# FALL 2013

Volume 3, No. 3

**THIS NEWSLETTER IS INTERACTIVE** The table of contents, web addresses, and e-mail addresses in this newsletter are interactive. News from the Roberta and Stephen R. Weiner Department of Surgery at Beth Israel Deaconess Medical Center

# INSIDE SURGERY

The Boston Marathon Bombings: An Extraordinary Response to an Extraordinary Event – Page 8

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# Save the Date

## October 23, 8-9 AM Surgical Grand Rounds

Distinguished Visiting Professor of Endocrine Surgery: Ashok R. Shaha, MD Memorial Sloan-Kettering Cancer Center; Weill-Cornell Medical College "Surgical Management of Recurrent Thyroid Cancer"

## November 6, 8-9 AM Surgical Grand Rounds

Salzman Visiting Professor of Vascular Surgery: Peter F. Lawrence, MD Gonda Vascular Center; David Geffen School of Medicine at the University of

California, Los Angeles

"The Use of Simulation in Training Surgical Residents and Fellows"

## November 20, 8-9 AM Surgical Grand Rounds

Clowes Visiting Professor of Surgical Research: B. Mark Evers, MD

Lucille P. Markey Cancer Center, UK HealthCare; University of Kentucky School of Medicine

"Surgical Research Accomplishments: A Tribute to the Greatest Generation and Training the Next Generation"

#### November 23, 7:30 AM-5 PM IDEAS™ Symposium on Virtual Surgery

Location: Carl J. Shapiro Simulation and Skills Center, 330 Brookline Avenue, Boston, MA.

Registration: To register (\$35 fee includes breakfast and lunch) contact: Daniel Jones, MD, ideas@bidmc.harvard.edu; 617-667-5101

## January 15, 2014, 8-9 AM Surgical Grand Rounds

Distinguished Visiting Professor of Surgery: Mark Puder, MD, PhD Boston Children's Hospital; Harvard Medical School

"Parenteral Nutrition-Induced Cholestasis: The Development of a New Treatment"

All Surgical Grand Rounds will be held in the Joslin Diabetes Center Auditorium, One Joslin Place, Boston, MA. For a listing of all 2013-2014 Surgical Grand Rounds, go to: bidmc.org/surgery.



# Beth Israel Deaconess Medical Center

HARVARD MEDICAL SCHOOL

# FALL 2013

Volume 3, No. 3

*Inside Surgery* is published by the Office of the Chairman of the Roberta and Stephen R. Weiner Department of Surgery at Beth Israel Deaconess Medical Center for faculty, trainees, staff, alumni, affiliates, and friends.

The mission of the Department of Surgery:

- Provide care of the very highest quality
- Improve health through innovation and discovery
- Prepare future leaders in American surgery
- Serve our communities with sensitivity and compassion

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Vice Chairman, Surgery (Communications) Allen Hamdan, MD

Director of Surgery Communications Editor/Writer Hilary Bennett

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## **Principal Photography**

Bruce R. Wahl, BIDMC

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#### bidmc.org/surgery

Cover photo: A temporary tribute to

the victims of the Boston Marathon bombings included runners' shoes.

Photo by Hang Dinh/Shutterstock.com

# MAKINGADIFFERENCE

# **Grateful Family's Gift Benefits Patients and Trainees**

In gratitude for the outstanding care their late father received by the interventional pulmonologists of the BIDMC Chest Disease Center, a Massachusetts family recently made a donation of \$67,000 that enabled the center to purchase a state-of-the-art Nd:YAP laser.



Interventional pulmonologists Adnan Majid, MD (left), and Erik Folch, MD, with the state-of-the-art laser purchased with a donation from a grateful family.

The family, who requested anonymity, were especially appreciative of their father's longtime doctor, Adnan Majid, MD, Director of Interventional Pulmonology, for his "outstanding" and attentive care of their father, who for many years was treated at BIDMC for tracheobronchomalacia and other complex airway problems.

"Our father received such wonderful care from Dr. Majid and others at BIDMC. We wanted to show our gratitude by making a donation that would help them provide the best possible care to others," said a family member.

The new laser, which is now in use by Majid and his colleague, interventional pulmonologist **Erik Folch**, **MD**, is used to endoscopically (minimally invasively) treat both benign and malignant (cancerous) airway obstructions, as well as bleeding from the airways. Often replacing procedures such as cryotherapy and electrocautery, the Nd:YAP laser is less invasive, faster, and more precise, which results in better outcomes and avoidance of the risks of general anesthesia.

"We are very grateful to this gentleman's family, whose selfless motivation was to help other patients, like their father, who suffer from serious airway conditions," said Majid. "This technology will enable us to not only provide better care for patients, but also to train our fellows in the use of state-of-the-art technologies."

# 'Project Purple' Gift Supports Pancreatic Cancer Research

In June, members and supporters of the nonprofit organization "Project Purple" traveled to BIDMC to present a generous check to surgical oncologist **A. James Moser, MD**, Executive Director of the Institute for Hepatobiliary and Pancreatic Surgery, to support his ongoing pancreatic cancer research.

Project Purple was launched in 2010 by Connecticut resident Dino Verrelli, founder and CEO of Apple Gate Brokerage, following his late father's diagnosis of pancreatic cancer. By mobilizing volunteer runners, the organization raises awareness of and funds for research toward a cure for pancreatic cancer.

For information about how you can support patient care, research, and education in the Department of Surgery, please contact Michele Urbancic, Department of Surgery Development Director, at <u>murbanci@bidmc.harvard.edu</u> or 617-632-8388.



Presenting a check for \$35,000 to A. James Moser, MD (second from left), were (from left) Project Purple supporter Susan Hurley, founder Dino Verrelli, and Connecticut surgical oncologist Bret Schipper, MD.

# **NEWSBRIEFS**



Mark Callery, MD, Chief of General Surgery (second from right), was selected as the recipient of this year's S. Robert Stone Award for Excellence in Teaching. The award is presented annually to a member of the BIDMC faculty for outstanding achievement in the teaching of medical students. Nominations are sought from BIDMC and Harvard Medical School (HMS) faculty, housestaff, and students. Joining Callery were (from left), A.W. Karchmer, MD, of BIDMC's Department of Medicine, recipient of the Senior Stone Award for Lifetime Dedication to Teaching; Richard Schwartzstein, MD, Vice President for Education; and Jules Dienstag, MD, Dean for Medical Education at HMS. Callery was also recently named Treasurer of the Society for Surgery of the Alimentary Tract (SSAT). In this new role, Callery serves on the Executive Committee of SSAT leadership and the boards of both the SSAT and the SSAT Foundation.



Terry B. Strom, MD, Co-Director of the Transplant Institute, was chosen as the next recipient of the

Thomas E. Starzl Prize in Surgery and Immunology. The annual award, presented by the University of Pittsburgh and named after transplantation icon Thomas E. Starzl, MD, PhD, honors outstanding national and international leaders who have made significant contributions to the field of organ transplantation and immunology. Among those who have received this prestigious award are two Nobel Laureates. The award ceremony will take place next spring.





Faculty member Christiane Ferran, MD, PhD, was awarded a grant from the Iacocca Family Foundation for a project being conducted by resident Alessandra Mele, MD. The project

involves a novel strategy for beta (insulin-producing) cell replacement in Type 1 diabetes using the gene A20.



Michael Wertheimer, MD, Director of the BreastCare Center, was invited for the fourth consecutive

year to present a lecture on the provider-patient relationship at the 2013 China Senior Health Executive Education Program at the Harvard School of Public Health (HSPH) in June. A collaboration of the Ministry of Health of China/ HSPH China Initiative, the program is attended by senior health care leaders from China's central government and provincial health departments.



**Carl J. Hauser, MD,** was appointed Medical Director of Trauma Services at Beth Israel Deaconess

Medical Center. BIDMC's Level I Trauma Center admitted 1,700 trauma patients during the past year.



Sidhu Gangadharan, MD, Chief of Thoracic Surgery and Interventional Pulmonology, was

recently elected to the prestigious American Association for Thoracic Surgery (AATS). Members are surgeons who have a proven record of distinction within the international cardiothoracic surgical field and have made meritorious contributions to the profession.



Raul Guzman, MD, Vascular and Endovascular Surgery, was elected a Distinguished Fellow

of the Society for Vascular Surgery (<u>SVS</u>) at the society's annual meeting in San Francisco in May. This honor is bestowed on SVS members who are vascular surgeons and have distinguished themselves in a sustained manner by making substantial contributions in two of three categories: research, service, or education. Guzman also gave an invited presentation at the meeting.



