

Roberta and Stephen R. Weiner
Department of Surgery

General Surgery Residency Program



Beth Israel Deaconess
Medical Center



HARVARD MEDICAL SCHOOL
TEACHING HOSPITAL

Welcome from the Chair



Since its origins in the 1860s under the leadership of David Williams Cheever, MD (1831-1915), the Department of Surgery at the Beth Israel Deaconess Medical Center, originally referred to as the “Fifth (Harvard) Surgical Service,” has been a preeminent center of surgical care, training, and research. In this tradition, we continue to rededicate ourselves each and every day to providing innovative care of the highest quality, developing next-generation therapies for the surgical patient through basic and clinical investigation, and preparing future leaders who will be inspired to invent the future of American surgery.

We believe that the challenge to any surgical training program is to understand the value of individual freedom, nurture intellectual diversity, appreciate flexibility, and promote originality. We believe in fostering the development of imaginative master surgeons and surgeon-innovators who will cross boundaries to identify new solutions to current and future challenges.

For 150 years, a foundation of excellence in the Department of Surgery at BIDMC has been nurtured and sustained by a variety of outstanding leaders of Harvard Medical School. Our duty has always been to create a supportive, nurturing, and collaborative environment that encourages each and every member of our community to think differently and challenge the status quo so that modern medical miracles continue to occur.

Elliot L. Chaikof, MD, PhD
Chair, Department of Surgery
Surgeon-in-Chief, Beth Israel Deaconess Medical Center
Johnson and Johnson Professor of Surgery, Harvard Medical School

Welcome from the Program Director



On behalf of the faculty of the Beth Israel Deaconess Medical Center Department of Surgery, I welcome your interest in our general surgery training program.

With a wealth of clinical experience and exceptional research opportunities, we are committed to training superior clinicians who will also become future leaders in American surgery. As a Harvard surgical training program, we are proud of our longstanding commitment to surgical education and innovation at every level.

The impact of the alumni of our residency program — as leaders in both academia and in their communities — attests to the high quality, depth, and breadth of our program.

Our residents are predominantly selected from the top 10 percent of their graduating class, with corresponding national board scores. Interested individuals who are committed to excellence in clinical care, education, and research are encouraged to apply through ERAS.

We appreciate your interest in the Beth Israel Deaconess Medical Center General Surgery Residency Program, and look forward to receiving your completed application.

Tara S. Kent, MD, MS
Program Director, General Surgery Residency, Beth Israel Deaconess Medical Center
Vice Chair, Education, Department of Surgery
Associate Professor of Surgery, Harvard Medical School

“The surgical residency at BIDMC emphasized meticulous attention to detail and critical thinking. The scholarly culture was second to none, and I attribute all of my subsequent successes to the many wonderful mentors who inspired me and instilled in me all the best values of academic surgery.”

— **Jeffrey B. Matthews, MD** (1990), Chair, Department of Surgery; Dallas B. Phemister Professor, The University of Chicago

Training Program Leadership

Elliot L. Chaikof, MD, PhD
Chair, Department of Surgery
Johnson and Johnson Professor of Surgery,
Harvard Medical School

Tara S. Kent, MD, MS
Program Director
Division of General Surgery
Associate Professor of Surgery,
Harvard Medical School

Jonathan F. Critchlow, MD
Associate Program Director
Division of General Surgery
Associate Professor of Surgery,
Harvard Medical School

Charles Parsons, MD
Associate Program Director
Division of Acute Care Surgery,
Trauma, and Surgical Critical Care
Instructor in Surgery,
Harvard Medical School

Christopher G. Boyd, MD
Assistant Program Director
Division of General Surgery
Assistant Professor of Surgery,
Harvard Medical School

Sidhu Gangadharan, MD, MHCM
Assistant Program Director
Division of Thoracic Surgery/
Interventional Pulmonology
Associate Professor of Surgery,
Harvard Medical School

Allen D. Hamdan, MD
Assistant Program Director
Division of Vascular and Endovascular Surgery
Associate Professor of Surgery,
Harvard Medical School

“The residency promoted core values such as honesty, compassion, professionalism, stamina, and evidence-based practice — all under a ubiquitous demand for excellence. These were the most transformative years of my life.”

— **C. Keith Ozaki, MD** (1995), Vascular and Endovascular Surgery, Brigham and Women’s Hospital; John A. Mannick Professor of Surgery, Harvard Medical School



About Beth Israel Deaconess Medical Center

Beth Israel Deaconess Medical Center, a major teaching affiliate of Harvard Medical School, is renowned for excellence in patient care, research, teaching, and community service. Located in the heart of Boston's medical community, it serves more than a half million patients annually from Boston and surrounding communities, as well as patients from around the nation and the world.



The roots of the Harvard Surgical Service at Beth Israel Deaconess Medical Center reach back to 1864, establishing it as one of the oldest academic programs in the nation. Our explicit mission is to provide advanced surgical care of the very highest quality to those in need,

improve health through innovation and discovery, and prepare future leaders in American surgery.

In 1864, a brilliant young surgeon named David Williams Cheever, MD (standing, center), joined the staff at the newly established Boston City Hospital, which was one of two Boston hospitals associated with Harvard Medical School.

