The Heart & Vascular Center: Multidisciplinary Approach Offers Improved Patient Care

Washington University cardiologists, cardiac surgeons and vascular surgeons have partnered with Barnes-Jewish Hospital to provide a new, fully integrated approach to heart and vascular patient care, education and research. The Washington University and Barnes-Jewish Heart & Vascular Center is a collaborative effort to provide seamless integration of heart and vascular care for patients. “As part of an academic health care center, we have always applied a team approach to the care of cardiovascular patients. This new initiative will only further enhance our abilities to collaborate to provide innovative treatment and clinical trial options, such as the PARTNER trial, to our patients. The educational experience for our fellows will also be enhanced as they participate in these multidisciplinary efforts,” says Douglas L. Mann, MD, chief of the Cardiovascular Division in the Department of Medicine.

Washington University cardiovascular physicians, ranked among the best in the nation by U.S. News & World Report, provide outpatient care to more than 5,000 cardiology patients each month. Through their efforts, they have advanced groundbreaking research in the areas of thrombolytics for acute myocardial infarction, biomarkers for cardiac injury, and cardiac imaging.

Heart and vascular care is available at the Center’s five locations throughout Missouri, including at the Center for Advanced Medicine on the campus of Washington University Medical Center, at Barnes-Jewish West County Hospital, as well as in Rolla, Farmington and South St. Louis County. Newly renovated patient care areas and offices are planned for the Center’s locations at the Center for Advanced Medicine and in West County.

Heart & Vascular Center

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.
Message from the Chief

We’re very pleased to send you this inaugural issue of the Washington University Cardiovascular Alumni Newsletter. Much has been happening in the Divisions of Cardiovascular, Cardiac Surgery and Vascular Surgery. Eleven years after launching the Washington University Heart Care Institute, leadership from the cardiovascular, cardiac surgery and thoracic surgery divisions have teamed with Barnes-Jewish to launch the Washington University and Barnes-Jewish Heart & Vascular Center. With five locations throughout the region and a commitment to growth, we look forward to accomplishing our goal of ranking among the top five heart and vascular centers in the country. And we are well on our way, as we continue to select outstanding trainees for the fellowship program, as well as recruit new clinician-scientists to the faculty and develop new multidisciplinary programs.

As part of our role as national leaders in cardiovascular care, we recently hosted a symposium at the annual meeting of the American Heart Association to provide updates and disseminate information on the results of the PARTNER trial of transcatheter aortic valve implantation.

In addition to news and events, each issue will include one short feature on the latest innovations in cardiovascular patient care at the new Washington University and Barnes-Jewish Heart & Vascular Center, as well as a short feature on recent or ongoing research, which may be of interest to you in your current work. We’ve also made plans to include a routine column featuring an update on one of our alumni. This issue you can learn what is happening in the world of alumna Courtney Virgilio, MD.

It is our hope to make this newsletter meaningful for you. We invite each of you to let us know what is happening with you, both on professional and personal fronts. Feel free to contact the fellowship administrative offices with any updates, or become our fan on Facebook to find out the latest updates from the Cardiovascular Division, to share your own updates and to stay connected with colleagues and friends.

Best wishes for a safe and happy New Year,

Douglas L. Mann, MD
Chief, Cardiovascular Division

The following new research awards were made to cardiology faculty during March – August 2010.*

Daniel S. Ory, MD: NIH R01 HL103001: Regulation of cholesterol homeostasis by noncoding RNAs
Brian R. Lindman, MD: Washington University CTSA (Institute of Clinical and Translational Sciences pilot project): Medical therapy for aortic stenosis: role of PDE5 inhibition
Brian R. Lindman, MD: NIH KL2 (career award) from the Washington University ICTS
Attila Kovacs, MD: NIH Shared Instrumentation Grant: High-resolution ultrasound system for cardiovascular phenotyping in mice
Peter A. Crawford, MD, PhD: Diabetic Cardiovascular Disease Center: Nutritional therapy for diabetic cardiomyopathy
Linda R. Peterson, MD: Diabetic Cardiovascular Disease Center: Energetic effects of ketone metabolism in insulin resistance

In addition, Douglas L. Mann, MD, and Victor G. Davila-Roman, MD, have been chosen via an internal competition to submit an application to the NIH in response to RFA HL-12-001: Heart Failure Clinical Research Network Regional Clinical Centers. They will submit an application for a grant to fund a seven-year regional clinical center for heart failure research in December 2010.