Postdoctoral fellow Herwig Moll, PhD, received the prestigious Erwin Schroedinger fellowship from the

Austrian Science Fund to conduct two years of research in the laboratory of **Christiane Ferran**, **MD**, **PhD**, with a return phase of one year in the laboratory of the group's collaborator, Veronika Sexl, MD, at the Austrian Research Institute, University of Veterinary Medicine in Vienna. Moll's project involves the study of A20 as a novel regulator of interferon-mediated transplant arteriosclerosis and vascular remodeling.

The Division of Thoracic Surgery and Interventional Pulmonology offered its annual Introduction to Bronchoscopy and Pulmonology Procedures Course in July. Led by Adnan Majid, MD, and Erik Folch, MD, with an invited international faculty, the full-day course featured lectures and hands-on training in the Carl J. Shapiro Simulation and Skills Center.

Residents Christopher Barrett, MD, Kiran Lagisetty, MD, and Noelle Saillant, MD, each received an "Outstanding Resident Teaching Award" in June. The awardees were chosen by 2012-2013 third-year Harvard Medical School students following the students' clinical rotations during their Principal Clinical Experience at BIDMC. Saillant graduated in June.



Resident **Prathima Nandivada**, **MD**, was one of 11 selected to make an oral presentation at the

Dr. M. Judah Folkman Research Day at Boston Children's Hospital (BCH) in May. Her abstract was one of 100 submitted from basic science and clinical research residents, fellows, and instructors throughout BCH. Nandivada is doing her research elective in the laboratory of pediatric surgeonscientist Mark Puder, MD, PhD, an alumnus of the BIDMC General Surgery Residency Program.



In May, resident Mariam Eskander, MD, was selected to present her abstract, "Impact of Insurance

Type on Pancreatic Cancer Outcomes: A Decade-Long Review," at the 20th Annual <u>New</u> <u>England Surgical Society</u>'s Surgical Resident and Fellow Research Presentation Day in Providence, RI. The co-authors are: Zeling Chau, Sing Chau Ng, **Tara Kent**, **MD**, and Jennifer Tseng, **MD**, **MPH**.

Two residents — Thomas Curran, MD, and Prathima Nandivada, MD — were each honored as the lead authors of the most outstanding posters during BIDMC's Resident Research Day in June. Six posters from among 35 were selected for this honor.

This year, BIDMC was one of ten medical centers in the U.S. and the only hospital in Massachusetts selected to pilot a Resident Chapter of the <u>Gold Humanism Honor</u> <u>Society</u>. The society's mission is to elevate the values of humanism and professionalism in the field of medicine and ensure the survival of "the caring physician." Among the 23 BIDMC residents inducted into the new chapter was surgical



resident **Courtney Barrows, MD**, who was nominated by her peers.

Continued on page 6 >

# **NEWSBRIEFS**

## < <u>Continued from page 5</u>

In May, the department hosted a group of 11 students from Massachusetts Institute of Technology (MIT) for the first "Introduction to Surgery Day." Organized by Allen Hamdan, MD, with the assistance of Administrative Coordinator Bonnie Gallivan, the program gave MIT undergraduates an inside look at various aspects of a career in surgery. In addition to Hamdan, many other faculty members and trainees participated in a day that included presentations, simulation training, and operating room visits: Christopher Barrett, MD, Sarah Carlson, MD, Victor Chien, MD, Tommy Curran, MD, Harvard Medical School student Chantal Dufreny, Michael Kent, MD, Hau Le, MD, Andy Lee, MD, Ali Linsk, MD, Frank LoGerfo, MD, Prathima Nandivada, MD, John Tillou, MD, Joshua Weiss, MD,

and Richard Whyte, MD, MBA. General Surgery alumni David Odell, MD, and Michael Robich, MD, were recently elected to leadership roles in the Thoracic Surgery Residents Association. Odell, currently at the University of Pittsburgh, was elected President; Robich, now at the Cleveland Clinic, was elected to serve on the Executive Committee.

The second annual Harvard Medical School (HMS) Surgery Research Day, a collaboration among the Departments of Surgery of four HMS teaching hospitals, was held May 11 at HMS. The daylong event featured approximately 150 posters and 16 oral presentations highlighting the basic and clinical research of the hospitals' surgical trainees, including residents, clinical fellows, medical or graduate students, and postdoctoral fellows.



Resident Nassrene Elmadhun, MD (right), presented a poster at HMS Surgery Research Day.

Of the 16 trainees selected to present oral abstracts, five were from BIDMC: Rachel Beard, MD, Cleide da Silva, PhD, and Mailin Li, in basic research; and Farer Nigim, MD, and Onkar Khullar, MD, in clinical research.

The BIDMC-MGH Interventional Pulmonary Fellowship Program received a \$20,000 grant from Boston Scientific. The funds will provide salary support for a fellow in the program, which is led by Adnan Majid, MD.

# **Course for Cardiac Surgery Emergencies**

Fortunately, it is rare for a patient to suffer a cardiac arrest in the Cardiovascular Intensive Care Unit (CVICU) following open cardiac surgery. But in about one in 100 patients, it does occur.

When clinical staff are properly trained in evidencebased approaches to resuscitate patients who arrest in the CVICU — including, in some circumstances, re-opening the chest (re-sternotomy) — patients' outcomes are significantly better.

Recently, approximately 40 CVICU staff, including critical care nurses, nurse practitioners, physician assistants, and physicians, participated in a daylong Cardiac Surgery Advanced Life Support course at BIDMC designed to give them the knowledge and skills to deal with cardiac surgery emergencies.

The course included didactic sessions and handson simulation training with special re-sternotomy mannequins in BIDMC's Carl J. Shapiro Simulation and Skills Center. BIDMC is the first Boston hospital to offer the course, which was developed in Europe and is available at only a handful of medical centers in the United States.

The faculty included four of the course creators (Joel Dunning, MD, Adrian Levine, MD, Jill



Alison Engelman, NP, participated in the Cardiac Surgery Advanced Life Support course.

Ley, RN, and Tara Bartley, NP) and BIDMC staff: Mark Courtney, NP, Michelle Doherty, RN, Angela Hindery, RN, Carol Kilday, RN, and Jamie Weinstock, RN. Chief of Cardiac Surgery Kamal Khabbaz, MD, and cardiac surgeon David Liu, MD, also participated in teaching the course. The program coordinators were Margie Serrano, RN, Barbara Regan, RN, and John Whitlock, RN.

# **Congratulations to 2013 Graduates**

raduating chief residents and fellows were celebrated at a dinner at the Boston Harbor Hotel at Rowes JWharf on Sunday, June 23.

More than 230 guests attended the black-tie affair, which featured cocktails and hors d'oeuvres served on a pier overlooking the picturesque Boston Harbor and a sumptuous dinner. With family and friends at their sides, graduates received their diplomas and were praised — and lightheartedly roasted — by faculty.

Elliot Chaikof, MD, PhD, department Chairman, and Tara Kent, MD, Program Director of the General Surgery Residency Program, offered well wishes to the graduates during the opening remarks. "Graduation is a very special time when dreams have been reached and journeys are about to begin," said Chaikof. He reminded graduates to be "courageous, passionate, and never quit," as they continue on in their careers.

Congratulations to the following graduates:

## **GENERAL SURGERY**

**Antoine Lyonel Carre, MD, MPH** Fellow, Plastic and Reconstructive Surgery University of Southern California

Nhue Do, MD Fellow, Cardiothoracic Surgery Johns Hopkins University, Maryland

# Frankie Fike, MD

Fellow, Pediatric Surgery Long Island Jewish North Shore Hospital-Cohen Children's Medical Center Hofstra University, New York

Albert Hsu, MD Fellow, Trauma/Surgical Critical Care University of Miami, Florida

**Zhen S. Huang, MD** Fellow, Vascular Surgery Columbia University/Cornell University

**Onkar Khullar, MD** Fellow, Thoracic Surgery Emory University, Georgia

Hau D. Le, MD Fellow, Pediatric General Surgery The Hospital for Sick Children, University of Toronto, Canada

**Noelle Saillant, MD** Fellow, Trauma/Surgical Critical Care University of Pennsylvania

**Steven Tizio, MD** Fellow, Colorectal Surgery Methodist Healthcare System, Texas



Department Chairman Elliot Chaikof, MD, PhD (far left), and General Surgery Residency Program Director Tara Kent, MD (far right), with graduating Chief Residents (left to right): Zhen S. Huang, MD, Frankie Fike, MD, Antoine Lyonel Carre, MD, MPH, Nhue Do, MD, Hau Le, MD, Albert Hsu, MD, Steven Tizio, MD, Onkar Khullar, MD, and Noelle Saillant, MD.