Dr. Cheever, the son and grandson of physicians who trained under Dr. Oliver Wendell Holmes Sr., created and grew a vibrant surgical program that rapidly established itself as a vital center for clinical care, training, and research of Harvard Medical School. A pioneering surgeon and man of immense dedication and integrity, Dr. Cheever served as the second Chair of Surgery at Harvard Medical School, succeeding Henry J. Bigelow at the Massachusetts General Hospital. He was editor of the *Boston Medical and Surgical Journal* (a predecessor of the *New England Journal of Medicine*), and in 1889 served as President of the American Surgical Association. In 1915, the year of Dr. Cheever's death, the Harvard Surgical Service was renamed the Fifth (Harvard) Surgical Service.

In 1973, William V. McDermott, MD, Director of the Fifth (Harvard) Surgical Service and Cheever Professor of Surgery at Harvard Medical School,

moved the entire surgical service — staff, residents, students, and research activities alike, as well as the Cheever Chair — to New England Deaconess Hospital following Boston City Hospital's change in affiliation, where he assumed the position of Chief of Surgery.

The Beth Israel and New England Deaconess hospitals came together as Beth Israel Deaconess Medical Center in 1996, but for nearly a century each was a national leader in health care with a long history of excellence in patient care, innovative research, and outstanding medical education. The New England Deaconess Hospital was originally founded to care for the city's underserved residents in 1896 as part of the charter of the Methodist deaconess movement. In 1916, Beth Israel Hospital was established by Boston's Jewish community to meet the needs of the growing immigrant population.

Today, the medical center is a tertiary/quaternary hospital with a wide range of multidisciplinary, cutting-edge clinical programs. Nearly 30,000 operative procedures are conducted each year at Beth Israel Deaconess Medical Center, making it one of the busiest centers for surgical care in the United States.

Beth Israel Deaconess Medical Center is part of Beth Israel Lahey Health, a new health care system that brings together academic medical centers and teaching hospitals, community and specialty hospitals, more than 4,000 physicians, and 35,000 employees in a shared mission to expand access to care and advance the science and practice of medicine through groundbreaking research and education.

Patient Care

Beth Israel Deaconess Medical Center is a nonprofit health-care institution providing care for patients of any race, creed, color, or nationality. The medical center features:

- A state-of-the-art inpatient clinical center, including 40 operating rooms
- 673 licensed beds, including 77 ICU beds
- Emergency care provided in the modern, 23,000-square-foot Berenson Emergency Department, which has more than 57,200 patient visits a year and offers a full range of emergency services, including a Level I Trauma Center and rooftop heliport
- The Carl J. Shapiro Clinical Center, a nine-story, technologically advanced ambulatory care center. The majority of ambulatory surgery takes place in the Shapiro and its connected Feldberg operating rooms

A new 350,000-square-foot, 10-story clinical tower will open in 2022, adding 128 medical-surgical patient rooms, 30 intensive care unit rooms, and an additional eight leading-edge operating rooms.

Nearly 30,000 operative procedures are conducted at BIDMC every year.



Research

Innovative biomedical and clinical research is supported by grants from private foundations and government agencies. Beth Israel Deaconess Medical Center is one of the top three independent teaching hospitals in the nation in terms of biomedical research funding from the National Institutes of Health.

Beth Israel Deaconess Medical Center shares important clinical, research, and educational programs with institutions such as the Harvard-wide Dana-Farber/Harvard Cancer Center, Joslin Diabetes Center, Boston Children's Hospital, the Wyss Institute for Biologically Inspired Engineering of Harvard University, the Harvard Stem Cell Institute, the Harvard-MIT Broad Institute, and the Consortia for Improving Medicine with Innovation & Technology (CIMIT).

Medical Education

Beth Israel Deaconess Medical Center has a longstanding commitment to educating medical students, residents, and postgraduate fellows.

