

# Cardiology

## From Welcome to Farewell: New Queeny Lobby Supports Personalized Patient Care

**T**he ample lobby in the Queeny Tower building has been transformed, befitting the space where patients and families are welcomed to the Washington University and Barnes-Jewish Heart & Vascular Center. Ever since the lobby opened this summer, entering patients have been connecting immediately with individualized care. The building location offers elevator access to all patient-care and surgical areas and to Cardiovascular Division physicians and services.

The renovated anteroom of the Heart & Vascular Center is warm and welcoming, in keeping with personalized medicine, explains Douglas L. Mann, MD, cardiovascular division chief in the Department of Medicine. The emphasis is part of the Center's new approach that unifies clinical care, training programs and research on patients' behalf.

"Nurses and other staff help people navigate through the Barnes-Jewish system," Mann says. "Clinical testing is integrated with models of care across cardiology, vascular surgery and cardiothoracic surgery. The patient experience will be seamless."

"Patients and families participate as staff coordinate the stay," adds Patti Crimmins Reda, RN, MSN, executive director, Heart & Vascular Program, at Barnes-Jewish Hospital. Staff members also assist with way-finding, logistics, problem-solving and arranging for escorts, and they keep referring physicians fully informed throughout the stay. Communication and personal service extend from front door to farewell.

Upon discharge, patients receive everything they will need when they leave—



Shown before-hours, the lobby has spacious walkways and family-style seating.

even water for their trip. Questions are encouraged as they learn about their medications, prescriptions and self-care. Says

Crimmins Reda: "We want patients' return home and recovery to be as safe and as positive as their experience with us." ■

## Heart & Vascular Center



NATIONAL LEADERS IN MEDICINE

The mission of the Washington University and Barnes-Jewish Heart & Vascular Center is to achieve excellence in patient care, research and education through seamless integration of heart and vascular care. The Heart and Vascular Center is committed to promoting heart and vascular health through education, prevention and treatment of heart and vascular disease.

The following new research awards were made to cardiology faculty from September 2010 through June 2011.

**Junjie Chen, PhD:** St. Louis Institute of Nanomedicine: Anti-angiogenesis nanomedicine of proliferative retinopathy.

**Sharon Cresci, MD:** Longer Life Foundation: Determination of the genetic contribution of glycemic control and CAD outcomes in patients with DM2 and CAD.

**Abhinav Diwan, MD:** RO1HL107594: Role of autophagic flux in cardiac myocyte viability.

**Joshua Hood, MD, PhD:** St. Louis Institute for Nanomedicine: Inhibiting sentinel node melanoma niche progression with mellittin modified exosomes.

**Gregory Lanza, MD, PhD:** NIH U01 NS073457: Characterization/bioinformatics-modeling of nanoparticle: complement interactions.

**Gregory Lanza, MD, PhD, Dipanjan Pan, PhD, and Katherine Weilbaecher, MD:** NIH RO1 CA154737-01A1: Next-generation approaches to breast cancer using image guided drug delivery.

**Brian Lindman, MD:** AHA grant: Stratification of patients with low-gradient aortic stenosis using cyclic variation and speckle tracking torsion.

**Daniel Ory, MD:** RO1HL067773: Mechanism of oxysterol activation of membrane cholesterol.

**Dipanjan Pan, PhD:** AHA: 11IRG5690011: Photoacoustic tomography theranostic approach to diagnosis and treatment of carotid disease.

**Hua Pan, PhD:** St. Louis Institute for Nanomedicine: Development of nanoparticle multiplexing strategy for rapid clinic translation.

## MESSAGE FROM THE CHIEF

The summer of 2011 is exciting for the Cardiovascular Division for a number of reasons, which I am delighted to share with you in this second issue of our biannual *Cardiology* newsletter. New faculty and fellows have arrived, a new academic year has started and we recognize and congratulate the fellows who recently completed their training (page 3).