*Total number of applications submitted was 41, including noncompeting applications, during this same time period.
NEW DIRECTOR OF FELLOWSHIP PROGRAM

Andrew M. Kates, MD, has been appointed Program Director of the Washington University Cardiovascular Fellowship. Kates, who specializes in coronary artery disease, heart disease prevention, valvular heart disease and echocardiography, is an associate professor of medicine and an alumnus of both the Washington University Internal Medicine Residency Program and Cardiovascular Fellowship. To refer an applicant to our program, or for more information, please contact Andy Kates, MD, at 314-362-1297 or akates@dom.wustl.edu.

Alumni Update: Courtney Virgilio, MD
Currently:
Practicing non-invasive cardiology and imaging with Fox Valley Cardiovascular Consultants and the Women’s Heart Center in Aurora, Ill., which will soon be integrating with Rush-Copley Medical Center, an affiliate of Rush University Medical Center; recently appointed the Medical Director of Noninvasive Cardiac Diagnostics; participating in clinical trials through Fox Valley Clinical Research Center

Favorite Ways to Spend Time Away from Work:
Courtney enjoys time playing baseball and soccer with her sons, Joey and Nicholas. She also still enjoys cooking and baking and notes her “… chocolate addiction has not lessened with time … but it’s heart healthy, right?”

In her words — Favorite fellowship memories:
1) Jas Singh telling the patient having an acute MI “You will be alright, my friend,” as he proudly opened the artery with amazing precision; 2) The awe of deploying my first stent with Dr. Lasala during an acute MI as a new second year fellow at two o’clock in the morning; 3) Reading echos with Majesh and not only learning a ton about echocardiography but appreciating the genuine enthusiasm that he has for his work, as well as for life in general.

Contact Courtney at cvirgilio@gmail.com

Meet the Fellows
First Year Clinical:
Elisa Bradley, MD
Jeremiah Depta, MD
Derrick 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

Second Year Clinical:
Alok Bachuwar, MD
Risa Cohen, MD, PhD
Chirayu Gor, MD
Ilia Halatchev, MD, PhD
Shane LaRue, MD
William Nienaber, MD
Ashwin Ravichandran, MD
Mohammed Saghir, MD
Jay Shah, MD

Second Year Research:
Veli Topkara, MD

Third Year Clinical:
Slava Epelman, MD, PhD
Pei-Hsiu Huang, MD
Jiafu Ou, MD
Yogesh Patel, MD
Anupama Rao, MD
Kristin Scott-Tillery, MD
Michael Yeung, MD

Third Year Research:
Suzanne Arnold, MD
Jie Ren, MD, PhD
John Verbsky, MD, PhD

Fourth Year Research:
Christopher Holley, MD, PhD
Ajit Janardhan, MD, PhD
Scott Marrus, MD, PhD
Arun Thukkani, MD, PhD

Sixth Year Research:
Ari Cedars, MD

Electrophysiology Fellows:
Jefferson Lee, MD
Daniel Cooper, MD
Andrew Krainik, MD
Thomas (Bobby) Kurian, MD

Interventional Fellows:
Sudeshna Banerjee, MD
Chun (Huie) Lin, MD, PhD
Partnering to Improve Management of Valvular Heart Disease

Specialists from the Washington University and Barnes-Jewish Heart & Vascular Center hosted a special satellite symposium in November as part of the American Heart Association’s Annual Meeting in Chicago, Ill. The symposium Update on Management of Valvular Heart Disease featured presentations on the pathobiology, medical management, and percutaneous and traditional surgical management techniques of valvular disease from leading experts, including Peter C. Block, MD, Ralph J. Damiano Jr., MD, Gerald M. Lawrie, MD, Brian R. Lindman, MD, Douglas L. Mann, MD, Catherine M. Otto, MD, and Alan Zajarias, MD. The symposium provided more than 65 participants the opportunity to increase their knowledge of mitral and aortic valve disease as well as the use and efficacy of transcatheter aortic valve implantation (TAVI). Attendees were eligible for a maximum of two AMA PRA Category 1 credits.

Diagnosing Acute Coronary Syndrome in Patients with Chest Pain Presenting to the Emergency Department

D Pan, SC Caruthers, SA Wickline and GM Lanza

More than 8 million patients come to emergency departments (ED) with complaints of chest pain and many require hospital admission and noninvasive stress testing to determine cardiac risk. Development Spectral (multicolor) CT and a novel fibrin-targeted agent, NanoK, may differentiate patients with acute coronary syndrome in the ED. Spectral CT with fibrin-specific nanoparticles extends traditional CT coronary imaging by offering the potential to detect ruptured plaque microthrombus without coronary calcium attenuation interference. NanoK bound to ruptured plaque thrombus in the coronary can be specifically seen by Spectral CT, allowing patients with chest pain due to coronary plaque rupture to be recognized and differentiated from others with non-coronary symptoms.