— UNDERGRADUATE MEDICAL EDUCATION

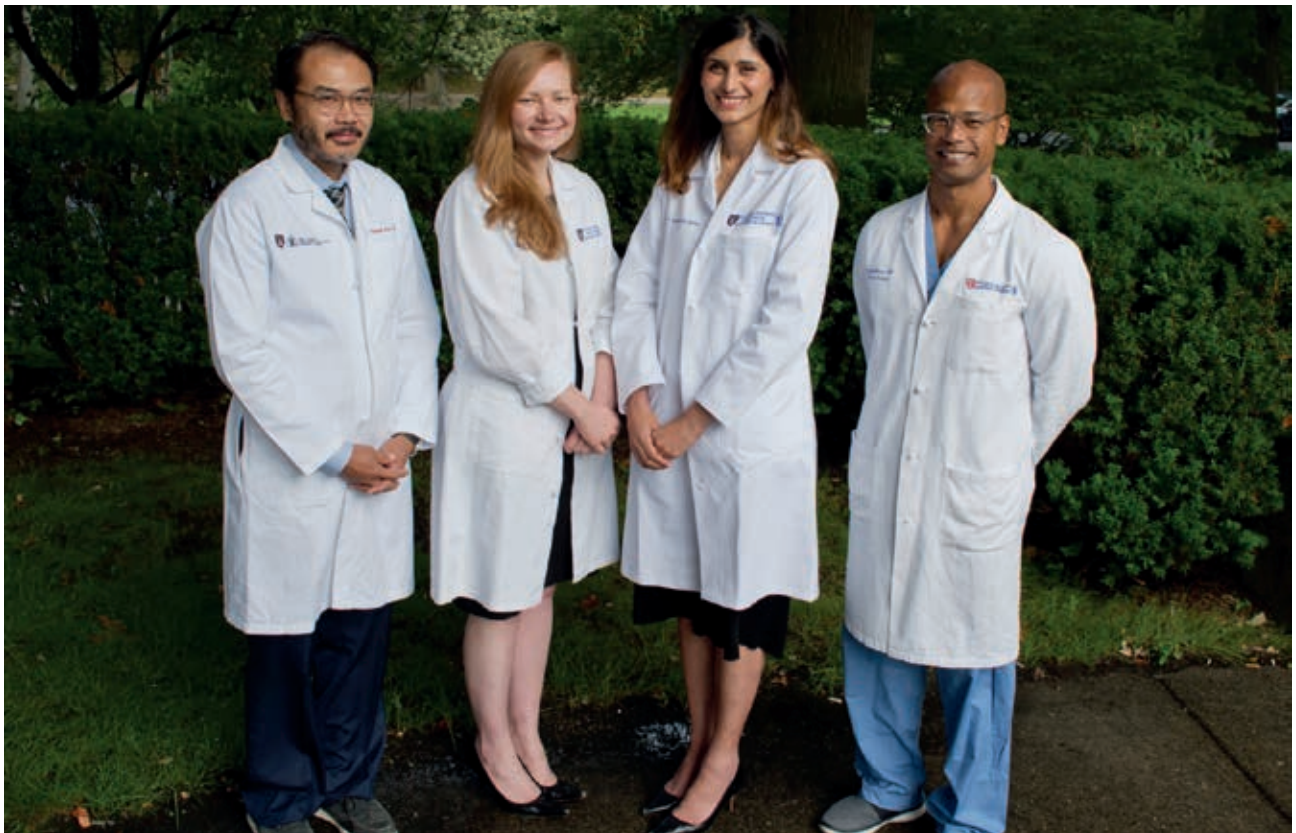
As one of Harvard Medical School's major teaching sites, BIDMC provides major core clerkships for the school's second-year students, and each department offers a wide variety of clinical electives for fourth-year students.

— GRADUATE MEDICAL EDUCATION

In addition to its General Surgery Residency Program, BIDMC sponsors residencies in anesthesiology, medicine, emergency medicine, obstetrics/gynecology, neurosurgery, ophthalmology, orthopedics, otorhinolaryngology, pathology, podiatry, psychiatry, radiology, urology, and integrated vascular surgery.

— POSTGRADUATE MEDICAL EDUCATION

BIDMC sponsors clinical fellowships in reconstructive breast and microsurgery, cardiothoracic surgery, colon and rectal surgery, hand and microsurgery, minimally invasive surgery and bariatric surgery, aesthetic plastic surgery, surgical critical care, transplantation, interventional pulmonology, and vascular surgery, in addition to a wide variety of medical and surgical specialties.



“I benefited from the broad and diverse training and research opportunities offered by the BIDMC surgical residency, which in my view is the best in Boston.”

— **David Linehan, MD** (1997), Chair of Surgery, University of Rochester Medical Center

General Surgery Residency Program

The General Surgery Residency Program is non-pyramidal. The surgical housestaff is composed of 16 first-year residents, including nine categorical (full five-year), six non-designated preliminary residents, and a categorical integrated vascular surgery intern.

In the PGY-2 year there are nine categorical residents and three preliminary residents. In the PGY-3, PGY-4, and PGY-5 Chief Resident level, there are nine categorical residents. All members of the housestaff hold academic appointments as Clinical Fellows in Surgery at Harvard Medical School.

The surgical training program produces the country's future surgical leaders. Clinical excellence is the foundation upon which that leadership is built, and our training programs strive to help young surgeons develop both technical and cognitive expertise. At all levels, the housestaff receive training and practical experience in the preoperative, operative, and post-operative care of patients.

The Beth Israel Deaconess program places a strong emphasis on resident-faculty interaction to enhance trainees' education. Teaching conferences and seminars for housestaff capitalize on working relationships developed with the attending staff.

Upon completion of five years of surgical training, residents are eligible for the American Board of Surgery Examination. Our graduates consistently obtain outstanding specialty fellowships in surgical oncology, trauma, critical care, cardiothoracic, pediatric, transplant, colorectal, plastic, and vascular surgery. Graduates typically attain superb opportunities in major academic medical centers.

— PGY-1 Year

The internship year focuses on the acquisition of basic principles and clinical skills in general and vascular surgery. The majority of these rotations are at Beth Israel Deaconess Medical Center, supplemented by a pediatric surgery rotation at Boston Children's Hospital, as well as experiences with Harvard-affiliated faculty at a number of external sites, including Mount Auburn Hospital or Signature Healthcare Brockton Hospital. Pre- and post-operative patient care is emphasized under the guidance of attending surgeons and resident staff. Interns participate in procedures that are appropriate for their stage of training and can expect to perform approximately 150 surgical cases.

— PGY-2 through PGY-4

The second and third years of residency include longer rotations to provide more in-depth training in general surgery, transplant, vascular, and trauma surgery, as well as critical care and endoscopy. In the fourth year, senior-level experience is obtained in general surgery, vascular, thoracic, and pediatric surgery, and a significant portion of the year is spent as the senior resident in acute care and trauma surgery.

— PGY-5 Chief Residency

During the fifth year of training, chief residents hone their clinical skills, performing more than 250 operations as surgeons in their final year. In their chief year, residents are also encouraged to develop their administrative and teaching skills by leading didactic sessions, heading inpatient teams, and teaching junior residents. Two chief residents are selected by their peers to serve as administrative chief residents, who also serve as resident representatives to the Housestaff Education Committee. During the chief year, residents may tailor their experiences to be most relevant to their future subspecialty.

