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GENERATIONS



Beth Israel Deaconess
Medical Center



HARVARD MEDICAL SCHOOL
TEACHING HOSPITAL

Cover photo (from left to right): Andrew Locke, MD, Mary LaSalvia, MD, Anjala Tess, MD, and Mark Aronson, MD.



Sara Steinberg, RN, and Lester Steinberg, MD.

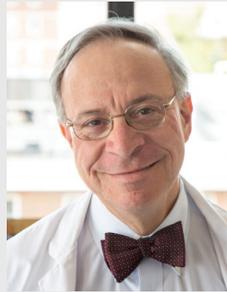
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From the Chair



Dear Colleagues and Friends,

This year's report celebrates the ways in which we collectively learn from, teach and take care of each other across generations. We explore inter- and intra-generational connections and collaborations between colleagues, patients and family members. In everything we do—whether it be in the area of clinical care, education or research—we look to those who came before us and those who will follow us, across generations. While many cultures and religions have similar concepts, I'm most familiar with two from Judaism that convey the spirit of this report: *l'dor v'dor*, “from generation to generation,” and *m'chayil l'chayil*, “strength to strength.”

These pages highlight just some of the inspiring ways in which the Department draws on the strengths of its community across generations, featuring:

- Senior faculty who have furthered the field of medicine through their own contributions and their impact on the next generation
- Mentor-mentee pairs who work together in the areas of research, patient care, education and quality improvement
- Families whose philanthropic generosity has supported the Department of Medicine over multiple generations
- Members of the Department who have followed in their parents' or grandparents' footsteps to work at BIDMC
- Research and clinical care that aims to understand and minimize the impact of diseases passed within families from one generation to the next
- Efforts to engage patients' families—often across generations—in advance care planning and care management
- A BIDMC-affiliated community health center supporting the next generation by serving Boston's highest risk youth
- The new generation of BIDMC and the Department itself, with our growing number of community partners and affiliates, poised to serve our patients for generations to come

As it does each year, this report also includes information on the state of the Department. We are pleased to report on several areas—including research funding, clinical volume and income, honors and awards and publications—all of which reflect the skill and commitment of our faculty and staff. Thank you to each and every member of the Department and to our extended family of affiliates, donors, alumni and patients.

Warm Regards,

Mark L. Zeidel, MD
Chair, Department of Medicine

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Division Chief

MARK JOSEPHSON: *Inspiring the Next Generation*

By Peter Zimetbaum, MD

Mark Josephson, MD, came to Beth Israel Hospital (BI) in 1992 from the University of Pennsylvania having firmly established a reputation as a master clinician, scientist and educator. He had built one of the premier electrophysiology (EP) services in the world in Pennsylvania and had become Chief of Cardiology there by the age of 35.

In those days, BI was well known for its interventional cardiology and cardiac imaging but had not yet committed to the development of a modern EP section. The buzz surrounding Mark's arrival predicted an outspoken, larger than life and irreverent character who would profoundly change the place.

That turned out to be an understatement. As a BI resident at the time, I can remember his chagrin and frustration as he realized how behind we were. Perhaps it was the need to catch us up or just his irrepressible passion for EP, but he brought an intellectual excitement to the [Division of Cardiovascular Medicine](#) that was electric. From the start he was everywhere—teaching at the bedside, in ECG conference and in the laboratory. He insisted on the education of everyone from lab technicians and nurses to housestaff, fellows and cardiology attendings. No one got a pass—not even the then-Chief of Cardiology, whom Mark quizzed on the details of reentry during his first Cardiology Grand Rounds.

In short order, EP began to rival interventional cardiology for fellowship applicants, fellows were talking about arrhythmia mechanisms on rounds and old attendings were embracing new ways of managing arrhythmias. In fact, at age 80, Paul Zoll, MD, stood next to Mark in the EP lab as he performed the first ventricular tachycardia (VT) ablation at BI on a patient of Paul's whose VT was no longer suppressed on medication. For me personally, Mark was the best doctor I had—and have—ever worked with. He's a big part of the reason that I've spent 25 years—the entirety of my career—here at BIDMC. And I'm not alone in considering Mark a valued mentor and friend. A couple of years ago, we held a symposium called "The Josephson Scholars—Four Decades of Clinical EP," and nearly 200 of his mentees and their mentees came to Boston from across the country and around the world. Mark often proudly refers to his "academic children and grandchildren," and he's received much recognition for his role as mentor, including the American Heart Association's prestigious [Eugene Braunwald](#)

[Academic Mentorship Award](#). Upon getting the award, Mark reflected that mentoring is about more than helping people advance professionally: "You have to love people; you have to care about people and want to see them grow and be happy."