I'm very pleased to announce that we've recruited four new outstanding faculty members. Anita Bhandiwad, MD, who trained at Beth Israel Hospital in Boston, works in West County and at Barnes-Jewish Hospital. She has expertise in MRI and echocardiography. Daniel Cooper, MD, former chief medical resident at the School of Medicine and Barnes-Jewish Hospital, has joined the electrophysiology group, as has Luciano Amado, MD, a recent graduate of Johns Hopkins University. Ari Cedars, MD, another superb former fellow, brings his talents to our adult congenital heart disease team.

Our new first-year fellows are terrific! Selected from a pool of 500 very qualified applicants, they come from diverse backgrounds, have varied research and personal interests—and are already proving to be a great fit within our program.

I'm also very excited to report on the progress within the Heart & Vascular Center, now almost one year old. The Queeny Tower lobby has been renovated and is open to patients (page 1). It will serve as the entry point for the Heart & Vascular Center, and is intended to help streamline the patient experience.

Going forward, a major focus will be on strengthening our research programs. We have ongoing searches for a Director of the Center for Cardiovascular Research (CCR), as well as Director of the Center for Cardiac Outcomes Research (CCOR). We have strengthened our educational programs and planned a spectacular series of cardiology grand rounds speakers for the academic year. I would also like to invite you to the annual Advanced Revascularization Chapter (ARCH) conference in January 2012. Jasvinder Singh, MD, is chair (page 4).

We would love to hear back from you and learn about what you are doing by email at [cards\\_alumni@dom.wustl.edu](mailto:cards_alumni@dom.wustl.edu), or through our Facebook page. Log on to [www.facebook.com](http://www.facebook.com), search for **Washington U. Cardiovascular Alumni** and click "Like" at the top of the page. In the meantime, my best wishes to you and your families for the summer!

**Douglas L. Mann, MD**  
Chief, Cardiovascular Division

CONTACT INFORMATION

### Cardiovascular Division

Washington University  
School of Medicine  
Campus Box 8086  
660 S. Euclid Ave.  
St. Louis, MO 63110

### Administration Office

314-747-3031

### Fellowship Office

314-362-1297

Ava Ysaguirre, coordinator  
[aysaguir@dom.wustl.edu](mailto:aysaguir@dom.wustl.edu)

### On the web:

[cardiology.wustl.edu](http://cardiology.wustl.edu)



Become a fan of **Washington U. Cardiovascular Alumni** on Facebook!

### Clinical Offices/Patient Appointments

#### Center for Advanced Medicine, WUMC:

314-362-1291

#### Rolla:

573-308-1301

#### South County:

314-362-1291

#### West County:

314-362-1291

#### Toll-Free Appointment Line:

888-210-8375

Mosthead image courtesy of Pamela Woodard, MD, Washington University Advanced Cardiac Imaging (CT/MR) Program.

## ALUMNI News & Awards

### Alumni Update: David Lanfear, MD

#### Currently

Demonstrating the scope of academic medicine, David Lanfear, MD, is senior staff physician for Advanced Heart Failure and Cardiac Transplantation at Henry Ford Hospital; research scientist focusing on pharmacogenetics at the Center for Health Services Research and assistant professor at Wayne State University, in Detroit. He teaches residents and fellows and delivers clinical lectures.

#### Favorite Ways to Spend Time Away from Work

David enjoys caring for his three preschoolers, who are 4½, 2½ and 10 months old.

#### In His Words: Favorite Fellowship Memories

**1** "My fondest memory (fit for print) relates to the photo below, taken at Pat O'Brien's on Bourbon Street on a night out during the 2004 ACC meeting in New Orleans. We had very good representation at the conference, and everyone showed up, ready for fun."

**2** "Dr. Barzilai saying, 'David, I judge fellowship classes by how many complaint calls I get, and so far, you guys are doing great!'"

**3** "Reading echoes with Julio Perez because he was such a gentleman scholar—ultra-nice, polite to literally everyone, and a super educator."



**Top:** Enjoying down time on Hilton Head Island, SC. David Lanfear with his wife, Sara, who did her residency in pharmacy at Barnes-Jewish Hospital, and their children (l. to r.) Rachel, 10 months, Ethan, 4 1/2, and Natalie, 2 1/2. **Bottom:** A page from the Lanfear scrapbook. Fellows and staff gathered in New Orleans for the 2004 American College of Cardiology conference.