#### **CHIEF RESIDENTS IN PODIATRY**

Patricia Kim, DPM Private Practice New England Foot & Ankle, Massachusetts

**Brant McCartan, DPM** Private Practice Milwaukee Foot Specialists, Wisconsin

## **FELLOWS**

Aesthetic Plastic Surgery

Hani Sinno, MD McGill University, Canada

Aesthetic and Reconstructive Breast Surgery

Azra Ashraf, MD, MPH Private Group Practice, New Jersey

#### Cardiothoracic Surgery

**Ian Makey, MD** Assistant Professor University of Texas San Antonio

Hand and Microvascular Surgery

**Benjamin Powell Christian, MD** Private Practice, Maryland

#### Minimally Invasive Surgery

Souheil Adra, MD Private Practice Bristol Hospital Multispecialty Group, Connecticut

Jaisa Olasky, MD Clinical Instructor Harvard Medical School, Boston

#### Vascular Surgery

Michelle Martin, MD Instructor in Surgery Harvard Medical School, Boston

# An Extraordinary Response to an Extraordinary Event BIDMC was Well-Prepared to Care for Victims of Marathon Bombings

In the early afternoon of Patriots Day 2013 — a Massachusetts holiday and the day of the famed Boston Marathon — several members of the Department of Surgery were enjoying some well-deserved time off.

Trauma surgeon Alok Gupta, MD, was relaxing at his Back Bay home. Trauma surgeon Michael Yaffe, MD, PhD, was working out at the gym. Plastic and reconstructive surgeon Peter Kim, MD, was driving back to Boston after visiting family in New Jersey. Surgical resident Stephen Gondek, MD, was heading toward the finish line to watch the runners.

Erika Brannock, a 29-year-old preschool teacher from Maryland, was also enjoying Marathon Monday. She was at the finish line with her sister and brother-in-law, cheering on her mother, who was running the race.

If all had gone as it should have on Monday, April 15, Brannock would have celebrated with her family and soon headed home to Maryland. The surgeons would have gone about their days. They would have remained strangers.

But at 2:50 PM, two powerful bombs exploded

with devastating force at the finish line. Within seconds, the lives of Brannock and other seriously injured spectators and runners became inextricably linked with these and many other BIDMC doctors and the care providers they work with.

Of the 265 people injured as a result of the bombings, 127 were taken within several hours to six Boston hospitals with Level-1 Trauma Centers, including BIDMC, which received 24 patients at its Emergency Department (ED). Fourteen of those patients, including Brannock, required surgery some immediately; others were triaged to a surgical or trauma intensive care unit or other unit.

Of the 17 patients who were seriously hurt, many had open, bleeding wounds peppered with shrapnel, dirt, and shards of fractured bone. Several, including Brannock, had lost part of a leg. Some had serious eye injuries, and most suffered hearing loss. All were traumatized.

Despite the large number of patients arriving within minutes of one another, BIDMC was fully up to the task of caring for them in both the short and long



term, according to trauma surgeon Gupta. He rushed to the hospital after receiving a message about a mass casualty from fellow trauma surgeon **Carl Hauser, MD**, who was on duty that day.

# A smooth, orderly system

When Gupta arrived at the ED, he assumed the role of "incident commander" and Hauser the role of "surgical triage," thus quickly establishing a smooth, orderly system based on lessons learned from previous city-wide and BIDMC simulated disaster-preparedness drills.

"We knew from experience and training what to do to take excellent care of these patients in a calm, orderly fashion," said Gupta, whose experience includes caring for victims of the 9/11 attacks and 2010 earthquake in Haiti. This was aided by the selfless response of faculty, trainees, and staff, many of whom remained at the hospital after their shifts or rushed in, unasked, to help. It also helped that patients were about equally distributed among the hospitals, thereby not overwhelming any one facility.

That is not to say the hours and early days following the bombings were not challenging. Among the immediate tasks were to determine how to manage existing ED patients to increase capacity for the bombing victims; establish a Command Center to communicate internally and with the city and state's command posts; assign and coordinate the roles of faculty, trainees, staff, and equipment; ensure the availability of sufficient operating rooms (ORs) and OR staff; and evaluate and transport the most seriously injured patients to ORs or ICUs as quickly as possible.

These and other related tasks were well within the expertise of surgeons and staff who routinely care for victims of trauma and are well-trained in disaster preparedness. But the sheer volume of critically injured patients whose conditions changed rapidly — coupled with the uncertainty about additional bombings, the increasing glare from the media spotlight, and the destructive nature of blast injuries — made the circumstances extraordinary. "It's rare to care for so many victims of a malicious event and with the world looking on, so this was an exceptional time for any doctor," said ophthalmologist Jorge Arroyo, MD.

Despite this, everyone involved in caring for the victims and their families came together and



Colorful, heartfelt get-well cards made by children from around the country adorned hallways, cheering up patients, families, and staff alike.

"functioned like a well-oiled machine," said trauma surgeon Yaffe, adding that the strong support and resources provided by the Department of Surgery and BIDMC administration were essential to allowing care providers to do their jobs well. "Our faculty, trainees, and staff responded superbly," said Surgery Chairman Elliot Chaikof, MD, PhD.

#### Mass Casualty Service created

The morning after the bombings, it was evident that the admitted patients, many of whom had suffered similar injuries, shared many physical and emotional needs in common. To address those needs in a wellcoordinated manner, a special Mass Casualty Service (MCS) was quickly established.

The MCS included a multidisciplinary team of surgeons and residents from Acute Care Surgery, Plastic and Reconstructive Surgery, Vascular Surgery, and Orthopedics, as well as chaplains and staff from social work, physical therapy, occupational therapy, and psychiatry.

Every morning, the team would visit each patient to evaluate his or her condition and, based on their evaluations, collaboratively determine next steps. In addition to their vital roles on the day of the bombings, surgical residents Gondek and **Noelle Saillant**, **MD**, provided essential administrative support for the MCS by organizing and mobilizing the surgical residents.

"Patients' situations changed quickly and usually required the involvement of doctors from a wide range

# < <u>Continued from page 9</u>

of specialties, so having a multidisciplinary service rounding daily allowed for better communication, rapid decision-making, and properly timed operations to achieve the best possible outcomes," said plastic and reconstructive surgeon Kim. A specialist in hand/ extremity surgery, Kim operated on most patients who underwent surgery, including Brannock.

"My care was extremely well-coordinated," confirmed Brannock, who, like many patients, underwent multiple operations over the course of her lengthy hospitalization. "It was clear all my doctors communicated with each other, and I always knew exactly what was going on, which was very important to me."

As issues arose, the MCS added members. When, for example, it became obvious that patients' hearing was affected by the blasts, neurotologist **Selena Heman-Ackah, MD, MBA**, joined the team to treat perforated eardrums. Infectious diseases specialists were included to address concerns about infections.

## **Multidisciplinary Clinic established**

As patients were being discharged from the hospital, once again it became evident that many shared similar needs for follow-up care.

In short order, a special multidisciplinary Mass Casualty Clinic — an extension of the MCS and coordinated by Lauren DeLorie, RN — was established on the medical center's East campus, adjacent to radiology facilities. There patients could have X-rays and be seen in one location by all the specialists and other health-care professionals involved in their care — from surgical and infectious disease specialists to wound care nurses and social workers — rather than having to deal with arranging and making repeated visits to different locations over multiple days.

Whether it was in the ED, ORs, patient units, or clinic and with the world looking on, the entire Department of Surgery — indeed, the entire medical center — focused in the hours and days following the bombings on what truly mattered: delivering the best possible care to victims of this terrible event and their families.



Staff gave a fond farewell to Erika Brannock, the last patient to leave a Boston acute-care hospital. The Maryland resident still stays in touch with some of her care providers, including many of her nurses, who befriended Brannock and, she says, have helped her in countless ways.



Among those who visited bombing victims at BIDMC was actor Kevin Spacey, here with trauma surgeon Alok Gupta, MD. Spacey visited patients in the Emergency Department and on many patient floors, providing a welcome diversion for patients, families, and staff.

"This was a situation where talented, well-trained people worked effectively and efficiently together for a common purpose," said Chief of Otolaryngology **Robert Frankenthaler, MD.** "While the circumstances were extraordinary, this was really an extension of what we do every day." Ophthalmologist Arroyo — echoing the sentiments of so many in the department and the medical center — said of the response to the Marathon bombings, "I was never more proud to be at BIDMC."

