dr. Christopher Schaich** was the senior and presenting author of the abstract titled, "Association of Lower Heart Rate Variability with Neuroimaging Markers for Dementia-related Pathology: the Multi-Ethnic Study of Atherosclerosis (MESA)," which was presented at the Alzheimer's Association International

Conference (AAIC) in July. Dr. Schaich was also a contributing author on the abstract titled, "Racial Differences in Dementia-related Pathology Underlying Cognitive Decline: The Multi-Ethnic Study of Atherosclerosis (MESA)," which was also accepted for presentation at the AAIC conference. In addition, Dr. Schaich was a contributing author on the abstract titled, "Number and Location of Cerebral Microbleeds (CMBs) are Associated with Global and Domain-Specific Cognitive Impairment," which was presented at the Annual Meeting of the American Academy of Neurology, held in April 2021.

The following students presented their research during the 13th Women's Health Research Day:

• Elizabeth Stirling – Mentor: Dr. David Soto-Pantoja -"Testing novel immune checkpoint therapy combinations targeting CD47 in an immune-competent tumor organoid platform of triple-negative breast cancer" for cardiac protective chemotherapy. Congratulations to Elizabeth for winning 1st place for best poster out of the trainees that presented their research!

- Kenysha Clear Mentor: Dr. Kathrine Cook -"Investigating lactate isoforms as a potential mechanism to reduce obesity-mediated breast cancer risk" that will provide cardiometabolic benefits.
- **Tiffany Newman** Mentor: Dr. Katherine Cook -"Intervention with probiotics and muscadine grape extract shifts western diet-associated metabolic, microbial, and inflammatory parameters to reduce breast tumor growth" in addition to cardiac benefits.

**Elizabeth Stirling's** abstract titled "Targeting Thrombospondin-1/CD47 signaling potentiates anti-tumor immune responses by modulation of cellular bioenergetics," was accepted for an oral presentation at the New York Academy of Science Conference Frontiers in Cancer Immunotherapy 2021.



On May 3, 2021, **Dr. Liliya Yamaleyeva** presented for - "ZOOMing in on Preeclampsia Research" online seminar series, "Ultrasound-guided photoacoustic imaging - novel tool for in vivo quantification of placental oxygenation"

### **CAREER CORNER**

#### 2021 Summer Research Programs to Increase Diversity in Biomedical Science Careers:

The Cardiovascular Sciences Center and Sticht Center for Healthy Aging and Alzheimer's Prevention hosted two summer research programs: the Excellence in Cardiovascular Sciences (EICS) summer research program directed by Drs. David Soto Pantoja and Debra Diz, which has been ongoing for >27 years, and a new program, Enhancing UNderGraduate Education and Research in AGing to Eliminate Health Disparities (ENGAGED – joint program with WSSU and WFU), directed by Drs. Tina Brinkley and Debra Diz, with additional Program Directors Drs. Gwathmey, Keith and Flowers (WSSU) and Miller (WFU) in its second year.

The EICS and ENGAGED undergraduate students were selected from across the country and participated in research topics related to aging and cardiovascular disease, as well as health disparities. Current events topics ranged from COVID-19 to racism/ social inequity and injustice and the impact of these on minority health. Guest speakers were from Howard University, Winston-Salem State University, Wake Forest University, Johnson C. Smith and the Center for Disease Control, as well as Wake Forest School of Medicine. Panels of current and former graduate school and diversity-focused training program participants provide career insights in several professional development sessions. Students participate in sessions on data collection relevant to cardiovascular sciences and aging-related research, including blood pressure and gait speed, in addition to various basic science demonstrations. Joint sessions and social activities with summer trainees in programs sponsored by NSF (Biomedical Engineering), WFIRM and Precision Medicine create peer networking opportunities for the ~100 students participants. The EICS and ENGAGED summer session will conclude with poster presentations of the research projects developed with their mentors over the course of the summer program. We thank the students and the faculty, many of whom are members of the Cardio-vascular Sciences Center, who serve as mentors, guest lecturers and journal club faculty, for contributing to the program's success.

