

Community

Education

GW Heart & Vascular Institute

REPORT FOR ACADEMIC YEARS 2019 & 2020

Cardiovascular
Research

Heart & Vascular
Institute

THE GEORGE WASHINGTON UNIVERSITY

Our Mission

THE MISSION OF THE GW HEART & VASCULAR INSTITUTE is to promote cardiac and vascular research, education, and community service with the goal of accelerating the pace of scientific discovery, reducing mortality, and improving the quality of life of Americans with heart and vascular disease.

To achieve these goals, the GW Heart & Vascular Institute seeks to provide an interdisciplinary structure to integrate basic and clinical investigators, clinicians, medical educators, health policy experts, and community leaders.

The Institute's goal is to be the leading center for heart and vascular research, education, and community service and to do so by leveraging the enormous resources of The George Washington University.

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Dear Friends

of the GW Heart and Vascular Institute,

IN THE 2019 + 2020 ACADEMIC YEARS, the GW Heart & Vascular Institute has made remarkable progress expanding our accomplishments with a wide range of programs in community service, education, and research.

Community Service

Honored by the president of Honduras, Drs. Tracy and Mercader conducted their 9th and 10th Annual Medical Missions to Honduras, treating a total of 1,342 patients and implanting 370 devices, using over \$3 million in donated medical equipment over the past decade. In Washington, DC, our faculty and fellows provided health screening at churches and high school athletic screening, as well as volunteering at Food & Friends. Our team addressed the social determinants of health with increased patient support by our GW Heart & Vascular Institute community health workers and nutritionist. We launched an innovative Culinary Medicine program engaging our community health workers and inner city families in hands-on heart-healthy cooking.

Education

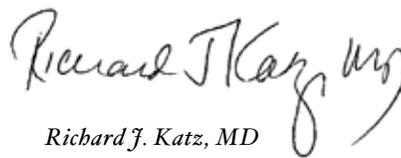
Educationally, the GW Cardiology faculty supervised our cardiology fellows, in addition to teaching medical residents, GW medical students, and physician assistants. Each year, under the leadership of Dr. Allen Solomon, we graduated nine general cardiology fellows who have moved on to clinical practice, academic positions, or advanced training in interventional cardiology, advanced cardiac imaging, and electrophysiology. The Institute also supported international research trainees. Drs. Mercader and Panjraht organized our weekly Cardiology Grand Rounds, inviting a wide range of national experts as visiting professors on campus and on the web, as well as co-chairing our Annual Heart Failure and Cardiac Arrhythmia Symposia.

Research

Our faculty and fellows have produced a record number of papers and presentations in all the major areas of cardiology, including advanced cardiac imaging, electrophysiology, heart failure, pulmonary hypertension, coronary artery and structural heart disease, preventive cardiology, women's heart disease, and public policy. Between July 2018 and June 2020, the GW Cardiology faculty published 67 manuscripts and presented 56 abstracts at the national meetings of the American Heart Association, American College of Cardiology, American Society of Echocardiography, Society for Cardiovascular Angiography and Interventions, International Society for Heart and Lung Transplantation, American College of Physicians, TransCatheter Therapeutics (TCT), Society of Cardiovascular CT, Heart Failure Society of America, and the Heart Rhythm Society. Noted for their academic leadership, our cardiology faculty have been selected to serve on the organizing committees for several national meetings, as invited speakers for 57 presentations at scientific meetings, and 33 national committees and editorial boards.

We are proud of our accomplishments and thank our Board of Directors, grateful patients, and multiple donors who inspire us to expand our academic mission.

Sincerely,



Richard J. Katz, MD

Walter A. Bloedorn Professor of Cardiology

Director, Division of Cardiology

Director, GW Heart and Vascular Institute

Faculty & Leadership

RICHARD J. KATZ, MD

Director and Board Chairman, GW Heart & Vascular Institute
Director, Division of Cardiology
Walter A. Bloedorn Professor of Medicine

JESSICA JOHNSON

Executive Director, GW Heart & Vascular Institute

CARDIOLOGY

WILLIAM BORDEN, MD

Professor of Medicine and Health Policy
Chief Quality and Population Health Officer

ANDREW D. CHOI, MD

Associate Professor of Medicine and Radiology
Co-Director, Cardiac CT and MRI

BRIAN G. CHOI, MD, MBA

Professor of Medicine and Radiology
Co-Director, Advanced Cardiac Imaging
Chief Medical Information Officer, GW MFA

STEVEN FARMER, MD, PhD

Associate Professor of Medicine and Public Health
Associate Director, Office of Clinical Practice Innovation
Chief Strategy Officer for Coverage at the Centers for Medicare and Medicaid Services

MARDI GOMBERG-MAITLAND, MD MSC

Professor of Medicine
Medical Director, Pulmonary Hypertension Program

RICHARD J. KATZ, MD

Director and Board Chairman, GW Heart & Vascular Institute
Director, Division of Cardiology
Walter A. Bloedorn Professor of Medicine

JOSEPH KREPP, MD

Assistant Professor of Medicine
Director, Structural Cardiac Imaging

JANNET LEWIS, MD

Professor of Medicine
Director of Non-Invasive Cardiology
Director, Women's Heart Center

LISA W. MARTIN, MD

Associate Professor of Medicine
Director, Lipid Research Clinic

RAMESH MAZHARI, MD

Associate Professor of Medicine
Director, Interventional Cardiology Fellowship

MARCO MERCADER, MD

Professor of Medicine
Director, Electrophysiology Research

CHRISTIAN NAGY, MD

Assistant Professor of Medicine
Director, Structural Heart Disease Program

GURUSHER PANJRATH, MD

Associate Professor of Medicine
Director, Heart Failure and Mechanical Circulatory Support Program

JONATHAN REINER, MD

Professor of Medicine
Director, Cardiac Catheterization Laboratories

ALLEN SOLOMON, MD

Professor of Medicine
Director, Cardiology Fellowship
Director, CCU

CYNTHIA TRACY, MD

Professor of Medicine
Associate Director of Cardiology
Director of Electrophysiology

ALAN WASSERMAN, MD

Chairman of the Department
of Medicine
Eugene Meyer Professor
of Medicine

WILLIAM WEGLIICKI, MD

Professor of Medicine
Professor of Biochemistry
& Molecular Medicine

VASCULAR SURGERY**ANTON SIDAWY, MD, MPH**

Lewis B. Saltz Chair of Surgery
Professor of Surgery

BASIC SCIENCES**TIMOTHY MCCAFFREY, PhD**

Professor of Medicine
Director, Division of
Genomic Medicine

BOARD OF DIRECTORS**BARBARA L. BASS, MD**

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Clinical Professor of Surgery
GW Hospital

JONATHAN S. REINER, MD

KIMBERLY D. RUSSO
Chief Executive Officer
GW Hospital

ANTON SIDAWY, MD, MPH

KANNAN SRINIVASAN
Director
Asurion

CYNTHIA M. TRACY, MD

ALAN G. WASSERMAN, MD
Chairman of the
Department of Medicine
Eugene Meyer Professor
of Medicine

The Institute in the Community

The GW Heart & Vascular Institute medical professionals, trainees, and support staff are committed to supporting local, national, and international community service programs.

GW Cardiology Faculty and Fellows Volunteer at Food & Friends

THE GW HEART & VASCULAR INSTITUTE'S FACULTY, NURSES, PHYSICIAN ASSISTANTS, AND FELLOWS donated their time on a Saturday in December 2018 and January 2020 to prepare more than 200 packaged meals and groceries to support Food & Friends. Food & Friends provides more than one million meals per year for people living with HIV/ AIDS, cancer, diabetes, and other life challenges.





ERIN BREEN, GW RN (ABOVE) AND JARED NG, PA (BELOW) PERFORM BLOOD PRESSURE SCREENING.

GW Cardiology Supports the Community for American Heart Month

FOR AMERICAN HEART MONTH IN FEBRUARY 2019, the GW Heart & Vascular Institute volunteered at the Temple of Praise church community in the Anacostia neighborhood of Washington, DC, to provide blood pressure screenings and a heart-healthy diet workshop. Dr. Richard Katz led the volunteer team with Kelli Metzger, our registered dietitian; Jason Stein, first-year medical student; Erin Breen, heart failure nurse; Jared Ng, cardiac physician assistant; and two members of the Temple of Praise church. The event served more than 50 people.

In February 2020, Dr. Richard Katz and Kelli Metzger, RD, teamed up with the Giant grocery’s in-store nutritionist, Jillian Griffith, at 1535 Alabama Ave SE in Washington, DC, to deliver heart-healthy nutrition information for American Heart Month.



TOP: MEDICAL STUDENT JASON STEIN AND DR. KATZ VOLUNTEERING AT THE TEMPLE OF PRAISE.

ABOVE: DR. KATZ AND KELLY METZGER, RD, AT THE ANACOSTIA GIANT SUPER-MARKET HEART MONTH 2020.



THE GW TEAM WITH TEMPLE OF PRAISE VOLUNTEERS.

Community Health Workers and GW Cardiology – A Bridge to Better Cardiac Care

THE 21ST CENTURY “DOCTOR-PATIENT RELATIONSHIP” no longer just means your doctor. This modernized “relationship” comprises a team that includes physicians, nurse practitioners, physician assistants, and pharmacists. The GW Heart & Vascular Institute is leading an innovative program expanding the medical team by adding community health workers (CHWs) to interface with our patients and their healthcare providers.

CHWs augment patient care by providing culturally appropriate health advice on disease prevention and management. Our GW Heart & Vascular Institute CHWs Kimberlee Desormeaux, Sawa Kamara, and Tim Mavritte assist patients with heart failure, hyperten-

sion, diabetes, and coronary artery disease. Trained and supervised by Drs. Gurusher Panjrath and Richard Katz, along with our nurse practitioners Sherrelle Apugo and Linda Bostrom and our DC-based partner,

the Institute for Public Health Innovation, our CHWs meet with patients in their homes and/or our office to help with and clarify medications, prescription refills, transport to clinic appointments, monitoring of weight, blood pressures, blood glucose values, and dietary advice.

The result of this program has been improved patient self-management, better cardiac health, and reduced hospital readmissions. In our first year, adding CHWs to our cardiology team lowered the 30-day re-hospitalization for our DC heart failure patients by over 50%.

Sawa Kamara and Kim Desormeaux presented the results of our GW experience at the national CHW meetings in Las Vegas in 2019.

Our CHWs assist patients with “social determinants of health” including housing, food access, insurance issues, job opportunities, and other social services. An outstanding example of the value and dedication of our CHWs took place on September 19, 2018. Kim Desormeaux and Sawa Kamara were on their way to a home visit when they were notified that there was a fire in the Arthur Capper Senior Building in Southeast Washington, DC. Kim rushed to the scene and alerted the firefighters that one of her patients was still in the building, whereupon the firefighters rescued the patient from the burning building and to safety. Kim Desormeaux and Sawa Kamara were just doing their jobs, but on this day went above and beyond the call of duty and made a tremendous difference in the outcome of this patient.