Brannock — the last bombing victim to leave a Boston acute-care hospital — is now back in Maryland. She is focused on continuing to heal, learning to use a prosthetic limb and, most importantly, moving on with her life — teaching preschoolers, enjoying her family and friends, and finishing graduate school.

She is extremely grateful for the care she received at BIDMC and especially for the friendships she forged with the surgeons and nurses, therapists, and many others she encountered during her seven-week hospitalization.

"I could not have gone through this without them," said Brannock in a recent phone interview, her voice catching with emotion. "When something didn't go well for me, my doctors and nurses would sometimes get tears in their eyes. I know I received the best possible care in the world. But I also know they really, truly cared about me."

# **Editor's Note:**

In addition to those cited in this article, we would also like to acknowledge the many other Department of Surgery members who played key roles in the care of the Marathon bombing patients:

#### Acute Care Surgery/Trauma Service

Paul Appleton, MD (Orthopedic Surgery) Katie Butler, MD Michael Cahalane, MD Stephen Odom, MD Edward Rodriguez, MD, PhD (Orthopedic Surgery) Darlene Sweet, BSN, RN

**General Surgery** Tara Kent, MD

**Ophthalmology** Frank Berson, MD Mark Kuperwaser, MD

#### Plastic and Reconstructive Surgery

Bernard Lee, MD Samuel Lin, MD Maj. Edward ("Chip") Malin, MD Adam Tobias, MD

Thoracic Surgery Michael Kent, MD Richard Whyte, MD, MBA

# Transplantation

Amy Evenson, MD Kristen Raven, MD

Vascular and Endovascular Surgery David Campbell, MD Raul Guzman, MD Mark Wyers, MD

**Operating Room Staff** Dorothy Sarno, RN, MSN

Surgery Administration Elliot Chaikof, MD, PhD Christine Lynch Debra Rogers

## Residents

Rodney Bensley, MD Sayuri Jinadasa, MD Jennifer Zhang, MD

Many other members of the Department of Surgery participated directly or indirectly in the care of the victims of the Marathon bombings. For those whose names are not listed on these pages due to space constraints, their efforts and contributions are no less important or appreciated.



# Harvard Medical School Faculty Promotions

Congratulations to the following faculty members on their well-deserved promotions at Harvard Medical School.

## PROMOTED TO: ASSOCIATE PROFESSOR OF SURGERY



# Kamal R. Khabbaz, MD

Area of Excellence: Clinical expertise and innovation, with significant supporting activities in administration, institutional service, and investigation

Kamal R. Khabbaz, MD, is Chief of Cardiac Surgery and Director of the

Cardiothoracic Surgery Residency Program. Khabbaz specializes in complex cardiac surgery, including thoracic aortic surgery, reoperative surgery in the elderly, and minimally invasive valve surgery. Among his clinical innovations are the early development of a ventricular assist device program at his previous institution, which he introduced to BIDMC. Khabbaz is co-principal investigator of the CoreValve U.S. Pivotal Trial, which has influenced cardiac surgical practice nationwide. He is also the site principal investigator of a National Institutes of Health RO1 grant studying mitral valve repairs, and co-investigator of a second RO1 grant. Khabbaz was recently recognized as a "Promising Young Chief" by the American Association for Thoracic Surgery Leadership Academy.

## PROMOTED TO: ASSISTANT PROFESSOR OF SURGERY



## Leena Pradhan-Nabzdyk, PhD

Area of Excellence: Investigation in vascular surgery, with significant supporting activities in administration and institutional service

Leena Pradhan-Nabzdyk, PhD, an investigator in the Division of Vascular and Endovascular Surgery, conducts

research focusing on the role of neuropeptides in diabetic wound healing and cardiac dysfunction, and on defining the role of neuropeptide dysfunction as a common mechanism for these complications of diabetes. She is the co-principal investigator of a National Institutes of Health (NIH) R01 grant focused on diabetic wound healing and co-investigator of numerous other grants. Pradhan-Nabzdyk coordinates and is a mentor for the NIH-funded T32 Harvard Longwood Research Training Program in Vascular Surgery and is Co-Director of the complementary NIH T35 training program for medical students.

## PROMOTED TO: ASSOCIATE PROFESSOR OF SURGERY



**Bernard T. Lee, MD, MBA** *Area of Excellence:* Clinical expertise and innovation in plastic and reconstructive surgery, with significant supporting activity in investigation

Bernard T. Lee, MD, MBA, is Acting Chief of Plastic and Reconstructive

Surgery. He specializes in breast reconstruction after mastectomy, particularly the microsurgical technique called the deep inferior epigastric perforator (DIEP) flap. The BIDMC program is the first and largest DIEP flap program in New England. Lee's clinical research focuses on outcomes after breast reconstruction, and patient satisfaction. He was recently awarded a multiprincipal investigator R01 grant examining near-infrared imaging of perfusion in face transplantation models. Lee has over 95 peer-reviewed publications, is an editor of a three-volume textbook on reconstructive surgery, and is Editor-in-Chief of the Journal of Reconstructive Microsurgery. He was awarded the Young Mentor Award by Harvard Medical School in 2012, and the Resident Teaching Award by the Harvard Plastic Surgery Residency Training Program in 2013.

## PROMOTED TO: ASSISTANT PROFESSOR OF SURGERY



Michael Kent, MD Area of Excellence: Clinical expertise and innovation in thoracic surgery

Michael Kent, MD, is Director of Minimally Invasive Thoracic Surgery in the Division of Thoracic Surgery and Interventional Pulmonology, Kent led the

development of the minimally invasive thoracic surgery program at BIDMC and has been instrumental in growing the division's robotics program. Kent's research focuses primarily on outcomes and improving the quality of care in thoracic surgery. He developed a commercially available soft-tissue retractor for minimally invasive surgery, and is developing an iPad application to improve patients' understanding of their condition and treatment. He is the former recipient of the Department of Surgery's John L. Rowbotham Award for Excellence in Teaching.

#### HOME $\ll$ >

# **ALUMNI SPOTLIGHT**

# Thomas F. O'Donnell Jr., MD

hen Tom O'Donnell was 15, he suffered a fractured femur while playing football, an vent that shaped the course of his entire life. His doctor was renowned Boston-area orthopedic surgeon Joseph Dorgan, MD, who also treated many members of the then — Boston Patriots. Impressed by Dorgan's confidence, skills, and role, O'Donnell decided that he, too, wanted to become a surgeon.

Decades later, Dorgan sought out his former patient — now himself a renowned surgeon — when he needed treatment for a vascular condition (an experience Dorgan once recounted in a magazine article). "It was a privilege to treat this man who had been my role model," says O'Donnell, Benjamin Andrews Chair of Surgery Emeritus at Tufts University School of Medicine and Director of the Vein Center at Tufts Medical Center in Boston.

After graduating from Harvard College, O'Donnell attended Tufts University School of Medicine, from which he graduated *cum laude*. Eager to train under the legendary William V. McDermott Jr., MD, who lived in his hometown of Dedham, O'Donnell was thrilled to be accepted to the Fifth (Harvard) Surgical Service, the general surgery residency program led by McDermott that was then based at Boston City Hospital. (In 1973, when O'Donnell was in his final chief year, McDermott relocated the Harvard Surgical Service, which was established nearly 150 years ago, to New England Deaconess Hospital.)

## Most important contributions

It was during O'Donnell's residency — which included a year in the Navy at the Beaufort Naval Hospital in South Carolina and a postgraduate year as a senior registrar at St. Thomas' Hospital in London — that O'Donnell achieved what he still considers two of his most important contributions.

The first was his self-initiated research on heatstress injuries among young Marines at Parris Island during training exercises, which led to Marine Corps policy changes that "impacted a lot of young men preparing for Vietnam and hopefully saved lives," says O'Donnell. This research was published in 1972 in the *New England Journal of Medicine*, co-authored by another of O'Donnell's residency mentors, George H.A. Clowes Jr., MD. The second was the research he carried out with Clowes and **George Blackburn**, **MD**, **PhD**, on the effects of sepsis on metabolism.

This work resulted in several influential publications, including one that earned O'Donnell the Association for Academic Surgery Resident Research Prize.

"Unquestionably the residency program, with its incredible mentors and combination of clinical experiences and research, jump-started my career in academic surgery," says O'Donnell. He adds that his decision to specialize in vascular surgery, and in particular venous disease, was also influenced by his mentors on "Five Surg" and during his stint as a senior registrar in London.