His style is very much tough love, however; his approach to life is to question, to debate, to agree to disagree. Early every morning, we gather as an EP service and review the cases for the day and the patients on the ward service. The fellows—and I was one, so I speak from experience—quickly learn to bring all the tracings and be ready to interpret them with both a diagnosis and an explanation of the physiology. This morning meeting ritual is about education and clinical excellence. It keeps us honest in our approach to patient care, allows us to teach one another, creates a cohesive service and, in effect, creates a family. It embodies all the principles Mark stands for as an academic physician. It is one of the places where Mark shares his brilliance with us and helps us learn to think more deeply and rigorously. It is no surprise that many EP programs in Boston and, I suspect, wherever his former fellows have landed now have similar morning meetings.

Ultimately Mark's commitment to the care of patients, the education of young doctors and the pursuit of



Mark Josephson, MD, and Peter Zimetbaum, MD.

academic excellence resulted in his selection as Chief of Cardiovascular Medicine. Since 2001, he has led the Division with extraordinary skill and spirit. As he relinquishes this responsibility, we look forward to having his attention back in the EP labs where his genius and enthusiasm

will continue to thrive for years to come. As Interim Chief of Cardiology, I'm keenly aware that his are big shoes to fill, but I also know that I learned from the best.

THE SALKE FAMILY: *Generations of Generosity*



Allison Salke with the Stoneman 7 Infusion/Pheresis team.



Allison Salke and her wife, Kim Banovic.



Joan and Michael Salke.



Stanley and Harriett Gordon, Joan Salke's parents. Harriet was a volunteer at Beth Israel Hospital during World War II.



A. Stone Freedberg, MD, Allison Salke's uncle and former Beth Israel cardiologist.

When asked how her family became involved in philanthropic efforts at BIDMC, Allison Salke goes back over 70 years and 2 generations to her grandparents. “My grandmother was a Grey Lady volunteer, and my grandfather was a juvenile cancer survivor,” she says. “Health care is a mission that resonates with us.”

The family’s initial support began with Allison’s parents, Joan and Michael Salke, who have been contributing to the [Division of Hematology/Oncology](#) for nearly four decades. Building on a second family endowment, Allison and her wife Kim Banovic make yearly contributions to the Stoneman 7 Infusion/Pheresis Unit.

Allison’s great uncle, A. Stone Freedberg, MD, a pioneering researcher who discovered the stomach bacteria *H. pylori*, served as Chief of Cardiology at Beth Israel

Hospital for many years. When Allison’s parents became interested in philanthropy, they didn’t have to look far: given their family’s connection to cancer, Freedberg suggested giving to the BI and pointed them in the direction of Lowell Schnipper, MD, Chief of the Division of Hematology/Oncology. Joan and Michael Salke established an endowment because “they wanted to make a difference in the fight against cancer,” Allison says. “My parents have always trusted Dr. Schnipper to allocate their funding to the research where it

would be most helpful.” The Salke parents continue to maintain the endowment today.

The Salkes also fund a second endowment that supports the Infusion/Pheresis nursing team on Stoneman 7 headed by Ayad Hamdan, MD, a member of the Division of Hematology/Oncology. Allison became a patient of the unit in 2009, around the time she was diagnosed with lupus, so she and Kim have first-hand experience with and appreciation of the team there. “If I had lived anywhere else in the country when I was diagnosed, and if it were not for access to all of my BIDMC providers, I truly believe I would not be as well as I am today,” Allison says. In particular, she credits

the Stoneman 7 nursing team, whose professional development their philanthropy helps support. “Patient care is profoundly affected by who is on the ground and at the bedside. Often nurses don’t get the recognition or resources they deserve,” she notes. She cites one example of Stoneman 7 nurses improving patient safety: they recommended switching the standard pre-infusion treatment allergy medication from Benadryl to Allegra to prevent drowsiness and possible accidents driving home. “Over the years, I’ve been cared for by every member of the Stoneman 7 team. They truly are the best of the best,” she adds.

In addition to their support of Hematology/Oncology and

Infusion/Pheresis, the Salke family supported BIDMC in the construction of the Carl J. Shapiro Clinical Center in 1996. As Mark Zeidel, MD, Chair of the Department of Medicine, notes, “Over the years, the Salkes have been remarkably important to BIDMC and the Department. The family’s longtime connection and generosity to the medical center is really quite extraordinary.” As for her family, Allison says they feel that BIDMC has been a great fit for their philanthropy, given their long and personal history with the medical center and because “our values are aligned.” She adds, “We have donated our time and funds because we believe in the importance of being grateful patients. For generations now, my

family has benefited from, and been connected to, this medical center. It is with great joy that we are able to help BIDMC in return.”

GENETIC TESTING: *Looking Beyond BRCA*

Family history has long been an important factor in determining a woman's risk of getting breast cancer. In 1997, it was discovered that mutations in the BRCA1 and BRCA2 tumor suppressor genes predispose women to both breast and ovarian cancer, the first hereditary evidence for these two diseases.