The following 22 trainees and mentors are participating in the programs for 2021:

ENGAGED		
Abha Athawale	Wake Forest University	Andrew South Pediatric Nephrology; CVSC
Laurence Bangert	Purdue University	Ashley Weaver – Biomedical Engineering; Critical Illness, Injury and Recovery ResearchCenter
Elili Brown	Occidental College	Chris Schaich – Hypertension; CVSC
Beatrice Gar	NC A&T State University	Andrew South – Pediatric Nephrology; CVSC
Christian Johnson	Virginia Commonwealth University	Jeff Williamson – Gerontology and Geriatric Medicine;Program Director, Sticht Center for Healthy Aging and Alzheimer's Prevention / Director, Center for Healthcare Innovation, CVSC
Sophia Lino	Florida State University	Giselle Melendez, Nazli Gharrae, & Jessica McCanless – Internal Medicine-Cardiology, CVSC
David Morton	Wake Forest University	Christian Hugenschmidt – Gerontology and Geriatric Medicine; J. Paul Sticht Center for Healthy Aging and Alzheimer's Prevention/Claude Pepper Older Americans Independence Center, CVSC
Drew Nwokeafor-Laz	Wake Forest University	Bethany Kerr – Cancer Biology; Comprehensive Cancer Center/ Center for RedoxBiology and Medicine, CVSC
Bryonna Peeples	Tuskegee University	Justin Moore – Implementation Science; Office of Global Health/ Comprehensive Cancer Center/ Maya Angelou Center for Health Equity/ Office of Women in Medicine and Science
Moriah Wells	Winston Salem State University	Ashley Sanderlin – Gerontology and Geriatric Medicine
Albi Zhiva	Forsyth Tech	Kristen Beavers – Health and Exercise Science; WakeForest University

#### ENGAGED

### EICS

DonAsafu-Adjaye	Emory University	Mark Chappell – Hypertension and VascularResearch Center, CVSC
Alex Bart	Lafayette College	Allison Caban-Holt – Maya Angelou Center for Health Equity
Dana Carreno	Johns Hopkins University	Joanne Sandberg – Health Equity/ Family and Community Medicine
Evelyn Farkas	Georgia State University	Ken Kishida – Physiology and Pharmacology, CVSC
Mya Hopper	Winston Salem State University	Joanne Sandberg – Health Equity/ Family and Community Medicine
Mi-Tien Lee	Georgia State University	Nicole Levi – Plastic and Recon- structive Surgery; Comprehensive Cancer Center, CVSC
Glen (Dave) Myatt	Wake Forest University	David Soto Pantoja, Steven Bronson – Surgery/Hypertension, Comprehensive Cancer Center, CVSC
Savannah Pollock	Wesleyan College	Rong Chen – Physiology and Pharmacology, CVSC
Dejanae Potter	Xavier University of Louisiana	David Soto-Pantoja, and Jessica Mackert – Surgery/Hypertension, Comprehensive Cancer Center, CVSC
Olivia Smith	North Carolina State University	Katherine Cook – Surgery/ Hypertension, Comprehensive Cancer Center, CVSC
Erian Watkins	Washington University in St. Louis	David Soto-Pantoja, and Yismeilin Feliz Mosquea – Surgery/Hypertension, Comprehensive Cancer Center,CVSC

### AWARDS AND ACCOMPLISHMENTS

**Dr. Xuewei Zhu** has recently been named the 2021 Dolph O. Adams Awardee by the Society for Leukocyte Biology (SLB). The annual award is to recognize excellence of an investigator working in the area of cellular and molecular mechanisms of host defense and inflammation. This award is named in honor of the outstanding macrophage researcher Dolph O. Adams, MD, Ph. D and is given out to a junior/mid-career faculty or equivalent investigator. As the Adams Awardee, Dr. Zhu will present her work on the role of ER membrane-anchored G6P transporter SLC37A2 in macrophage inflammation and metabolic homeostasis on July 29 during the Immunometabolism session II of the 2021 SLB meeting.

**Dr. Prashant Bhave** was named to the editorial board for the Journal of the American Heart Association.

- **Dr. Olivia Gilbert** has started a 3 year term on the American College of Cardiology's Science & Quality Committee.
- Dr. Giselle Melendez has been invited to serve as Associate Editor for JACC Cardio-Oncology.
- Dr. David Soto-Pantoja was invited to serve on the Florida Breast Cancer Foundation Study Section for expertise in cardio-oncology.

