Honoring the Past, Creating the Future
Cardiovascular Division Celebrates 70 Years

The Cardiovascular Division is on an upward trajectory. Over the past five years, the Division has made growth of the clinical and research programs a top strategic priority. The result is the addition of a number of talented clinical and research faculty, the creation of multiple new subspecialty clinics, as well as significant increase in funding and opportunities for cardiovascular research.

“As we head towards celebrating the 70th anniversary of our Division, we are honoring our legacy of excellence and innovation by continuing to enhance the services we provide as well as increase the depth and breadth of cardiovascular research by our fellows and faculty,” says Douglas Mann, MD, Lewin Professor and Chief of the Cardiovascular Division.

Since 2012, the Division has started clinics for cardiovascular genetics, cardioneuromuscular disorders, women’s heart disease and chronic chest pain. The Division has almost doubled the number of faculty focused on heart failure and cardiac transplantation and now offers an ABIM-certified heart failure fellowship that already is ranked #5 in the country. A structural heart disease program, begun five years ago, is the largest of its kind in the region, with the most experienced team offering complex transcatheter aortic valve replacement (TAVR) and mitral valve procedures.

“We currently have seven Centers of Excellence in our clinical programs,” says Dr. Mann. “Reflective of that expertise, we’ve seen a corresponding growth in patient volumes and physician referrals.”

More new faculty have joined the Center for Cardiovascular Research since Jeanne Nerbonne, PhD, Alumni Endowed Professor of Molecular Biology and Pharmacology, became its director in 2013. All of the new faculty have now received NIH R01 awards. In addition, cardiovascular researcher Gregory Lanza, MD, PhD, Professor of Medicine, Biomedical Engineering, and Biology and Biomedical Sciences, has assumed leadership of the Consortium for Translational Research in Advanced Imaging and Nanomedicine (C-TRAIN), a collaborative basic and clinical research effort into the use of imaged-based diagnosti and biocompatible nanotechnologies for targeted treatment of cardiovascular and other diseases.

Jean Schafer, MD heads the Diabetic Cardiovascular Disease Center, which is a multi-disciplinary center focused on developing new diagnostics and treatments for patients with diabetes.

“I’m most proud of our sustained commitment to developing the next generation of young physician-scientists through strong mentorship and financial support,” Dr. Mann adds. “And I am grateful to alumni who help us fund a wide variety of training and research projects so that we can offer innovative educational opportunities for cardiovascular fellows to excel.”

The strong alumni ties are evident at the Smith-Oliver Society events at national meetings. The Smith-Oliver Society, which

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As we prepare to celebrate the 70th anniversary of the Cardiovascular Division, I am reminded of Sir Isaac Newton’s oft quoted words: “If I have seen further…it is by standing upon the shoulders of giants.” When I reflect on the contributions of the Cardiovascular Division, I realize that many of the things that we take for granted in clinical cardiology today, including biomarkers for diagnosing cardiac injury and heart failure, the use of thrombolytic agents for treating acute myocardial infarction and pulmonary embolism, and catheter ablations for atrial fibrillation can be traced back to the pioneering research that was performed here by our faculty. We continue to honor these accomplishments by building on this legacy every day. We now have three active research centers: The Center for Cardiovascular Research, The Diabetic Cardiovascular Disease Center, and the Consortium for Translational Research in Advanced Imaging and Nanomedicine, which facilitate interdisciplinary, collaborative basic and clinical cardiovascular research. Clinical programs have also expanded to include seven Centers of Excellence that promote multi-disciplinary models of care.

One of my primary goals since I became chief has been to increase the number of physician scientists so that we can accelerate our research and translate these findings into clinical practice. As you read in our cover story, I’m proud that over the past several years, we have established several new programs in cardiovascular genetics, cardio-neuromuscular disorders, and women’s heart disease, to name a few. This summer, we’re adding four more outstanding physician-scientists to our faculty. Thomas Maddox, MD, MSC, will launch our new Health Systems Innovation Lab as its inaugural director. Karen Joynt, MD, MPH, will focus her efforts on health policy research in addition to clinical cardiology. John Gorcsan III, MD, will assume the role of Director of Clinical Research and bring his pioneering work in 2-D ultrasound to Wash U. Lastly, Dan Lenihan, MD, will join us to build a world-class cardio-oncology program in collaboration with the Siteman Cancer Center.

I hope that you will join us in St. Louis in November for our annual Cardiovascular Research Day to celebrate our 70th anniversary, which truly is a celebration of your personal contributions to the field of cardiovascular medicine. If you cannot attend, mail us a card or send an email reflecting upon your time here so that we can share your thoughts at the celebration.