Support of this program is made possible by partnerships with GW Hospital, AmeriHealth, and the Institute for Public Health Innovation.



COMMUNITY HEALTH WORKERS TIM MAVRITTE (LEFT) AND KIM DESORMEAUX (RIGHT), WITH LINDA BOSTROM, NP (CENTER).

SAWA KAMARA AND KIM DESORMEAUX.



Dr. Allen Solomon and GW Cardiology Fellows Provide Free Heart Screenings for Young Athletes

DR. ALLEN SOLOMON AND GW CARDIOLOGY FELLOWS provided free health screenings to high school students in Montgomery County in September 2019. Dr. Solomon has provided these screenings to high school athletes in Silver Spring, MD, for nearly two decades.



**DR. SOLOMON
HAS PROVIDED FREE
HEALTH SCREENINGS
FOR ALMOST**

Two Decades.

GW Heart Failure Team Volunteers at NBC4 Health Expo

GURUSHER PANJRATH, MD, Director of the GW Heart Failure and Mechanical Circulatory Support Program, Erin Breen, RN, CCRN, Heart Failure and LVAD Coordinator, and Ashley Young, ACNP, Heart Failure and LVAD Coordinator, participated in the 27th annual NBC4 Health and Fitness Expo at the Walter E. Washington Convention Center in Washington, DC in January 2020, supported by GW Hospital, The GW Medical Faculty Associates, and The GW School of Medicine and Health Sciences. The wellness expo attracts an estimated 85,000 attendees every year. Dr. Panjrath led educational discussions on heart failure and our heart failure team provided information to

thousands of visitors.



DR. PANJRATH (ABOVE), AND GW HEART FAILURE NURSES ASHLEY YOUNG AND ERIN BREEN (LEFT).



GW Heart & Vascular Institute Celebrates 10 Years of Providing Cardiac Care in Honduras

IN 2019, THE GW HEART & VASCULAR INSTITUTE supported its 10th Annual Medical Mission to Honduras, led by Drs. Cynthia Tracy and Marco Mercader. In partnership with the medical staff at the Centro Medico Colonial Hospital in Comayagua, the Mission provides life-saving pacemakers and defibrillators to patients in need.

EACH YEAR HUNDREDS OF HONDURANS TRAVEL FROM all 18 regions OF THE COUNTRY TO SEE THE GW MEDICAL TEAM IN COMAYAGUA. THE GW MISSION TEAM EVALUATED 342 patients AND IMPLANTED 49 devices DURING THEIR TWO-WEEK VISIT IN 2019. SINCE 2010, THE GW TEAM HAS EVALUATED A TOTAL OF 1842 patients AND IMPLANTED 370 devices, WORKING WITH MORE THAN \$3 million IN DONATED MEDICAL EQUIPMENT.

To celebrate this milestone, the Permanent Mission of Honduras to the Organization of the American States (OAS) hosted a reception at the OAS Hall of the Americas. Ambassador Luis Cordero of the Permanent Mission of Honduras to OAS and the Honduran Ambassador to the United States, Maria Dolores Agüero, attended the event.

Supporters of the 2019 GW Medical Mission include Medtronic, Abbott, GW University Hospital, Heart Beat International, GW Medical Faculty Associates, and the Felix Y. Manalo (FYM) Foundation.

DR. KATZ, DR. MERCADER, AMBASSADOR CORDERO, AMBASSADOR AGÜERO, DR. TRACY, ELI SEVILLA, DR. VOLKE, AND DR. COVAS.



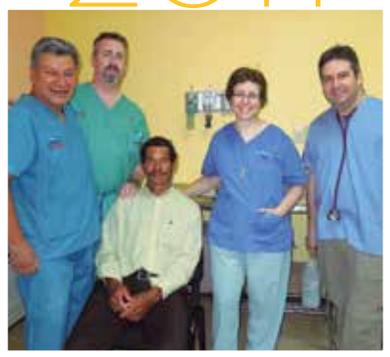
10
YEARS

in Honduras

2010



2011



2012



2013



2014 2015



2016



2017



2018



2019





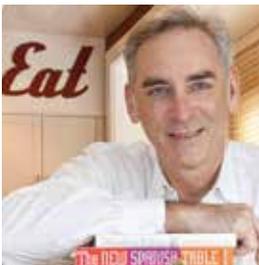
FROM LEFT: DRs. ANGELA RYAN, BAYO ATANDA, AND RICHARD KATZ, WITH KELLI METZGER, RD.

GW Heart & Vascular Institute Shares Heart-Healthy Tips at Anacostia’s Ward 8 Fall Fest

IN SEPTEMBER 2019, Dr. Richard Katz, Kelli Metzger, RD, and GW cardiology fellows Drs. Angela Ryan and Bayo Atanda shared heart-healthy tastings and tips at the Great Ward 8 Community Fall Fest sponsored by the Giant grocery store in Anacostia.

GW Heart & Vascular Institute is First to Train Community Health Workers in Culinary Medicine

CULINARY MEDICINE, A NATIONALLY RECOGNIZED PROGRAM developed by Dr. Timothy Harlan, features hands-on training of health professionals and patients in healthy nutrition. Now based at the GW School of Medicine and Health Sciences, Dr. Harlan is collaborating with Dr. Richard Katz, creating a new program training community health workers (CHWs) to be instructors in Culinary Medicine for heart patients and their families.



DR. TIMOTHY HARLAN

Adapted for in-person and virtual courses, our CHWs will learn about nutrition to educate their patients and provide patients with in-home hands-on cooking demonstrations. In May 2020, Dr. Katz, Kelli Metzger, registered dietitian of the GW Heart & Vascular Institute, and our three GW Cardiology CHWs Kim Desormeaux, Sawa Kamara, and Tim Mavritte, participated in a training session led by Dr. Harlan and Kerri Dotson, RDN, LDN,

Executive Chef of the GW Culinary Medicine Program.

The goal of this innovative program is to deliver this

first-of-its-kind

nutrition education in the Washington region.

Serv

COMMUNITY HEALTH WORKER KIM DESORMEAUX PARTICIPATES IN AN ONLINE CULINARY MEDICINE SESSION.





Dr. Gurusher Panjraht Inspires Teens at National 4-H Summit for Healthy Living

DR. GURUSHER PANJRATH SPOKE at the National 4-H Summit for Healthy Living: Inspire Leaders in Health in February 2020, at the National 4-H Youth Conference Center in Chevy Chase, MD. The program included more than 300 teenagers ages 15-18 who are leaders in health in their respective states. Teens representing 30 states attended, to learn about current national health issues and develop Youth Community Health Action Plans to deliver in their home communities.

THE PROGRAM INCLUDED MORE THAN

300
TEENAGERS FROM
30
STATES.

ing Our Communities near and far

GW Heart Team Participates in Pulmonary Hypertension's First Annual Northern Virginia Walk

THE GW PULMONARY HYPERTENSION TEAM, led by Dr. Mardi Gomberg-Maitland, participated in the Pulmonary Hypertension Association's Northern Virginia Walk in May 2019 in Lee District Park. There were more than 200 people in attendance. The GW Hospital sponsored the team and provided snacks, a tent, and giveaways to participants. Our GW team participants included Drs. Mardi Gomberg-Maitland and Jalil Ahari, Denise Lewis, Monica Jenkins, Lori Marshall, and Maureen Townsend.

**DR. AHARI, DENISE LEWIS,
DR. GOMBERG-MAITLAND,
AND MONICA JENKINS,
WITH FAMILY MEMBERS.**



Highlights in Education

Visiting Professors The GW Heart & Vascular Institute enhances the educational experience of our GW medical residents and cardiology fellows by inviting renowned cardiologists and master teachers to serve as visiting professors. Visiting professors spend two days on campus with GW trainees and faculty, and deliver lectures at cardiology grand rounds and medical grand rounds to more than 200 medical professionals.

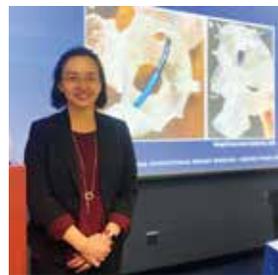
2019 Jack Understein Memorial Visiting Professor

JANUARY 2019

Marvin Konstam, MD

Chief Physician Executive,
The CardioVascular Center
Professor, Tufts University
School of Medicine

PRESENTED: *Acute Heart Failure and the Cardio Renal Syndrome: Are We Making Progress?* and *The Future of Cardiovascular Care: Advanced Technologies, Affordable Care, and the Academic Medical System*



2019 GW Cardiac Imaging Visiting Professor

NOVEMBER 2019

Dee Dee Wang, MD

Director of Structural
Imaging and 3D Printing
Henry Ford Hospital,
Detroit, MI

PRESENTED: *The Emerging Role of 3D Printing in Planning Complex Heart Interventions*

**DR. SHAW (CENTER) WITH DRS.
ANDREW CHOI AND JANNET LEWIS.**



GW Women's Heart Center Visiting Professorship

OCTOBER 2018

Leslee J. Shaw, PhD

Professor of Medicine
Weill Cornell Medical College

PRESENTED: *Imaging for Stable Ischemic Heart Disease in Large Clinical Trials, and Evaluation of Symptomatic Women with Stable Ischemic Heart Disease*

SEPTEMBER 2019

Martha Gulati, MD, MS

Professor of Medicine and the Chief
of Cardiology, University of Arizona
(Phoenix)

PRESENTED: *An Update on Women's Heart Disease*



DR. GULATI WITH DR. LEWIS.



2020 GW Heart & Vascular Institute Visiting Professor

JANUARY 2020

Anjali Vaidya, MD

Associate Professor of Medicine
Co-Director, Pulmonary Hypertension, Right Heart Failure, and CTEPH Program
Associate Program Director, Cardiology Fellowship
Temple University Lewis Katz School of Medicine

PRESENTED: *Chronic Thromboembolic Pulmonary Hypertension (CTEPH): 2020*

2020 GW Cardiac Imaging Visiting Professor

MARCH 2020

James K. Min, MD



Founder and CEO, Cleerly, Inc.
Former Professor of Radiology Medicine at Weill Cornell Medical College

PRESENTED: *The Vulnerable Patient: New Insights into Atherosclerosis Imaging and AI/Machine Learning Applications in Medicine: CV Disease as a Use Case*

Annual P. Jacob Varghese Visiting Professorship and GW Cardiology Alumni Receptions

Graduates of the GW Cardiology Fellowship Program join current cardiology faculty and fellows annually for the P. Jacob Varghese Visiting Professorship and Alumni Reception.

