

GILL QUARTERLY

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GILL QUARTERLY

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REVERSE-IT

Rapid and SustainEd ReVERSal of TicagrElor – Intervention Trial

FEATURED CLINICAL TRIAL

REVERSE-IT: A Phase 3, Multicenter, Open-Label, Single-Arm Study of PB2452 in Ticagrelor-Treated Patients with Uncontrolled Major or Life-Threatening Bleeding or Requiring Urgent Surgery or Invasive Procedure

PI: Ahmed Abdel-Latif, MD, PhD

Sponsor: PhaseBio Pharmaceuticals Inc

Objective: To demonstrate reversal of the antiplatelet effects of ticagrelor with IV infusion of PB2452 and to demonstrate the clinical efficacy of PB2452 by assessment of hemostasis in ticagrelor-treated patients with uncontrolled major or life-threatening bleeding or who are undergoing urgent surgery or invasive procedure in an open-label, single-cohort study. months, or an elevation in a certain blood test for HF, called BNP or NT-pro-BNP.

For More information contact: Stephanie Morris:
stephanie.a.morris@uky.edu
Phone: 859-323-5366

Trial Background: Bentracimab (previously PB2452) has been studied in Phase 1 and Phase 2 clinical trials and has demonstrated the potential to bring life-saving therapeutic benefit through immediate and sustained reversal of the antiplatelet activity of ticagrelor, potentially mitigating concerns regarding bleeding risks associated with the use of antiplatelet drugs. Additionally, in a translational study, bentracimab achieved equivalent reversal of branded ticagrelor and multiple ticagrelor generics. The pivotal Phase 3 clinical study is called REVERSE-IT (Rapid and SustainEd ReVERSal of TicagrElor – Intervention Trial). REVERSE-IT is a multi-center, open-label,

prospective single-arm trial designed to study reversal of the antiplatelet effects of ticagrelor with bentracimab in patients who present with uncontrolled major or life-threatening bleeding or who require urgent surgery or invasive procedure. Approximately 200 patients are being targeted to be enrolled from major health centers worldwide. Patients with reported use of ticagrelor within the prior 3 days who require urgent reversal due to uncontrolled major or life-threatening bleeding or because they need ticagrelor reversal will be eligible for enrollment.

As of March 2021, the REVERSE-IT Phase 3 clinical trial had enrolled 60 of the first approximately 100 patients needed to support a Biologics License Application (BLA), nearly all of whom to date have required urgent surgery or an invasive procedure. PhaseBio is attempting to accelerate enrollment of patients with uncontrolled major or life-threatening bleeding, including by working to increase the number of enrolling clinical trial sites in the United States, Canada, and the European Union as it is believed that a broader site footprint will increase the probability of enrolling these patients. The trial is enrolling faster than PhaseBio originally projected, and PhaseBio now expects to complete enrollment of the first 100 patients in mid-2021 and is targeting to submit a BLA for bentracimab in mid-2022, although those timelines could be impacted by the continued scope and duration of the COVID-19 pandemic.

We are also currently conducting a Phase 2B trial in older (ages 50-80) patients to evaluate the efficacy of bentracimab in reversal of ticagrelor. Enrollment is ongoing in the US and Canada with a 3:1 randomization (active: placebo). The primary endpoint is reversal measured by VerifyNow. The secondary endpoints are safety, PK and immunogenicity.

For additional trial information, please visit:
ClinicalTrials.gov

CURRENTLY ENROLLING CLINICAL TRIALS

BIO LIBRA - AnaLysIs of Both Sex and Device Specific FactoRs on Outcomes in PATients with Non-Ischemic Cardiomyopathy

PI: Aaron Hesselson, MD

Coordinator: Ben Rushing 323-5259

Objective:

This study is designed to evaluate the combined risk of all-cause mortality and treated ventricular tachycardia (VT) or ventricular fibrillation (VF) events by subject sex and by implanted device type. All-cause mortality, VT or VF alone, risk of cardiac death, and sudden cardiac death will be analyzed for the total cohort, as well as by subject sex and by the implanted device type

OPTIMIZER SMART POST - APPROVAL STUDY

PI: Aaron Hesselson, MD

Coordinator: Ben Rushing 323-5259

Objective:

Post-approval study that evaluates data such as cardiac outcomes, quality of life, mortality, and functionality. Long-term data needed to assess complication rates and potential interactions with other implantable devices in the intended patient population. The post-approval study (PAS) protocol designed to address these concerns in a real-world setting.

The PRECISE Protocol: Prospective Randomized Trial of the Optimal Evaluation of Cardiac Symptoms and Revascularization (PRECISE)

PI: Vincent Sorrell, MD

Coordinator: Ben Rushing 323-5259

Objective:

The study will be a prospective, pragmatic, randomized clinical trial of the comparative effectiveness of diagnostic evaluation strategies for stable CAD, to be performed in outpatient settings, including primary

care and cardiology practices.

Women's IschemiA TRial to Reduce Events In Non-ObstRuctive CAD (WARRIOR)

PI: Gretchen Wells, MD

Coordinator: Denise Sparks, RN 218-6713

Objective:

The Ischemia-IMT (Ischemia-Intensive Medical Treatment Reduces Events in Women with Non-Obstructive CAD), subtitle: Women's Ischemia Trial to Reduce Events in Non-Obstructive CAD (WARRIOR) trial is a multicenter, prospective, randomized, blinded outcome evaluation (PROBE design) evaluating intensive statin/ACE-I (or ARB)/aspirin treatment (IMT) vs. usual care (UC) in 4,422 symptomatic women patients with symptoms and/or signs of ischemia but no obstructive CAD. The hypothesis is that IMT will reduce major adverse coronary events (MACE) 20% vs. UC. This study is being conducted to determine whether intensive medication treatment to modify risk factors and vascular function in women patients with coronary arteries showing no flow limit obstruction but with cardiac symptoms (i.e., chest pain, shortness of breath) will reduce the patient's likelihood of dying, having a heart attack, stroke/TIA or being hospitalized for cardiac reasons. The results will provide evidence data necessary to inform future guidelines regarding how best to treat this growing population of patients, and ultimately improve the patient's cardiac health and quality of life and reduce health-care costs.

CLINICAL TRIALS CONTINUED

RELIEVE – HF - REDucing Lung congestIon symptoms using the v-wave shunt in ad-VancEd Heart Failure

PI: John Gurley, MD

Coordinator: Stephanie Morris 323-5366

Objective:

The objective of this study is to provide reasonable assurance of safety and effectiveness of the V-Wave Interatrial Shunt System to improve clinical outcomes in a certain high-risk subset of symptomatic patients suffering from HF.

REVERSE-IT: A Phase 3, Multicenter, Open-Label, Single-Arm Study of PB2452 in Ticagrelor-Treated Patients with Uncontrolled Major or Life-Threatening Bleeding or Requiring Urgent Surgery or Invasive Procedure

PI: Ahmed Abdel-Latif, MD, PhD

Coordinator: Jennifer Isaacs 323-4738

Brief Summary:

The study will demonstrate the reversal of the antiplatelet effects of ticagrelor with IV infusion of PB2452 and the clinical efficacy of PB2452 by assessment of hemostasis in ticagrelor-treated patients with uncontrolled major or life-threatening bleeding or who are undergoing urgent surgery or invasive procedure in an open-label, single-cohort study.

AMPLATZER PFO Occluder Post Approval Study (PFO PAS)

PI: John Gurley, MD

Coordinator: Stephanie Morris 323-5366

Objective:

Clinical study intended to demonstrate the safety and effectiveness of the AMPLATZER PFO Occluder, in a post-approval setting, in patients with a PFO who have had a cryptogenic stroke.

Influence of Cooling duration on Efficacy in Cardiac Arrest Patients (ICE CAP)

PI: Vedant Gupta, MD

Coordinator: Ronda Petrey, RN, 502-320-0137

Objective:

To determine, in each of two populations of adult comatose survivors of cardiac arrest (those with initial shockable rhythms and those with PEA/asystole): the shortest duration of cooling that provides the maximum treatment effect as determined by a weighted 90 day modified Rankin score and whether increasing durations of cooling are associated with better outcomes or recovery implying efficacy of hypothermia to no cooling.