External Rotations

While most of the residency years are spent at Beth Israel Deaconess Medical Center, that experience is rounded out with clinical rotations with Harvard-affiliated surgical staff at nearby hospitals:

— BOSTON CHILDREN'S HOSPITAL

Boston Children's Hospital is the largest pediatric hospital in the United States with one of the largest pediatric surgery programs in the world. The Department of Surgery at Boston Children's Hospital provides general and specialized surgical services to infants, children, and adolescents suffering from a wide range of congenital and acquired conditions. Rotations at Boston Children's Hospital for BIDMC surgical residents in their first and fourth years offer a concentrated experience in pediatric and adolescent surgery. Opportunities to gain additional research experience at Children's during elective periods are also available.

— BETH ISRAEL DEACONESS HOSPITAL-NEEDHAM

Beth Israel Deaconess Hospital-Needham is an acute-care community hospital that has served Needham, Massachusetts and surrounding communities for more than 80 years. The hospital provides outpatient and inpatient services, complete diagnostic facilities, a full-service emergency department, and cares for patients within the recently opened Lank Cancer Center and Surgical Pavilion and a new 40,000-square-foot Outpatient Center. This preceptorship provides the mid-level resident a unique window through which to view the practice of community general surgery, surgical oncology, and colorectal surgery offering a broad exposure in all venues - from evaluation in the emergency room, to the operating room and SICU, to post-operative follow-up in the clinic.

— MOUNT AUBURN HOSPITAL

Mount Auburn Hospital, located near Harvard Square, is a 217-bed acute-care, teaching hospital serving the health-care needs of residents in Boston's northern and western suburbs. The hospital offers comprehensive inpatient and outpatient medical, surgical, obstetrical, and psychiatric services. Mount Auburn has a strong surgical orientation in general and vascular surgery, surgical oncology, and colorectal surgery.

— SIGNATURE HEALTHCARE BROCKTON HOSPITAL

Founded in 1896, Signature Healthcare Brockton Hospital is the oldest and largest inpatient facility in Brockton, Massachusetts and 21 surrounding towns in Plymouth County. With 216 beds, the hospital provides medical/surgical, pediatric, and obstetrics services. For the intern and mid-level resident, this rotation offers excellent operative experience in general and vascular surgery.

— CAMBRIDGE HOSPITAL AND HEALTH ALLIANCE

Cambridge Hospital is a 169-bed, acute-care hospital located in Cambridge. Its ambulatory care division offers medical/surgical emergency rooms, a Level 2 Trauma Center, a primary care center, and more than 25 specialty clinics. Residents assigned to Cambridge Hospital gain experience with serious surgical problems in an urban hospital and extensive training in endoscopy, as well as ambulatory surgery experience.

“I’m very fortunate to have trained at BIDMC, where I had fantastic *mentors and a broad experience with many high-risk, high-acuity patients. When I went into combat, I felt so well-trained that I was able to walk into the OR without fear and get to work.*”

— **Jeremy W. Cannon, MD** (2005), Colonel, U.S. Air Force Reserves; Trauma Medical Director and Section Chief of Trauma, Perelman School of Medicine, University of Pennsylvania; and recipient of the U.S. Air Force 2011 Paul W. Myers Award

Didactic Teaching

The residency has a formal structured educational program, including a strong didactic conference schedule, to provide a basic foundation of surgical knowledge and skills. The core curriculum didactics are based on the SCORE® curriculum, to which each resident has full access. In addition to a range of conferences that are unique to each clinical service, there are a number of additional department-wide conferences focused on resident education.

Regular weekly conferences include:

Tuesdays: Core Curriculum Conference, including ABSITE® review and boards practice

Wednesdays: Surgical Service Morbidity and Mortality Conference
Surgical Grand Rounds

Regular monthly conferences include:

Tuesdays: Practical skills curriculum

Wednesdays: Chair’s Conference

Thursdays: Surgical Horizons Seminar Series

Advanced Simulation and Skills Center

In 2006, the Carl J. Shapiro Simulation and Skills Center (SASC) at Beth Israel Deaconess Medical Center became the first regional Simulation and Skills Center in North America accredited by the American College of Surgeons. The SASC offers the latest advances in medical simulation technology combined with progressive teaching methods to replicate real-life patient-care situations, from routine procedures to acute management crises. The scale and scope of the SASC make it one of the most comprehensive centers in the country. In addition to high-fidelity mock operating and intensive care unit rooms, the SASC features two skills lab areas, providing learners with hands-on training for basic clinical procedures; open surgical skills; and endoscopic, ultrasonography, and laparoscopic skills.

In the SASC, residents have the opportunity to learn and practice skills that are specific to their rotation through formal training sessions.

During the PGY-1 year, interns attend an additional 75 hours of practical skills sessions taught by BIDMC faculty members and senior residents. These sessions include: laparoscopic and minimally invasive skills, central line and chest-tube placement, use of electro-surgical and stapling instruments, and ultrasound imaging. PGY-2 to PGY-5 residents also have scheduled skills sessions.





Distinguished Visiting Professors

As part of our commitment to surgical education, the Department of Surgery invites a dozen or more distinguished national leaders in surgery as visiting professors each year. During their tenure, each visiting professor has the opportunity to interact closely with surgical residents in small group forums. Visiting professors also present at Grand Rounds, providing faculty and residents with the opportunity to gain insight into their areas of expertise.