Douglas L. Mann, MD
Lewin Professor and Chief, Cardiovascular Division

70th Anniversary
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was started to commemorate the 65th anniversary of the division, has now grown to more than 250 members, many of whom re-connect annually at ACC alumni receptions, ARCH symposiums in St. Louis, and our annual Cardiovascular Research Day events.

“Academic programs are focused on the tripartite mission of advancing patient care, research and education,” says Dr. Mann. “With significant growth already under way in our clinical, research and training programs, we are now on the cusp of growing the fellowship program by adding new fellowships in advanced cardiac imaging and adult congenital heart fellowships. Stay tuned!”

Douglas Mann, MD
Lewin Professor and Chief, Cardiovascular Division

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If you are interested in making a donation to the Cardiovascular Division, send it to:
Washington University in St. Louis, Office of Medical Alumni and Development,
Attn: Helen Z. Liu
7425 Forsyth Blvd.
Campus Box 1247
St. Louis, MO 63105
Phone: 314-935-9715
helen.liu@wustl.edu
The Cardiovascular Division at Washington University has a long history of producing successful fellows – from research scientists to division chiefs to outstanding clinical cardiologists.

To adapt to the changing needs of fellows and further our mission to produce leaders in cardiovascular medicine, we have sought to expand the unique clinical pathways offered to our trainees. In the upcoming years, two new programs will further the training experience. Under the leadership of Drs. Joe Billadello and Phil Barger, we are currently in the process of establishing an advanced fellowship in Adults with Congenital Heart Disease. This ACGME certified two year program will provide trainees with the time for research and patient care and train at the largest center in the Midwest. I am also excited about the Robert E. Kleiger Advanced Cardiac Imaging Fellowship. This one-year fellowship will offer training in multiple imaging modalities that serve to advance both patient care and cardiovascular research efforts. Dr. Kleiger who has been on faculty for almost 50 years (see page 4) has provided the initial support for the fellowship – we are actively seeking donations now to bolster the program and ask that you consider making a donation. The design of our program, which opens up the third year for trainees to pursue a wide variety of interests, has provided the opportunity for fellows to develop unique skill sets - including women and heart disease, cardio-oncology, outcomes research and more. The addition of new faculty will expand these opportunities to include innovation and health care policy. It is clear that we are always pushing forward.

Alumni Update

Daniel P. Kelly, MD
Clinical Cardiology Fellow, 1987-1989
Founding Director, Center for Cardiovascular Research 1996-2008
Chief, Cardiovascular Division 2006-2008

Current: Director, Penn Cardiovascular Institute (PCI), University of Pennsylvania. PCI is dedicated to scientific discoveries in heart and vascular care, leveraging cross-disciplinary research teams to develop the next generation of therapies for cardiovascular disease. Dr. Kelly moved to PCI in 2017 after serving as the founding Scientific Director at Sanford Burnham Prebys (SBP) Medical Discovery Institute in Fl., since 2008. A career physician-scientist, Dr. Kelly focuses his own research on the metabolic origins of heart muscle diseases and investigates the pathways that regulate heart and skeletal muscle mitochondrial function and energy metabolism in search of new therapeutic targets.

Favorite Fellowship Memories: The cardiovascular fellowship experience was transformational for my career. I intended to pursue clinical cardiology. The in-depth research experience embedded in the WU cardiovascular training program, however, opened my eyes to the wonders of scientific discovery and its application to disease. I worked in Arnie Strauss’ lab in the Department of Biochemistry and we were able to define the genetic basis for an in-born error in fuel metabolism that caused heart failure and sudden death in children. I subsequently sought to establish my own basic research laboratory. I joined the faculty as a physician scientist and focused on adult congenital heart disease. In addition to caring for patients, I discovered that the heart switches its fuel preferences and develops mitochondrial dysfunction en route to heart failure, a process triggered by a select group of transcription factors. I became founding director of the Division’s Center for Cardiovascular Research, a cross-disciplinary center that received a Specialized Center for Cardiovascular Research (SCCOR) grant from the NHLBI. Following the departure of Division Chief Michael Cain, I assumed the post for two years before leaving for SBP to expand my opportunities to lead exciting research efforts. My training and leadership roles within this Division were critical to my pioneering efforts at SBP and now at PCI.

Favorite Leisure Activities: After years of being a runner, I have shifted to road biking — easier on the knees, exhilarating and not as difficult in hot, humid weather! I also hike, kayak and golf, the latter of which I do with passion and some level of intensity given that I come from a golf family. Golf is a bit like life; one must stay focused, be strategic, but enjoy the transient moments of success, along with family and colleagues.