Clinical Research Team

John Kotter, MD

Director, Gill Heart & Vascular Institute Cardiology Research Center

Jennifer Isaacs, MS, MS, CCRP

Clinical Research Administrative Director
Cardiovascular and Radiology Services
Gill Heart & Vascular Institute Clinical Research

Stephanie Morris, CCRP

Clinical Research Operations Manager
Cardiovascular and Radiology Services
Gill Heart & Vascular Institute Clinical Research

Research Coordinators

Ben Rushing, CCRC

859-323-5259

Ben.rushing@uky.edu

FELLOWS NEWS/ACCOMPLISHMENTS

FIT JEOPARDY



Good showing by our UK Jeopardy team at ACC.21 FIT Jeopardy State Chapter competition. The team consisted of : Matt Sousa, MD, Gregg Sinner, MD, Ashley Brunmeier, MD, Senior Chief, with second highest points (3rd place overall).

Our other KY team from Bowling Green: Kristopher Pfirman, Saif Al Qaisi, and Sameer Saleem came in tied for 1st out of 8 teams! Bowling Green will face off in the sixth annual FIT Jeopardy: Battle of the Chapters competition during ACC.21 Virtual, held May 15 – 17.

Congratulations!



Evan Sheets, MD

Junior Chief starting 2021-2022

Medicine Residency: Ohio State University

NEW FACULTY



Navin Rajagopalan, MD
Professor of Medicine
Associate Director of the Gill Heart & Vascular Affiliate Network
Associate Director of the Organ Failure and Transplant Network.

Residency: Mayo Clinic in Rochester, MN
Cardiology Fellowship: University of Pittsburgh
Advanced heart failure and cardiac transplantation: University of Pittsburgh



Joseph J. Souza, MD
Associate Professor of Medicine

Residency: Internal Medicine, University of North Carolina at Chapel Hill, School of Medicine, Chapel Hill, N.C.
Cardiology Fellowship: University of Michigan Medical School, Ann Arbor, Mich.
Clinical Cardiac Electrophysiology Fellowship: University of Michigan Medical School, Ann Arbor, Mich.

AFFILIATE & OUTREACH NEWS

CLARK REGIONAL CELEBRATES \$4.6 MILLION CARDIAC CATHETERIZATION LAB

From wtvq.com. Clark Regional Medical Center, along with representatives from the UK Gill Heart & Vascular Institute Affiliate Network, and members of the community, celebrated the opening of a new \$4.6 million cardiac catheterization (cath) lab.

The cath lab paves the way for an interventional cardiology program at CRMC, providing greater access to life-saving heart care in Clark County.

“Today is truly exciting for Clark Regional Medical Center, the community and the entire region we serve. The opening of the cardiac catheterization lab ensures patients in Clark, Powell, Wolfe, Bath, Estill and Montgomery counties have greater access to timely cardiac interventions close to home,” said Matt Smith, Clark Regional Medical Center Chief Executive Officer.

“The addition of the cardiac cath lab enhances our mission of Making Communities Healthier and demonstrates our commitment to expanding access and services, the ability to invest in new technology and have the capability to meet the needs of our growing community.”

tional procedures such as pacemaker and stent insertion, removal of blood clots in the lungs and treatment of heart blockages.

Clark Regional is an accredited Chest Pain Center and a part of the UK Gill Heart & Vascular Institute Affiliate Network. Building on a long-standing commitment to quality care and a powerful regional collaboration, the new cardiac cath lab is a tremendous step forward in the fight against heart disease in the region.

The 2,500-square-foot building encompasses four pre-procedure bays as well as a post-procedure recovery area. The cath lab is located behind the ambulance bay and surgery pick up area of the hospital. This location is close to the emergency department, ensuring convenient access to rapid evaluation for patients experiencing a cardiac event.

Clark Regional Medical Center, provides high-quality healthcare services in the east Central Kentucky region with the 79-bed, acute care facility.

Watch the ribbon cutting ceremony: <https://www.youtube.com/watch?v=S8hfoWNBdXI>



HEART FAILURE, TRANSPLANT SERVICES TO COLLABORATE WITH NORTON

UK HealthCare and Norton Heart & Vascular Institute are announcing a collaboration to expand advanced heart failure, ventricular assist device (VAD) placement and heart transplant services to Kentuckians.

Heart disease is the leading cause of death in Kentucky, and the Commonwealth has one of the highest rates of heart disease in the country. Norton Heart & Vascular Institute will join with Gill Heart & Vascular Institute through Gill Heart & Vascular Institute's Gill Affiliate Network to expand care to heart failure patients.

"By working with Norton Heart & Vascular Institute, we hope to reduce the burden of cardiovascular disease across the state by expanding access to advanced heart failure care and providing more Kentuckians the opportunity to receive complex, life-saving therapies," said Susan Smyth, M.D., director, Gill Heart & Vascular Institute.

"By collaborating with our colleagues at Gill Heart, we are truly striving to improve the outcomes and convenience of our patients," said Joseph A. Lash, M.D., chair, Norton Heart & Vascular Institute. "Patients in and around Louisville who need heart transplant care can continue to receive care close to home while awaiting that lifesaving procedure."

The Gill Heart & Vascular Institute works with 18 affiliates across the commonwealth to enhance access to high-quality cardiovascular care and to provide the right care in the right place at the right time. The network also includes 10 outreach locations, including the UKHC Transplant & Specialty Clinic located on the campus of Norton Audubon Hospital. This clinic allows cardiologists from UKHC and Norton Healthcare, who specialize in advanced heart failure and

transplant care, to evaluate patients pre- and post-operatively for heart transplant and VAD care.

"The Gill Affiliate Network works closely with cardiologists across the state to improve the lives of patients with heart disease. We are excited to collaborate with Norton Healthcare, which has a long-standing history of excellence in cardiac care and proven expertise in managing heart failure," said Navin Rajagopalan, M.D., heart failure cardiologist and associate director, Gill Affiliate Network.

For advanced heart failure patients, a heart transplant may be necessary when their heart is no longer able to function properly. When a patient's heart failure is critical, some transplant candidates may need bridge therapy until transplantation surgery is possible. A ventricular assist device, known as a VAD, is a mechanical device that supports the heart in pumping blood through the body when the patient's heart cannot perform properly. VAD therapy can extend survival time long enough until a suitable donor heart becomes available.

See the rest of the story [here](#).

NEW RESEARCH IN IMPLEMENTATION SCIENCE

TISA: An Alliance that Aims to Help Increase Health Care Value

Many major inefficiencies in health care can be credited to two things: the lack of implementation of known beneficial therapies, and, conversely, the use of non-evidenced based care that may offer no benefits at all.

It's this concept that drove UK College of Medicine researchers to form the Transdisciplinary Implementation Science Alliance (TISA). Supported by the Alliance Research Initiative, TISA brings together clinicians and scientists from across the University of Kentucky and the UK College of Medicine to identify and implement solutions that increase health care value.

TISA aims to bridge the gap between research and clinical practice through the expansion of implementation science research. The team supports innovative, collaborative research projects that identify, develop, test, and evaluate strategies to implement evidence-based interventions into public health, clinical practice, and community settings.

TISA also launched the TISA Implementation Science Visiting Professor Series to promote learning, collaboration, and innovative research. The series has invited renowned visiting faculty who are nationally and internationally recognized for their expertise in the field of implementation science.

Upcoming Speakers: <https://chsr.med.uky.edu/calendarevents>

"We were eager to collaborate with clinicians and researchers to establish an implementation science leadership team at UK to address complex health issues," says principal investigator Jing Li, MD, DrPH, MS, associate professor and co-director of the Center for Health Services Research. "Additionally, we believe the TISA platform represents an opportunity to apply learning health system concepts to advance research and optimize patient care."

The Alliance team includes more than 30 members and is led by researchers with a variety of specialties. Dr. Li, associate professor of medicine, studies health services delivery and implementation science. Gretchen Wells, MD, PhD, professor of medicine, researches cardiovascular disease risk control and management, especially in women's heart health. Mahesh Kudrimoti, MD, professor of radiation oncology, focuses his research on head and neck cancers, mucositis, skin cancers, primary and secondary tumors in the liver, pancreatic cancer, and biliary tumors.