Fourth Annual P. Jacob Varghese Visiting Professorship

Arshed A. Quyyumi, MD

Professor of Medicine, Emory University School of Medicine
Co-Director, Emory Clinical Cardiovascular Research Institute

PRESENTED: *Precision Medicine: Predicting Risk in Patients with Cardiovascular Disease*

Fifth Annual P. Jacob Varghese Visiting Professorship

Samuel J. Asirvatham, MD

Professor of Medicine and Pediatrics
Program Director, Clinical Cardiac Electrophysiology Fellowship
Mayo Clinic, Rochester, Minnesota

PRESENTED: *Can We Ablate Ventricular Fibrillation?*



GRADUATES OF THE GW CARDIOLOGY FELLOWSHIP PROGRAM JOIN CURRENT FACULTY AND FELLOWS AT THE ANNUAL LECTURE AND ALUMNI RECEPTION.

Invited Speakers

National Lipid Expert

OCTOBER 2018

Daniel J. Rader, MD

Seymour Gray Professor of Molecular Medicine
 Chair of the Department of Genetics
 Chief of the Division of Translational Medicine and Human Genetics
 University of Pennsylvania School of Medicine

PRESENTED: *Beyond LDL: Addressing the Residual Risk for Coronary Events*



DRS. DANIEL RADER, LISA MARTIN, AND WILLIAM BORDEN.

DRS. MONICA MUKHERJEE AND JANNET LEWIS.



GW Cardiology Alums Present at Grand Rounds

DECEMBER 2018

We are proud of the fact that our GW cardiology graduates are making a difference in academic cardiology. Graduates of the GW Cardiology Fellowship are invited to deliver cardiology grand rounds on GW's medical campus.

Monica Mukherjee, MD, MPH

Director, Echocardiographic Research
 Assistant Professor of Medicine
 Johns Hopkins University School of Medicine

PRESENTED: *Right Ventricle and Pulmonary Hypertension*

Behnam Tehrani, MD

Director of Cardiac Catheterization Laboratory
 INOVA Heart & Vascular Institute

PRESENTED: *Cardiogenic Shock: Heart Team Approach to Management*

Virtual GW Visiting Professor Cardiology Grand Rounds: Continuing the Institute's Education Mission During the COVID-19 Pandemic

MAY 2020

While the coronavirus pandemic may have prevented group gatherings, our cardiology grand rounds series featuring visiting professors from national medical centers is being delivered as virtual videoconferencing through WebEx.

Dhanunjaya Lakkireddy, MD

Medical Director for the Kansas City Heart Rhythm Institute at HCA Midwest Health

PRESENTED: *Left Atrial Appendage Occlusion; Devices and Anticoagulation Strategies*

Garima Vishwanath Sharma, MD

Assistant Professor of Medicine, Johns Hopkins Medicine

DISCUSSED: *Ten Emerging Concepts in Cardio Obstetrics—Adverse Pregnancy Outcomes and Long-term Cardiovascular Risk*



VIRTUAL CARDIOLOGY GRAND ROUNDS.

Fellows Education and Training

American College of Cardiology Board of Governors Chair

JANUARY 2019

B. Hadley Wilson, MD



Sanger Heart & Vascular Institute
Carolinas HealthCare System/Atrium Health

Clinical Professor of Medicine at UNC School of Medicine

PRESENTED: ACC Global ST-Elevation Myocardial Infarction (STEMI) Project. A worldwide heart focus initiative to improve the treatment of heart attack in third world countries.

THE GW GENERAL CARDIOLOGY FELLOWSHIP PROGRAM, led by Dr.

Allen Solomon, offers a three-year cardiology intensive training program to recent graduates of internal medicine residency programs. Our fellows are selected from a group of more than 200 applicants to train under the GW cardiology faculty. The Institute also sponsors advanced fellowships for cardiology graduates to further specialize as electrophysiologists or interventional cardiologists. Dr. Cynthia Tracy leads the electrophysiology training program and Dr. Ramesh Mazhari leads the interventional fellowship. Each year, the Institute's faculty train our nine general cardiology fellows, and support two electrophysiology fellows and two interventional cardiology fellows. Fellows participate in academic research studies provided by the Institute's Annual Young Investigators Awards.

BELOW: GW DIVISION OF CARDIOLOGY FACULTY AND FELLOWS, ACADEMIC YEAR 2018-2019.



Symposia

Fourth Annual Heart Failure and Arrhythmia Symposium

Drs. Marco Mercader and Gurusher Panjrath co-chaired the Institute's Fourth Annual Heart Failure and Arrhythmia Conference in Washington, DC. The symposium educates cardiovascular specialists and internists about the **newest advances** and up-to-date clinical practice approaches for treatment of heart failure, arrhythmias, and structural ischemic and vascular issues. GW Cardiology Faculty—Drs. Katz, Borden, A. Choi, B. Choi, Lewis, Martin, Mazhari, Nagy, Najam, Reiner, Solomon, and Tracy—presented on **best practices** in cardiovascular care.

DR. GURUSHER PANJRATH



DR. MARCO MERCADER



GW Cardiologists and Trainees Present at American College of Cardiology Mid-Atlantic Symposium

NOVEMBER 2019

The GW Heart & Vascular Institute had a **major presence** at the American College of Cardiology Mid-Atlantic Symposium at the ACC Heart House. Dr. Raza Yunus was invited to present a case of advanced heart failure, in addition to research on “The Role of Hospital Teaching Status in MitraClip Outcomes” with faculty author

Dr. Joseph Krepp. Dr. Shani Weerakoon presented a case of arrhythmogenic right ventricular cardiomyopathy, a rare cause of sudden cardiac death managed successfully by the GW cardiac team, with faculty authors Dr. Marco Mercader and Dr. Allen Solomon.

ACC's DC Governor Dr. Jannet Lewis addressed attendees on behalf of the region's governors on engagement with the ACC. Dr. Gurusher Panjrath, ACC's Chair of Heart Failure and Transplantation, spoke to fellows-in-training on section engagement, as well as serving as an expert discussant on clinical cases in advanced heart failure and amyloidosis.

**DRS. KREPP AND PANJRATH
AT THE MID-ATLANTIC CARDIAC
AMYLOIDOSIS SYMPOSIUM.**



Drs. Joseph Krepp and Gurusher Panjrath Lead Mid-Atlantic Cardiac Amyloidosis Symposium

NOVEMBER 2019

Recently, there have been **groundbreaking** developments in the diagnosis and treatment of cardiac amyloidosis, once considered a rare and untreatable condition. The GW Infiltrative Cardiomyopathy Center, led by Drs. Gurusher Panjrath and Joseph Krepp, has been at the forefront in the diagnosis and treatment of patients with this life-threatening cardiac disease. As a regional leader in the treatment of patients with cardiac amyloidosis, Drs. Panjrath and Krepp hosted a Mid-Atlantic Cardiac Amyloidosis Symposium. Dr. Panjrath led the sessions, presenting data on **new therapeutic options** for patients with cardiac amyloidosis, while Dr. Krepp, an expert in cardiac imaging, reviewed the use of nuclear imaging and testing options to detect cardiac amyloidosis.

Dr. Andrew Choi directed the Fellows Forum and was appointed by the Mid-Atlantic chapter as Director of the Symposium, leading cardiovascular education for the region in 2020 and 2021.

In addition, Dr. Pedro Covas, medical resident, presented “Who Truly has Heart Failure? Discordance in Ejection Fraction with Left Bundle Branch Block” with faculty authors Dr. Richard Katz and Dr. Allen Solomon, and Dr. Taher Tayeb, medical resident, presented “Not Your Common Athletic Problem,” a case with faculty author Dr. Cynthia Tracy.



DR. JANNET LEWIS WITH GW CARDIOLOGY FELLOWS.

Thought Leaders

Faculty of the GW Heart & Vascular Institute are invited to speak to Congress, Federal Agencies, and leading national academic associations as thought leaders on heart disease prevention and health policy issues.



Dr. Ramesh Mazhari on NBC News4 Discussing Loneliness and the Heart

DR. RAMESH MAZHARI was featured on NBC News4 in Washington, discussing the health risks of **loneliness**. Dr. Mazhari stated that “loneliness can increase the risk of cardiovascular disease and stroke by 30%.” She also noted that “the risk associated with social isolation could be as bad as smoking 15 cigarettes a day or being obese.”



Dr. Jonathan Reiner Serves as Health Expert on CNN

DR. JONATHAN REINER, GW Director of Cardiac Cath Lab and **nationally recognized** interventional cardiologist, has had a prominent role in communicating complex medical issues to the public as a regular contributor to CNN since the outbreak of the coronavirus pandemic. The clip above is from an interview on CNN with Erin Burnett in April 2020.

Dr. William Borden Leads Discussions on Cardiovascular Quality of Care

DR. WILLIAM BORDEN, Chair of the American Heart Association’s Quality of Care and Outcomes Research Council, served on a panel discussing “Improvements to Rural Health Care through Patient-Centered Research,” at the U.S. Senate. Panelists shared what makes health care delivery unique in rural areas, and how patient-centered/community-based programs can **lower the risk** of heart disease and address other public health challenges. Dr. Borden also spoke at the Centers for Disease Control (CDC) to the Division of Heart Disease and Stroke Prevention in Atlanta on “Cardiovascular Quality and Outcomes Research.”



DR. WILLIAM BORDEN (NEAR RIGHT) WITH PANELISTS FROM THE U.S. SENATE BRIEFING ON IMPROVEMENTS TO RURAL HEALTH CARE THROUGH PATIENT-CENTERED RESEARCH, SPONSORED BY RESEARCH!AMERICA.

GW Cardiologists Featured at the National Heart, Lung, and Blood Institute's 2019 Coronary CT Angiography Summit

DR. ANDREW CHOI was a presenter at the November 2019 NHLBI Coronary CT Angiography Summit at the National Institutes of Health. The Summit focused on novel vascular disease diagnoses and **outcomes** derived from coronary CT angiography. Dr. Nehal N. Mehta, Chief of Inflammation and Cardiometabolic Diseases at the National Heart, Lung, and Blood Institute and GW Clinical Professor of Cardiology, chaired the symposium.



Dr. Andrew Choi Joins National Thought Leaders at Cardiac Imaging Summit

DR. ANDREW CHOI, Co-Director of Cardiac CT and MRI at GW, represented the American Heart Association, and GW cardiologist Dr. Steven Farmer represented the Center for Medicare and Medicaid Services at the Technology Advances in Cardiac CT summit. This meeting, sponsored by the American College of Cardiology, articulated new approaches to improve patient-centered care by **preventing** the onset of heart disease through cardiac imaging.