### Message from the Program Director



### Our New Fellows at a Glance

by Andy Kates, MD  
Fellowship Program Director

Our 10 new fellows are exceptional. They hail from institutions such as Washington University, Boston University, Duke, Northwestern, UCSF, the University of Virginia and Yale. Three physicians are women. One new fellow has a master's degree in British literature from Cambridge; another, an MS in engineering from the University of Minnesota; still another, an MS in clinical research from the University of Virginia and a fourth received a grant for clinical research at the Institut de Tourraine in France. As part of our mission to develop national leaders in cardiovascular medicine, we are excited about their diverse medical interests, which include international health. One doctor has just returned from mission work in North Africa. These fellows' strengths and backgrounds will enrich our program.

Many fellowship activities, including vital research to further innovations in cardiovascular care, are funded in whole or in part through the generosity of our alumni. If you are interested in giving back to Washington University and future cardiology fellows, please contact Doug Mann, MD, or Andy Kates, MD, at **314-747-3031**

## Meet the Fellows

### First-Year Clinical

Alejandro (Alex) Aquino, MD  
Jonathan Davis, MD  
Carl Kapadia, MD  
Kathryn (Kate) Lindley, MD  
Jason Meyers, MD  
Sujata Ramamurthy, MD  
Justin Sadhu, MD  
Sarah Sandberg, MD  
Robert Shapiro, MD  
Deepak Thomas, MD, PhD  
Veli Topkara, MD

### Second-Year Clinical

Elisa Bradley, MD  
Jeremiah Depta, MD  
Derek Fansler, MD  
Corey Foster, MD  
Jeffrey Lau, MD, PhD  
Kory Lavine, MD, PhD  
Sara Martinez, MD, PhD  
Shimoli Shah, MD  
Shivak Sharma, MD  
Justin Vader, MD

### Third-Year Clinical/Research

Alok Bachuwar, MD  
Risa Cohen, MD  
Chirayu Gor, MD  
Iliia Halatchev, MD, PhD  
Shane LaRue, MD  
William Nienaber, MD  
Ashwin Ravichandran, MD  
Mohammed Saghir, MD  
Jay Shah, MD

### Advanced Research Fellows

Suzanne Arnold, MD  
*(Kansas City, paid by AHA)*  
Slava Epelman, MD  
Christopher Holley, MD, PhD  
Ajit Janardhan, MD, PhD  
C. Huie Lin, MD  
Scott Marrus, MD, PhD  
Arun Thukkani, MD, PhD

### Electrophysiology Fellows

Jefferson Lee, MD (1st yr. EP)  
Thomas (Bobby) Kurian, MD  
*(2nd yr. EP)*  
John Verbsky, MD, PhD  
*(1st yr. EP)*

### Interventional Fellows

Yogesh Patel, MD  
Michael Yeung, MD

### Our Newest Alumni

*(As of 6/30/11)*  
Ari Cedars, MD  
Daniel Cooper, MD  
Pei-Hsiu Huang, MD  
Andrew Krainik, MD  
Jiafu Ou, MD  
Anupama Rao, MD  
Jie Ren, MD, PhD  
Kristin Scott-Tillery, MD

## FACULTY

### News & Awards

#### Faculty Spotlight: Jasvinder Singh, MD



Jasvinder Singh, MD

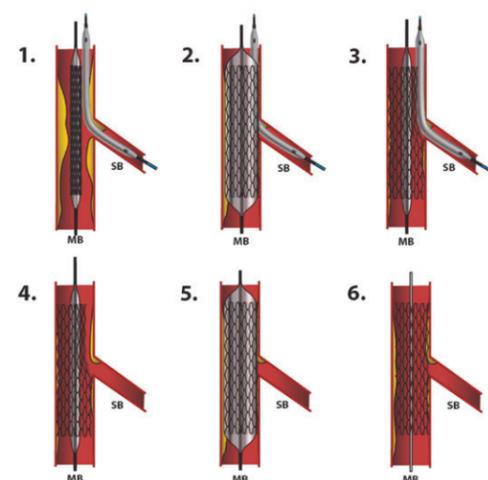
Jasvinder Singh, MD, performs complex coronary and peripheral vascular interventions. To address coronary bifurcation lesions, he developed a “jailed balloon” technique, placing a balloon alongside the stent to trap it and maintain access to the branch. In nearly 125 procedures, no side-branch closures have occurred. He presented the technique at the 2010 Transcatheter Cardiovascular Therapeutics (TCT) conference and is submitting a paper.