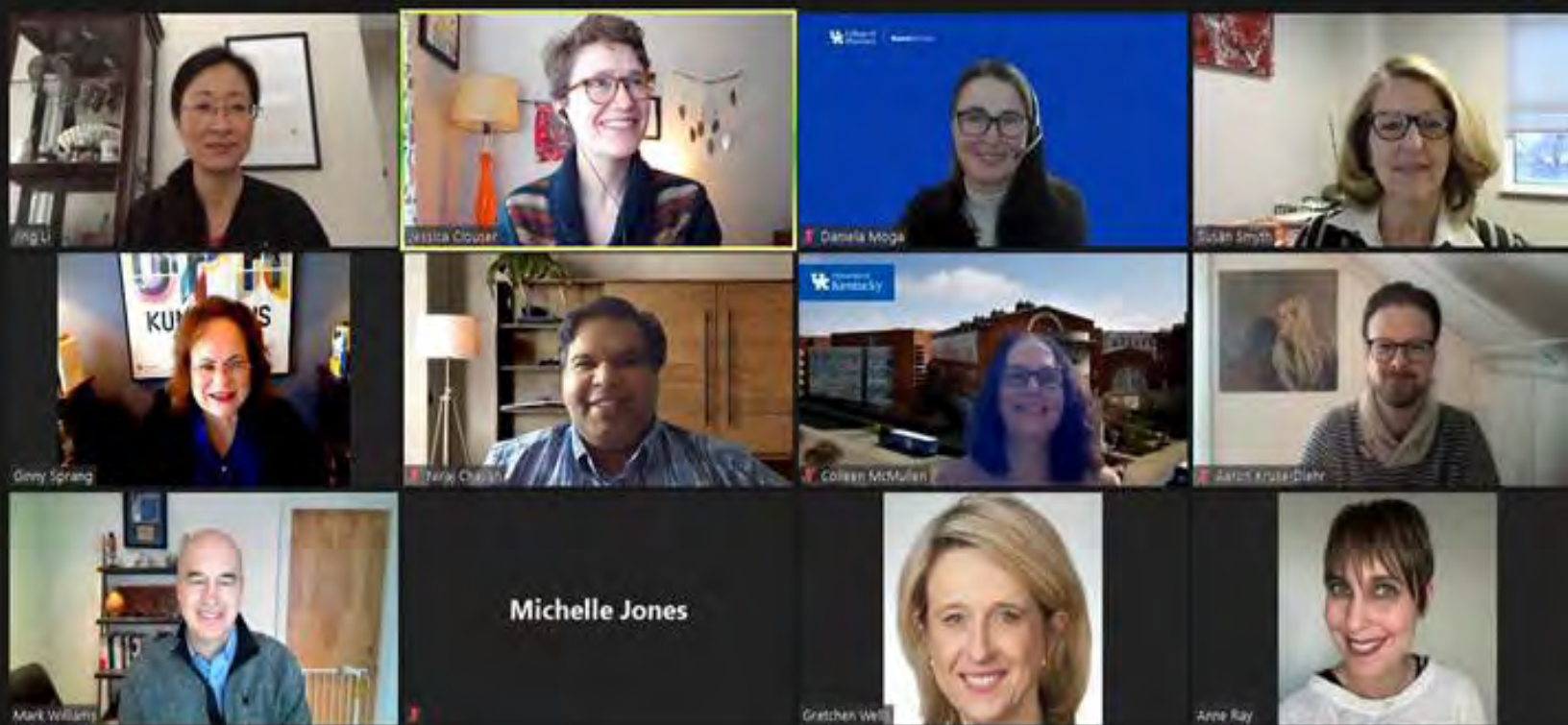
One of TISA's first projects, the CardioVascular disease rIsk Control in Survivorship (CVICS) study, involves the connection between cardiovascular and oncology sciences to ensure more holistic care for cancer survivors, who seldom receive the preventive cardiac care they require as they age. TISA linked the Markey Cancer

Center and the Gill Heart and Vascular Institute to help incorporate preventive cardiovascular services such as monitoring for heart damage, blood pressure control, treatment of high cholesterol, and lifestyle change management.

"We were eager to collaborate with clinicians and researchers to establish an implementation science leadership team at UK to address complex health issues," says Li.

For continued collaboration, a key component of their team's objectives, TISA established multiple channels for interaction among TISA members: monthly group meetings, three overlapping workgroups, and learning sessions. These meetings have allowed for funding, training, and mentorship opportunities while offering a supportive, transdisciplinary opportunity for interactive conversation and feedback regarding specific projects.

"The benefits from working on an Alliance team are many, including high value in building practice collaborations for our research that cross sectors," Dr. Li said. "We're making the most of group learning and knowledge sharing, and we are excited about the new connections and collaborations on research projects and grant applications."



The group welcomes collaboration with all implementation science researchers and practitioners at UK.

To learn more about TISA and our other Alliance teams, visit: <https://med.uky.edu/alliance>

TISA Alliance Team Members:

- **Amit Arbune**, MD, Assistant Professor – Internal Medicine
- **Ana Bastos de Carvalho**, MD, PhD, Assistant Professor – D Ophthalmology and Visual Sciences
- **Erin Burke**, MD, Assistant Professor – Surgery
- **Roberto Cardarelli**, DO, MHA, MPH, Professor, Family and Community Medicine
- **Niraj Chavan**, MD, MPH, Assistant Professor – Obstetrics and Gynecology
- **Jessica Clouser**, MPH, Research Director - Health Services Research
- **Mark Dignan**, PhD, Professor – Internal Medicine

- **Mary Beth Fisher**, DO, Fellow – Internal Medicine
- **Rachel Graham**, DrPH, Assistant Professor – Public Health
- **Alla Grigorian**, MD, PhD, Associate Professor – Internal Medicine
- **Vedant Gupta**, MD, Assistant Professor – Internal Medicine
- **Pam Hull**, PhD, Associate Professor – Behavioral Science
- **James Keck**, MD, Assistant Professor – Family and Community Medicine
- **Aaron Kruse-Diehr**, PhD, Assistant Professor – Public Health
- **Mahesh Kudrimoti**, MD, Professor – Radiation Medicine
- **Mary “Beth” Lacy**, PhD, Assistant Professor – Public Health
- **Jing Li**, MD, DrPH, MS, Associate Professor – Internal Medicine
- **Colleen McMullen**, MA, MBA, Science Editor – Internal Medicine

- **Daniela Moga**, MD, PhD, Associate Professor – Pharmacy
- **Kevin Pearce**, MD, MPH, Professor – Family and Community Medicine
- **Anne Ray**, PhD, MEd, Assistant Professor – Public Health
- **Matthew Sirrine**, Research Assistant – Health Services Research
- **Susan Smyth**, MD, PhD, Professor – Internal Medicine
- **Ginny Sprang**, PhD, Professor – Psychiatry
- **Jerod Stapleton**, PhD, Associate Professor – Public Health
- **Margaret Szabunio**, MD, Professor – Radiology
- **Jeff Talbert**, PhD, Professor – Internal Medicine
- **Kshitij Thakur**, MD, Assistant Professor – Internal Medicine
- **Gretchen Wells**, MD, PhD, Professor – Internal Medicine
- **Lovoria Williams**, PhD, Associate Professor – Nursing
- **Mark V. Williams**, MD, Professor – Internal Medicine

JANUARY NEW GOVERNOR OF KY-ACC



Dr. Gretchen L. Wells Installed as American College of Cardiology Kentucky Chapter President

Gretchen L. Wells, MD, PhD, FACC assumes office as President of the Kentucky Chapter of the American College of Cardiology (KYACC). In this role, Dr. Wells will lead KYACC initiatives to improve access to cardiovascular care across the commonwealth.