Surgical Horizons Seminar Series

Emerging and senior leaders from both surgical and non-surgical disciplines who are currently pursuing endeavors that promise to dramatically alter the landscape of care for surgical patients are invited to speak as part of our monthly Surgical Horizons Seminar Series. Topics range from data science, machine learning, precision medicine, device development, immunotherapy, regenerative medicine, and drug discovery.

Clinical Scholarship Program

Our Clinical Scholarship Program pairs all first-year categorical general surgery residents with a faculty research mentor who guides the residents throughout the year as they acquire the skills to develop and implement a clinical research project. Residents are given one month of protected time during the second half of the first year in which to complete their project. The

objectives of the Clinical Scholarship Program are to provide residents with a robust foundation for scholarship early in their training, promote additional clinical mentorship opportunities, and enhance the opportunity to engage in efforts that will ultimately change the way we care for the surgical patient. By providing this experience early in the training program, our goal is to facilitate residents' interests in scholarship, research, and an academic career.

The FIRST Program

The FIRST (Facilitating Innovative Research and Surgical Trials) Program provides surgery faculty and residents with an accessible, robust research infrastructure. The goal is to provide current and emerging surgeon-investigators in the Department of Surgery with the expertise, resources, assistance, and support they need to conduct clinical research in today's increasingly complex environment.

Developed and led by James Rodrigue, PhD, Vice Chair of Clinical Research in the Department of Surgery, FIRST offers a comprehensive range of customized, essential services, all of which are designed to make it as easy and efficient as possible for Surgery faculty and trainees to pursue clinical research. Support may be as straightforward as answering a question to providing hands-on assistance with managing the myriad tasks associated with study design, implementation, and analysis.

Resident as Educator Program

Throughout training, a primary responsibility of senior residents is to teach more junior surgical residents and medical students on their service. Senior residents are also responsible for assigning cases, clinically supervising medical students and residents, and preparing material for service and teaching conferences. Our Resident as Educator Program facilitates and supports the development of our residents as outstanding surgeon-educators. Senior residents are encouraged to apply for admission to the BIDMC Academy of Medical Educators.



The Resident as Educator Program curriculum includes three components:

Seminars

Interactive, team-based learning seminars are held using a “flipped classroom” approach. The goal of these sessions is to introduce the theory and practice of adult teaching and learning, including bedside and intraoperative teaching that promotes the transmission of clinical and technical knowledge, behavior, and skills.

Self-study

A multidisciplinary curriculum includes a series of five videos and an accompanying facilitator guide that reviews effective adult learning principles with the following goals: review knowledge, skills, and methods associated with best clinical teaching practices; encourage application of adult learning principles in any clinical setting; and develop experience serving in supervisory roles, providing effective feedback, leading small-group discussions, and teaching procedural skills to medical students and resident colleagues.

Dedicated Teaching Experience

Each senior resident has a general surgery rotation during which a portion of time is dedicated to training residents and students.

BIDMC Academy of Medical Educators

The BIDMC Academy of Medical Educators is an important forum for residents interested in medical education. Open to senior residents at or above the PGY-3 level, Academy membership provides the opportunity to participate in professional development seminars, engage in collaborative projects, and take advantage of educational services for the advancement of innovation and science in medical education. Academy offerings include workshops on the flipped classroom, navigating educational change, and providing feedback to the difficult learner.

Mount Desert Island Biological Laboratory: Comparative Physiology

Mount Desert Island Biological Laboratory (MDIBL) is a non-profit marine biology lab in Maine where permanent and visiting scientists and students study marine and non-marine organisms to learn about the basic biology of life. Five PGY-2 residents are selected each year to receive a scholarship to attend a weeklong course in comparative clinically focused physiology, which covers topics including cardiac augmentation, water balance, chloride secretion, biliary function, vascular tone, and hematology. The course also allows time for exploring the Maine coastline, including nearby Acadia National Park.



Committee on Social Responsibility

The Department of Surgery's Committee on Social Responsibility, comprising faculty, trainees, and staff, focuses on several important areas of social responsibility: hunger, homelessness, human trafficking, health equality, childhood education, and medical missions. During orientation, incoming interns have an opportunity to volunteer at the Greater Boston Food Bank. Other volunteer opportunities are available throughout surgery residency.

Anatomical Basis of General Surgery

This course, taught by Harvard Medical School's Director of Clinical Applications of Anatomy Course in conjunction with BIDMC surgical faculty, provides PGY-3 residents with a solid foundation in the anatomical basis of all aspects of general surgery. Through 10 sequential cadaver laboratories, each focusing on a different aspect of anatomy, residents will acquire the in-depth anatomical knowledge, techniques of exposure, and skills required of a general surgeon.

Harvard Program in Global Surgery and Social Change

The mission of the Harvard Program in Global Surgery and Social Change (PGSSC) is to achieve excellence and equity in global surgical and anesthesia care through leadership and innovation in education, training, research, clinical care, and advocacy. Projects undertaken by the PGSSC consist of sustainable efforts to improve delivery of quality surgery and anesthesia in low- and middle-income countries in the Americas,

Africa, and the Caribbean. Through the Paul Farmer Global Surgery Research Fellowship, surgical residents are able to obtain the medical and non-medical skills they need to improve the health of some of the world's most impoverished people. Interested fellows may incorporate a Master's of Public Health degree during their fellowship.

