A New Era Emerging in CCU Care

The Cardiovascular Division at Washington University School of Medicine has established a new Section of Critical Care Cardiology and is changing how it approaches the care of patients admitted to the coronary care unit. In addition, in collaboration with the Division of Pulmonary and Critical Care Medicine, the division is planning to offer a one-year advanced fellowship pathway in critical care cardiology.

“This is an evolving subspecialty in cardiology because patient demographics in CCUs have been evolving over the past decade,” says Richard Bach, MD, medical director of the CCU at Barnes-Jewish Hospital for more than 20 years and head of the new section. “To manage the complex and critically ill patients in the modern CCU now demands a broader knowledge of intensive care in addition to cardiology expertise.”

CCUs were initially designed 50 years ago to care for patients diagnosed with acute myocardial infarction, or MI. Those patients had a high risk of death and CCUs had cardiologists, nurses and trained staff to rapidly handle rhythm disturbances at any time. Because of that approach with routine CCU care, the MI mortality rate in its day dropped by half, from 30 percent to 15 percent. Fast forward to today’s CCU, and uncomplicated MI patients account for a small portion of patients. The majority now are patients with cardiogenic shock, severely decompensated congestive heart failure and serious arrhythmias. Many require mechanical ventilation or cardiac support devices and all need highly specialized care and intensive medical management.

Douglas Mann, MD, Chief of the Cardiovascular Division, spearheaded efforts to add the new critical care cardiology section and has fostered collaborations with colleagues in pulmonology and critical care medicine to create the new model of care. It includes the addition of two new cardiology faculty whose primary responsibility will be to help care for patients in the CCU, which now handles more than 2,000 admissions annually. Dr. Bria Giacomino completed a cardiology fellowship at the University of Washington University Cardiology Alumni Newsletter | 1
Gregory A. Ewald, MD, FACC, has been named acting chief of the Cardiovascular Division. He takes the helm as Douglas Mann, MD, the Tobias and Hortense Lewin Professor and Director of the Cardiovascular Division, steps down to focus on research efforts and spend more time with his family.

Ewald, Professor of Medicine, is currently the Chief of Clinical Cardiology and Director of the Section of Heart Failure and Cardiac Transplantation. He has been a member of the division since 1997, joining the faculty after completing both his residency in internal medicine and fellowship in cardiology at Washington University School of Medicine/Barnes-Jewish Hospital. In addition to his roles at Washington University, Ewald serves as cardiac medical director for Mid-America Transplant, the regional organ procurement organization. Since 1997, he consistently has been funded by the National Institutes for Health (NIH) and other organizations for clinical research into new therapeutics to better evaluate and treat heart failure.

“During Doug’s tenure, we made a lot of strides to enhance our strengths in basic research as well as develop a robust infrastructure to support clinical research,” says Ewald. “He has been a fantastic mentor to our fellows and junior faculty. I have been fortunate to work closely with him during the past 10 years and hope to continue those traditions as we move through this transitional period.”

If you are interested in making a donation to the Cardiovascular Division, please contact Rachel A. Hartmann in the Washington University Medical Alumni and Development office at: 314-935-9715 or rachel_hartmann@wustl.edu
Washington University in St. Louis
Office of Medical Alumni and Development
Attn: Rachel A. Hartman
Campus Box 1247
7425 Forsyth Blvd.
St. Louis, MO 63105
Alumni Update

Anu Rao, MD
Cardiovascular Fellow, 2008-2011
Chief Fellow, 2009-2011

Currently: Rao is Director of the Echocardiography Lab and Acting Section Chief of Noninvasive Cardiology at Rush University Medical Center, Chicago, IL. She completed her cardiology fellowship at Washington University and a subspecialty fellowship in advanced cardiac imaging in the Laboratory of Cardiac Energetics at the National Heart, Lung and Blood Institute in Bethesda, MD. She also worked as a Medical Officer at the NIH. Concurrently, she worked as an assistant professor in the Division of Cardiovascular Medicine at the University of Maryland Medical Center and as an attending cardiologist at MedStar Washington Hospital Center in Washington, D.C.