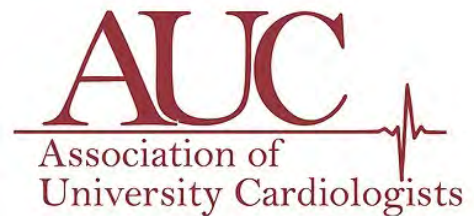
“Dr. Wells is uniquely well suited to lead KYACC during this unprecedented time,” said Stephanie Czuhajewski, MPH, who serves as the KYACC executive director. “Her clinical and leadership experience will be invaluable to KYACC efforts to optimize interdisciplinary care along the continuum, as consumers and clinicians navigate new paradigms in healthcare stemming from the COVID-19 pandemic.”

During her three-year term, Dr. Wells hopes to expand opportunities for participation across the cardiovascular care team and to advance health equity measures that address disparities in care that disproportionately affect rural communities and people of color in Kentucky.

“I am looking forward to serving as President of the Kentucky Chapter of the American College of Cardiology. We have an exceptionally strong chapter recognized nationally for its contributions to cardiovascular medicine. During the next few years, we will continue to address not only the impact of COVID 19 on cardiovascular disease and health care delivery, but also the growing disparities in cardiovascular care and outcomes.”

Dr. Wells is a graduate of the University of Alabama School of Medicine where she completed both her MD and PhD. She completed her fellowship in cardiology at the Wake Forest School of Medicine where she remained on the faculty for 15 years achieving the rank of Professor. She also served as both Dean of Admissions of the Wake Forest School of Medicine and Director of the Coronary Care Unit and Inpatient Cardiology prior to her transition to the University of Kentucky in 2015 as the Thomas Wayne Professor of Women’s Heart Health. She is board certified in cardiology and echocardiography.

Dr. Wells has served as both Lexington Councilor and Treasurer for KYACC, prior to her election as Chapter President. She is the 2020 recipient of the American Heart Association Women in Cardiology



AUC ANNUAL MEETING

The Sixtieth Annual Meeting- Virtual Meeting- was live streamed from the University of Kentucky on January 14, 2021. Dr. Susan Smyth, President of AUC gave opening remarks and was followed by several notable cardiologists in the field.

Speakers: Valerie Montgomery Rice, MD President & Dean, Morehouse School of Medicine and Claire Pomeroy, MD President, Lasker Foundation gave the Nanette K. Wenger Honorary Lecture entitled "Looking in the Mirror: Striving for Racial Equity in Academic Medicine"

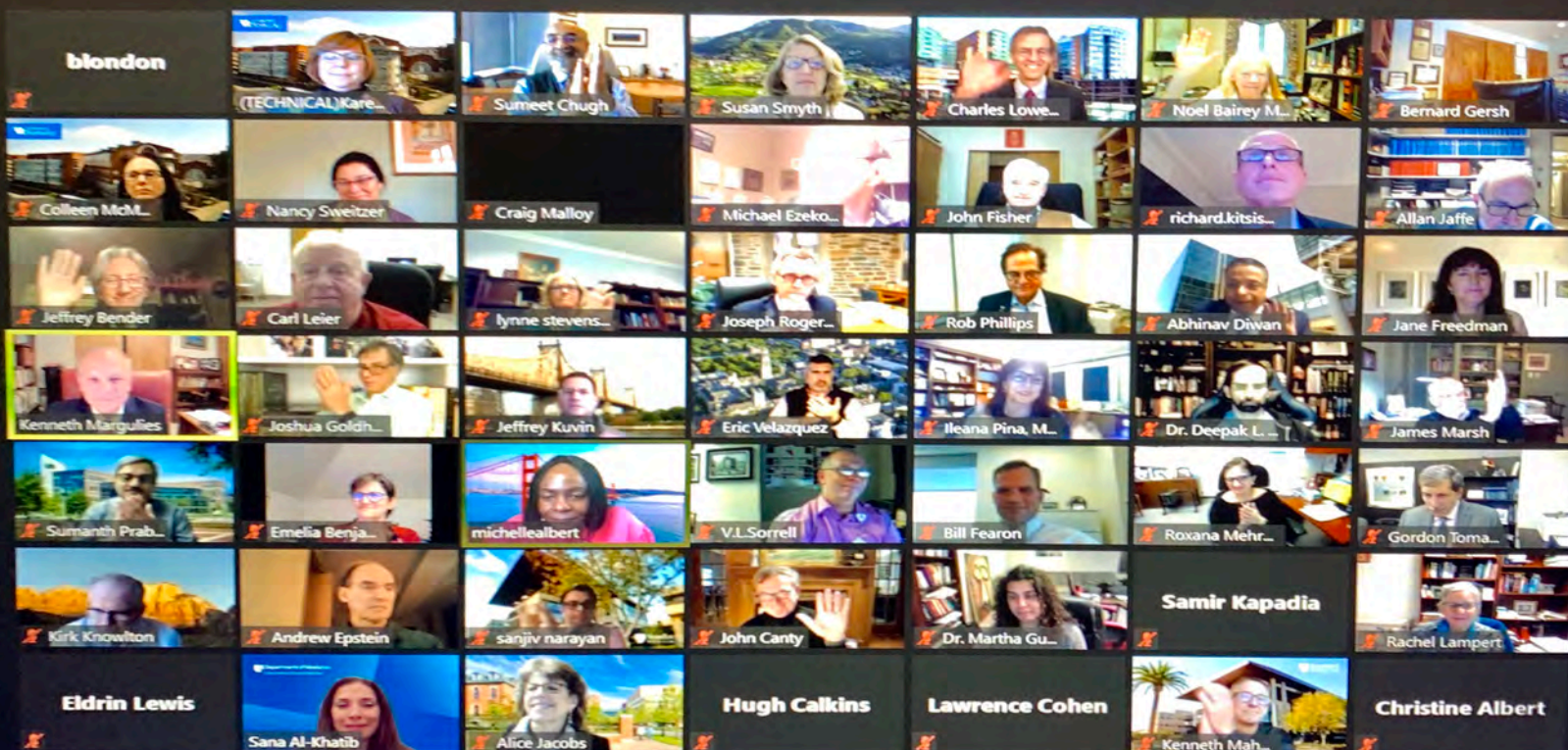
The 31st GEORGE BURCH MEMORIAL LECTURE entitled "Why are we losing the battle with heart disease in the U.S?" Was presented by Robert Califf, MD Head of Clinical Policy and Strategy for Verily and Google Health and Adjunct Professor, Duke University and Stanford.

Founded in 1961, the Association of University Cardiologists (AUC) is an organization that is limited to an active membership of 135 academic cardiologists from the United States, elected by their peers.

The group has a purely educational purpose and meets once per year in January for a two-day session of scientific interchange. The members traditionally are the leaders and best investigators in American cardiology.

The Association of University Cardiologists contains those cardiologists who shape the course of research and training in cardiovascular disease in this country.

Current Gill Heart & Vascular Institute members of AUC are: Drs. Susan Smyth, David Moliterno and Vincent Sorrell.



FEBRUARY GO RED

More than 4,800 women die each year from heart disease in Kentucky. Across the United States, women are dying every 80 seconds from cardiovascular disease and stroke, which they are less likely to survive than men.

These staggering statistics are what keep two University of Kentucky faculty members pushing for more research and funding in the field of women's heart health.

Analia Loria, Ph.D., and Frédérique Yiannikouris, Ph.D., from UK's Department of Pharmacology & Nutritional Sciences, created the Healthy Hearts for Women Symposium. Now in its seventh consecutive year, the event features scientists from UK and universities across the country, who present research and new findings in women's heart health and translational cardiovascular medicine.

"There are many important differences between men and women with regard to heart disease," Loria said. "It's critical to consider sex as a biological variable in heart disease to better understand the cause and effect as part of the process to find better and more adapted treatment."

Loria believes each year, the symposium spurs thinking in study design. Updates in research allows for a continuous discovering of new mechanisms that may translate in novel and more effective therapeutics to fight cardiovascular disease in women, she added.

Yiannikouris' ultimate goal is to bring physicians and scientists together to exchange new skills, knowledge and recent advances in cardiovascular research to improve and speed up the research and health care of women.





7th Annual HEALTHY HEARTS FOR WOMEN

Virtual Symposium • Friday, Feb. 5, 8 A.M.