## A lasting mark

Following a clinical fellowship in vascular surgery at Massachusetts General Hospital, 37 years ago O'Donnell was recruited to Tufts-New England Medical Center (now Tufts Medical Center), where he has remained ever since. At Tufts, he has served in a wide range of senior leadership positions, including Chairman of the Department of Surgery and, from 1996 to 2004, Chief Executive Officer and President.

During all these years and whatever his role, O'Donnell has continued to make a lasting mark in all domains of academic surgery. For example, he developed several innovative treatments that have improved the outcomes for patients with venous disease; has authored more than 160 peer-reviewed papers and 62 book chapters; and has trained a long list of vascular fellows, many of whom hold leadership positions in academic surgery.

O'Donnell also remains active in national and regional professional societies, including the Society for Vascular Surgery, the American Venous Forum, and the New England Society for Vascular Surgery, all of which he once served as president.

As he ponders the next phase of his long, illustrious career, O'Donnell plans to devote more time to clinical research and, he readily admits, his other passions: playing golf and spending time with his six grandchildren.



# **New Faculty**



# Thomas E. Cataldo, MD

**Division:** Colon and Rectal Surgery **Medical School:** University of Massachusetts Medical School, Worcester, MA

Residency: University of Massachusetts Medical School, Worcester, MA

Fellowship: Colon and Rectal Surgery; Alton Ochsner Medical Foundation, New Orleans, LA

Clinical Interests: minimally invasive surgical techniques to treat colorectal conditions; diverticulitis; cancer of the colon, rectum, and anus; Crohn's disease; fecal incontinence; sacral nerve stimulation; functional disorders of defecation; anal fistulas; hemorrhoids

Research Interests: stoma complications, late effects of radiation on the rectum, outcomes in colorectal surgery

Phone: 617-667-4159



# Chantel N. Hile, MD

**Division:** Vascular and Endovascular Surgery

Medical School: University of Minnesota Medical School, Minneapolis, MN

**Residency:** General Surgery; Beth Israel Deaconess Medical Center, Boston, MA

Fellowship: Vascular and Endovascular Surgery; Beth Israel Deaconess Medical Center, Boston, MA

Clinical Interests: vascular and endovascular surgery, critical limb ischemia and claudication, dialysis access, venous insufficiency, carotid disease and stroke prevention, aortic aneurysms

**Research Interests:** lower extremity revascularization, lower extremity amputation, popliteal artery aneurysms, macrovascular disease

Phone: 617-632-9959



# Kari Kansal, MD

**Division:** Surgical Oncology **Medical School:** University of Minnesota Medical School, Minneapolis

Residency: General Surgery; University of California, San Diego, CA

Fellowship: Breast Surgery; Dana-Farber Cancer Institute, Massachusetts General Hospital/Brigham and Women's Hospital, Boston, MA; Minimally Invasive Surgery Research; University of California, San Diego, CA Clinical Interests: breast disease, breast surgery, surgical oncology, nipple-sparing mastectomy

**Research Interests:** surgical complications of mastectomy, optimizing breast screening techniques in various patient populations

Phone: 617-667-3787



# Michelle C. Martin, MD

Division: Vascular and Endovascular Surgery Medical School: University of Massachusetts Medical School, Worcester, MA

Residency: General Surgery; Beth Israel Deaconess Medical Center, Boston

Fellowship: Vascular and Endovascular Surgery; Beth Israel Deaconess Medical Center, Boston, MA; Vascular Surgery Research, Beth Israel Deaconess Medical Center, Boston, MA

Clinical Interests: endovascular and open treatment of peripheral arterial disease and carotid disease, visceral arterial ischemia, venous thrombosis, venous insufficiency, aortic dissection treatment, advanced techniques in endovascular aortic surgery, hybrid surgical techniques

**Research Interests:** clinical outcomes in vascular surgery **Phone:** 617-632-9959



# Kevin L. Riemer, DPM

Division: Podiatry

Medical School: Dr. William M. Scholl College of Podiatric Medicine, North Chicago, IL

Residency: Podiatry; Beth Israel Deaconess Medical Center, Boston, MA

Fellowship: Podiatric Reconstruction and Research Fellowship; Beth Israel Deaconess Medical Center, Boston, MA

Clinical Interests: diabetic limb salvage, Charcot foot reconstruction, sports medicine, chronic wounds, repetitive stress injuries such as plantar fasciitis

**Research Interests:** global amputation-prevention program development, complex wound healing

Phone: 617-632-8428

# White Coats and Awards

At the much-anticipated White Coat Ceremony in June, the Department of Surgery educational awards were announced and the incoming chief residents received their new white coats from the graduating chief residents. During the event, a special tribute was paid to Mount Auburn Hospital surgeon John Schuler, MD, who recently retired.

#### **ABSITE\* AWARDS**

Highest Junior-Level Resident on the 2013 ABSITE Christopher Barrett, MD

Highest Senior-Level Resident on the 2013 ABSITE Scott Atay, MD

# Residents scoring above the 90th

percentile on the 2013 ABSITE Scott Atay, MD, Christopher Barrett, MD, Prathima Nandivada, MD, Nakul Raykar, MD, John Tillou, MD

# **RESIDENT TEACHER AWARD**

**A. Lyonel Carre, MD, MPH** Voted by residents as the senior resident who best exemplifies teaching to other residents.

#### ISAAC O. MEHREZ, MD, AWARD Scott Atay, MD

To the third-year resident selected by Mount Auburn Hospital surgeons for "Dedication to the highest quality care, honesty, willingness to learn, and a sense of humor."



To the faculty member with the highest-rated teaching evaluations from third-year HMS students in the Core Surgery Clerkship.

#### HAROLD BENGLOFF AWARD Tara S. Kent, MD

Voted by residents as the faculty member who best exemplifies humanism in teaching.

# JOHN L. ROWBOTHAM AWARD

Stephen R. Odom, MD

Voted by residents as the faculty member who best exemplifies excellence in teaching.



Stephen Odom, MD, Acute Care Surgery (right), accepts the John L. Rowbotham Award from graduating chief administrative residents Onkar Khullar, MD, and Noelle Saillant, MD.



The 2013-2014 Chief Residents, with General Surgery Residency Program Director Tara Kent, MD (far left), and department Chairman Elliot Chaikof, MD, PhD (far right), are (from left): Louis Chu, MD, Rodney Bensley, MD, Yuen-Jong Liu, MD, Stephen Gondek, MD, Kiran Lagisetty, MD, Jana Simonds, MD, Elizabeth Mindorff-Turner, MD, Clayton Peterson, MD, and Martin Dib, MD.

# Mount Desert Island Biological Laboratory

Also announced at the awards ceremony were the four second-year residents selected to attend a weeklong course in comparative physiology at Mount Desert Island Biological Laboratory on the Maine coast in August. Now in its third year, this opportunity was made possible by donor Ted Boylan. The top four ABSITE scorers are invited to participate.

Christopher Barrett, MD Courtney Barrows, MD Anita Mamtani, MD John Tillou, MD

Mount Auburn Hospital Chairman of

the Isaac O. Mehrez, MD, Award to

Surgery Russell Nauta, MD (left), presents

\*American Board of Surgery In-Service Training Exam

resident Scott Atay, MD.

# Selected Faculty Publications

# **Acute Care Surgery**

Davidson BA, Vethanayagam RR, Grimm MJ, Mullan BA, Raghavendran K, Blackwell TS, Freeman ML, Ayyasamy V, Singh KK, Sporn MB, **Itagaki K, Hauser CJ**, Knight PR, Segal BH. NADPH oxidase and Nrf2 regulate gastric aspiration-induced inflammation and acute lung injury. J Immunol 2013; 190(4):1714-24.

Sun S, Sursal T, Adibnia Y, Zhao C, Zheng Y, Li H, **Otterbein LE, Hauser CJ, Itagaki K.** Mitochondrial DAMPs increase endothelial permeability through neutrophil dependent and independent pathways. PLoS One 2013;8(3):e59989.

Sursal T, Stearns-Kurosawa DJ, Itagaki K, Oh SY, Sun S, Kurosawa S, **Hauser CJ.** Plasma bacterial and mitochondrial DNA distinguish bacterial sepsis from sterile systemic inflammatory response syndrome and quantify inflammatory tissue injury in nonhuman primates. Shock 2013;39 (1):55-62.