Drs. Andrew Choi and William Borden Speak on the Importance of Influenza and Pneumococcal Vaccinations for Heart Disease Patients

DR. ANDREW CHOI was invited to brief the Congressional Public Health Caucus co-chaired by Reps James McGovern (D-MA), Mike Simpson (R-ID), Lucille Roybal-Allard (D-CA), and Rob Wittman (R-VA) on “Stop the Spread, Preparing for the 2019-2020 Influenza Season”. Dr. A. Choi addressed the **crucial role** of vaccination in preventing heart disease on behalf of the American College of Cardiology.

DR. WILLIAM BORDEN joined the nation's **leading experts** at the 2019 National Foundation for Infectious Diseases Influenza/Pneumococcal Disease News Conference in September at the National Press Club to share the importance of flu and pneumococcal vaccination for patients with heart disease.



DR. ANDREW CHOI (ABOVE) AND DR. WILLIAM BORDEN (LEFT), SPEAKING ON NATIONAL PANELS SUPPORTING FLU VACCINATIONS FOR HEART PATIENTS.

International Education

DR. CHAVEZ WITH DR. TRACY.



Former GW Cardiology Intern Honored by National Hispanic Medical Association

DR. DORYS CHAVEZ, a Honduran physician who interned with the GW Division of Cardiology in 2017, received the 2019 Young Physician of the Year Award from the National Hispanic Medical Association (NHMA). The award was presented during the NHMA's Hispanic Health Conference in Arlington, Virginia, at the Leadership Awards Gala & Dinner held on April 2019. Dr. Chavez was joined by Dr. Cynthia Tracy, Associate Director of Cardiology at GW and leader of the Institute's annual medical mission to Honduras. Dr. Chavez, a major participant in GW's medical mission to Honduras, was selected from a competitive pool of candidates from across the United States. This award goes to individuals who have made a **significant contribution** to Hispanic health through their continued work as young physicians of NHMA. Dr. Chavez will return to GW as a medical resident in July 2020.

GW Cardiologists Train Visiting Electrophysiology Intern from Italy



MARIA PIA DEL CORRAL, having trained in cardiology at the University of Milano, IRCCS Policlinico San Donato, in Italy, joined the GW Division of Cardiology from 2018-2019 as our international electrophysiology **research scholar**. Under the supervision of Dr. Mercader, along with Drs. Tracy, Panjrath, and Solomon, her projects evaluated cardiac resynchronization therapy and the burden of cardiac arrhythmias in patients with end stage renal disease. In 2020, Dr. Corral joined GW's electrophysiology fellowship under the training leadership of Dr. Cynthia Tracy.

GW cardiologists respond to the COVID-19 Crisis

The novel coronavirus pandemic caused by COVID-19 adversely affected the health, well-being, and daily life of our community and that of the world. Historic challenges exist nationally in the delivery of care during this rapidly evolving pandemic. Members of the GW Heart & Vascular Institute have risen to the challenge in caring for patients at the front lines, through new telemedicine visits, and by leading the national cardiovascular response to this crisis. Our faculty, fellows, and staff have been actively reviewing the rapidly changing medical knowledge around COVID-19, providing leadership to the region's physicians and incorporating best known clinical practices to patients while serving on the front lines of cardiovascular care.

DR. JONATHAN REINER, GW Director of Cardiac Cath Lab and nationally recognized interventional cardiologist, has had a prominent role in communicating complex medical issues to the public as a regular contributor to CNN during the coronavirus pandemic.

DR. MARDI GOMBERG-MAITLAND was senior author on “Care of Patients with Pulmonary Arterial Hypertension during the Coronavirus (COVID-19) Pandemic,” published in *Pulmonary Circulation* on April 29, 2020.

DR. ANDREW D. CHOI, Co-Director of Cardiac CT and MRI, led the development of a new national cardiac imaging and coronavirus guidance statement for the Society of Cardiovascular Computed Tomography. The statement was published in the *Journal of Cardiovascular Computed Tomography*, and endorsed by the American College of Cardiology.

GW Heart & Vascular Institute Provides Hand-held Cardiac Ultrasound to Care for COVID-19 Patients and Honduras Mission Patients

DRS. JANNET LEWIS AND JOSEPH KREPP promoted the use of a novel mobile technology-based point-of-care-ultrasound (POCUS) of the heart using the Butterfly iQ, an ultrasound probe that converts an iPhone or iPad into an echocardiogram machine. The GW Heart & Vascular Institute purchased Butterfly iQs for GW cardiology faculty and fellows for bedside examination of COVID-19 patients and physicians, and to help guide clinical decision making during GW's September 2019 medical mission to Honduras.



DRS. MARDI GOMBERG-MAITLAND AND GURUSHER PANJRATH (CENTER PAIR), ON HOSPITAL ROUNDS.

Cardiovascular Research

In the academic years 2019-2020 our GW cardiology faculty and fellows have produced a record number papers and presentations. The GW Cardiology faculty published 67 manuscripts and presented 56 abstracts. Faculty, fellows, residents, and GW medical students presented their work at national meetings of the American Heart Association, American College of Cardiology, American Society of Echocardiography, Society for Cardiovascular Angiography and Interventions, International Society for Heart and Lung Transplantation, American College of Physicians, TransCatheter Therapeutics (TCT), Society of Cardiovascular CT, American Thoracic Society, Heart Failure Society of America, and the Heart Rhythm Society. In addition, our faculty were invited speakers, providing 57 presentations at national and regional scientific meetings.

FACULTY AND FELLOWS POST RECORD NUMBERS:

67

MANUSCRIPTS
PUBLISHED

56

ABSTRACTS
PRESENTED

57

SCIENTIFIC MEETING
PRESENTATIONS

ABSTRACTS AND PUBLICATIONS

CARDIAC IMAGING

ABSTRACTS

Jain, R, **Krepp, J**, Wessler, J, Khalique, O, Hahn, RT, Moses JW. Improvement in Myocardial Strain after Percutaneous Coronary Intervention in Patients with Ischemic Cardiomyopathy. *Society for Cardiovascular Angiography and Interventions* Las Vegas, NV May 2019.

Alzahrani T, **Choi B, Krepp J, Lewis J**. Predicting Clinical Outcomes of Inpatients With Heart Failure Based on Echocardiogram Reports Using Natural Language Processing and Deep Learning Models. *Scientific Sessions of the American Heart Association* Nov 2019.

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Yunus R, Alzahrani T, **Choi B, Krepp J, Nagy C, Choi A**. Does Aortic Valve Calcium Predict Improvement in Low-Flow, Low-Gradient Aortic Stenosis? *14th Annual Society of Cardiac Computed Tomography Scientific Sessions* Sept 2019.

Kumar V, Achamyelch F, **Krepp J, Nagy C, Mazhari R, Reiner J, Choi A**. High Accuracy of Coronary CTA in Low-Intermediate Risk TAVR Evaluation. *ACC* 2020.

PUBLICATIONS

Wang DD, Geske JB, **Choi AD**, Lee JC, Khalique OK, Gafoor S, Atianzar K, Blanke P, Little SH, Sorajja P, O'Neill WW, Cavalcante JL. Interventional Imaging for Structural Heart Disease: Challenges and New Frontiers of an Emerging Multi-disciplinary Field. *Structural Heart*, 2019 May, Published online 22 Apr 2019.

2018-2022

Cardiac Imaging

Cardiac imaging, including echocardiography, nuclear cardiology, cardiac CT, and cardiac MRI, is undergoing **major advances**. At GW, we have assembled a world-class cardiac imaging team. Drs. Jannet Lewis and Joseph Krepp are developing new insights using echocardiography to assess heart failure and structural heart diseases. Dr. Brian Choi is promoting international access to echocardiography. Dr. Krepp is expanding the use of nuclear cardiac imaging to detect amyloidosis and other diseases that infiltrate the heart. Dr. Andrew Choi has become a national leader in cardiac CT and MRI, with new techniques including artificial intelligence, to visualize and assess coronary artery disease.



FROM LEFT: DRs. KREPP, B. CHOI, LEWIS, A. CHOI, AND FARMER.

Faza NN, Wang DD, Cavalcante J, **Choi AD**, Geske JB, Little SH. Interventional Imagers: The Conductors of the Heart Team Orchestra. *Diagnostic and Interventional Cardiology*, April 2019.

Choi AD, Parwani P, Geske J, et al., Cardiac Imaging at ACC 19: A Sneak Peek, American College of Cardiology Imaging Section, acc.org/imaging, Mar 2019.

Choi AD, Leifer ES, Yu JH, Datta T, Bronson KC, Rollison SF, Schuzer JL, Steveson C, Shanbhag SM, Chen MY. Reduced Radiation Dose with Model Based Iterative Reconstruction Coronary Artery Calcium Scoring. *European Journal of Radiology*, Feb, 2019; 111:1-5.

Alzahrani T, Tashkandi A, Sarkar A, Smuclovsky C, Earls JP, **Choi AD**. Practical Clinical Application of Cardiac Computed Tomography-Derived Fractional Flow Reserve. *Cardiovascular Innovations and Applications*, Feb 2019.

Brunetti R, **Choi A**. App Review Series: Cardiac Imaging Planes 1-2-3. *Journal of Digital Imaging*, Dec 2018; 31(6): 765-767.

Ramsey BC, Fentanes E, **Choi AD**, Branch KR, Thomas DM. Myocardial Assessment with Cardiac CT: Ischemic Heart Disease and Beyond. *Current Cardiovascular Imaging Reports*, Nov 2018; 11(7):16.

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Parwani P, Lopez-Mattei J, **Choi AD**. Building Bridges in Cardiology and Radiology: Why Collaboration is the Future of Cardiovascular Imaging. *Journal of the American College of Cardiology: Cardiovascular Imaging*, Nov 2018; 11(11):1713-1717.

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Zoghbi W, DiCarli M, Blankstein R, **Choi A**, et al. Multimodality Cardiovascular Imaging in the Midst of the COVID-19 Pandemic: Ramping Up Safely to a New Normal. *Journal of the American College of Cardiology: Cardiovascular Imaging* June 2020.

**FROM LEFT: DENISE LEWIS,
SARAH SMITH, ANNA
JOHNSON, AND DR.
GOMBERG-MAITLAND.**



Pulmonary Hypertension

Dr. Mardi Gomberg-Maitland, an international expert in pulmonary hypertension, joined the GW cardiology faculty in January 2019 and established the GW Pulmonary Center of Excellence. Dr. Gomberg-Maitland is on the organizing committee on multiple multicenter clinical trials, and is the lead author on several of these **high impact studies**. She serves on the editorial board of several journals and is an invited speaker in the USA and abroad.

ABSTRACTS AND PUBLICATIONS

PULMONARY HYPERTENSION

ABSTRACTS

Simon M, **Gomberg-Maitland M**, Oudiz R, Rischard F, Elinoff JM, Grigorian B, Schmid A, Hoe S, Desai N, Gladwin M. Patients with Severe Pulmonary Arterial Hypertension Treated with ABI-009, Nab-Sirolimus, an mTOR Inhibitor: Interim Results From a Phase 1 Clinical Trial. American College of Cardiology 2019, New Orleans, LA, poster presentation.