Featured Speakers:

- **Renu Virmani, MD, FACC**
Founder, President, CVPPath Institute, Gaithersburg, MD, USA
Clinical Professor, Department of Pathology at Georgetown University, University of Maryland-Baltimore, George Washington University and Vanderbilt University
Former Chairperson, Department of Cardiovascular Pathology, Armed Forces Institute of Pathology
- **Judith Zilberman, MD, PhD**
Chief of Hypertension Division
Hospital Dr. Cosme Argerich de Buenos Aires
University of Buenos Aires, Buenos Aires, Argentina
- **Rosa Maria Bruno, MD, PhD**
Researcher
French Institute of Health and Medical Research (INSERM)
University of Paris, Paris, France
- **Christian Delles, MD, FRCP, FAHA, FBIHS**
Professor
Institute of Cardiovascular and Medicine Sciences
University of Glasgow, Glasgow, United Kingdom
- **Paul Connelly, MBChB**
Clinical Research Fellow
University of Glasgow, Glasgow, United Kingdom
- **Sarah Lindsey, PhD**
Associate Professor
Dr. Barbara S. Beckman Professorship in Pharmacology
Tulane University, New Orleans, USA

Following the presentations, there will be a round table focused on approaches to improve women's wellness sponsored by Women in Medicine and Science (WIMS).

Sponsors:

- Department of Pharmacology and Nutritional Sciences
- UK Gill Heart and Vascular Institute
- SAHA Cardiovascular Center

 **College of
Medicine**

Interventional Services

Waiting And Registration



MARCH INTERVENTIONAL

Chandler Hospital opens cutting-edge interventional center

On March 1, Chandler Hospital opened a brand-new, 50,000-square foot Interventional Services center, featuring advanced technology and offering comprehensive, multidisciplinary services in vascular and interventional radiology, neurointerventional radiology, and interventional cardiovascular care.

The upgraded space allows for minimally invasive alternatives to surgery, including emergency lifesaving interventional treatments, ultraprecise

diagnostic and therapeutic procedures using biplane and CT-fluoroscopy guidance, and radiation-free treatment options with a select group of highly trained advanced practice providers.

The only unit of its kind within the country, the interventional center is outfitted with the Nexaris Angio-CT, an imaging system capable of instantly and seamlessly fusing together CT, angiography and ultrasound images during a single procedure.

A greater number of individual patient rooms as well as a larger team of physicians will promote patient access. The flexible room designs accommodate either cardiac or interventional radiology scans, and the identical pre- and post-procedure rooms allow the unit to flex with changing needs and accommodate projected growth.

Learn more and watch a video tour of the center on The Loop at:
bit.ly/interventional-services.



“In conjunction with the new space, UK HealthCare has doubled the number of faculty that perform neurointerventional procedures in order to ensure that all patients in the Bluegrass have access to the most advanced treatments for cerebrovascular and stroke diseases in the country,” said Justin Fraser, MD, FAANS, FAHA, director of cerebrovascular surgery and neurointerventional radiology and surgical director of the UK Comprehensive Stroke Center.

In addition to enhanced patient care and experience, the new interventional center and team of multidisciplinary professionals will support research and education through UK’s growing residency programs.

“There is no better example of what the power of advanced medicine at UK HealthCare really means than this new facility with its state-of-the-art technology, futuristic design and, most importantly, very caring, empathic and highly skilled staff and providers,” said Driss Raissi, MD, chief of vascular and interventional radiology and medical director of interventional services. “Kentuckians will have access to world-class minimally invasive surgeries without having to leave the comfort of their home state.”

Adapted from UKNow.

SUSAN SMYTH, M.D., PH.D., NAMED DEAN OF THE UAMS COLLEGE OF MEDICINE

Adapted from UAMS News March 8,
2021 | LITTLE ROCK —

Susan S. Smyth, M.D., Ph.D., has been named executive vice chancellor and dean of the College of Medicine at the University of Arkansas for Medical Sciences (UAMS), effective June 1.

She is succeeding Christopher Westfall, M.D., who retires Aug. 1, 2021, after 24 years at UAMS.

“Dr. Smyth is a remarkable physician, researcher and administrator whose focus on patient-centered care aligns perfectly with ours,” said Cam Patterson, M.D., MBA, UAMS chancellor and CEO of UAMS Health. “Her skillset and experiences will serve her well as dean of the College of Medicine, and I look forward to working with her.

“I’m also very grateful to Dr. Westfall for his years of dedicated leadership and innumerable contributions to advancing UAMS and its tripartite mission of education, research and clinical care.”

Smyth joins UAMS from the University of Kentucky College of Medicine, where she is the chief of the Division of Cardiovascular Medicine and the director

of the Gill Heart and Vascular Institute, a position in which she developed and implemented an operating structure that emphasized the integration and translation across research, education, and clinical care.

“I am very excited to be joining UAMS and the College of Medicine,” Smyth said. “UAMS has a tremendous reputation for educational, clinical and research excellence, and a compelling commitment to making lasting improvements in the health of Arkansans. I am honored and look forward to working with the talented UAMS team and partners across the state to promote health equity and collaboratively address the health needs of Arkansas.”

A nationally known cardiologist and translational scientist, Smyth is an elected member of the American Society for Clinical Investigation, immediate past-president of the Association of University Cardiologists, and has served on the CTSA Steering Committee for the National Center for Advancing Translational Science. At the University of Kentucky, she is Senior Associate Director of the Kentucky Center for Clinical and Translational Science and has a part-time appointment as a physician and research investigator at the Lexington VA Health Care System.



A nationally known cardiologist and translational scientist, Smyth is an elected member of the American Society for Clinical Investigation, immediate past-president of the Association of University Cardiologists, and has served on the CTSA Steering Committee for the National Center for Advancing Translational Science. At the University of Kentucky, she is Senior Associate Director of the Kentucky Center for Clinical and Translational Science and has a part-time appointment as a physician and research investigator at the Lexington VA Health Care System.

“We conducted a nationwide search and were fortunate to attract interest from a number of highly qualified leaders. Susan simply blew us away,” said Stephanie Gardner, Pharm.D., Ed.D., senior vice chancellor for Academic Affairs and provost. “I very much look forward to the great things she will accomplish at UAMS.”

Dr. Vince Sorrell has graciously agreed to serve as the **Interim Chief of Cardiology**. This role will be vital to maintaining the excellence of our tripartite mission for clinical care, research, and education in the Gill Heart and Vascular Institute.

“I am honored to be the **Interim Division Chief for Cardiology** and humbled to follow Dr. Smyth who has led this academically productive group of **Cardiovascular Care Providers** for the past decade.” Sorrell said. “I know that she will have great success in her new position and our loss is their gain. I also know that she has left behind a stable Division with a wealth of history and I am looking forward to continuing to support the many strengths that exist while seeking out opportunities for strategic growth.”

Congratulations to both Dr Smyth and Dr Sorrell in their new roles!

CV-RPA NEWS

DREAM SCHOLAR

Since 2018, the Disparities Researchers Equalizing Access for Minorities (DREAM) Scholars Program has supported the training of exceptional, under-represented pre-docs, post-docs and assistant professors at the University of Kentucky who are committed to health equity research.

The program originally began in 2015 as mentoring program in the UK College of Nursing for “people who needed to belong—racial, sexual, and gender minorities”, said Lovoria Williams, Ph.D., who currently co-directs DREAM. Now led by the Center for Clinical and Translational Science (CCTS) and the Center for

(CHET), DREAM has evolved into a robust, multidisciplinary career development opportunity for researchers from across UK’s colleges.

Most recently, the impact and importance of the program compelled the UK Markey Cancer Center and the Cardiovascular Research Priority Area to each sponsor an additional DREAM Scholar position per year, bringing the total number from five to seven.

The support provided by the program—which includes two years of research methods training, mentorship, and, for Scholars, pilot and travel funding—can make a big difference in someone’s career.

Williams points out that beyond the training and funding, perhaps the most important aspect of the DREAM program is the community it provides, often to people who are likely familiar with being the only person of color in a meeting. In Williams’ previous role at the University of Georgia, she ran a program similar to DREAM; here at UK, she’s glad to leverage her position in the CCTS to develop an RFA specifically aimed at influencing the careers of researchers from underrepresented minorities.