Floyd SR, Pacold ME, Huang Q, Clarke SM, Lam FC, Cannell IG, Bryson BD, Rameseder J, Lee MJ, Blake EJ, Fydrych A, Ho R, Greenberger BA, Chen GC, Maffa A, Del Rosario AM, Root DE, Carpenter AE, Hahn WC, Sabatini DM, Chen CC, White FM, Bradner JE, **Yaffe MB.** The bromodomain protein Brd4 insulates chromatin from DNA damage signalling. Nature 2013;498(7453):246-50.

**Odom SR**, Howell MD, Silva GS, Nielsen VM, **Gupta A**, Shapiro NI, Talmor D. Lactate clearance as a predictor of mortality in trauma patients. J Trauma Acute Care Surg 2013; 74(4):999-1004.

Liu YJ, Siracuse JJ, Gage T, **Hauser CJ**. Phlegmonous gastritis presenting as portal venous pneumatosis. Surg Infect (Larchmt) 2013;14(2):221-4.

Rock JM, Lim D, Stach L, Ogrodowicz RW, Keck JM, Jones MH, Wong CC, Yates JR 3rd, Winey M, Smerdon SJ, **Yaffe MB**, Amon A. Activation of the yeast Hippo pathway by phosphorylation-dependent assembly of signaling complexes. Science 2013;340(6134):871-5.

Yaffe MB. The scientific drunk and the lamppost: Massive sequencing efforts in cancer discovery and treatment. Sci Signal 2013;6(269):pe13.



# **Cardiac Surgery**

Mahmood F, Kim H, Chaudary B, Bergman R, **Matyal R**, Gerstle J, Gorman JH 3rd, Gorman RC, **Khabbaz KR**. Tricuspid annular geometry: A three-dimensional transesophageal echocardiographic study. J Cardiothorac Vasc Anesth 2013; in press.

Matyal R, Chu L, Mahmood F, Robich MP, Wang A, Hess PE, Shahul S, Pinto DS, Khabbaz K, Sellke FW. Neuropeptide Y improves myocardial perfusion and function in a swine model of hypercholesterolemia and chronic myocardial ischemia. J Mol Cell Cardiol 2012;53(6):891-8.

Elmadhun NY, **Lassaletta AD, Chu LM**, Sellke FW. Metformin alters the insulin signaling pathway in ischemic cardiac tissue in a swine model of metabolic syndrome. J Thorac Cardiovasc Surg 2013; 145(1):258-65.

**Sabe AA**, Elmadhun NY, **Robich MP**, Dalal RS, Sellke FW. Does resveratrol improve insulin signaling in chronically ischemic myocardium? J Surg Res 2013; 183(2):531-6.

Masuzawa A, Black KM, Pacak CA, Ericsson M, Barnett RJ, Drumm C, Seth P, Bloch DB, **Levitsky S**, Cowan DB, **McCully JD**. Transplantation of autologously derived mitochondria protects the heart from ischemiareperfusion injury. Am J Physiol Heart Circ Physiol 2013;304(7):H966-82. **Lassaletta AD**, Odell D. Diaphragmatic hernias. In: Williams J, Youssef S, editors. Thoracic surgery residents' association primer in cardiothoracic surgery, 1st edition. Thoracic Surgery Residents Association, Chicago, IL. 2013; in press.

Lassaletta AD, Elmadhun NY, Selke FW. Quality improvement and surgical checklists. In: Lobdell KW, Stamou SC, editors. Quality improvement: Methods, principles and role in healthcare. Nova Science, Hauppauge, NY. 2013; in press.

# **Colon and Rectal Surgery**

**Gilmore DM, Curran T**, Gautam S, **Nagle D, Poylin V**. Timing is everything — colectomy performed on Monday decreases length of stay. Am J Surg 2013; 206(3):340-5.

# **General Surgery**

**Carlson SJ, Fallon EM**, Kalish BT, Gura KM, Puder M. The role of the omega-3 fatty acid DHA in the human life cycle. JPEN J Parenter Enteral Nutr 2013; 37(1):15-22.

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Kudsi OY, Gagner M, **Jones DB**. Laparoscopic distal pancreatectomy. Surg Oncol Clin N Am 2013;22(1):59-73.

Ní Mhuircheartaigh JM, Sun MR, **Callery MP**, Siewert B, Vollmer CM, Kane RA. Pancreatic surgery: A multidisciplinary assessment of the value of intraoperative US. Radiology 2013;266(3):945-55.

Lim LR, **Jones DB**. Bariatric surgery. Int Anesthesiol Clin 2013;51(3):179-97.

Sachs TE, Pratt WB, Kent TS, Callery MP, Vollmer CM Jr. The pancreaticojejunal anastomotic stent: Friend or foe? Surgery 2013;153(5):651-62.

Lassaletta AD, Fike FB, Sheth KR. Image of the month: Presentation of an acute abdomen. Perforated small bowel diverticula. Arch Surg; 2013, in press.

## Neurosurgery

Cheung T, Zhang C, Rudolph J, **Alterman RL**, Tagliati M. Sustained relief of generalized dystonia despite prolonged interruption of deep brain stimulation. Mov Disord 2013; in press.

Kulkarni O, Lafaver K, **Papavassiliou E**, Tarsy D, Shih LC. Thalamic and subthalamic deep brain stimulation for Parkinsonian tremor: Are two circuits involved? Mov Disord 2013; in press.

Lam FC, Penumaka A, Chen CC, **Fischer EG, Kasper EM**. Fibrin sealant augmentation with autologous pericranium for duraplasty after suboccipital decompression in Chiari 1 patients: A case series. Surg Neurol Int 2013;4:6.

Zinn PO, Colen RR, **Kasper EM**, Burkhardt JK. Extent of resection and radiotherapy in GBM: A 1973 to 2007 surveillance, epidemiology and end results analysis of 21,783 patients. Int J Oncol 2013;42(3): 929-34.

**Alterman RL**, Weisz D. Reasoned discussions must be based on sound data. Mov Disord 2013;28(2):255-6.

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# Otolaryngology

**Mallur PS**, Rosen CA. Office-based laryngeal injections. Otolaryngol Clin North Am 2013 Feb;46(1):85-100.

Sedaghat AR, Gray ST, Chambers KJ, Wilke CO, **Caradonna DS**. Sinonasal anatomic variants and asthma are associated with faster development of chronic rhinosinusitis in patients with allergic rhinitis. Int Forum Allergy Rhinol 2013; in press.

**Heman-Ackah SE**, Gupta S, Lalwani AK. Is facial nerve integrity monitoring of value in chronic ear surgery? Laryngoscope 2013; 123(1):2-3.

Cosetti MK, Friedmann DR, Zhu BZ, Heman-Ackah SE, Fang Y, Keller RG, Shapiro WH, Roland JT Jr, Waltzman SB. The effects of residual hearing in traditional cochlear implant candidates after implantation with a conventional electrode. Otol Neurotol 2013;34(3):516-21.

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Ashitate Y, **Lee BT**, Laurence RG, Lunsford E, Hutteman M, Oketokoun R, Choi HS, Frangioni JV. Intraoperative prediction of postoperative flap outcome using the near-infrared fluorophore methylene blue. Ann Plast Surg 2013;70(3):360-5.

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Taghinia AH, Al-Sheikh AA, Panossian AE, **Upton J**. Two-stage distraction lengthening of the forearm. J Craniofac Surg 2013;24(1):79-84.

**Ibrahim AM**, Ayeni OA, Hughes KB, **Lee BT, Slavin SA, Lin SJ**. Acellular dermal matrices in breast surgery: A comprehensive review. Ann Plast Surg 2013;70(6):732-8.

**Ibrahim AM**, Rabie AN, **Kim PS**, Medina M, **Upton J, Lee BT, Lin SJ**. Static treatment modalities in facial paralysis: A review. J Reconstr Microsurg 2013; 29(4):223-32.

Ashraf AA, Colakoglu S, Nguyen JT, Anastasopulos AJ, **Ibrahim AM**, Yueh JH, **Lin SJ, Tobias AM**, **Lee BT**. Patient involvement in the decision-making process improves satisfaction and quality of life in postmastectomy breast reconstruction. J Surg Res 2013; in press.

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# **Podiatry**

Tellechea A, Kafanas A, Leal EC, Tecilazich F, Kuchibhotla S, Auster ME, Kontoes I, Paolino J, Carvalho E, **Nabzdyk-Pradhan L, Veves A**. Increased skin inflammation and blood vessel density in human and experimental diabetes. Int J Low Extrem Wounds 2013; 12(1):4-11.