At the Heart of Education

Dana R. Abendschein, PhD, associate professor of cell biology and physiology, received Distinguished Service Teaching Awards from the Class of 2013 for his work with the first-year organ systems physiology course in which he teaches ECG, auscultation and cardiac function, and from the Class of 2012 for his work as coursimester and lecturer in the second-year cardiovascular diseases course.
Cardiovascular disease is the leading cause of complications and death in people with diabetes, affecting two-thirds of the over 20 million diabetics in the United States. The Washington University Diabetic Cardiovascular Disease Center, led by Jean E. Schaffer, MD, and Daniel S. Ory, MD, is focusing on this important clinical problem.

The center brings together teams of scientists from eight departments within the Washington University School of Medicine to explore the interactions between derangements in blood sugar and lipids levels and the aggressive and unique forms of myocardial and vascular disease to which diabetics are particularly predisposed.

The center has two broad objectives. The first is to uncover the molecular basis of cardiovascular disease in diabetes, which is essential for the development of novel therapeutics.

A second objective is to discover and validate novel biomarkers that facilitate early diagnosis, management and prevention.

A team of imaging scientists, basic investigators and clinicians, led by radiologist Robert J. Gropler, MD, and cardiologist Linda R. Peterson, MD, are evaluating new, non-invasive imaging techniques in collaborative studies by building on expertise in positron emission tomography and ultrasonography.

In another approach, teams of basic and clinical investigators from the center are leveraging mass spectrometry methods for quantification of lipid metabolites pioneered by Richard W. Gross, MD, PhD, to identify specific metabolic products in the blood that can serve as early markers of diabetes complications.

As a catalyst for broad research exploration that connects laboratory findings to clinical innovations, the Diabetic Cardiovascular Disease Center is creating a new paradigm for translating basic discoveries into tangible advancements in patient care. Ory’s and Schaffers’s research on a development of molecular biomarkers for Niemann-Pick type C, a rare cholesterol storage disease was published in Science Translational Medicine in November 2010. The fatal genetic disorder, which frequently takes years to diagnose, may soon be detectable with a simple blood test.

Learn more about Niemann-Pick type C research at Washington University School of Medicine by visiting medicine.wustl.edu/Niemann-Pick.

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**Publications**

EVENTS & HIGHLIGHTS: PARTNER TRIAL UPDATE

Transcatheter Aortic Valve Implantation — New Viable Treatment Option for Valvular Heart Disease

The results are in – In a population of 358 patients with severe aortic stenosis who were deemed unsuitable for surgery by at least two surgeon investigators, transfemoral transcatheter aortic valve implantation (TAVI) was found to be superior to standard, open-heart surgical therapy. One year later, the transcatheter valve replacement group had a lower morbidity rate.*

The Washington University and Barnes-Jewish Heart & Vascular Center was among the 21 heart centers in the world selected to participate in the PARTNER (Placement of Aortic tranScathETER) trial. Ralph J. Damiano Jr., MD, chief of cardiac surgery at the School of Medicine, and Washington University interventional cardiologist John M. Lasala, MD, PhD, medical director of the cardiac catheterization laboratory at Barnes-Jewish Hospital, co-lead the St. Louis portion of the study. Co-investigators at Washington University include cardiac surgeon Hersh S. Maniar, MD, and interventional cardiologist Alan Zajarias, MD.

Since 2008, Washington University physicians have performed more than 70 TAVI procedures at Barnes-Jewish Hospital, the only hospital in the region to use the procedure.

One year follow-up results

<table>
<thead>
<tr>
<th>Group</th>
<th>Rate of Death</th>
<th>Survival Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Transcatheter Valve Replacement Group</td>
<td>30.7%</td>
<td>69.3%</td>
</tr>
<tr>
<td>Standard-Therapy Group</td>
<td>50.7%</td>
<td>49.3%</td>
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*Results of the study appear online in the New England Journal of MedicineSept. 22.
More information about The PARTNER Trial (NCT00530894) may be obtained at www.clinicaltrials.gov.

To refer a patient for TAVI at the Heart & Vascular Center, please call the Doctors’ Access Line at 800.252.3627.