See the rest of the DREAM Scholars and more information about the program here: https://uknow.uky.edu/research/dream-program-expands-community-career-development-health-equity-researchers?j=333927&sfmc_sub=122674094&l=20904_HTM-

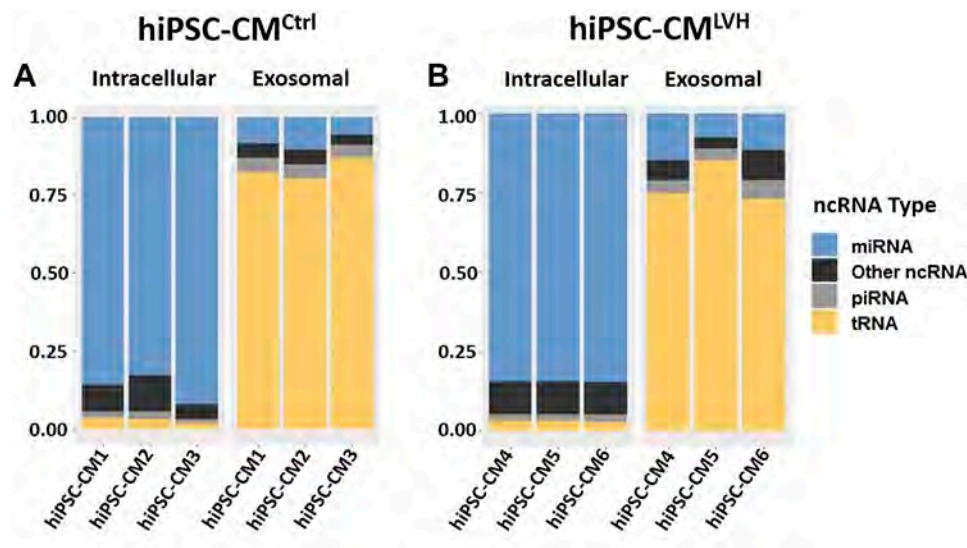


Firaz Peer, Ph.D. (CV-RPA DREAM Scholar)

Assistant Professor, College of Communication and Information

Research Topic: Exploring religio-cultural interventions in substance abuse treatment information infrastructures

Mentor: Hilary Surrat, Ph.D.



RESEARCH FEATURE

EXOSOMES AND EXTRACELLULAR VESICLES IN CARDIOVASCULAR PHYSIOLOGY

Donor-specific phenotypic variation in hiPSC cardiomyocyte-derived exosomes impacts endothelial cell function <https://pubmed.ncbi.nlm.nih.gov/33416449/>

Turner A, Aggarwal P, Matter A, Olson B, Gu CC, Hunt SC, Lewis CE, **Arnett DK**, Lorier R, Broeckel U. *Am J Physiol Heart Circ Physiol*. 2021 Mar 1;320(3):H954-H968. doi: 10.1152/ajpheart.00463.2020.

Exosomes are an important mechanism of cell-cell interaction in the cardiovascular system, both in maintaining homeostasis and in stress response. Interindividual differences that alter content in exosomes may play a role in cardiovascular disease pathology.

What they did: In this study, we characterized exosomal content in phenotypically diverse human induced pluripotent stem cell-derived CMs (hiPSC-CMs). Cell lines were generated from six participants in the HyperGEN cohort: three with left ventricular hypertrophy (LVH) and three with normal

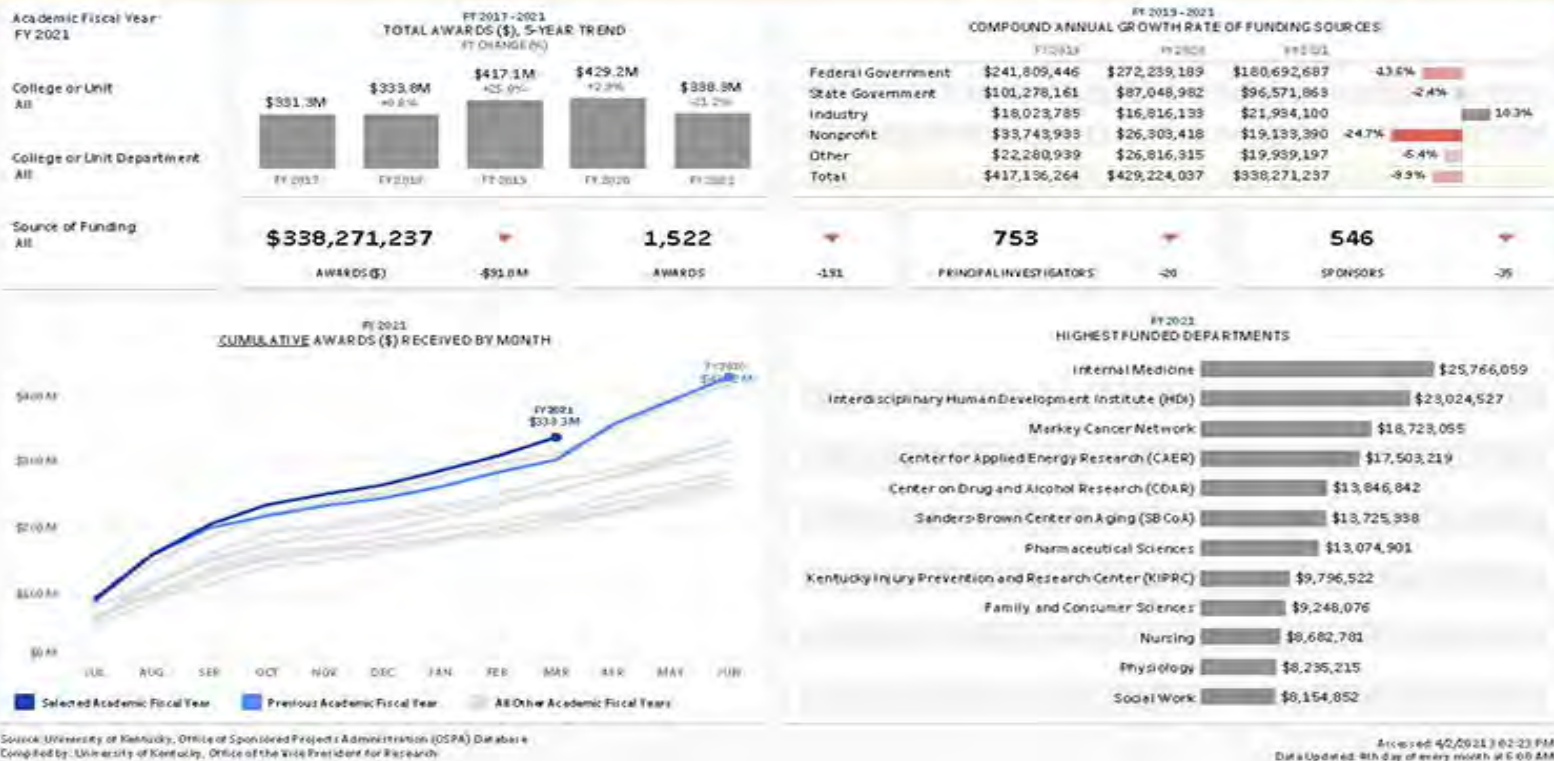
left ventricular mass (LVM).

What they found: Sequence analysis of the intracellular and exosomal RNA populations showed distinct expression pattern differences between hiPSC-CM lines derived from individuals with LVH and those with normal LVM. Functional analysis of hiPSC-endothelial cells (hiPSC-ECs) treated with exosomes from both hiPSC-CM groups showed significant variation in response, including differences in tube formation, migration, and proliferation.

Why it matters: These findings provide novel insight into underlying mechanisms of hypertrophic cell signaling between different cell types. With a growing interest in stem cells and exosomes for cardiovascular therapeutic use, this also provides information important for regenerative medicine.

Visit : <https://www.research.uky.edu/research-priorities-initiative-cardiovascular-diseases/cardiovascular-diseases> for more information.