Pspotka MA, Thomeas-McEwing V, Gamazon ER, Hirota T, Friedman PN, Konkashbaev A, Kubo M, Nakamura Y, Ratain MJ, Benza RL, Cox NJ, **Gomberg-Maitland M**, Maitland ML. Two Polymorphic Gene Loci Associated with Treprostinil Dose in Pulmonary Arterial Hypertension. *International Society of Heart and Lung Transplant*, 2019, Orlando, FL, oral presentation.

Simon M, **Gomberg-Maitland M**, Oudiz R, Rischard F, Elinoff JM, Grigorian B, Schmid A, Hoe S, Desai N, Gladwin M. Patients with Severe Pulmonary Arterial Hypertension Treated with Abi-009, Nab-Sirolimus, an mTOR Inhibitor: Interim Results from a Phase 1 Clinical Trial. *International Society of Heart and Lung Transplant*, 2019, Orlando, FL, oral presentation.

Benza RL, **Gomberg-Maitland M**, Farber HW, Vizza D, Holdstock L, Borg E, Nelson A, Deng CQ, White RJ. The Impact of Stratification of Baseline Pulmonary Arterial Hypertension Risk Score-Analysis from the FREEDOM-EV Study. *ATS 2020*, Philadelphia, PA.

Badesch DB, Gibbs S, **Gomberg-Maitland M**, Humbert M, McLaughlin VV, Preston IR, Souza R, Waxman AB, Mutyaba M, Manimaran S, Barnes J, Pena J. The Pulsar Study: An Ongoing Phase 2, Double-Blind, Placebo-Controlled, Randomized Study to Compare the Efficacy and Safety of Sotatercept (Ace-011) Versus Placebo When Added to Standard of Care for the Treatment of Pulmonary Arterial Hypertension (PAH). *ATS 2020*, Philadelphia, PA.

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Sitbon O, **Gomberg-Maitland M**, Granton J, Lewis MI, Mathai SC, Rainisio M, Stockbridge NL, Wilkins MR, Zamanian RT, Rubin LJ. Clinical Trial Design and New Therapies for Pulmonary Arterial Hypertension. *Eur Resp J*. 2019 Jan 24;53(1)

Benza RL, **Gomberg-Maitland M**, Elliott G, Farber HWA, Foreman AJ, Frost AE, McGoon MD, Pasta DJ, Selej M, Burger C, Frantz RP. An Update of the Risk Score Calculator in Pulmonary Arterial Hypertension Patients from the Registry to Evaluate Early and Long-Term PAH Disease Management (REVEAL). *Chest*. 2019 Feb 14 (epub).

Parikh KS, Sharma K, Fiuzat M, Surks HK, George JT, Hoarpour N, Depre C, Desvigne-Nickens P, Nkulikiyinka R, Lewis GD, **Gomberg-Maitland M**, O'Conner CM, Sockbridge N, Califf RM, Konstam MA, Januzzi JL Jr, Solomon SD, Borlaug BA, Shah SJ, Medfield MM, Felker GM. Heart Failure with Preserved Ejection Fraction Expert Panel Report: Current Controversies and Implications for Clinical Trials. *JACC Heart Fail*. 2018 Aug;6(8):619-632.

Gomberg-Maitland M, Souza R. Uncovering Small Secrets in Big Data Sets: How Math Can Identify Biology in Rare Conditions (Pediatric Pulmonary Hypertension). *Circ Res*. 2017 Aug 4; 121(4):317-319.

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Gomberg-Maitland M, Long-term Results of the Implantable Remodulin Delivery Pump for Pulmonary Arterial Hypertension Trial. *Pulmonary Circulation* Nov 2019.

Kishiki K, Singh A, Narang A, **Gomberg-Maitland M**, Goyal N, Maffessanti F, Besser SA, Mor-Avi V, Lang RM, Addetia K. Impact of Severe Pulmonary Arterial Hypertension on the Left Heart and Prognostic Implications. *J Am Soc Echocardiogr*. 2019 Sep;32(9):1128-1137.

Gomberg-Maitland M, Bourge RC, Shapiro SM, Tarver JH 3rd, Zwicke DL, Feldman JP, Chakinala MM, Frantz RP, Torres F, Bag R, Murphy JA, Lautenbach AA, Morris M, Peterson L, Waxman AB. Long-Term Results of the Delivery for Pulmonary Arterial Hypertension Trial. *Pulmonary Circulation* 2019 Nov 5;9(4):1-9.

Piscova Oncal CG, Mendes AA, Muniz MTC, de Oliveira SA, do Valle Neto LM, de Vasconcellos Piscocoya NA, Goes GHB, Sobral Filho DC, **Gomberg-Maitland M**. Schistosomiasis-associated Pulmonary Arterial Hypertension: Survival in Endemic Area in Brazil. *Int J Cardiol Heart Vasc*. 2019 Oct 31;25.

Heart Failure/ Infiltrative Heart Disease

Heart Failure is increasing as a major cause for morbidity and mortality in the United States. Gurusher Panjrath, MD, Director of the GW Heart Failure and Mechanical Circulatory Support Program, has been a major contributor to recent research advances in heart failure, and is a national leader for the American Heart Association, American College of Cardiology, and the Heart Failure Society of North America. Assisted by Richard Katz, MD, our heart failure nurse practitioners, and community health workers, the GW Heart Failure team has **promoted innovative research** assessing use of community health workers to improve cardiac care, and several studies analyzing risks and outcomes of heart failure patients. In addition, Dr. Krepp's research has expanded the diagnosis and treatment of amyloidosis and other rare causes of heart failure.



FROM LEFT: ASHLEY YOUNG, LINDA BOSTROM, ERIN BREEN, AND DR. PANJRATH.

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Rosenkranz S, Luke S, Howard LS, **Gomberg-Maitland M**, Hoepfer MM, Systemic Consequences of Pulmonary Hypertension and Right-Sided Heart Failure. *Circulation* 2020;141:678-693.

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HEART FAILURE/ INFILTRATIVE HEART DISEASE

ABSTRACTS

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Panjrath G, Bostrom L, Witkin L, **Katz R**, Moving Mobile Health Forward: Combining mHealth with Community Health Workers Bolsters Heart Failure Care, *Heart Failure Society of America 22nd Annual Scientific Meeting*, 2019.

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Nazari M, Gill GS, Malik A, Tummala L, Arundel C, **Panjrath G**, Singh S, Allman RM, Faselis C, Fonarow GC, Ahmed A. Outcomes in Hospitalized Older African American Patients with

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Gill GS, Malik A, Nazari M, Arundel C, Singh S, **Panjrath G**, Deedwania P, Kanonidis I, Faselis C, Fonarow GC, Ahmed A. Admission-to-Discharge Weight Change and 30-Day Post-Discharge Outcomes in Older Patients with Heart Failure with Preserved and Reduced Ejection Fraction (HFpEF and HFrEF), *Journal of American College of Cardiology*, Mar 2019.

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Alzahrani T, Liu J, **Solomon A**, **Panjrath G.** Angiotensin-Converting-Enzyme Inhibition in Stable Coronary Artery Disease and Cardiomyopathy with Mid-range Ejection Fraction: Insights from the PEACE Trial. *Circulation: Cardiovascular Quality and Outcomes*, 2018.

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Patel J, Alzahrani T, Ryan A, **Krepp J.** Predictors of In-hospital Mortality in Elderly Patients with Heart Failure. *Scientific Sessions of the American Heart Association*, Nov 2019.

Nguyen T, Alzahrani T, **Krepp J.** Cardiovascular Outcomes in Patients with Mitochondrial Disease in the United States: A Propensity Score Analysis. *Scientific Sessions of the American Heart Association*, Nov 2019.

Chavez D, Alzahrani T, Rodriguez A, Quadri S, **Krepp J**, **Mercader M.** Baseline Characteristics and Clinical Outcomes for Patients with Chagas



FROM LEFT: DRs. MERCADER, SOLOMON, AND TRACY.

Heart Rhythm Disorders

Drs. Cynthia Tracy, Allen Solomon, and Marco Mercader continue to advance the

understanding and treatment

of cardiac arrhythmias. Our electrophysiologists mentor GW trainees and serve on committees for the American Heart Association, American College of Cardiology, and the Heart Rhythm Society. Dr. Tracy is a co-author on the national atrial fibrillation guidelines, and Dr. Mercader collaborates with the GW Biomedical Engineering arrhythmia group.

Disease: Insight from the National Inpatient Sample. *Scientific Sessions of the American Heart Association*, Nov 2019.

Temesgen N, Weerakoon S, **Lewis J, Choi A**. Big Ball of Stress: MINOCA and Cardiomyopathy in a Young Woman. *Journal of American College of Cardiology*, Mar 2020.

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Alzahrani T, Tiu J, **Panjrath G, Solomon A**. The Effect of Angiotensin-Converting Enzyme Inhibitors on Clinical Outcomes in Patients with Ischemic Cardiomyopathy and Midrange Ejection Fraction: A Post hoc Subgroup Analysis from the PEACE Trial. *Ther Adv Cardiovasc Dis*, 2018.

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Gabr RE, El-Sharkawy AM, Schär M, **Panjrath GS**, Gerstenblith G, Weiss RG, Bottomley PA. Cardiac Work is Related to Creatine Kinase Energy Supply in Human Heart Failure: A Cardiovascular Magnetic Resonance Spectroscopy Study. *J Cardiovasc Magn Reson.*, Dec 2018.

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HEART RHYTHM DISORDERS

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McCaffrey J, Alzahrani T, **Mercader M, Solomon A, Tracy C**. Rate Versus Rhythm Control in Patients with Atrial Fibrillation and Normal to Mild Left Atrial Enlargement: Insights from the AFFIRM Trial. *European Society of Cardiology*, Aug 2018.

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Aldrich A, Bradley A, **Choi A, Panjrath G**. The Great Masquerader: Cardiac Sarcoidosis Mimicking Arrhythmogenic Right Ventricular Dysplasia. *Journal of American College of Cardiology*, 2018.

Weerakoon S, **Mercader M, Solomon A**. Arrhythmogenic Right Ventricular Cardiomyopathy, a Rare Cause of Sudden Cardiac Death. *Mid-Atlantic Symposium American College of Cardiology*, Dec 2019.

Tayeb T, **Tracy C**. Not Your Common Athletic Problem. *Mid-Atlantic Symposium, American College of Cardiology*, Dec 2019.

Kumar V, Tushina J, **Choi A**. Breaking the Cycle: Sudden Cardiac Death in a Young, Healthy Adult. *Journal of American College of Cardiology* Mar 2020.



THE GW STRUCTURAL HEART TEAM.