Another paper, in review, demonstrates that intravascular ultrasound guidance during coronary angioplasties and stents produces a significantly lower event rate later on, compared with angiogram. And in a national study, Singh is PI for bio-absorbable stent trials.

“Dr. Singh is inspiring,” says fifth-year fellow C. Huie Lin, MD. “Following medical school in Fiji, he played professional chess at 22. He uses that analytical skill and creativity when he operates, identifying multiple lines of strategy and backup, and potential difficulties.”

“I teach fellows a hands-on clinical approach,” says Singh. “And I treat them like my kids: I care about their education, I’m strict and I watch them grow. They all stay in touch.”

On June 18, Jasvinder Singh received the Craig K. Reiss, MD, Award for Excellence in Teaching, a gift of Harvey and Linda Saligman. The award honors an outstanding teacher in the Cardiovascular Division, as recognized by students, house staff, fellows and faculty colleagues.



**1.** The main-branch (MB) stent is advanced into position and side-branch (SB) balloon is placed approximately 2 mm proximal to stent. **2.** MB stent is deployed to nominal pressures, jailing SB balloon and wire. **3.** If SB compromise occurs, SB balloon angioplasty is performed. **4.** Then SB wire and balloon are removed. **5.** MB stent balloon is then re-inflated to optimize stent apposition. **6.** Final Result.



John Lasala, MD (center), with American Heart Association officials Tracy Brazelton, executive director (l.), and Louis B. “Buzz” Eckelkamp, Jr., chairman of the board.

#### AHA’s McCulloch Award Honors a Distinguished Career

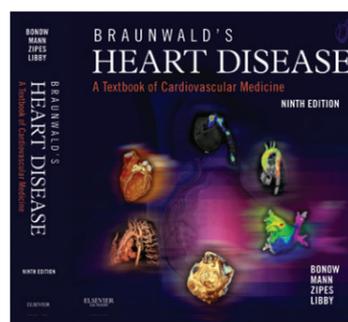
John Lasala, MD, PhD, professor of medicine and director of the Cardiac Catheterization Laboratory at BJH, has received the 2011 Hugh D. McCulloch Award from the American Heart Association’s Midwest Affiliate. He was cited for contributions including his leadership in using cutting-edge technology to treat a range of heart diseases, his significant research and his service to his profession. Lasala is an abstract grader for the AHA and the ACC and holds editorial responsibilities for eight publications.

#### Optimal Cardiac Health is Focus of West County Events

Two evening events this spring showcased the Cardiovascular Division’s renovated West County location, now part of the Washington University and Barnes-Jewish Heart & Vascular Center. At the Division’s Continuing Medical Education meeting, Anne Goldberg, MD, spoke about aggressive therapy in managing hyperlipidemia. Next, a community event focused on the topic “Living with Heart Disease: A Patient’s Perspective,” with a lecture by Joe Piscatella, co-author of *Prevent, Halt and Reverse Heart Disease* (Workman, 2010). Both evenings included an open house. Washington U. cardiologists answered questions, and guests enjoyed tours, cooking demos and deliciously healthful food.



Thirty-three-year bypass surgery survivor Joe Piscatella (l.), Angela Brown, MD, and Craig Reiss, MD (far right), listen intently as Keith Mankowitz, MD, answers a question.