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Gibbons CH, Freeman R, Tecilazich F, **Dinh T, Lyons TE**, Gnardellis C, **Veves A**. The evolving natural history of neurophysiologic function in patients with well-controlled diabetes. J Peripher Nerv Syst 2013;18(2):153-61.

**Pradhan-Nabzdyk L**, Kuchibhotla S, Guthrie P, Chun M, Auster ME, Nabzdyk C, Deso S, Andersen N, Gnardellis C, **LoGerfo FW, Veves A**. Expression of neuropeptides and cytokines in a rabbit model of diabetic neuroischemic wound healing. J Vasc Surg 2013;58(3):766-775. e12.

Tecilazich F, **Dinh T, Lyons TE**, Guest J, Villafuerte RA, Sampanis C, Gnardellis C, Zuo CS, **Veves A**. Postexercise phosphocreatine recovery, an index of mitochondrial oxidative phosphorylation, is reduced in diabetic patients with lower extremity complications. J Vasc Surg 2013;57(4):997-1005.

Tecilazich F, **Dinh TL, Veves A**. Emerging drugs for the treatment of diabetic ulcers. Expert Opin Emerg Drugs 2013;18(2): 207-17.

# **Surgical Oncology**

Daouadi M, Zureikat AH, Zenati MS, Choudry H, Tsung A, Bartlett DL, Hughes SJ, Lee KK, **Moser AJ**, Zeh HJ. Robotassisted minimally invasive distal pancreatectomy is superior to the laparoscopic technique. Ann Surg 2013;257(1):128-32.

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Psoinos CM, Flahive JM, Shaw JJ, Li Y, Ng SC, **Tseng JF**, Santry HP. Contemporary trends in necrotizing soft-tissue infections in the United States. Surgery 2013; 153(6):819-27.

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Abood GJ, Can MF, Daouadi M, Huss HT, Steve JY, Ramalingam L, Stang M, Bartlett DL, Zeh HJ 3rd, **Moser AJ**. Robotic-assisted minimally invasive central pancreatectomy: technique and outcomes. J Gastrointest Surg 2013;17(5):1002-8.

**Gilmore DM, Khullar OV**, Gioux S, Stockdale A, Frangioni JV, Colson YL, Russell SE. Effective low dose escalation of indocyanine green for near-infrared fluorescent sentinel lymph node mapping in melanoma. Ann Surg Oncol 2013;20(7):2357-63.

# Thoracic Surgery and Interventional Pulmonology

Dresler CM, **Kent MS**, **Whyte RI**, Sade RM. Hepatitis C virus-infected resident: End of residency, end of career? Ann Thorac Surg 2013;95(3):779-86.

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# **Transplantation**

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In each issue of *Inside Surgery*, we focus on the question a member of our department "owns" — a question that inspires the individual's work.

# THE QUESTION I OWN — Leo Otterbein, PhD

ost people equate carbon monoxide (CO) with deadly danger, largely from reading about CO poisoning in the news. But Leo Otterbein, PhD, a basic scientist in the Division of Transplantation, has an entirely different perspective on CO — a perspective based on years of pioneering research.

In fact, he lauds its virtues. "At low, non-toxic concentrations, CO has potent protective effects in many clinically relevant models of disease including lung injury, hemorrhagic and septic shock, vascular disease, and cancer," says Otterbein.

Otterbein and his collaborators have even shown that CO improves the outcomes of kidney transplants in animals, which led to the first clinical trial in humans, and may also be beneficial for patients undergoing partial liver resection.

Administered by various delivery methods, many of which Otterbein developed in collaboration with engineers and medicinal chemists, CO is now being evaluated in clinical trials of patients with a wide range of conditions, from sickle cell anemia and pulmonary disease to gastrointestinal disorders.

As a result of Otterbein's longtime investigations of CO, which began when he was a graduate student at Johns Hopkins University, it is now broadly accepted that the much-maligned gas has important biologic effects and, at the right levels, provides benefits that are still being revealed. "The question I own," says Otterbein, "is how does this simple molecule impart such powerful physiological effects in the body?"

# Launching a new field

CO is one of three products generated from the actions of a basic metabolic enzyme called heme-oxygenase-1 (HO-1), which has long been characterized as a protective gene in various cell types and tissues in the body.

When Otterbein began working on his doctorate in physiology at Johns Hopkins, everyone chalked up the protective effects attributed to HO-1 to the end product bilirubin, the most potent antioxidant in the body (and another focus of Otterbein's research).



Leo Otterbein, PhD, owns the question, "How does this simple molecule [CO] impart such powerful physiological effects in the body?"

Ignoring most of his advisors, who thought it would result in a dead end, Otterbein set out to discover whether CO might also offer beneficial effects. CO had been studied for decades as a poison, but Otterbein was convinced it could be repurposed to provide benefit.

"At the time, no one would have guessed that CO, which everyone considered toxic, might also be protective," says Otterbein, who worked as a scientist in biotech for five years before receiving his PhD. As a result of his perseverance, Otterbein is credited with launching an entirely new field of investigation that is being pursued by basic and clinical researchers worldwide.

## A critical experiment

In one critical experiment conducted while he was at Johns Hopkins, Otterbein administered very low levels of CO to rats that were destined to die within a few days from extensive lung inflammation and injury. "Based on the anti-inflammatory effects I'd seen in cells, my hypothesis was that CO would similarly benefit the animals," explains Otterbein.

He was correct. But even Otterbein was surprised by the results. "After four days, all the rats who breathed the CO were still alive, while those who hadn't were dead." Further experiments over many years administering CO in models of shock, vascular disease, acute liver injury, and organ transplantation resulted in equally compelling evidence of the gas's beneficial effects.

After receiving his PhD, Otterbein continued his research at Yale University under the mentorship of Augustine Choi, MD. During that period, he began a collaboration with renowned BIDMC transplant surgeon-scientist Fritz Bach, MD.

Bach knew about Otterbein's work and became interested in the potential of CO to prevent organ

rejection in models of xenotransplantation (crossspecies organ transplantation; for example, from pigs to humans, which many consider a potential solution to the shortage of donor organs).

# The hearts kept beating

In one landmark experiment with Bach and thenpostdoc Miguel Soares, PhD, mouse hearts were transplanted into the abdomens of rats. In the rats that did not receive CO, the heart stopped beating within a few days after transplant and exhibited all the signs of hyper-acute rejection. In contrast, the

hearts of the rats that received CO kept beating — and beating. Says Otterbein, "Day after day, I'd get an e-mail from Miguel that simply said, 'It's still beating!' It was pretty exciting."

In addition to the discovery that CO prevented organ

rejection, this was the first investigation demonstrating that the beneficial effects of CO were not limited only to the lungs; transported by red blood cells, it also had a far-reaching impact in remote parts of the body. Otterbein's subsequent research began shedding light on how CO works — by inhibiting inflammatory molecules while simultaneously amplifying levels of anti-inflammatory or protective molecules.

From Yale, Otterbein was recruited to a faculty position in the Department of Medicine at the University of Pittsburgh. There he began collaborative efforts with the Surgery Department, focusing his research on studying the effects of CO in vascular injury, trauma, acute liver failure, transplantation, pulmonary hypertension, and inflammatory bowel disease.

## Other models of injury

"After our papers were published [in high-impact journals], interest in CO was very high; everyone wanted to test the hypothesis that it might be beneficial in other models of injury," says Otterbein.

For example, one of Otterbein's papers reported that CO given once for only one hour just prior to balloon angioplasty could prevent restenosis (reblockage) of the treated artery weeks later. He also

"At the time, no one would have guessed that CO [carbon monoxide], which everyone considered toxic, might also be protective."

Leo Otterbein, PhD

reported that CO could be used to treat and reverse pulmonary hypertension, a condition for which there is no effective drug therapy. CO is currently being evaluated in patients with pulmonary hypertension.

In 2004, Otterbein was recruited from Pittsburgh to the BIDMC Department of Surgery. Here, he collaborated with former Transplant Institute Chief Douglas Hanto, MD, PhD, on seminal large animal studies. These resulted in an FDA-approved clinical trial to evaluate the effect of CO in patients undergoing kidney transplantation to improve kidney function after transplant, allowing a shorter hospital stay. As a result

> of this work, in 2010 Otterbein was awarded the Key Opinion Leader Award by the American Transplant Society. While the preliminary results of the trial were very positive, it has not yet been completed.

> > Today, supported by grants

from the Department of Surgery's ARC program, industry, and two NIH grants (including a EUREKA grant awarded for especially novel, high-impact research), Otterbein is now focusing much of his attention on further understanding how CO influences the behavior of cells at the molecular level. This could lead to additional therapeutic opportunities in areas such as traumatic brain injury and infection, says Otterbein.