Coronary Artery Disease and Structural Valve Disease

Drs. Jonathan Reiner, Ramesh Mazhari, Christian Nagy, and GW cardiology colleagues have expanded clinical procedures and research in the mechanisms and treatment of coronary artery disease and structural valve disease. As non-surgical approaches to valve replacement and repair have grown exponentially, our team has reported on **many advances** and outcomes of this evolving field of heart disease treatment.

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PUBLICATIONS

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CORONARY ARTERY DISEASE AND STRUCTURAL VALVE DISEASE

ABSTRACTS

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Yunus R, Alzahrani T, Forgione J, McCaffrey J, Atanda A, **Krepp J, Mazhari R, Nagy C, Reiner J**. Transcatheter Aortic Valve Replacement Outcomes: Insight from the National Cardiovascular Data Registry. *ACC 2019 Mar, JACC 2019 Vol. 73 (9) Suppl 1*.

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Bahri F, Alzahrani T, Sodhi G, Sadri M, **Nagy C, Reiner J, Mazhari R**. Catheter Access Site and Acute Kidney Injury. *American Heart Association Scientific Sessions* Nov 2018.

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Amankwah N, Alzahrani T, **Mazhari R, McCaffrey J, Nagy C, Reiner J**. Transcatheter Mitral Replacement Outcomes: Insight from the National Cardiovascular Data Registry. *Circulation* 2018;138 Suppl (1): A11586, 2018.

Alzahrani T, Nguyen T, Ryan A, Dwairy A, McCaffrey J, Yunus R, Forgione J, **Krepp J, Nagy C, Mazhari R, Reiner J**. Cardiovascular Disease Risk Factors and Myocardial Infarction in Transgender Population, *AHA QCOR*, Arlington, VA, 2019, Finalist at Young Investigator Award.

Atanda A, Buhari O, Alzahrani T, Isa S, Fadiran O, Forgione J, Atanda O, **Nagy C, Mazhari R, Reiner J, Krepp J**. Seasonal Variation Among Acute Coronary Syndrome Patients in the United States: Patient Characteristics, Hospital Admissions, and In-patient Outcomes. *Scientific Sessions of the American Heart Association* Nov 2019.

Covas P, Alzahrani T, Yunus R, **Nagy C, Krepp J**. Percutaneous Coronary Intervention and Inpatient Mortality in Spontaneous Coronary Artery Dissection: A Propensity Score Analysis. *Scientific Sessions of the American Heart Association* Nov 2019.

Yunus R, **Krepp J**. The Role of Hospital Teaching Status in MitraClip Outcomes. *Mid-Atlantic Symposium, American College of Cardiology* Dec 2019.



DRS. STEVEN FARMER AND WILLIAM BORDEN.

Healthcare Policy

Washington DC is the **main hub** for healthcare policy in the United States. Leading our GW cardiac policy research are Drs. William Borden and Steven Farmer, along with several other members of our faculty. Dr. Borden is Director of Health

Transformation at the GW Medical Faculty Associates, and Associate Editor of *Circulation: Cardiovascular Quality and Outcomes*. He advises the ACC and AHA on policy issues. Dr. Steven Farmer, Clinical Associate Professor of Cardiology, serves as Chief Strategy Officer for Coverage at the Centers for Medicare and Medicaid.

ABSTRACTS AND PUBLICATIONS

Atanda A, Alzahrani T, Temesgen N, Agronin J, **Krepp J**. Hospital Outcomes of Mitraclip Placement in Teaching versus Non-Teaching Hospitals: Insights from the National Inpatient Sample. *Scientific Sessions of the American Heart Association* Nov 2019.

Toma I, **Katz R, Reiner J, Mazhari R**, Shah P, Tackett M, Jones D, St. Laurent, III G, Shtakalo D, Antonets D, Ertle J, Kim J, Lai Y, Arslan Z, Alfaraidy M, Jepson T, McCaffrey T. Blood RNA Biomarkers of Coronary Artery Disease: RNA Sequencing Reveals a Signature of Regulatory Tcell Imbalance. *Scientific Sessions of the American Heart Association* Nov 2019.

Khalil H, Atanda A, **Choi A**. Regional Variation in Incidence and Outcomes of Patients Admitted with Acute Coronary Syndrome: Insight from the National Inpatient Sample. *American College of Cardiology Scientific Sessions* Mar 2020.

Nguyen T, Alzahrani T, **Krepp J**. Post Myocardial Infarction Syndrome: Inpatient Contemporary Features of a Forgotten Condition in the Post Percutaneous Coronary Intervention Era. *American College of Cardiology Scientific Sessions* Mar 2020.

PUBLICATIONS

McCaffrey JA, Alzahrani T, Datta T, **Solomon AJ, Mercader M, Mazhari R, Nagy C, Reiner JS, Tracy CM**. Outcomes of Acute Conduction Abnormalities Following Transcatheter Aortic Valve Implantation with a Balloon Expandable Valve and Predictors of Delayed Conduction System Abnormalities in Follow-up. *American Journal of Cardiology*, 2019 Jun, 123, 1845-1852.

Lee KB, Trachiotis GD, **Reiner JS, Nagy CD**, Double Valve-in-Valve Transcatheter Valve Replacements for Failed Surgical Bioprosthetic Aortic and Tricuspid Valves. *Innovations: Technology and Techniques in Cardiothoracic and Vascular Surgery*, 2019 Mar, *Innovations* (Phila). 2019 Mar 14.

Choi A. Coronary Artery Disease in Young Adults (Editorial). *Journal of the American College of Cardiology* 10/15/2019.

Alzahrani T, Nguyen T, Ryan A, Dwairi A, McCaffrey J, Yunus R, Forgione J, **Krepp J, Nagy C, Mazhari R, Reiner J**. Cardiovascular Disease Risk Factors and Myocardial Infarction in the Transgender Population. *Circ Cardiovasc Qual Outcomes*. 2019 Apr;12(4).

HEALTHCARE POLICY

PUBLICATIONS

Borden WB, Critique and Review: Making Health Policy More Accessible. *Circulation: Cardiovascular Quality and Outcomes*, Dec 2018.

Choi B, Analysis of American College of Cardiology/American Heart Association Guidelines Author Self-Disclosure Compared with Open Payments Industry Disclosure. *Circulation: Cardiovascular Quality and Outcomes* Nov 2019.

Parwani P, **Choi AD**, Lopez-Mattei J, Raza S, Chen T, Narang A, Michos ED, Erwin JP 3rd, Mamas MA, Gulati M. Understanding Social Media: Opportunities for Cardiovascular Medicine. *Journal of the American College of Cardiology*, Mar 12;73(9): 1089-93, 2019.

Amankwah N, Park M, Gu A, **Choi BG**, Trends In Authorship Demographics for Manuscripts Published in the *American Journal of Cardiology*. *American Journal of Cardiology*, 2018 Oct, 122(7):1255-9.

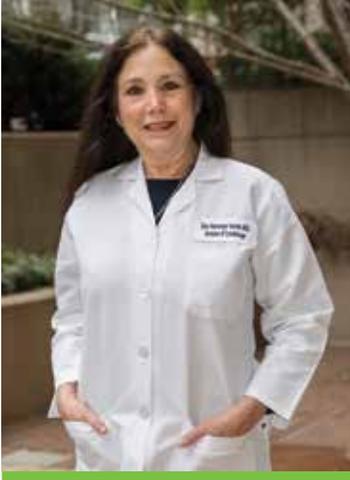
Farmer SA, M Schreiber, & KA Horvath. Disabling the Pump: Slowing the Opioid Epidemic by Controlling a Source. *JAMA Cardiology*, 2020; online ahead of print.

Farmer SA, HCP-LAN. Roadmap for Driving High Performance in Alternative Payment Models. *Health Care Learning and Action Network*, 2019. Accessed June 15, 2020 at: <https://hcp-lan.org/workproducts/roadmap-final.pdf>.

Farmer SA, A Moghtaderi, BB Black. Damage Caps and Defensive Medicine: Reexamination with Patient Level Data. *Journal of Empirical Legal Studies*, 2019; 16(1): 26-68.

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Farmer SA, Casale PN, Gillam LD, Rumsfeld J, Williams B, de Regnier K, Ericsoon S, Kirschner N, Martin S, McClellan MB. Payment Reform to Support Primary Care—Cardiology Joint Accountability for Chronic Cardiac Care. *JAMA Cardiology*, 2018; 3(1):77-83.



DR. LISA MARTIN'S RESEARCH HAS PROVIDED NEW UNDERSTANDING OF WOMEN'S CARDIAC HEALTH.

Prevention and Women's Health

Prevention of heart disease and understanding women's health are **expanding areas** of cardiac research. Several of our GW cardiologists are studying prevention and Women's Health. Leading our women's cardiac health programs are Dr. Jannet Lewis, Director of the GW Women's Heart Center, and Dr. Lisa Martin, longtime co-investigator for the NIH-sponsored Women's Health Initiative.



DR. JANNET LEWIS LEADING A DISCUSSION ON PREVENTION METHODS THAT CAN REDUCE THE RISK OF HEART DISEASE.

PREVENTION AND WOMEN'S HEALTH

ABSTRACTS

Zhang X, Tu W, Manson JE, Tinker L, Liu S, Cauley JA, Qi L, Mouton C, **Martin LW**, Hou L, Song Y. Racial/Ethnic Differences in 25-Hydroxy Vitamin D and Parathyroid Hormone Levels and Cardiovascular Disease Risk Among Postmenopausal Women. *Journal of the American Heart Association*, 2019 Feb 8.

Panjrath G, Alzahrani T, Witkin L, **Katz R**. A Pilot Program to Tackle Food Insecurity in an Underserved and Poorly Controlled Diabetic Population. *JACC*, Mar 2019.

Peeples M, Shenoy V, **Katz R**, Homali M. Enhancing Mobile Health to Achieve Both Hypertension and Diabetes Goals. *Scientific Sessions of the American Heart Association*, Nov 2019.

PUBLICATIONS

Choi BG, Dhawan T, Metzger K, Marshall L, Akbar A, Jain T, Young H, **Katz R**. Image-based Mobile System for Dietary Management in an American Cardiology Population: A Pilot Randomized Controlled Trial to Assess the Efficacy of Dietary Coaching Delivered Via Smartphone App Versus Traditional Counseling. *JMIR mHealth and uHealth* 7(4):e10755, 2019.

Tayeb T, Alzahrani T, **Mercader M**. Does a Higher Level of Education Translate into a Lower Prevalence of Cardiovascular Disease? *Hospital Medicine* Mar 2019.

Lewis JF, Zeger SL, Li X, Mann NC, Newgard CD, Haynes S, Wood S, Dai M, Simon AE, McCarthy ML. Gender Differences in the Quality of EMS Care Nationwide for Chest Pain and Out-of-Hospital Cardiac Arrest. *Women's Health Issues* 2019;29:116-124.