#### 2021 Internal Medicine Tinsley R. Harrison Cardiology Faculty Award Winners:

#### Master Teachers: Drs. Karl Richardson and Bharathi Upadhya

Clerkship Best Teachers: Drs. Barbara Pisani and Brandon Stacey

<u>Cardiovascular Medicine Nominees</u>: Drs. Manrique Alvarez, Aysha Amjad, Matthew Belford, Anita Kelkar, Luke Peters, Octavia Rangel, and Li Zhou

#### Highlights from the Department of Internal Medicine Research Day Top Research Papers published in 2020:

- **Dr. Priyesh Patel** (Sanger Heart and Vascular Institute) "Association between Systolic Ejection Time and Outcomes in Heart Failure by Ejection Fraction," published in European Journal of Heart Failure
- Dr. Matthew Singleton (Wake Forest Baptist Health) "Effect of Intensive Glycemic and Blood Pressure Control on QT Prolongation in Diabetes: The ACCORD Trial," published in Diabetes
- Dr. Dermot Phelan (Sanger Heart and Vascular Institute) "Screening of Potential Cardiac Involvement in Competitive Athletes Recovering from COVID-19: An expert Consensus Statement," published in JACC Cardiovascular Imaging.
- **Dr. Hadley Wilson** (Sanger Heart and Vascular Institute) "New ACC Global Heart Attack Treatment Initiative: Improving STEMI Care Worldwide," published in Journal of the American College of Cardiology.

### **PUBLICATIONS**

Between the months of April-July, Cardiovascular Sciences Center members have published an astounding 101 manuscripts. Of these, 9 were CVSC first author publications. Below we highlight several of those.

**Bancks MP**, Carnethon M, Chen H, Cotch MF, Klein B, Klein R, Szklo M, **Bertoni A.** Diabetes subgroups and risk for complications: The Multi-Ethnic Study of Atherosclerosis (MESA). J Diabetes Complications. 2021;35(6):107915. Epub 2021/04/01. doi: 10.1016/j. jdiacomp.2021.107915. PubMed PMID: 33785252; PMCID: PMC8113152.

Files DC, Gibbs KW, Schaich CL, Collins SP, **Gwathmey TM**, Casey JD, Self WH, **Chappell MC**. A pilot study to assess the circulating renin-angiotensin system in COVID-19 acute respiratory failure. Am J Physiol Lung Cell Mol Physiol. 2021;321(1):L213-l8. Epub 2021/05/20. doi: 10.1152/ajplung.00129.2021. PubMed PMID: 34009036.

Schaich CL, Yeboah J, Espeland MA, Baker LD, Ding J, Hayden KM, Sachs BC, Craft S, Rapp SR, Luchsinger JA, Fitzpatrick AL, Heckbert SR, Post WS, Burke GL, Allen NB, Hughes TM. Association of Vascular Risk Scores and Cognitive Performance in a Diverse Cohort: The Multi-Ethnic Study of Atherosclerosis. J Gerontol A Biol Sci Med Sci. 2021. Epub 2021/07/04. doi: 10.1093/gerona/glab189. PubMed PMID: 34216214.

**Kitzman DW**, Whellan DJ, Duncan P, Pastva AM, Mentz RJ, Reeves GR, Nelson MB, Chen H, **Upadhya B**, Reed SD, **Espeland MA**, Hewston L, O'Connor CM. Physical Rehabilitation for Older Patients Hospitalized for Heart Failure. N Engl J Med. 2021;385(3):203-16. Epub 2021/05/18. doi: 10.1056/NEJMoa2026141. PubMed PMID: 33999544.

**Upadhya B**, Pajewski NM, Rocco MV, **Hundley WG**, Aurigemma G, Hamilton CA, Bates JT, He J, Chen J, Chonchol M, Glasser SP, Hung AM, Pisoni R, Punzi H, Supiano MA, Toto R, Taylor A, **Kitzman DW**. Effect of Intensive Blood Pressure Control on Aortic Stiffness in the SPRINT-HEART. Hypertension. 2021;77(5):1571-80. Epub 2021/03/30. doi: 10.1161/hypertensionaha.120.16676. PubMed PMID: 33775127; PMCID: PMC8035296.