#### The Best Cardiology Textbook Just Got Better

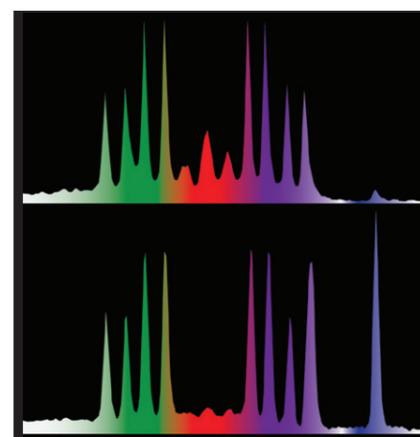
*Braunwald’s Heart Disease: A Textbook of Cardiovascular Medicine* has been the leading textbook in cardiology since Eugene Braunwald, MD, edited the first edition (1980). The ninth edition, which is co-edited by Douglas L. Mann, MD, and features chapters by Washington University Heart and Vascular faculty including Alan Braverman, MD, Robert Thompson, MD, and Luis Sanchez, MD, was just updated. Mann says it represents “a significant departure from the eighth,” with 24 completely new chapters that are accompanied by nearly 2,500 figures and 600 tables. The textbook also features an online version with video files, podcasts, and frequent updates on clinical trials and scientific advances.

Courtesy of Elsevier Inc.

## RESEARCH SPOTLIGHT

### Leveraging discovery and technology to improve clinical care

Peter Crawford, MD, PhD, and his group have used novel model systems to discover that the heart is able to autonomously shift its metabolic fuel preference despite delivery of highly abundant ketone bodies—prospective evidence of an adaptive mechanism to protect against metabolic toxicity from overuse. Future testing will increase understanding of the natural variations in populations’ response to commonly followed low-carbohydrate diets, as well as why some Type I diabetics suffer worse cardiac disease than others.



NMR spectra of the myocardial metabolic fuel beta-hydroxybutyrate (a ketone body), and downstream metabolites, from hearts of a normal newborn mouse (top image), and a novel knockout mouse (bottom) that is unable to metabolize ketone bodies. The absence of glutamate (red) in the knockout heart indicates the absence of terminal ketone body oxidation. Inability to burn this metabolic fuel results in neonatal lethality.

Brian Lindman, MD, researches molecular pathways altered in aortic stenosis, in both the valve and the ventricle, to identify novel targets for medical therapy. He is exploring ways to address associated pulmonary hypertension and hypertrophic LV remodeling. Using sophisticated echo and MRI analyses, he is studying how ventricular structure and function is altered in response to the pressure overload from aortic stenosis. In several pilot studies, he is investigating potential medical therapies that may—for the first time—improve clinical outcomes in aortic stenosis.

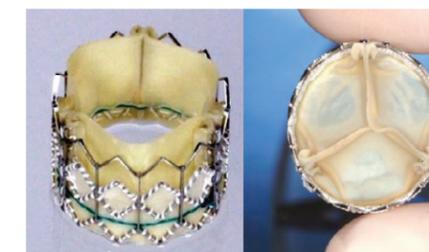
Michael Rich, MD, and colleagues from St. Louis University determined complication rates in hospitalized patients aged 18 and older who had received implantable cardioverter defibrillators (ICDs). The complication rate was roughly twofold higher in patients over age 80, while mortality was 2 percent, compared with slightly less than 1 percent among those 79 or younger. (*Arch Intern Med*, V. 170, No. 7, Apr 12, 2010). Following defibrillator implantation, older people and especially those over 80 are at greater risk for problems, particularly inappropriate shocks.



Ventricular tachycardia successfully terminated with an ICD discharge.

Rich’s editorial opinion: “There are relatively few situations for which I believe ICD implantation is appropriate for patients over 80.”

Alan Zajarias, MD, investigates why aortic stenosis develops and why racial disparities exist in its occurrence and treatment. At Barnes-Jewish Hospital, situated on an urban medical campus, only 4 percent of patients who receive aortic valve replacements are African American and 96 percent are Caucasian—but the numbers are very different for people undergoing coronary artery bypass surgery. Zajarias is investigating the underlying reasons.



Profile of valve utilized for transcatheter aortic valve replacement.

Zajarias is also a co-investigator for a large multicenter trial. Utilizing a smaller delivery system in healthier patients, the researchers are testing a less-invasive route for aortic valve replacement in patients with aortic stenosis. Zajarias is “extremely encouraged by the results.”