Rao’s research focus is on multimodality imaging of myocardial function in valvular heart disease. A strong advocate of fellowship training and mentoring, Rao was named Teacher of the Year in 2018 in Rush’s Division of Cardiology.

Favorite Fellowship Memories:
Rao’s favorite memories include my time in the echo lab. My interest in imaging was sparked by the excellent WU faculty. I still hear Majesh’s voice in my head saying “mitral regurgitation from here to Australia” and his use of exclamation marks for remarkable findings in echo reports. A highlight was working with co-fellows and the echo attendings on the first WU echo manual. I also remember how excited and awestruck I was when I scrubbed in on our very early Mitra-Clip cases. I spent a lot of time with the valve team in those days and got invaluable experience with TAVR and aortic valve disease. Wash U was always at the forefront of cutting edge treatments. We were so fortunate to have been exposed to all aspects of adult congenital heart disease, which is very unique to this program. I remember fondly the camaraderie of my co-fellows and I still keep in touch with many of them as we have formed lifelong friendships.

Departing Fellows

The following fellows have completed cardiovascular fellowships and share their next career moves:

Ernesto Betancourt, MD
Miami Lakes, Florida
Veteran’s Administration

John Trevor Posenau, MD
Private Practice
Henrico, VA

Adam Shpigel, MD
Structural Heart Fellowship
Baylor University
Dallas, Texas

Sangita Sudharshan, MD
St. Vincent’s Health Facility
Indianapolis, Indiana

Sandeep Sodhi, MD, MBA
Dominique Williams, MD
Kathleen Zhang, MD
Washington University Cardiovascular Faculty

Research
Gmerice Hammond, MD
Jesus Jimenez, MD
Benjamin Kopecky, MD
Jonathan Moreno, MD
David Rawsley, MD
Erika Young, MD

Advanced Fellowships

The following trainees continue in our program for subspecialty fellowship:

Advanced Heart Failure
Amanda Verma, MD
Electrophysiology Fellowship
Curtis Steyters, MD
Geoffrey (Joe) Orme, MD

Structural Heart Disease Fellowship
Michael Daniel, MD

Interventional Cardiology Fellowship
Mark Gdowski, MD
Chien Jung Lin, MD

The lead story on the evolution in critical care cardiology comes at a unique time in the evolution of fellowship training pathways. As many of you may know, the American College of Cardiology’s recent Core Cardiology Training Symposium (COCATS 4) highlighted the need for training in critical care cardiology, advanced cardiac imaging and adults with congenital heart disease (ACHD). The need in these important areas in cardiovascular medicine reflects both the advancement of treatment options and the increasingly complex nature of cardiovascular care.

Our division has been at the forefront of offering the opportunity to pursue training in these and many other non-traditional pathways. Our advanced imaging fellowship formally begins next year, as does our ACHD fellowship, which was approved by the ACGME last year. This year, one fellow has created a pathway focused on medical education and another on sports cardiology. We actively are in the process of developing the critical care cardiology fellowship. All of this is a hallmark of our program, which provides flexibility in the third year of training to pursue new avenues and cardiovascular interests.

Many aspects of these pathways, such as course work and visiting rotations, even salary support, are not always funded through traditional means. As some programs around the country struggle to find resources, we find that contributions from alumni like you are crucial to our efforts to continue training leaders in cardiovascular medicine. Thank you!
New Advanced Cardiac Imaging Fellowship Begins in 2020

Nishath Quader, MD, Assistant Professor of Medicine, has been named director of the new advanced cardiac imaging fellowship. The fellowship, funded in part through generous contributions from alumni and faculty, begins in 2020.

Quader joined the faculty of the Cardiovascular Division in 2014 after completing an advanced cardiac imaging fellowship at Northwestern Memorial Hospital in Chicago. She earned her medical degree at Northwestern University Feinberg School of Medicine in 2007 and completed a residency in internal medicine at Loyola University Medical Center in Chicago and a fellowship in cardiology at the Mayo Clinic Foundation in Rochester, MN.