Saquist N, Brunner R, Desai M, Kroenke C, **Martin LW**, Davigliu M, Allen NB, Robinson J, Tindle H, Stefanick ML. Changes in Physical and Mental Health are Associated with Cardiovascular Disease Incidence In Postmenopausal Women. *Aging*, 5;2019.

Zhang X, Tu W, Manson JE, Tinker L, Liu S, Cauley JA, Qi L, Mouton C, **Martin LW**, Hou L, Song Y. Racial/Ethnic Differences in 25-Hydroxy Vitamin D and Parathyroid Hormone Levels and Cardiovascular Disease Risk Among Postmenopausal Women. *Journal of the American Heart Association*, 2/8/19.

Wen Chih Wu, Huang M, Taveira TH, Roberts MB, **Martin LW**, et al. Relationship Between Dietary Magnesium Intake and Incident Heart Failure Among Older Women. The WHI. *Journal of the American Heart Association*, Mar 2020.

Hu Y, **Martin LW**, et al. Minority-centric Meta-analyses of Blood Lipid Levels Identify Novel Loci in the Population

Architecture Using Genomics and Epidemiology (PAGE) Study. *PLoS Genet*, 2020 Mar 30;16(3):e1008684.

Liu L, Klein L, Eaton C, **Panjrath G**, **Martin LW**, et al. Menopausal Hormone Therapy and Risks of First Hospitalized Heart Failure and its Subtypes During the Intervention and Extended Postintervention Follow-up of the Women's Health Initiative Randomized Trials. *Journal of Cardiac Failure*, 2020 Jan, Volume 26, Issue 1, pg 2-12.

Breathett K, Kohler L, Eaton C, Franceschini N, Garcia L, Klein L, **Martin L**, et al. When the At-Risk Do Not Develop Heart Failure: Understanding Positive Deviance Among Postmenopausal African-American and Hispanic Women. *Circulation: Cardiovascular Quality and Outcomes*, 2020.

Surendran P, **Martin LW**, et al. 87 Rare Variants Associated with Blood Pressure Regulation in Meta-Analysis of ~1.3 Million Individuals. *Nature Genetics*, 2020, Feb 28.

Santiago-Torres M, Neuhaus ML, Lampe JW, Shi Z, Tinker L, Allison M, Valdiviezo, C **Martin L**, et al. Diet Quality and the Metabolic Syndrome among women of Mexican descent. *Nutrition and Healthy Aging Journal*, April 2020.

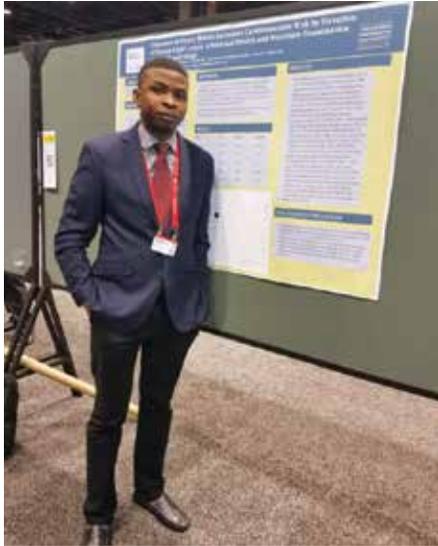
Noordam R, **Martin L**, et al. Multi-ancestry Sleep-by-SNP Interaction Analysis in 126,926 Individuals Reveals Lipid Loci Stratified by Sleep Duration. *Nat Commun*, 2019 Nov 12;10(1):5121.

Hirahatake KM, Jiang L, Wong ND, Shikany JM, Eaton CB, Allison MA, **Martin L**, et al. Diet Quality and Cardiovascular Disease Risk in Postmenopausal Women With Type 2 Diabetes Mellitus: The Women's Health Initiative. *J Am Heart Assoc*, 2019 Oct 8(19):e013249.

Jiang X, Nudy M, Aragaki AK, Robbins JA, Manson JE, Stefanick ML, O'Sullivan DM, Shikany JM, LeBlanc ES, Kelsey AM, Cauley J, **Martin LW**, et al. Women's Health Initiative Clinical Trials: Potential Interactive Effect of Calcium and Vitamin D Supplementation with Hormonal Therapy on Cardiovascular Disease. *Menopause*, 2019 Aug;26(8): 841-849.

Liu Q, Matthan NR, Manson JE, Howard BV, Tinker LF, Neuhaus ML, Van Horn LV, Rossouw JE, Allison MA, **Martin LW**, et al. Plasma Phospholipid Fatty Acids and Coronary Heart Disease Risk: A Matched Case-Control Study Within the Women's Health Initiative Observational Study. *Nutrients*, 2019 Jul, 11(7).

Freeborne N, Simmens SJ, Manson JE, Howard BV, Cené CW, Allison MA, Corbie-Smith G, Bell CL, Denburg NL, **Martin LW**. Perceived Social Support and the Risk of Cardiovascular Disease and All-Cause Mortality in the Women's Health Initiative Observational Study. *Menopause*, 2019 Jul;26(7):698-707.



Young Investigator Research Award

GW CARDIOLOGY FELLOW DR. BAYO ATANDA won the George Washington University's Graduate Medical Education Resident Research Award in the Basic Sciences category for his work on "The Association Between Heavy Metal and Serum Cholesterol Levels in the US Population: National Health and Nutrition Examination Survey." Dr. Bayo Atanda was the 2019-2020 recipient of the GW Heart & Vascular Institute's Young Investigator's Award that is supported annually by a generous donation from the Dr. Cyrus Katzen Foundation. This award allows young faculty and cardiology trainees to compete for seed funding to begin research projects.

NATIONAL PRESENTATIONS

CHRISTIAN NAGY, MD

Interventions at the VA Cases: Protected PCI. *CRT 2019–Washington DC*, Mar 2019.

Plenary Speaker, MitraClip in the VA: Time to Take Off. *CRT 2019–Washington DC*, Mar 2019.

Structural Interventions at the VA. *CRT 2019–Washington DC*, Mar 2019.

Heart Valve Workshop. *Washington DC Veterans Affairs Medical Center Valve Workshop*, Mar 2019.

GURUSHER PANJRATH, MD

Guidelines to Clinical Practice in Heart Failure. *Peruvian Society of Cardiology Annual Scientific Sessions*, Lima, Peru, May 2019.

Comorbidities in HF: What You Need to Know in 2019. *Peruvian Society of Cardiology Annual Scientific Sessions*, Lima, Peru, May 2019.

Highlights from ACC 2019. *Peruvian Society of Cardiology Annual Scientific Sessions*, Lima, Peru, May 2019.

Heart Failure Section Highlight Sessions. *ACC Scientific Sessions*, May 2019.

Top 3 Clinical studies, *ACC Highlight Sessions*, Mar 2019.

OSA Versus CSA—Diagnosis and Treatment Strategies. *ACC Scientific Sessions*, Mar 2019.

Iron Deficiency in Heart Failure. *Cardio Metabolic Health Congress*, Boston, Oct 2018.

Guideline to Clinical Practice in Heart Failure. *International Heart Failure Congress*, Shenzhen, China, Jul 2018.

Inotropes and Vasodilators in Acute Heart Failure. *Inter American Congress of Heart Failure*, Panama City, Panama, Jul 2018.

Evaluation and Management of Cardiogenic Shock. *Inter American Congress of Heart Failure*, Panama City, Panama, Jul 2018.

Planning committee for the HFSA's 23rd Annual Scientific Session, Sept 2019.

Director of Heart Failure, "Imaging needs in clinical heart failure: Tips from a master clinician." *AHFS* Sept 2019.

Co-chair joint session of the HFSA and American College of Cardiology on "How to Best Implement Technologies to Assist in Heart Failure Care and Reduce Readmissions." *HFSA 23rd Annual Scientific Session*, Sept 2019.

CYNTHIA TRACY, MD

Ablation Should Be Performed in All Patients With Brugada Syndrome. *Heart Rhythm Society Annual Scientific Sessions*, May 2019.

Global Disparities in Cardiac Pacemaker Therapy. *Heart Rhythm Society Annual Scientific Sessions*, May 2019.

What Are Atypical Clinical Paths Really Like? *Heart Rhythm Society Annual Scientific Sessions*, May 2019.

Novel Ways to Look at Risks of Atrial Fibrillation, *American Heart Association Annual Scientific Sessions*, Nov 2018.

WILLIAM BORDEN, MD

Policy to Payment to Practice. *American Heart Association Quality of Care and Outcomes Research Scientific Sessions*, Apr 2019.

Alternate Payment Model Panel—What Other Payment Modules Other than "Fee-For-Service" are Viable? *ACT IAC Health Innovation Day*, Apr 2019.

Operating Successfully in Medicare Shared Savings Plan ACO. *American College of Cardiology Scientific Sessions*, Mar 2019.

ACO Executive Roundtable for ACOs. *New York, McKinsey & Company*, Feb 2019.

Renal Denervation. *The Circulatory System Devices Panel of the Medical Devices Advisory Committee for the Food and Drug Administration*, Dec 2018.

Telehealth Innovations to Promote Person-Centered Care in DC. Nov 2018.

U.S. Health Policy at the Crossroads: What Cardiovascular Clinicians Need to Know. *American Heart Association Scientific Sessions*, Nov 2018.

MIPS/APM Pathway. *American College of Cardiology Legislative Conference*, Oct 2018.

Telehealth Quality Measure Development Multi-Stakeholder Roundtable. *Discern Health*, Jul 2018.

Chair of the American Heart Association's Quality of Care and Outcomes Research Council.

Improvements to Rural Health Care through Patient-Centered Research. *The U.S. Senate*.

National Award

DR. DORYS CHAVEZ, GW international visiting young physician from Honduras, was awarded the Paul Dudley White International Scholar Award for her poster “Baseline Characteristics and Clinical Outcomes for Patients with Chagas Disease. Insight from the National Inpatient Sample,” co-authored by Drs. Marco Mercader, Talal Alzarhrani, Arnaldo Rodriguez, Syed Quadri, and Joseph Krepp. In addition, Chavez was given the International Early Career Award by the president of AHA.



Cardiovascular Quality and Outcomes Research. *Centers for Disease Control (CDC) to the Division of Heart Disease and Stroke Prevention in Atlanta.* June 2019.

RAMESH MAZHARI, MD

Taking the High Road: Trans-Radial Management of Ischemic Leg Following TAVR. *Fellows Complication Course*, Jun 2019.

Management of Cardiogenic Shock. *CRT 2020–Washington DC*, Feb 2020.

Trans-radial Peripheral Intervention: *CRT 2020–Washington DC*, Feb 2020.

ANDREW D. CHOI, MD

The #ACC Imaging Social Media Response. *American College of Cardiology 2019 Imaging Highlights Session*, Mar 2019.