Later that year, oncologist Nadine Tung, MD, established BIDMC's [Cancer Genetics and Prevention Program](#), now part of the [BIDMC Cancer Center](#). Made up of five genetic counselors who work in concert with clinicians, the program has counseled and performed genetic testing on approximately 5,000 patients over the past 18 years.

BRCA1 and BRCA2 mutations account for approximately 5% of all cases of breast cancer and approximately 15% of cases of ovarian cancer. But recent research by Tung and other leaders in the field has started exploring the possibility of other genetic components. Earlier this year Tung published [a seminal paper in *Cancer*](#), the journal of the American Cancer Society, that pinpointed these additional breast cancer genes. Tung and her team examined more than 2,000 breast cancer patients, including 1,781 individuals who were referred for commercial BRCA gene testing and 377 who had a detailed personal and family history of breast cancer and had previously tested negative for BRCA1 and BRCA2 mutations. Using a next-generation sequencing panel of 25 genes associated with inherited cancer predisposition, the researchers explored the

frequency of other mutations. In approximately 4% of the patients, an inherited change in a cancer risk gene other than BRCA1 or BRCA2 was contributing to the development of their breast cancer.

Identifying mutations in genes other than BRCA1/2 can be helpful when counseling family members about their own risk of cancer. Though the clinical implications of mutations in some of these genes are not fully known, detecting these mutations may suggest therapies likely to be effective in treating cancers that develop in these individuals. For example, PARP inhibitors and platinum chemotherapy have been known to be particularly effective in treating cancers that develop in patients with inherited BRCA1 and BRCA2 mutations. Data is emerging that these therapies may also be effective in treating cancers that develop in patients with germline mutations in other cancer predisposition genes that function in the same DNA repair pathway as BRCA1 and BRCA2.

When using multi-gene panels, as Tung and her colleagues did, she notes that sometimes a mutation is unexpectedly found in a well-known cancer risk gene

not otherwise suggested by the family history. While this may be beneficial, allowing for screening that would not otherwise have been recommended the cancer risks associated with mutations in this setting are not fully known.

Tung says, "Our findings also showed that approximately 40% of patients had at least one genetic change of unclear significance, meaning that it is not known whether these genetic changes actually play a role in the development of cancer." These changes of uncertain significance, while promising for researchers, can be a cause of worry for patients. "Keep in mind that it has taken us many years to determine which genetic changes in BRCA1 and BRCA2 increase cancer risk, which ones are benign and which ones are still of uncertain significance," says Tung. "These uncertain findings can obviously cause anxiety for an individual or their family."

And Tung reminds us that this is one test that indeed can affect the whole family. If there is a hereditary genetic abnormality, then patients' children and siblings may also have inherited it. It is important for an individual to consider how the information might impact other family members—this is one of the many reasons why pretest counseling by a clinician familiar with genetics is so important.

"This is a very exciting time in the field of clinical genetics. Testing may



Nadine Tung, MD.

identify cancers for which you are at risk so that you can manage that risk through intensive screening, or preventative medication or surgery," adds Tung. "Testing also provides family members with information to help them manage risk. However, as the information yielded by these tests becomes more complex,

understanding the implications of genetic test results has never been more important. Misinterpretation can lead to both overreaction as well as false reassurance."

This article was adapted from the Summer 2015 "FYI" BIDMC Cancer Center newsletter.

BIDMC IN THE FAMILY



Verona White and Jacquelynn White

Mother and daughter Verona and Jacquelynn (Jackie) White both work in the [Division of Cardiovascular Medicine](#). Verona is a Patient Services Representative and Jackie is the Coordinator for the [Cardiovascular Disease Fellowship Program](#). “She takes care of the patients and I take care of the physicians,” Jackie notes. They commute to/from work together, Verona says, talking about “how our day went, any obstacles we had to overcome and what we accomplished for the day.” She adds, “Jackie and I have always been close and working at BIDMC keeps us closer.” In addition to working at BIDMC, Jackie receives care at the medical center, and she and her sister were both born here. Jackie’s cousin also works at BIDMC. Between the family connections and many mutual friends, Verona and Jackie agree that their BIDMC community has become a “second family.” Verona recalls starting at BIDMC

in 2011, saying, “I always wanted to work for BIDMC. I have friends and family who had worked here and had nothing but good things to say.” As to why she followed in her mother’s footsteps and decided to take a job at the medical center, Jackie says, “My mom has worked in hospitals all her life.” Jackie remembers hearing Verona talk about meeting new people and enjoying interactions with them. She has always loved helping patients and enjoyed working with colleagues. “This made me want to work in a hospital setting, too,” says Jackie. “I look up to my mom, so if she is doing something positive that works for her, then I want to do it too.”