Please visit: <https://redcap.uky.edu/redcap/surveys/?s=W4WY8DEHEH> to join the CV-RPA.



Ahmed Abdel-Latif

Lysophosphatidic Acid Mediates Cardiac Inflammation After Acute Infarction

National Heart Lung and Blood Institute

08/01/17-07/31/22

Doug Andres

RIT1-Mediated Protection Following Traumatic Brain Injury

National Institute of Neurological Disorders & Stroke

02/15/2018-01/31/23

G-protein Signaling Reduces Neurodegeneration and Promotes Recovery of Synaptic Strength following Traumatic Brain Injury

KY Spinal Cord and Head Injury Research Trust

01/15/17-01/14/21

RIT1 as Novel Driver Oncogene in Lung Adenocarcinoma

KY Lung Cancer Research Fund

07/01/16-06/30/21

An Innovative Therapeutic Approach to Treat Cardiomyopathy

Army Medical Research and Materiel Command

07/01/20-06/30/23

Donna Arnett

Genomewide Association Study of Lipid Response to Fenofibrate and Dietary Fat

National Heart Lung and Blood Institute

12/01/07-02/28/21

Ken Campbell

Multiscale Modeling of Inherited Cardiomyopathies and Therapeutic Interventions

National Heart Lung and Blood Institute

08/03/17-07/31/22

Length-Dependent Activation in Human Myocardium

National Heart Lung and Blood Institute

09/15/20- 07/31/24

Dual Filament Control of Myocardial Power and Hemodynamics

University of Missouri

08/25/20- 07/31/24

Computer Modeling of Myosin Binding Protein C and its Effect on Cardiac Contraction

Case Western Reserve

04/01/19-03/31/23

Thick-Filament Regulation In Human Heart Failure

Washington State University

07/01/19-06/30/22

CRCNS: Multi-Scale Models of Proprioceptive Encoding for Sensorimotor Control

Emory University

09/16/16-05/31/2021

Lisa Cassis

Center of Research in Obesity and Cardiovascular Disease COBRE

Core A: Admin

Core National Institute of General Medical Sciences

09/08/08-07/31/23

Supplemental Environmental Project Compliance Assistance Tools and Services

KY Department of Environmental Protection

07/01/07-12/31/21

EPSCoR Administrative

KY Economic Development Cab

02/01/19-06/30/22

RESEARCH FUNDING CONTINUED

Healthy Kentucky Research Building
Fit-up for Vascular Research
Office of the Director
09/23/19-10/31/21

Sex Differences in Angiotensin-Induced Vascular Diseases
National Heart Lung and Blood Institute
03/21/12-05/31/21

Alan Daugherty
University of Kentucky- Baylor
College of Medicine Aortopathy Research Center
American Heart Association
04/01/18-03/31/22

Adventitial-Medial Interactions in Thoracic Aortic Diseases
American Heart Association
06/01/16- 05/31/21

Macrophage Migration Inhibitory Factor and Urinary Pain
Lexington Biomedical Research Institute
07/01/19-06/30/23

Brian Delisle
Transcriptional Regulation of KCNH2
National Heart Lung and Blood Institute
03/08/19-02/28/23

Circadian Clock Regulation of Myocardial Ion Channel Expression and Function
University of Florida
09/01/20- 05/31/21

Tbx3-regulated Alternative RNA Processing in Cardiac Conduction System Development
Geisinger Health System
04/15/16- 03/31/21

Florin Despa
The Amylin Dyshomeostasis Hypothesis of Vascular Contributions to Cognitive Impairment and Dementia (VCID)
National Institute of Neurological Disorders & Stroke
04/01/20-03/31/25

Programing Amylin Secretion to Slow Brain Aging - An Animal Model
National Institute of Aging
09/15/17-04/30/22

Role of Systemic Amylin Dyshomeostasis in Alzheimer's Disease
National Institute on Aging
09/15/16- 05/31/21

Ming Gong
Targeting Timing of Food Intake as a Novel Strategy against Disruption of Blood Pressure Circadian Rhythm in Diabetes
National Heart Lung and Blood Institute
01/15/19-10/31/22

A Novel Mechanism by which Smooth Muscle BMAL1 Regulates IL-6 and Sexual Dimorphism of Abdominal Aortic Aneurysm
National Heart Lung and Blood Institute
08/20/18-07/31/22

Scott Gordon
The Role of High Density Lipoprotein Associated Protease Inhibitor Activity in Protection Against Atherosclerosis.
National Heart Lung and Blood Institute
08/20/18-07/31/21

Gregory Graf
Contributions of hepatic and intestinal pathways to cholesterol excretion
National Institute Diabetes & Digestive & Kidney
09/13/17-07/31/22

Bernhard Henning
Nutrition and Superfund Chemical Toxicity
National Institute of Environmental Health Sciences
04/01/97-01/31/25

Brian Jackson
Graduate Research Fellowship Program
National Science Foundation
08/01/18-07/31/23

Jing Li
Project MISSION: Developing a multicomponent, Multilevel Implementation Strategy for Syncope
OptImalCare through eNgagement
National Heart Lung and Blood Institute
08/15/18-07/31/21

RESEARCH FUNDING CONTINUED

Xiangan Li

Mechanism of Adrenal Insufficiency
as A Risk Factor for Sepsis
National Institute of General Medical
Sciences
09/01/17-08/31/21

Synthetic HDL a Potential Sepsis
Therapy
National Institute of General Medi-
cal Sciences
11/01/15-11/30/21

Zhenyu Li

Inflammasome Activation Triggers
Systemic Coagulation in Sepsis
National Heart Lung and Blood
Institute
05/15/19-04/30/23

A Novel Mechanism of Immuno-
suppression in Sepsis: Depletion of
Monocytes and Macrophages
National Institute of General Medi-
cal Sciences
09/20/19-06/30/23

Heart-Platelet Crosstalk: JNK, AFib,
and Thrombogenesis
Rush University Medical Center
05/15/19-02/28/23

Analia Loria

Effect of Early Life Stress on Obesi-
ty-Induced Hypertension in Mice
National Heart Lung and Blood
Institute
12/01/17-11/30/22

Fat Nerve Recording in Mice
American Physiological Society
10/01/19-07/31/21

Hong Lu

Atherosclerosis Mechanisms: Angio-
tensin II Production and Action
National Heart Lung and Blood
Institute
05/01/18-03/31/22

Andrew Morris

Define the Twist-ATX-LPAR1
Signaling Axis in Promoting Obe-
sity-Associated Triple Negative
Breast
Cancer Army Medical Research and
Materiel Command
04/15/16-04/14/21

Anniston Community Health Sur-
vey: Follow-up Study and Dioxin
Analyses
National Cancer Institute
05/01/19-04/30/21

Debra Moser

Rural Intervention for Caregivers'
Heart Health (RICHH)
National Institute of Nursing Re-
search
09/26/16-06/30/21

Online Cognitive Behavioral
Therapy for Depressive Symptoms
in Rural Coronary Heart Disease
Patients
Patient Centered Outcomes Re-
search Institute
10/01/2020 to 09/30/2024

Gia Mudd-Martin

Corazón de la Familia (Heart of the
Family)
National Institute of Nursing Re-
search
03/02/17-01/31/22

Heart of the Family: A Cardiovas-
cular Disease and Type 2 Diabetes
Risk Reduction Intervention in
High-Risk Rural Families
National Institute of Nursing Re-
search
09/07/20- 06/30/25

Timothy Mullett

Using Biomarkers and Imaging in
Fungal Regions to Improve Lung
Cancer
Diagnosis Vanderbilt University
04/01/19-03/31/21

Kentucky Lung Cancer Survivorship
Program
Bristol Myers Squibb Foundation
Incorporated
09/01/14- 02/28/21

Mariana Nikolova-Karakashian

Ceramide and Acute Phase Proteins
Elevation During Aging
National Institute on Aging
08/01/02-05/31/23

Jonathan Satin

Monomeric G-Proteins and Cardio-
protection from Heart Failure
National Heart Lung and Blood
Institute
09/01/17- 08/31/21

An Innovative Therapeutic Approach
to Treat Cardiomyopathy
Army Medical Research and Materiel
Command
07/01/20- 6/30/23