Invited Lecture: Recent Advances and the Future of Cardiac CT, The editors speak: Social Media and Cardiac CT. *Society of Cardiovascular CT 2018 Annual Scientific Sessions*, July 2018.

Speaker, Finding your Niche in Academic Cardiology: An Imager’s Perspective. *American College of Cardiology Mid-Atlantic Cardiology Symposium*, November 2018, Washington, DC.

Basics of Coronary CT Angiography. *SCCT Chicago: Cardiac CT for the Practitioner–Invited Lecturer*, March 30-31, 2019, Chicago, IL.

CT Angiography for Structural: TAVR, Valve in Valve, TMVR. *SCCT Chicago: Cardiac CT for the Practitioner–Invited Lecturer*, March 30-31, 2019, Chicago, IL.

Coronary Cases. *SCCT Chicago: Cardiac CT for the Practitioner–Invited Lecturer*, March 30-31, 2019, Chicago, IL.

Structural Cases. *SCCT Chicago: Cardiac CT for the Practitioner–Invited Lecturer*, March 30-31, 2019, Chicago, IL.

Invited online lecture: Introduction to Cardiac CT Tweetorial. *American College of Cardiology Fellows-in-Training Social Media Bootcamp Series*, August 2018.

Planning Committee Member and Chair, Social Media Working Group. *14th Annual Society of Cardiac Computed Tomography Scientific Sessions*, Sept 2019.

Novel Vascular Disease Diagnoses and Outcomes Derived from Coronary CT Angiography. *NHLBI Coronary CT Angiography Summit at the National Institutes of Health*, Nov 2019.

Fact and Fiction Regarding Coronary Artery Calcium Testing, Advances & the Future of Cardiac CT: American Social Media Editor’s Perspective.

Closing Session Meeting Highlights. Carving a Unique Niche in Cardiac CT: Perspectives for Trainees and Early Career Professionals. Artificial Intelligence/Machine Learning in CT (Abstract Moderator). *14th Annual Society of Cardiac Computed Tomography Scientific Sessions* July 2019.

Moderated “Second Opinion Clinic: Read Your Case with an Expert,” *23rd Annual Scientific Sessions of the Society of Cardiovascular Magnetic Resonance (CMR)*, Orlando, FL Feb 2020.

MARDI GOMBERG-MAITLAND, MD MSC

American College of Cardiology, Co-Chair, Highlighted Original Research: Pulmonary Hypertension and Venous Thromboembolic Disease, and The Year in Review. New Orleans, LA. Mar 2019.

International Society of Heart and Lung Transplant, Speaker, “The Drugs Don’t (Or Might Not) Work Anymore! Implications for Treatments In PAH with the New Hemodynamic Definition.” Session Entitled, “Changes in the World of Pulmonary Hypertension: Nice or Not Nice.” Orlando, FL. Apr 2019.

“Pros and Cons of Risk Scores as Potential Clinical End Points and Statistical Aspects of Incorporating Risk Scores into Clinical Trials,” *Pulmonary*

Vascular Research Institute’s 6th Annual Drug Discovery & Development Symposium, Paris, France, Jul 2019.

“10-Simple Tips Sessions on Pulmonary Hypertension.” Dr. Joseph Krepp participated in a panel discussion on advances in the diagnosis and treatment of amyloidosis. *AHFS* Sept 2019.

Pulmonary Hypertension Associated with Sarcoidosis and PH Left Heart Disease Focusing on Hemodynamics. *American College of Chest Physicians (ACCP) Conference*, New Orleans, LA Oct 2019.

State of the Art Management and Endpoints in Pulmonary Arterial Hypertension: Functional Assessments: Exercise Testing, 6MWT, SHAPE, Risk Scores, and Patient Reported Outcomes. *Scientific Sessions of the American Heart Association* Nov 2019.

MARCO MERCADER, MD

Moderator: Atrial Fibrillation: Monitoring and Special Risk Groups. *Scientific Sessions of the American Heart Association*, Nov 2019.

ANDREW D. CHOI, MD AND STEVEN FARMER, MD, PhD

Technology Advances in Cardiac CT Summit. *American College of Cardiology*.

Editorial National Boards & Committees

Over the past two years our cardiologists have been selected for leadership roles on 33 national committees and journals. The GW cardiology faculty has unique expertise as national experts on heart failure, pulmonary hypertension, electrophysiology, structural heart disease, advanced cardiac imaging, and health care policy.

RICHARD J. KATZ, MD

British Journal of Cardiology, Editorial Board

MARDI GOMBERG-MAITLAND, MD MSC

European Respiratory Journal, Associate Editor

CHEST, Associate Editor

Journal of the American College of Cardiology,
Section Editor, Pulmonary Hypertension

Member, Pulmonary Hypertension Association
Scientific Leadership Council

Chair, Pulmonary Hypertension Association
Scientific Leadership Council Education
Committee

ANDREW D. CHOI, MD

Journal of the American College of Cardiology:
Cardiovascular Imaging, Editorial Board
(Social Media)

Journal of Cardiovascular Computed Tomography,
Editorial Board (Social Media)

Society of Cardiovascular CT,
Annual Scientific Meeting Committee

WILLIAM BORDEN, MD

Vice Chair, American Heart Association Council
on Quality of Care and Outcomes Research

Member, American Heart Association National
Advocacy Coordinating Committee

Member, American College of Cardiology
Population Health Management Task Force

Associate Editor, *Circulation: Cardiovascular
Quality and Outcomes*

BRIAN G. CHOI, MD, MBA

American College of Cardiology Informatics and Health IT Task Force

RAD-AID International, Senior Member, 2018-present, Director

STEVEN FARMER, MD, PhD

Executive Committee, Heart Valve Collaboratory

Executive Committee, American Heart Association Value in Healthcare Initiative

JANNET LEWIS, MD

American College of Cardiology Governor for the District of Columbia

GURUSHER PANJRATH, MD

Member, American College of Cardiology Heart Failure and Transplant Section Leadership Council

World Heart Federation Heart Failure Roadmap, Heart Failure Writing Group

Heart Failure Society of America, Annual Scientific Session Planning Committee

Member, American College of Cardiology Academic Cardiology Council

Editorial Board, ACC.org

Editorial Board, *VAD Journal*

ALLEN SOLOMON, MD

American College of Cardiology, Writing Committee, Electrophysiology In-Service Exam

CYNTHIA TRACY, MD

Accreditation Council for Graduate Medical Education, Board of Appeals for Internal Medicine—Electrophysiology

CCEP Program Directors Subcommittee, Heart Rhythm Society

Co-Chair EP Advanced Training Life Long Learning Statement, American College of Cardiology

Heart Rhythm Society 2017-2018 Scientific Sessions Program Committee Member

AHA AF Clinical/Population Program Grants Peer Review

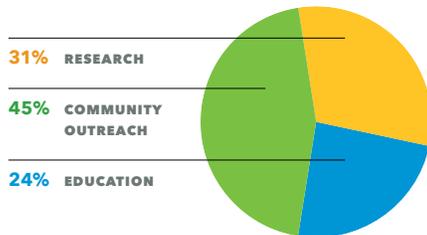
ACC/AHA Practice Guidelines, Peer Review

Member, ACC EP Performance Question Committee

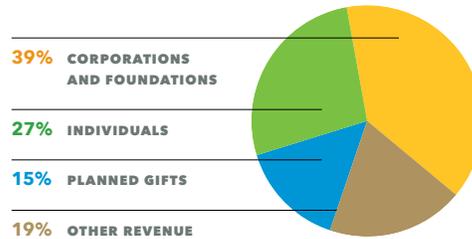
Journal of Interventional Electrophysiology Editorial Board

The Institute by the Numbers

Our Priorities



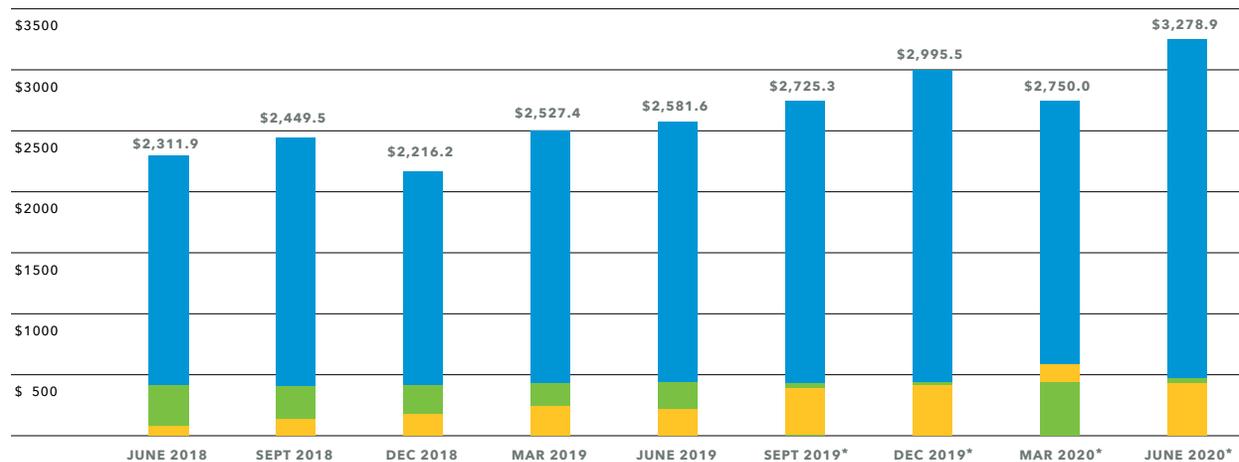
Our Supporters



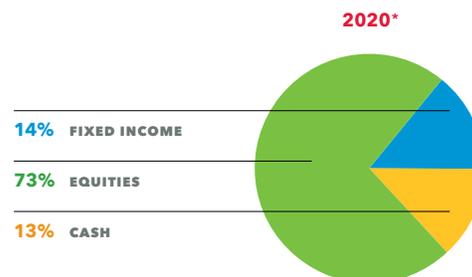
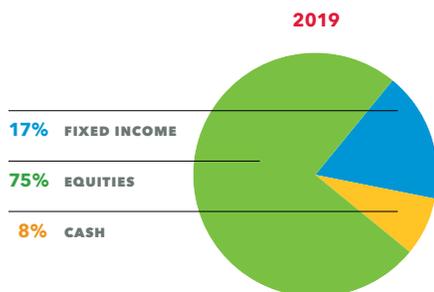
ACADEMIC YEARS 2019 AND 2020

Endowment Fund Assets IN THOUSANDS OF DOLLARS

CASH FIXED INCOME EQUITIES



Asset Allocation AS OF JUNE 30,



*FY2020 is unaudited. Audit will be complete on 10/2/20.

Heart & Vascular Institute

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