

EMORY | Surgery

NOTABLE NEWS FROM THE DEPARTMENT OF SURGERY | JULY 19, 2012



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Dr. Padala receives NIH R41 grant to develop polymeric heart valve



Dr. Padala with his award winning "Mitra-Cath" valve repair system

Bioprosthetic heart valves (BHV) have been used for valvular replacement since the 1980s, but can deteriorate due to such forces as calcification and may eventually require replacement. While mechanical valves fail less frequently than BHV, they can experience such problems as blood clots. In recent years, the search for a more durable artificial heart valve has turned to the development of biocompatible, polymeric heart valves (PHV).

"Polymeric valves can offer improved durability, tunable surface properties that can reduce calcification, and the ability to program hemocompatibility to avoid thrombogenesis," says **Dr. Muralidhar Padala**, director of the structural heart disease research and innovation lab of Emory's Cardiothoracic Surgery Research Laboratory. "However, one valve that combines all three advantages is yet to be developed."

Dr. Padala hopes to do just that as the PI of a new NIH R41 grant, an award the NIH gives under the Small Business Technology Transfer Program to fund research and development of new technologies and methodologies that have the potential to succeed as commercial products. In collaboration with MedShape Solutions Inc., an Atlanta-based medical device company that harnesses the unique transformational capabilities of new biomaterials, Dr. Padala and his team will develop a new polymeric heart valve using a novel ultra-polymer called polyetheretherketone (PEEK).

"PEEK is superior to traditional polymers and is widely used for implantable devices," says Dr. Padala. "It has excellent fatigue resistance, low water absorption, highly inert structure, is likely to be hemocompatible, and its structures can be molded into complex shapes, woven, and/or non-woven to avoid regions of stress concentration, which is where structural failure of BHV occurs."

PEEK can be processed to demonstrate shape memory—the ability to "remember" multiple shapes and transition easily between those shapes when triggered—and can recover its original shape after deformation without loss of mechanical integrity. In addition to providing an ideal materials solution for traditional artificial heart valves, PEEK's shape-shifting component could allow its use for transcatheter aortic valves.

The partnership of Dr. Padala's team with MedShape is a model of synergy, as Emory's expertise and resources in heart valve development and testing is invigorated with MedShape's experience in polymer innovation, processing, and commercialization of FDA-approved polymeric devices.

Emory Medishare mission to Haiti a "formative experience" for surgical students



In 2008, an Emory group associated with Project Medishare—a non-profit consortium of U.S. medical schools—became the first medical school-based surgical team to offer short-term intervention at L'Hôpital Sainte-Thérèse de Hinche in Haiti's *Plateau Central*. For the past four years, an Emory team of 20 attendings, students, and mid-level practitioners has visited Hinche during the month of July.



Traditionally, medical students have limited clinical duties and few opportunities for hands-on learning. During the Medishare missions, however, students are responsible for almost all logistical arrangements and, under the direct supervision of faculty members, point-of-care decisions. Clinical training and required evaluations for rotation and surgery clerkship credit are performed by the attendings.

"We added a lot this year," reports **Dr. Jahnavi Srinivasan**, director of surgical simulation and elective programs. "We lengthened our stay and added M4s to the team. A fourth-year elective kept several enterprising M4s in-country for a full month while various groups weaved in and out."



The Medishare teams' visit was expanded from one week to a 21-day surgical camp to achieve heightened patient care. "In past years, toward the end of each week, the surgeries performed were less complex to avoid having critical patients on the wards as we departed the country," says **Lee Hugar**, an M4 who first got involved with the program as an M2.

Accompanied by Haitian Kreyol-speaking nurses and translators who were responsible for supporting Hinche's general and OB/GYN surgeons, six M4s arrived four days early to meet with local hospital leadership, survey the facilities, and interview patients. Their luggage included items to replenish Hinche's non-bulk supplies. They then worked with several M3s under the guidance of urologist **Dr. John Pattaras**, anesthesiologist **Dr. Cinnamon Sullivan**, and **Dr. Srinivasan**, performing 32 operations in one week using a combination of local and general anesthetic.



For the second week, M2s were supervised by general and endocrine surgeon **Dr. Jyotirmay Sharma** and senior resident **Dr. Benjamin Martin**, who is doing a transplant research fellowship in the Emory Transplant Center. "We did 42 surgeries with minimal running water, an OR that functioned on a diesel generator, and barely adequate lighting," says Dr. Sharma. "There was no anesthesiologist available that week, so we did most of the cases under local and spinal. The students worked as doctors, nurses, techs, and transport. It was a formative experience for them."

"As the first surgical resident to participate in the trip, I didn't know what to expect," says Dr. Martin. "I scrubbed in with the local OB/GYN on a C-Section. Although we could not communicate directly, the art and skill of surgery are universal. His moves were familiar to me and, when he handed me the knife or suture, mine to him. The baby came out healthy and crying."

Dr. Martin, who plans to pursue a career in international medicine, found the experience invaluable. "One thing I underestimated when planning for the trip was the opportunity to teach and mentor. Every medical student I spoke with thought that having a surgery resident as part of the team was beneficial in the OR, clinic, and wards."

During the third week, **Dr. Barbara Pettitt**, director of medical student education, supervised follow up surgery clinic for all operated patients. Over 80% returned to the hospital to be seen.

Dr. Srinivasan deemed the 2012 mission a success. "Compared to 30 cases in one week last year, this year we did 74 cases," she says. The 2012 participants plan to write a paper detailing the Emory Medishare model as the benchmark for any short-term surgical initiative, and will present at Surgical Grand Rounds on November 1, 2012.