For information about the multicenter PARTNER trial: 314-747-4421. □

#### Selected Publications

Cooper DH, Faddis MN. Catheter ablation of atrial fibrillation: long-term outcomes. *Expert Rev Cardiovasc Ther*. 2011 May;9(5):657-70.

Cotter DG, d’Avignon DA, Wentz AE, Weber ML, Crawford PA. Obligat role for ketone body oxidation in neonatal metabolic homeostasis. *J Biol Chem*. 2011 Mar 4;286(9):6902-10.

Kovács SJ. How the (pediatric) heart works when it contracts application of left ventricular “isovolumic acceleration” as a load-independent index of contractility. *J Am Coll Cardiol*. 2011 Mar 1;57(9):1108-10.

Lindman BR, Arnold SV, Madrazo JA, Zajarias A, Johnson SN, Pérez JE, Mann DL. The adverse impact of diabetes mellitus on left ventricular remodeling and function in patients with severe aortic stenosis. *Circ Heart Fail*. 2011 Feb 25;4:286-292.

Longmore RB, Spertus JA, Alexander KP, Gosch K, Reid KJ, Masoudi FA, Krumholz HM, Rich MW. Angina frequency after myocardial infarction and quality of life in older versus younger adults: The Prospective Registry Evaluating Myocardial Infarction: Event and Recovery study. *Am Heart J*. 2011 Mar;161(3):631-8.

Mann DL. The emerging role of innate immunity in the heart and vascular system: for whom the cell tolls. *Circ Res*. 2011 Apr 29;108(9):1133-45.

Rasalingam R, Johnson SN, Bilhorn KR, Huang PH, Makan M, Moazami N, Pérez JE. Transthoracic echocardiographic assessment of continuous-flow left ventricular assist devices. *J Am Soc Echocardiogr*. 2011 Feb;24(2):135-48.

## Noninvasive ECG Imaging Allows Precise Arrhythmia Assessment

Collaborative research using noninvasive electrocardiographic imaging (ECGI) is uncovering previously inaccessible details of how the heart's electrical system behaves during atrial fibrillation (AF). Phillip Cuculich, MD, assistant professor of medicine, and Yoram Rudy, PhD, the Fred Saigh Distinguished Professor of Engineering and Professor of Medicine, who developed ECGI, published their findings (*Circulation*. 2010 Oct 5;122:1364-72).

For more than 140 years, cardiologists have imaged the heart's electrical system with an electrocardiogram (ECG). "ECGI represents a technological leap forward, producing images of electrical activation on the surface of the entire heart in a single beat," Cuculich says. In the published manuscript, most patients with paroxysmal AF had focal sites of activation (triggers) near pulmonary veins, the site Cuculich and his colleagues target in their ablation procedures.

"In paroxysmal AF, the patterns were simpler, with fewer wavelets activating the heart. We saw the specific areas that seemed to contribute to the patient's AF," Cuculich reports. "As people developed longer-standing or persistent AF, the patterns showed more wavelets and sites of initiation. The overall trend was that the longer a patient was in AF, the more complex the activation patterns.

"This is an important step toward tailored AF therapy," he continues. "Our future research will include identifying a patient's specific mechanism for AF and targeting that with personalized treatment plans."



Phillip Cuculich, MD, readies a noninvasive, 256-electrode vest-like device for ECG imaging in the Center for Cardiovascular Imaging Research at Barnes-Jewish Hospital. ECGI collects the electrical data of a heartbeat during AF and maps it onto a model of the patient's heart obtained with rapid CT scanning.

**Find us on Facebook**   
Washington U.  
Cardiovascular Alumni!

**Cardiovascular Division**  
Washington University  
School of Medicine  
Campus Box 8086  
660 S. Euclid Ave.  
St. Louis, MO 63110

  
**Washington University in St. Louis**  
SCHOOL OF MEDICINE

Nonprofit Organization  
U.S. Postage  
**PAID**  
St. Louis, MO  
Permit No. 2535