“This fellowship is invaluable in training future cardiologists in the ever expanding field of imaging and echocardiography,” she says. “Fellows will not only learn echocardiography in great depth, but also will have the opportunity to pursue other imaging modalities. In addition, fellows will have the opportunity to gain expertise in interventional echocardiography and be part of this rapidly evolving and exciting field.”

Brittany Dixon, MD, currently a second-year cardiology fellow, will be the first advanced cardiac imaging fellow when the pathway officially begins next year. “I have a particular interest in valvular heart disease and imaging used to guide structural interventions,” she says. “Imaging allows me to explore a wide breadth of cardiovascular processes, from heart failure to ischemia to congenital abnormalities. It is an invaluable resource that improves both accuracy and efficiency of clinical practice. In fact, almost every cardiac sub-specialty now incorporates some aspect of cardiac imaging, so it is a field with a significant need and much potential for growth.”

Division Welcomes Five New Faculty

Briana Giacominno, DO, joined the division in the section of critical care cardiology in July 2019. With a background that includes being a licensed emergency medicine technician, Giacominno completed her internal medicine residency and a cardiology fellowship at the University of Iowa. This past year she also completed a critical care fellowship at Baylor/Texas Heart Institute in Houston, Tx.

Adam May, MD, joined the division in the section of critical care cardiology in July 2019. May earned his medical degree from Loyola University and completed both a residency in internal medicine and a fellowship in cardiology at the Mayo Clinic in Rochester, Minn. Prior to joining the division in July, May also completed a critical care fellowship at Mayo Clinic.

Sandeep Sodhi, MD, MBA, joined the division in the electrophysiology section in July 2019. He completed both his residency in internal medicine and his cardiology and advanced electrophysiology fellowship in the Cardiovascular Division at Barnes-Jewish Hospital at Washington University School of Medicine.

Dominique Williams, MD, joins the division in the sections of maternal fetal and general cardiology in September 2019. She previously was a cardiology fellow in the division.

Kathleen Zhang, MD, joined the division in the section of cardio-oncology in July 2019. She previously was a cardiology and advanced cardio-oncology fellow in the division and completed her residency at Barnes-Jewish Hospital at Washington University School of Medicine.

Faculty Promotions

The following faculty received promotions in 2019:

- Attila Kovacs, MD, Professor of Medicine
- Shane J. LaRue, MD, Associate Professor of Medicine
- Jiafu Ou, MD, Associate Professor of Medicine
- Babak Razani, MD, PhD, Associate Professor of Medicine
- Stacey L. Rentschler, MD, PhD, Associate Professor of Medicine
- Timothy Wm. Smith, DPhil, MD, FACC, FHRs, Professor of Medicine
- Nathan O. Stitziel, MD, PhD, Associate Professor of Medicine and Genetics
- Alan Zajarias, MD, Professor of Medicine
Rajan Sah, MD, PhD, has joined the Cardiovascular Division, bringing with him a team of post-doctoral researchers and laboratory staff focused on understanding how ion channels regulate metabolism, with an eye toward developing new therapeutics for cardiometabolic disease.

“My research during my PhD and postdoctoral studies was on ion channel signaling at the level of the cardiac myocyte and in the context of heart failure,” he says. “But just prior to starting my independent research program I realized that there was a rich, unexplored biology of ion channel signaling in fat cells through a fortuitous collaboration with a local colleague in Boston. Shortly after starting my own lab in 2013, I followed these leads into the realms of obesity and diabetes, which are, of course, both major drivers of heart disease, and so very relevant for a cardiologist to study.”

Fat cells are among the few cells in the body that can change significantly; sometimes increasing 20-30 times their original size. Sah’s lab has found that a protein forming an ion channel, called SWELL1, responds in proportion to cell size and regulates insulin sensitivity in fat cells. In subsequent studies the team discovered that the same protein sensed glucose-stimulated swelling in pancreatic β-cells to regulate insulin secretion. Having identified a pathway that regulates both insulin sensitivity and secretion, the Sah lab is now beginning to develop small molecules that target this pathway for the treatment of Type 2 diabetes and metabolic syndrome. “It’s a fundamental signaling pathway that regulates function in all cells and may have important therapeutic implications for multiple disease processes, including heart disease, diabetes and fatty liver disease,” he says.