RESEARCH FUNDING CONTINUED

Nancy Schoenberg

Community to Clinic Navigation to Improve Diabetes Outcomes
National Institute Diabetes & Digestive & Kidney
08/01/17-07/31/22

Implementing an Evidence-Based mHealth Diet and Activity Intervention: Make Better Choices 2 for Rural Appalachians
National Heart Lung and Blood Institute
08/01/20- 04/30/25

Susan Smyth

Lipid Phosphate Phosphatase 3 as a Novel Atherosclerosis Suppressor
National Heart Lung and Blood Institute
04/01/15-03/31/21

NRSA Training Core (Kentucky Center for Clinical and Translational Science)
National Center for Advancing Translational Sciences
08/15/16-05/31/21

Venkateswaran Subramanian

Calpains and Abdominal Aortic Aneurysms
National Heart Lung and Blood Institute
08/10/17-07/31/21

Ryan Temel

TRAF6 Nanoimmunotherapy to Resolve Plaque Inflammation
Mount Sinai
08/15/18-06/30/21

Targeting MicroRNA-33 To Reduce Intracranial Atherosclerosis and Other Neurovascular Hallmarks of Vascular Cognitive Impairment and Dementia
National Institute of Neurological Disorders & Stroke
04/01/19-03/31/21

Therapeutic Targeting of Metabolic microRNAs as a New Treatment Paradigm for NASH
Aalborg University
01/01/19-12/31/24

Dongfang Wang

Development of a Paracorporeal Pump-Integrated Artificial Lung for Transport of Warfighters with Acute Respiratory Distress Syndrome (ARDS)
Army Medical Research and Materiel Command
08/15/19 -08/14/22

SBIR: Development of a TransApical to Aorta Double Lumen Cannula for a Neonate LVAD
W-Z Biotech LLC
04/01/19-07/31/21

Shuxia Wang

Thrombospondin 1 in obesity associated inflammation and insulin resistance
National Institute Diabetes & Digestive & Kidney
08/20/17-05/31/21

Christopher Mark Waters

Biophysical Mechanisms of Hyperoxia-Induced Lung injury
National Heart Lung and Blood Institute
04/15/20- 03/31/24

ASK1 and Ventilator-Induced Lung Injury
National Heart Lung and Blood Institute
12/15/16-11/30/21

Regulation and Function of IL33 During Neonatal RSV Infection
Louisiana State University
05/05/18-07/31/21

Nancy Webb

Serum Amyloid A, Inflammasome Activation, and Abdominal Aortic Aneurysms
National Heart Lung and Blood Institute
01/01/17-12/31/21

NRSA T32: Pharmacology and Nutritional Sciences:
National Institute Diabetes & Digestive & Kidney
08/15/00-07/31/21

Jonathan Wenk

Force Validated Heart Valve Surgical Planning Tool
University of Arkansas
09/01/19-08/31/22

Sidney Whiteheart

Platelet Exocytosis and Endocytosis in Thrombosis and Immunity
National Heart Lung and Blood Institute
04/01/20-03/31/28

Jeremy Wood

Protein S Anticoagulant Activity: Biochemical Mechanisms and Structural Studies
National Heart Lung and Blood Institute
09/15/15-03/31/21

SEMINARS AND JOURNAL CLUBS

* Please note if these seminars are still occurring, they will be online only. Check website for details.

Cardiovascular Seminar Series

Fridays at 8:00 am

This forum brings to campus prominent external speakers and provides presentations by UK faculty to ensure their research expertise is widely known.

<https://cvrc.med.uky.edu/cvrc-current-seminar-schedule>

Cardiovascular Journal Club

Tuesdays at 8:00 am

Presenters in this forum discuss specific citations including basis for this publication's selection, strengths and weaknesses, from the perspective as if he/she were the original reviewer. For more information contact:

Greg Graf, Ph.D. or Ryan Temel, Ph.D.

<https://cvrc.med.uky.edu/cvrc-current-journal-club-schedule>

Blood Cell Journal Club

4th Friday of each month at 4:00 pm

The journal club was started a number of years ago in an effort to provide a focal point for the hemostasis community at UK. The focus is usually on platelets but they also discuss papers on Coagulation and Immune responses.

<https://cvrc.med.uky.edu/cvrc-blood-cell-journal-club-2018>

PUBLICATIONS

JANUARY- MARCH

Adegboyega A, Chung M, **Moser D, Mudd-Martin G**. Psychometric Testing of a Cardiovascular Disease Fatalism Instrument (CVD-FI) Among Adults With CVD Risks. *J Nurs Meas*. 2021 Feb 16;JNM-D-19-00057. doi: 10.1891/JNM-D-19-00057.

Alsiraj Y, Thatcher S, Liang CL, Ali H, Ensor M, **Cassis L**. Therapeutic assessment of combination therapy with a neprilysin inhibitor and angiotensin type 1 receptor antagonist on angiotensin II-induced atherosclerosis, abdominal aortic aneurysms, and hypertension. *J Pharmacol Exp Ther*. 2021 Mar 11;JPET-AR-2021-000525. doi: 10.1124/jpet.121.000525.

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Daugherty A, Cherepanova OA, Alshbool F, Steven S. Recipients of the 2021 Early Career Investigator Awards. *Arterioscler Thromb Vasc Biol*. 2021 Mar 4;ATVBA-HA121316123.

PUBLICATIONS CONTINUED

Deng P, Wang C, Wahlang B, Sexton T, **Morris AJ, Hennig B**. Co-exposure to PCB126 and PFOS increases biomarkers associated with cardiovascular disease risk and liver injury in mice. *Toxicol Appl Pharmacol*. 2020 Dec 15;409:115301. doi: 10.1016/j.taap.2020.115301.

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Elbadawi A, Elgendy IY, Jimenez E, Omer MA, Shahin HI, **Ogunbayo GO**, Paniagua D, Jneid H. Trends and Outcomes of Elective Thoracic Aortic Repair and Acute Thoracic Aortic Syndromes in the United States. *Am J Med*. 2021 Feb 22:S0002-9343(21)00101-7. doi: 10.1016/j.amjmed.2021.01.021.

Elbadawi A, Ugwu J, Elgendy IY, Megaly M, **Ogunbayo GO**, Omer MA, Elzeneini M, Chatila K, Al-Azizi K, Goel SS, Gafoor S. Outcomes of transcatheter versus surgical aortic valve replacement among solid organ transplant recipients. *Catheter Cardiovasc Interv*. 2021 Jan 5. doi: 10.1002/ccd.29426.

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PUBLICATIONS CONTINUED

Gupta V, Paranzino M, Alnabel-si T, Ayoub K, Eason J, Mullis A, Kotter JR, Parks A, May L, Nerusu S, Dai C, Cleland D, **Leung SW, Sorrell VL** 5th generation vs 4th generation troponin T in pre-dicting major adverse cardiovascular events and all-cause mortality in patients hospitalized for non-cardiac indications: A cohort study. *PLoS One*. 2021 Feb 9;16(2):e0246332. doi: 10.1371/journal.pone.0246332.

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Higgins JT, **Lennie TA,** Frazier SK. Depressive Symptoms Predict Delayed Ambulation After Traumatic Injury. *J Trauma Nurs*. 2021 Jan-Mar 01;28(1):3-9. doi: 10.1097/JTN.0000000000000551.

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Huang P, Zhao C, Chen C, **Whiteheart SW,** Liu-Chen LY. Does GEC1 Enhance Expression and Forward Trafficking of the Kappa Opioid Receptor (KOR) via Its Ability to Interact with NSF Directly? *Handb Exp Pharmacol*. 2021 Jan 7. doi: 10.1007/164_2020_398.

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UPCOMING 2021 EVENTS

Heart Walk- May 8

Nurses Week- May 6-12

Cardiology Fellows Graduation- May 14

ACC Annual Meeting- May 15 – 17

Central Kentucky Heart Ball- June 10

Lipid Conference- Sept 9-11

CVRC Research Day- Sept 10

KY-ACC- Sept 11

Flower and Horan Lecture- Sept 17

Cardiooncology Symposium- Oct 16

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