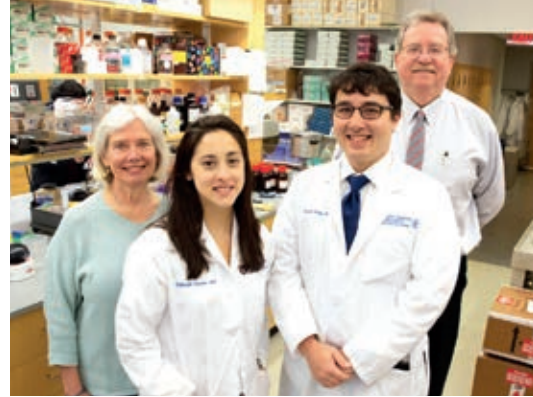
Harvard Surgical Program in Innovation (SPIN)

The Harvard Surgical Program in Innovation (SPIN) is open to all General Surgery residents at BIDMC. The program enables residents to become surgical innovators, by combining the collaborative spirit of a hackathon with a more structured series of educational workshops. Residents meet for a series of monthly Saturday sessions in which they learn computer and electronic skills necessary to design and produce a medical device prototype. In between these formal sessions, they meet as teams and individually with the course directors and expert advisors from the Boston innovation ecosystem of biotech and medtech entrepreneurs and venture capitalists. Assigned readings and videos demonstrating techniques are posted online. The experience culminates in a "pitch finale" where the teams pitch their ideas before a panel of expert judges.



Research

Beth Israel Deaconess Medical Center ranks among the top recipients in National Institutes of Health funding among independent hospitals nationwide. With more than \$20.5 million per year in extramural (direct and indirect) research support, the Department of Surgery ranks among the top academic surgical departments in NIH funding. With faculty appointments at Harvard and MIT, our surgical faculty are members of the Harvard Stem Cell Institute, the Wyss Institute of Biologically Inspired Engineering, the Harvard-MIT Broad Institute, the Harvard Program in Global Surgery and Social Change, and the Consortia for Improving Medicine with Innovation & Technology (CIMIT).



Following the second or third clinical year, residents are required to pursue a two-year research elective in any number of available areas that include basic science or clinical outcomes. It is also possible for residents to seek advanced degrees in public health, business administration, or education. We recognize the importance of developing the next generation of surgeon-scientists and are supportive of residents who wish to pursue a PhD during residency training.

These opportunities are intended to teach residents the requisite skills to become surgeon-investigators engaged in clinical or translational research and leaders in academic surgery. BIDMC surgery residents have been very successful in obtaining high-quality research and clinical fellowships in Boston and nationwide.

There are multiple mechanisms, listed below, to provide residents with salary support to help defray the costs of an advanced degree, research supplies, or a research technician. Residents may also obtain full salary support through a commitment to clinical moonlighting at BIDMC during the fellowship period.

- The Sandra and Richard Cummings Resident Research Fellowship in Surgery is awarded to five residents annually, based on the merits of their proposed research.

- Institutional research training grants (Surgical Critical Care, Gastrointestinal Diseases, Vascular Surgery, Transplantation, Pediatric Surgery, and Global Health) supported through the NIH and other sources)
- A prospective fellow and principal investigator may apply for a fellowship grant from the NIH, American College of Surgeons, Society of University Surgeons or other foundations
- A principal investigator may support the research fellow directly

Opportunities are also available for surgical housestaff during their clinical training to participate in clinical research conducted by members of the Department of Surgery.



Department Leadership

Elliot L. Chaikof, MD, PhD

Chair of Surgery and
Surgeon-in-Chief
Johnson and Johnson
Professor of Surgery,
Harvard Medical School

Richard D. Cummings, PhD

Vice Chair, Basic and
Translational Research
S. Daniel Abraham Professor of
Surgery, Harvard Medical School

Allen D. Hamdan, MD

Vice Chair, Operations
Associate Professor of Surgery,
Harvard Medical School

Ted A. James, MD, MS

Section Chief of Breast Surgical
Oncology
Vice Chair, Academic Affairs
Associate Professor of Surgery,
Harvard Medical School

Daniel B. Jones, MD, MS

Vice Chair, Technology
and Innovation
Professor of Surgery,
Harvard Medical School

Tara S. Kent, MD, MS

Vice Chair, Education
Associate Professor of Surgery,
Harvard Medical School

Sidney Levitsky, MD

Senior Vice Chair
David W. and David Cheever
Professor of Surgery,
Harvard Medical School

A. James Moser, MD

Co-Director, Pancreas and Liver
Institute
Professor of Surgery, Harvard
Medical School

James R. Rodrigue, PhD

Vice Chair, Clinical Research
Professor, Harvard Medical
School

Richard Whyte, MD, MBA

Vice Chair, Quality, Safety,
and Clinical Affairs
Professor of Surgery,
Harvard Medical School