The research is significant because more than 93 million adults in the U.S. are considered obese, with 30 million people in this country diagnosed with diabetes.

Sah earned both his medical and doctorate degrees from the Institute of Medical Sciences at the University of Toronto in Ontario, Canada. He completed his cardiovascular fellowship at Brigham & Women’s Hospital in Boston and served as a post-doctoral research fellow in the cardiology department at Howard Hughes Medical Institute Children’s Hospital in Boston. He then joined the faculty at the University of Iowa before he and his research team came to Washington University.

4th Annual Michael Beardslee Memorial Lecture

Attendees at the 4th Annual Michael Beardslee Memorial Lecture in April were treated to an inspiring talk by guest speaker David Watkins, founder of the IronHeart Foundation, a nonprofit dedicated to empowering and transforming the lives of those affected by heart disease through activities that foster athletic inspiration. Watkins was diagnosed with a congenital heart defect in his 30s and almost died on the operating table. After he recovered, he founded IronHeart so that cardiac patients could share stories and ultimately regain a healthy lifestyle through sport. Today, Ironheart is in 49 states and 20 countries. He also is the director of HEART: Flatline to Finish Line, a documentary profiling six individuals who went from “the hospital bed to the finish line” of the grueling IRONMAN® triathlon.

Beardslee, a former fellow, joined the faculty in the Clinical Cardiology section in 1999 and subsequently moved to private practice in 2008. He was in the process of re-joining the division faculty when he unexpectedly passed away in 2015.

New Physician Scientist Joins Division

Emerging CCU Care

Continued from page 1

Iowa and a critical care fellowship at the Baylor Texas Heart Institute. Dr. Adam May completed both his cardiovascular fellowship and a critical care fellowship at Mayo Clinic in Rochester, MN. They will be joined by cardiologist David Schwartz, MD, assistant director of the CCU, and work under the direction of Bach and colleagues in pulmonary and critical care medicine to train fellows in the new subspecialty pathway.

“My past year of training has been dedicated to taking care of all critically ill patients, including those in medical, cardiac, and surgical ICUs, which has given me a broad range of strategies of management,” says Giacomino. “Although patients in a cardiac ICU have severe heart disease, they can also develop other issues that affect their healing and recovery, and this past year has provided me the training to optimally address and care for all of these issues.”

Says Bach, “In many places, people with the experience of Bria and Adam don’t exist because this is an emerging subspecialty within cardiology. Our new model allows for enhanced cardiology staffing within the CCU and has the added value of bringing in cardiologists who have additional expertise in critical care medicine. That will only serve to augment our nationally recognized and already superlative care of our increasingly complex CCU patients.”
The Cardiovascular Division turned out in force to celebrate the 85th birthday of Robert Kleiger, MD. Kleiger is a leading expert on electrocardiography and the first to establish an echocardiography service at the former 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.

Kleiger has also been on the Washington University faculty for 50 years and still delights in training residents and fellows on the nuances of reading electrocardiograms. He was a resident on the Washington University ward service from 1961 to 1963. Following cardiology fellowship training at both Harvard and Stanford, he joined the Washington University faculty as an assistant professor in 1969. He was promoted to Professor of Medicine in 1978.

He previously donated to help fund the start-up of the division’s advanced cardiac imaging fellowship, noting that the new pathway will “train leaders in advanced cardiac imaging and lead to better care of patients with complex cardiac problems.”

This year, Kleiger has honored the division by making an even greater charitable donation — $1 million over the next four years, which, at his request, is being earmarked for the establishment of a lectureship.

“I can’t say enough about the generosity of Dr. Kleiger’s to fund a lectureship that will serve to educate and disseminate some of the latest advancements in the cardiovascular field,” says Greg Ewald, MD, interim chief of the Cardiovascular Division. “He is truly an exceptional cardiologist who has made numerous clinical and research contributions during his 50 year tenure at Washington University. It was an honor for us to celebrate his milestone birthday at the same time that we thank him for his amazing gift to the division.”

Douglas Mann, MD, shares in the fun of Robert Kleiger’s 85th birthday and his 50th year in the Cardiovascular Division.