He is also collaborating with trauma surgeons **Carl Hauser MD**, and **Michael Yaffe**, **MD**, **PhD**, and basic scientist **Wolfgang Junger**, **PhD**, Acute Care Surgery, to evaluate CO in models of bacterial infection and trauma, as it has been shown to enhance the body's innate immune response. His research in this area has been funded, in part, by the Department of Defense via a grant from the Center for Integration of Medicine and Innovative Technology (<u>CIMIT</u>).

"A bench researcher's greatest contribution, second only to teaching and mentoring, is to be able to apply his or her findings to human disease," says Otterbein, "so it's very gratifying to me that what began as a single and simplistic proof-of-principle study as a graduate student has evolved into trials in humans."

# **Department Welcomes New Trainees**

n June 19, the Department of Surgery welcomed the 2013-2014 General Surgery interns and new upper-level residents to the BIDMC community at a reception at the Harvard Club in Boston. The trainees received a warm welcome from chief residents and faculty members, including department Chairman Elliot Chaikof, MD, PhD, and Tara Kent, MD, Program Director of the General Surgery Residency Program.

#### **CATEGORICAL INTERNS**

Meredith Baker, MD University of Cincinnati College of Medicine

**Stephanie Bezner, MD** University of Texas Southwestern Medical School

Michael DeSimone, MD Warren Alpert Medical School of Brown University

**Christopher Digesu, MD** Columbia University College of Physicians and Surgeons

**Dre Irizarry, MD** Jefferson Medical College of Thomas Jefferson University

Nisha Narula, MD University of Chicago Pritzker School of Medicine

Kortney Robinson, MD State University of New York Upstate Medical University

**Borami Shin, MD** University of California, San Diego School of Medicine

**Bijan Teja, MD** Geisel School of Medicine at Dartmouth



From left: interns Kortney Robinson, MD, Nisha Narula, MD, Borami Shin, MD, and Stephanie Bezner, MD.

#### **PRELIMINARY INTERNS**

**Lorenzo Anez-Bustillos, MD** Universidad Central de Venezuela, Luis Razetti School of Medicine

Benjamin Cloyd, MD University of Nebraska College of Medicine

Steven DiSegna, MD Tufts University School of Medicine

Alana Dixson, MD Keck School of Medicine of University of Southern California

**Carlos Encarnación, MD** Texas Tech University Health Sciences Center Paul L. Foster School of Medicine

Artur Fahradyan, MD Yerevan State Medical University

Jennifer C. Fuller, MD David Geffen School of Medicine at University of California, Los Angeles

David B. Nelson, MD Northwestern University Feinberg School of Medicine

**Omair Shakil, MD** Aga Khan Medical College

**Erin L. Springer, MD** University of Medicine and Dentistry of New Jersey-Robert Wood Johnson Medical School

David C. Tomich, MD Case Western Reserve University School of Medicine

## NEW UPPER-LEVEL RESIDENTS

Khyldoon Bajwa, MD (PGY 2) Shifa College of Medicine

Varun Chowdhary, MD (PGY 2) University of Texas Medical Branch School of Medicine

Roger Eduardo, MD (PGY 3) Emory University School of Medicine

Marcos G. Molina, MD (PGY 2) San Juan Bautista School of Medicine

Brent J. Sinicrope, MD (PGY 2) University of Miami Leonard M. Miller School of Medicine



From left: Podiatry intern Michelle Allen, DPM, resident Roger Eduardo, MD, and intern Benjamin Clovd, MD.

#### **PODIATRY INTERNS**

Michelle E. Allen, DPM Barry University School of Podiatric Medicine

Shawn T. Braunagel, DPM New York College of Podiatric Medicine

## THE DEPARTMENT ALSO WELCOMES ITS NEW FELLOWS

Mark Markarian, MD Aesthetic Plastic Surgery

**Oren Ganor, MD** Aesthetic and Reconstructive Breast Surgery

Shelby J. Stewart, MD Cardiothoracic Surgery

Lee D. Hallagan, MD Critical Care Surgery

Jacob Bloom, MD Hand and Microvascular

Omar Ibrahim, MD Amit Mahajan, MD Eugene Shostak, MD Interventional Pulmonology

Robert Sung, MD Hussna Wakily, MD Minimally Invasive Surgery

Lars Stangenberg, MD Vascular and Endovascular Surgery



BIDMC's "Human First" campaign, which celebrates the medical center's core belief that patients are people first, has featured many members of the Department of Surgery and those they work with, including (from left): nurse practitioner Jeanne Quinn, MS, APRN-BC, medical oncologist Michael Greenberg, MD, Chief of Colon and Rectal Surgery Deborah Nagle, MD, nurse practitioner Kristen Messer, MS, APRN-BC, and colorectal surgeon Vitaliy Poylin, MD.

# Training Program to Develop a 'New Breed' of Leaders

Inflammation, immune dysfunction, and organ failure remain major causes of post-traumatic illness and death among critically injured patients despite remarkable progress in basic science that might prevent these events.

Wolfgang Junger, PhD, a researcher in the Department of Surgery, believes that "a more fertile exchange of information and ideas between basic scientists and their physician partners" could go a long way toward advancing progress in trauma care.

In June, Junger received a T32 grant from the National Institutes of Health to fund a Harvard Trauma Inflammation Training Program. The program's long-term goal is to develop a "new breed of leaders in trauma research with the interdisciplinary teamwork skills to make tangible progress and improve patient outcomes following trauma," said Junger.

Junger, an immunologist, will direct the program with leading trauma surgeon-scientist, **Carl Hauser**, **MD**, Medical Director of Trauma Services at BIDMC. The two have an established track record of productive interdisciplinary ties.

Over the next five years, the program will host two MD and two PhD trainees for a minimum of two years each. In the laboratories of physician-scientists and basic researchers at BIDMC and other Harvard Medical School-affiliated teaching hospitals, the trainees will conduct research aimed at solving key problems faced by



Wolfgang Junger, PhD, directs the new training program with Carl Hauser, MD.

critically ill patients. To promote interdisciplinary skills, the trainees will work in teams composed of a PhD and an MD. Potential trainees are welcome to <u>apply</u>.

"This program will help trainees recognize the critical importance of interdisciplinary teamwork and the value of a vigorous flow of information between clinical and basic scientists to improve patient care," said Junger.

# LoGerfo Receives Lifetime Achievement Award

**Frank LoGerfo, MD,** Vascular and Endovascular Surgery, was honored in June as the recipient of the Society for Vascular Surgery (SVS) Lifetime Achievement Award. The award was presented by SVS President Peter Gloviczki, MD, at the society's annual meeting in San Francisco.

"In one of his numerous nominations for the award, Dr. LoGerfo was referred to as a 'triple hitter,' in reference to his excellence in all three areas of academic surgery — clinical care, research, and teaching," said Gloviczki, who highlighted some of LoGerfo's many achievements in each of these areas.

In the clinical arena, Gloviczki cited LoGerfo's landmark 1984 *New England Journal of Medicine* paper, "Vascular and Microvascular Disease in the Diabetic Foot: Implications for Foot Care," which "almost 30 years after its publication, continues to be referenced in chapters and peer-reviewed articles." He also recognized LoGerfo's contributions in the area of gentle harvesting of the saphenous vein (for bypass procedures), which has led to improved patient outcomes.

In the research domain, Gloviczki stated that "Few have achieved more success than our awardee in the area of basic science research...which focuses on restenosis of vein and prosthetic grafts. He received his first NIH grant in 1983 and has been continuously funded for the past 29 years." Gloviczki added that LoGerfo's research has been published in more than 250 peer-reviewed publications, as well as 55 books or book chapters.

But it is in the realm of "educating and inspiring [trainees at all levels] that Dr. LoGerfo has perhaps had the most impact," said Gloviczki. He cited LoGerfo's ongoing National Institutes of Health-funded Harvard-Longwood Research Training Program in Vascular Surgery. The program, which began in 1992, provides residents with two years of intensive basic and



outcomes research training in vascular surgery.

In addition, Gloviczki acknowledged LoGerfo's many contributions to professional organizations, including his roles as President of the Association of Program Directors in Vascular Surgery, President of the New England Society for Vascular Surgery, and Chair of the Vascular Surgery Board of the American Board of Surgery, among others.

When presenting the award, Gloviczki added that LoGerfo is described as "humble, warm, and genuine by those who know him best."