Program Division Chiefs

Acute Care Surgery, Trauma, and Surgical Critical Care

Charles H. Cook, MD

Associate Professor of Surgery,
Harvard Medical School

Bariatric and Minimally Invasive Surgery

Daniel B. Jones, MD, MS

Professor of Surgery,
Harvard Medical School

Cardiac Surgery

Kamal R. Khabbaz, MD

David S. Ginsberg Associate
Professor of Cardiac Surgery,
Harvard Medical School

Colon and Rectal Surgery

Evangelos Messaris, MD, PhD

Associate Professor of Surgery,
Harvard Medical School

General Surgery

Mark P. Callery, MD

Professor of Surgery,
Harvard Medical School

Plastic and Reconstructive Surgery

Bernard T. Lee, MD, MBA, MPH

Professor of Surgery,
Harvard Medical School

Surgical Oncology

Jonathan Critchlow, MD

(Interim)
Associate Professor of Surgery,
Harvard Medical School

Thoracic Surgery/ Interventional Pulmonology

Sidhu Gangadharan, MD, MHCM

Associate Professor of Surgery,
Harvard Medical School

Transplant Surgery

Khalid O. Khwaja, MD

(Interim)
Assistant Professor of Surgery,
Harvard Medical School

Vascular and Endovascular Surgery

Marc L. Schermerhorn, MD
George H.A. Clowes, Jr.
Professor of Surgery,
Harvard Medical School

Selected Research Programs

Acute Care Surgery, Trauma, and Surgical Critical Care

Gabriel A. Brat, MD, MPH, MSc
Biomedical informatics, machine learning, and clinical decision making

Charles H. Cook, MD

Bacterial sepsis and reactivation of latent cytomegalovirus

Carl J. Hauser, MD

Regulation of innate immunity in trauma with an emphasis on translational biology

Wolfgang G. Junger, PhD

Inflammatory responses to trauma

Michael B. Yaffe, MD, PhD

DNA damage and trauma

Cardiac Surgery

Louis Chu, MD

Development of cardiac surgery simulators for training and operative planning, assessment of frailty in the cardiac patient

Kamal R. Khabbaz, MD

Transcatheter aortic valve replacement (TAVR), mitral valve repair, predictive markers of postoperative adverse events, 3D printing for cardiac repair

Center for Drug Discovery and Translational Research

Lijun Sun, PhD

Design of new therapeutic compounds in the fields of oncology, immunology, and innate immunity. Dr. Sun has taken four compounds to phase 3 clinical trials

Colon and Rectal Surgery

Evangelos Messaris, MD, PhD
Outcomes research in colorectal surgery patients

Gastrointestinal and Hepatopancreaticobiliary Surgery

Mark P. Callery, MD

Outcomes research in high-acuity pancreaticobiliary surgery

Susan J. Hagen, PhD

Cellular mechanisms in the development of gastric cancer

Tara S. Kent, MD, MS

Patient-centered outcomes research in high-acuity pancreaticobiliary surgery

A. James Moser, MD

Multi-center research study of biomarker discovery for therapeutics in pancreatic cancer

Glycobiology

Richard D. Cummings, PhD

Glycobiology of cancer, innate and adaptive immunity, and infectious disease. Dr. Cummings is the scientific founder of Selexys Pharmaceuticals

Metabolism and Obesity

Daniel B. Jones, MD, MS

Comparative effectiveness and outcomes of bariatric surgery; evaluation of new clinical interventions for the treatment of obesity; simulation in surgical education

Plastic and Reconstructive Surgery

Bernard T. Lee, MD, MBA, MPH

Near-infrared imaging technologies for flap perfusion in face transplantation models; clinical outcomes and patient satisfaction in breast reconstruction surgery

Samuel J. Lin, MD, MBA

Microelectromechanical systems devices for peripheral nerve modulation; clinical outcomes in breast reconstruction; and advanced 3D printing for reconstructive surgery

Dhruv Singhal, MD

Microsurgical techniques for the prevention and treatment of lymphedema; evaluation of integrative medicine applications to plastic surgery care





Surgical Oncology

Benjamin C. James, MD, MS

Population-level analysis of thyroid cancer incidence and the clinical and economic implications of this rapid rise. Biomarkers of thyroid cancer

Ted A. James, MD, MS

Breast cancer surgery outcomes to derive best practices, determine optimal processes, and improve quality of patient care

Barbara Wegiel, PhD

Heme degradation pathway and the cytoprotective protein heme oxygenase-1 in the development and prevention of cancer

Michael B. Yaffe, MD, PhD

Cell signaling: Approaches to targeted cancer therapy

Jin-Rong Zhou, PhD

Mechanisms of nutraceutical components on the prevention and treatment of cancer

Transplant Surgery

Amy Evenson, MD, MPH

Clinical outcomes in abdominal transplantation, hepatobiliary surgery, and dialysis access

Leo E. Otterbein, PhD

Therapeutic strategies to limit maladaptive inflammatory responses that contribute to acute injury, chronic disease, and cancer

James R. Rodrigue, PhD

Behavioral health aspects of organ transplantation and organ donation

Vascular and Endovascular Surgery

Elliot L. Chaikof, MD, PhD

Thrombosis, atherosclerosis, biologically inspired materials and drugs, tissue engineering

Mauricio A. Contreras, MD

Developing novel biomaterial surfaces

Christiane C. Ferran, MD, PhD

Role of A20 in organ transplantation, diabetes, atherosclerosis, and hepatitis

Frank W. LoGerfo, MD

Developing novel biomaterial surfaces; mechanisms of prosthetic arterial graft failure and prevention of intimal hyperplasia in vein grafts; role of neuropeptides in diabetic wound healing

Leena Pradhan-Nabzdyk, PhD, MBA

Mechanisms of prosthetic arterial graft failure and prevention of intimal hyperplasia in vein grafts; role of neuropeptides in diabetic wound healing