Departing Fellows

Best wishes to our departing fellows on the next phase of their careers:

Rafael Garcia-Cortes, MD
Heart Failure/Transplant
St. Vincent Hospital, IN

Frederick (Spencer) Gaskin, MD, PhD
Interventional Cardiology Fellow
Mid-America Heart Institute
St. Luke’s Hospital, Kansas City

Nathan Lo, MD
Interventional Cardiology Fellow
Duke University Medical Center

The following fellows are continuing on to advanced fellowships here:

Advanced Heart Failure
Michael Nassif, MD
David Raymer, MD
Christopher T. Sparrow, MD

Echocardiography
Tyson E. Turner, MD, MPH

Electrophysiology
Sandeep S. Sodhi, MD, MBA

Interventional
Matthew J. Chung, MD
John (Trevor) Posenau, MD

Pedro M. Calderón, MD
Interventional Cardiology Fellow
Beaumont Hospital, Royal Oak, MI

John (Trevor) Posenau, MD
Alumni Update
Andrew Kates, MD

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Beaumont Hospital, Royal Oak, MI

John (Trevor) Posenau, MD
Kleiger Advanced Cardiac Imaging Fellowship Established

Thanks to a generous starting gift from a long-standing and nationally respected cardiologist at Washington University, the Cardiovascular Division is planning to establish a new fellowship dedicated to advanced cardiac imaging.

The fellowship will be named the Robert E. Kleiger Advanced Cardiac Imaging Fellowship, in honor of the physician who has been on faculty for the past 48 years.

“Imaging is one of the more important advances in cardiology diagnostics and it continues to evolve,” says Dr. Kleiger. “This new fellowship will train leaders in advanced cardiac imaging and lead to better care of patients with complex cardiac problems.”

Dr. Kleiger, best known for his expertise in electrocardiography, was the first to establish an echocardiography service at Washington University Cardiology.

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“The Jewish Hospital of St. Louis. He also served as director of the hospital’s Cardiac Care Unit and was interim chief of the cardiology division for three years. Now 83, Dr. Kleiger still conducts research related to heart rate variability and relishes in training fellows on the nuances of reading echocardiograms. “There’s a lot of information that you can obtain from an echo that will guide the direction of treatment,” he explains. “I think that also applies to imaging modalities such as CT and MRI. They are both like jigsaw puzzles or a detective novel — you have a set of clues and from that, you can infer a solution. These modalities will give us more clues to effectively care for patients.”

Andrew Kates, MD, Fellowship Program Director, agrees. “Training in multiple imaging modalities requires additional training beyond a general cardiology fellowship,” he says. By offering an advanced cardiac imaging pathway, we will be able to offer trainees the ability to obtain expertise in multiple imaging modalities which, when coupled with meaningful research opportunities, will enhance both diagnosis and treatment options for patients.”

“We are grateful for Dr. Kleiger’s donation and for his multiple academic and research contributions to our division,” Dr. Kates adds. “We hope that alumni will add to his initial contribution to help us launch this critically needed advanced cardiac imaging pathway.”

If you would like to honor Dr. Kleiger with a contribution to the fellowship, please contact us.

Doubling down on healthcare innovation

Fresh from their honeymoon, two new faculty members hope to impact both health policy and the delivery of health care services. Thomas Maddox, MD, MSC, and Karen Joynt Maddox, MD, MPH, are nationally recognized cardiologists who met at an AHA conference in 2010 while competing in a young research investigator competition. “Sadly, neither of us won the competition,” laughs Dr. Maddox, “but we’re pretty happy with the ultimate outcome!” The two were married in May 2017.

Dr. Maddox serves as the inaugural director of Washington University’s Health Systems Innovation Lab (HSIL). He most recently was the Director for the VA Health System’s Clinical Assessment, Reporting and Tracking (CART) Cardiac Quality Program and led initiatives to enhance cardiac care services in the VA and within the American College of Cardiology and the American Heart Association. “The amount of information that we can obtain from our health care systems, patients, environments and communities is unprecedented,” he says. “The challenge is how to translate that information into actionable insights to drive optimal health outcomes.

HSIL will bring together a large collaborative to incubate and test promising interventions that ultimately will lead to better ways of delivering health care.”