Eighteen Emory Surgery faculty named to Atlanta's Top Doctors

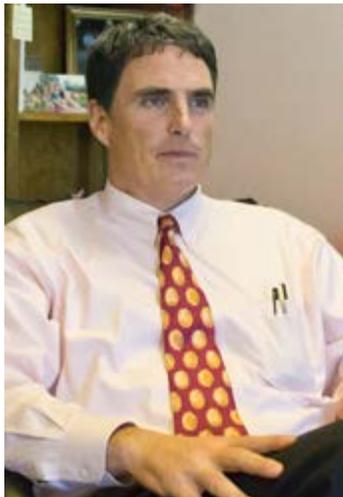
Atlanta magazine's July 2012 "Top Doctors" issue, an annual listing compiled by the New York-based research firm Castle Connolly Medical Ltd., included 18 faculty of the Department of Surgery of the Emory University School of Medicine. Congratulations to **Tim Buchman, Linda Cendales, Seth Force, Sheryl Gabram, John Galloway, Robert Guyton, T. Roderick Hester, Kirk Kanter, Stuart Knechtle, Chris Larsen, Albert Losken, Daniel Miller, Ken Newell,**



Richard Ricketts, Charles Staley, John Sweeney, Collin Weber, and Mark Wulkan.

In the 2011 edition of Atlanta's Top Doctors, over 1/3 of all the doctors honored in *Atlanta* magazine's list were Emory physicians. In 2012, nearly half of the 315 physicians recognized as Atlanta's best doctors practice at one of Emory's facilities.

Castle Connolly was founded in 1991 by a former medical college board chair and president to guide consumers to America's leading doctors and hospitals. The firm's established survey and research process involves tens of thousands of top doctors and the medical leadership of prominent hospitals.



Dr. John Sweeney appointed Vice Chair for Clinical Affairs

In the position, **Dr. Sweeney** will provide leadership within the Department of Surgery for developing a culture of quality and safety by integrating measures of clinical quality and patient and provider satisfaction, primarily by developing processes that drive clinical outcomes, patient safety, and other quality improvement metrics to the highest levels of performance possible.

Dr. Sweeney has directed the Department's quality improvement program since 2008 and helmed its participation in the University Healthcare Consortium Quality and Accountability Program, American College of Surgeons National Surgical Quality Improvement Program, Surgical Care Improvement Project, and Best Practices for Better Care. Other initiatives have included his investigations of hospital length of stay conducted with GSU economist James Cox.

Departing faculty

Matthew A. Corriere, MD, July 2012

Paul M. Kirshbom, MD, July 2012

Gary A. Vercruysse, MD, June 2012

Emory reception at the ACS Clinical Congress



Emory Department of Surgery alumni, faculty, and trainees are invited to attend a buffet reception hosted by the Department during the 98th Annual Clinical Congress of the American College of Surgeons in Chicago. The reception will be held on Tuesday, October 2, 2012, from 6:00-8:00 p.m. at the Chicago Firehouse Restaurant, 1401 South Michigan Avenue. Please RSVP by September 21, 2012, to surgeryeventsrsvp@emoryhealthcare.org.

Upcoming events

EVENT	DATE/TIME	LOCATION
Surgery Faculty Meeting	5:30-7:00 p.m., July 31, 2012	EUH Auditorium
SURGICAL GRAND ROUNDS Management of Diaphragmatic Paralysis Presented by Harrell Lightfoot, MD <i>–Chief Resident, Department of Surgery, Emory University School of Medicine</i>	7:00-8:00 a.m., August 2, 2012	EUH Auditorium
SURGICAL GRAND ROUNDS Acute Care Surgery: Today and Tomorrow's Directions Presented by A. L. Jackson Slappy, MD <i>– Assistant Professor of Surgery, Division of General and GI Surgery, Department of Surgery, Emory University School of Medicine</i>	7:00-8:00 a.m., August 9, 2012	EUH Auditorium
SURGICAL GRAND ROUNDS Evolving Roles of Artificial Organs and Thoracic Organ Transplantation Presented by Bartley P. Griffith, MD <i>University of Maryland Medical Center:</i> <i>– Professor of Surgery</i> <i>– Thomas E. and Alice Marie Hales Distinguished Professor and Chief, Division of Cardiac Surgery</i> <i>– Director, Heart and Lung Transplantation</i> <i>– Co-Director, UM Comprehensive Heart Center</i>	7:00-8:00 a.m., August 16, 2012	EUH Auditorium
SURGICAL GRAND ROUNDS	7:00-8:00 a.m., August 23, 2012	EUH Auditorium

<p>New Innovations/Resident Evaluations Presented by Barbara J. Pettitt, MD – Associate Professor, Division of Pediatric Surgery, Department of Surgery, Emory University School of Medicine – Chief of Surgery, Children's Healthcare of Atlanta, Hughes Spalding Campus, Grady Memorial Hospital – Director, Medical Student Education, Department of Surgery, Emory University School of Medicine</p>		
<p>Surgery Division Chiefs Meeting</p>	<p>5:30-7:00 p.m., August 28, 2012</p>	<p>Whitehead Room, EUH</p>
<p>SURGICAL GRAND ROUNDS New Concepts in the Treatment and Management of Hemostasis and Bleeding in the Perioperative Period Presented by Jerrold H. Levy, MD – Professor and Deputy Chairman for Research, Department of Anesthesiology, Emory University School of Medicine</p>	<p>7:00-8:00 a.m., August 30, 2012</p>	<p>EUH Auditorium</p>