Marc L. Schermerhorn, MD

Re-engineering the delivery of care for patients with vascular disease; comparative effectiveness of surgery and endovascular therapy for treatment of vascular disease

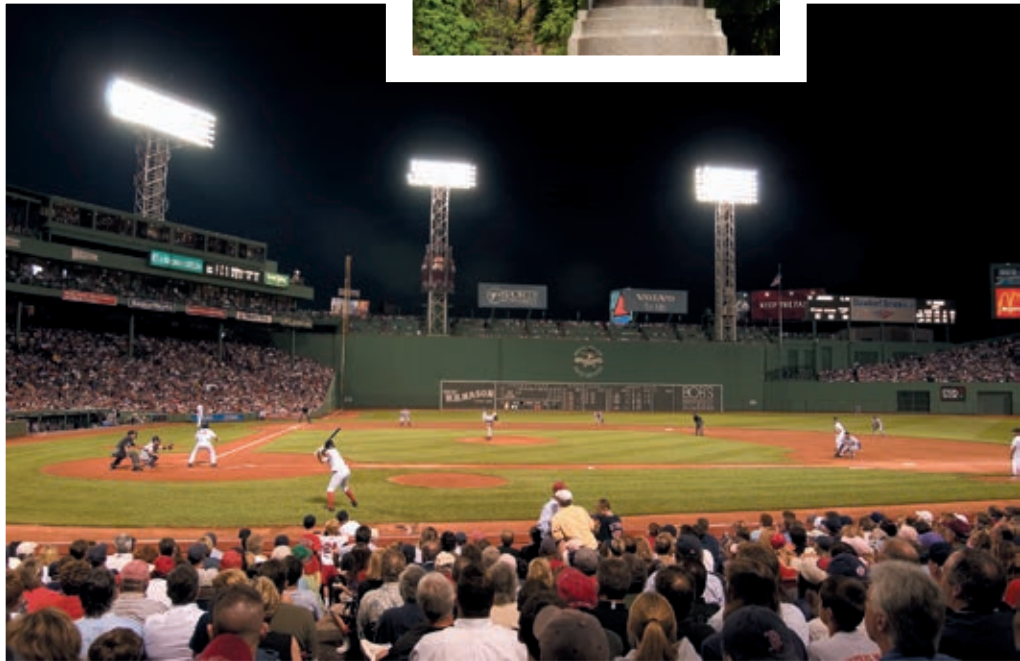
Aristidis Veves, MD, DSc

Regenerative medicine. Mechanisms of microvascular disease, wound healing, and peripheral neuropathy in diabetes

About Boston

Founded in 1630, Boston is rich in history and culture. The city is an academic center with more than 100 colleges and universities, and a center of technology, with more than 3,000 computer and biotech businesses. Boston is also home to three medical schools and more than 20 hospitals.

Boston offers historic sites, beautiful parks, world-class museums, a renowned symphony orchestra, excellent dining, a diverse population, and five professional sports teams. For more information about Boston, please visit www.visitboston.org or www.bostonusa.com.



Houseofficer Salaries and Benefits

Resident salaries are similar for all members of the Council of Boston Teaching Hospitals; rates are adjusted annually to account for cost of living. Training conditions and work schedules follow the guidelines of the Residency Review Committee for Surgery of the Accreditation Council on Graduate Medical Education.

The program provides a wide range of benefits, including malpractice insurance coverage, on-call meals, and short- and long-term disability insurance. The program also offers the opportunity to purchase several types of health, dental, and life insurance. Each resident is allotted four weeks of vacation per year; all chief residents are allotted travel to one conference. In addition, the program has a liberal leave of absence policy for residents who are new parents, require medical leave, or need to care for a seriously ill family member. BIDMC also offers several resources to promote work/life balance and overall wellness.

Licensure

All residents and clinical fellows appointed to the Beth Israel Deaconess Surgical Service must have either a current limited license or a full license to practice medicine in the Commonwealth of Massachusetts. Applications for the limited license may be obtained from the Surgery Education office. Limited licenses must be renewed every year, up to a maximum of five years. The cost of the license is \$100 annually.

Application Process and Deadline

The Beth Israel Deaconess Medical Center Surgical Residency Program participates in the Electronic Residency Application Service (ERAS). The program selects interns through the National Resident Matching Program (NRMP) in accordance with the policies established by the NRMP.

The deadline for receipt of all application documents is November 1. All applicants are required to pass USMLE Step-2 before starting in a first-year position. Please note that the program supports J-1 visas for foreign trainees.

Interviews

Each application is reviewed with an eye toward a combination of overall academic excellence, leadership ability, career-development potential, and personal character. Qualified individuals will be invited to interview. Interviews are held on select Wednesdays and some Saturdays from November through January. No interviews are scheduled without an invitation, and no individual interviews are scheduled outside of the scheduled sessions. All candidates who are invited to interview must contact the Surgery Education office (617.632.9236 or surgedu@bidmc.harvard.edu) to confirm acceptance of the invitation.



“The culture was intensely focused on providing the best patient care possible and I’ve always tried to maintain that focus.”

— **Richard Hodin, MD** (1990), Chief for Academic Affairs of the Department of Surgery; Surgical Director, MGH Center for Inflammatory Bowel Disease; Chief of Endocrine Surgery, Massachusetts General Hospital; Professor of Surgery, Harvard Medical School



Beth Israel Deaconess Medical Center



HARVARD MEDICAL SCHOOL
TEACHING HOSPITAL

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