Dr. Joynt Maddox is a cardiologist and health policy researcher. She previously was an assistant professor in medicine at Harvard Medical School and an instructor in health policy at the Harvard School of Public Health, and has served as an advisor in the Office of Health Policy of the U.S. Department of Health and Human Services. “Policy is so important to how health care is delivered, funded and evaluated, but often, policy decisions are made without strong data and without involvement from clinical communities or attention to potential unintended consequences;” she says. “We need to rigorously measure the impact of policies so that we know what works and what needs to be improved.”

Faculty Promotions

Effective 7/1/17

Anita R. Bhandiwad, MD, FACC
Associate Professor of Medicine

Sharon Cresci, MD
Associate Professor of Medicine

Gregory A. Ewald, MD, FACC
Professor of Medicine

Mitchell N. Faddis, MD, PhD
Professor of Medicine

Andrew Kates, MD, FACC
Professor of Medicine

Majesh Makan, MD, FACC, FASE
Professor of Medicine

Linda R. Peterson, MD, FACC, FAHA, FASE
Professor of Medicine and Radiology

Justin S. Sadhu, MD, MPH
Assistant Professor of Medicine
A decade ago, interventional cardiologist Jasvindar Singh, MD, had an idea to host a small symposium to share knowledge and provide an opportunity for fellows, referring physicians and alumni a chance to re-connect on a regular basis. Today, that symposium, the Advanced Revascularization Symposium (ARCH) has grown into one of the largest and most prestigious regional interventional cardiology symposiums in the country.

“I am surprised at the scope of this now, but we have worked hard to showcase the latest technologies and offer exciting case lectures that educate attendees on treatment options for complex cases,” says Dr. Singh, who is founder and chairman of the symposium. Current program directors include John Lasala, MD, Howard Kurz, MD, George Chrysant, MD, and Craig Walker, MD.

The number of attendees has grown from just a handful to more than 400 this year, with lecturers and live cases not only from Washington University School of Medicine but also from around the world — this year, live cases generated from India, Ireland and England as well as from renowned institutions from around the United States. The program also now includes a track for allied health professionals as well as regular forums for physicians and fellows.

All of the biggest technology companies now participate in ARCH,” says Dr. Singh, who, as a member of the European Bifurcation Club, also draws in lecturers from across Europe. “The added benefit of these connections is that we have collaborated on many research initiatives.”

Dr. Singh says a significant benefit of the mid-sized regional symposium is the one-to-one networking opportunities available. “This is important for young fellows, referring physicians and alumni,” he says. “You can talk individually with faculty, interact with thought leaders in interventional cardiology, and obtain contact information for future research and career options.”

An increasing number of alumni return annually for the conference. “It’s a reunion of sorts, so that makes this a unique meeting,” he explains. “I want former fellows to keep coming back to learn, to lecture and to reconnect with their peers and mentors at Washington University.”

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The Cardiovascular Division has opened a new patient care clinic at the Heart and Vascular Center on the campus of Barnes-Jewish West County Hospital dedicated to caring for patients identified with ischemia with no obstructive coronary artery disease (INOCA). The clinic is anticipated to be a Midwest referral center with advanced diagnostic tools to pinpoint the causes of episodic chest pain in these patients.

“An estimated five million people in the United States have INOCA,” says cardiologist David Brown, MD, who heads the clinic. “Every cardiologist has patients that have a normal angiogram or that have episodic chest pain even after a blockage is treated with a stent. In fact, a recent study showed 50 percent of patients with chest pain and an abnormal stress test did not have obstructive disease apparent on angiography.”

The chest pain can be mild or extremely intense. To hone in on the cause, Brown collaborates with interventional cardiologist Jasvindar Singh, MD, who performs an acetylcholine spasm provocation test to see if coronary artery spasm triggers a blood vessel to close or constrict. “We actually had a heart stop beating in a male patient when we injected the acetylcholine because of intense spasm,” says Dr. Brown. “He had been so tired of being bounced around from doctor to doctor without a diagnosis that he cried when we told him we found what triggered his pain.”

Dr. Brown also notes that the vasculature of the heart is really a network of both large and small blood vessels, but problems in the smaller, fern-like vessels can’t be seen on a traditional angiogram. Dr. Brown utilizes PET/MRI to measure blood flow in those smaller branches and delineate whether insufficient flow is caused by compression of the heart vessels from the outside or by blockages on the inside. Once a cause is identified, Dr. Brown works to determine the correct medication or combination of medications that will stop the spasms or clear the blockage. In some severe cases, he refers patients to pain medicine specialists for implantation of a spinal cord stimulator to block nerve inflow into the heart and prevent the release of adrenaline.

“Ultimately, with more patient referrals, we hope to create a strong clinical research effort here and help develop guidelines for both diagnosis and treatment of INOCA patients,” Dr. Brown says.