Charlene Mantia, MD, and Susan Mantia, RN

They don’t overlap on the wards very often, but occasionally they find themselves responding to the same Code Blue emergency. “It’s always surprising when I wind up there as the doctor and my mom shows up as the nurse,” says Charlene Mantia, MD, a second-year [Internal Medicine resident](#). While Charlene does rotations in various medical areas, her mother, Susan (Sue) Mantia, RN, is a nurse in the Post-Anesthesia Care Unit (PACU). “So we don’t see each other all that often,” Sue says, “but my colleagues will often report that they’ve seen Charlene.” Indeed, some of Sue’s longtime colleagues even remember her when she was pregnant with her daughter—she’s been a nurse at BIDMC for 37 years, having started at the New England Deaconess Hospital as a Northeastern Co-op student. “I feel blessed that after all these years, I still enjoy what I do and am proud of where I work,” she says.

While several other members of the family are nurses, Charlene says she was drawn to medical school because she wanted an opportunity to study the science in-depth. “Growing up, I was always interested in science and especially human pathophysiology,” she says. She was also fascinated by her mother’s stories of taking care of very sick patients in the Surgical Intensive Care Unit, where she worked for 24 years before the PACU. “She is an incredibly caring nurse and really prides herself on being able to communicate well with patients and their families,” Charlene says, adding, “My mother is definitely a role model for me.”



Sara Steinberg, RN, and Lester Steinberg, MD

Sara Steinberg, RN, a nurse on Cardiology’s Farr 3, affectionately calls her 96-year-old grandfather “Pop.” But to others, he’s Lester Steinberg, MD, whose impressive career spans about 70 years, starting with a stint as a captain in the Air Force during WWII. Newly trained in internal medicine (not surgery, as he points out), Dr. Steinberg diagnosed acute appendicitis and performed an emergency appendectomy while on a Coast Guard cutter near the North Pole. He used the captain’s table as an operating area and adeptly completed the procedure. The young man recovered, and when the two were reunited a few years later, Dr. Steinberg told him, “That was the first and only surgery I ever did.” By the late 1940s, he had an office in Chestnut Hill, and in the early 1950s he joined Beth Israel Hospital’s Department of Medicine. In 1996, he published [a seminal paper linking platelets with bone injury and surgery complications](#). Although he no longer practices medicine, he is an active

member of the BIDMC community, taking the T from his home in Newton several times a week to attend conferences and events. He maintains research interests in new applications of the blood pressure drug Torsemide, and using emergency medicine tools for increasing heart circulation in the home setting.

For Sara, whose maternal grandfather and various other relatives were also physicians, medicine has been an interest since childhood. “When I was 19, I started as an EMT and was drawn to nursing because it combined medical and psychosocial aspects of care,” she says. “My favorite part of caring for patients is making a difference—making people smile, helping patients and their families understand complicated issues.” Dr. Steinberg agrees, noting simply, “It seemed nice to try to do something for people.” Indeed, a willingness to help people in need—whatever the circumstances—seems to run in the Steinberg family.

ENGAGING PATIENTS AND FAMILIES ACROSS GENERATIONS

As most people who have ever been seriously sick or injured can attest, illness often impacts the patient along with a network of people, including his or her family members, friends, co-workers and neighbors.

Often that network is multigenerational: an elderly man becomes ill and his middle-aged children and perhaps even grandchildren become involved in his care, or a young woman gets injured and her parents step in to manage her care. This year, the Department of Medicine has engaged in several initiatives to help our patients largely by supporting their family members and friends in their roles as caregivers, decision makers and advocates.

InfoSAGE

When someone is frail or ill, there's often extensive coordination that family and friends take on to manage the person's basic needs. Who's going to pick up medication? Who is responsible for driving to a follow-up visit? InfoSAGE (Information Sharing Across Generations) is a federally-funded project launched this year by the Divisions of [Clinical Informatics](#) and [Gerontology](#) in collaboration with investigators at [Hebrew SeniorLife](#). The team has developed a web-based platform and smartphone app to facilitate information search and retrieval, communication and task management—all built

around caring for an aging adult. In addition to providing a helpful service, InfoSAGE aims to better understand the information needs of elders and their adult children who are involved in their care by building a “living laboratory.” By actively enrolling people who coordinate the care of an adult over the age of 75, the team hopes to gauge the extent to which InfoSAGE improves the patient's and family's sense of control over long-term care plans.

Wellist

This year BIDMC entered into a partnership with the start-up company Wellist, which offers information on resources and services often sought during an illness—such as accessible transportation, support groups, house cleaning and grocery delivery. Wellist also enables patients or their caregivers to set up a gift registry, offering family and friends a way to “gift” practical needs, such as house cleaning or meal delivery. Critical to this new BIDMC-Wellist partnership are three divisions in the Department of Medicine that are serving as pilot sites: [General Medicine and Primary Care \(Healthcare Associates\)](#), [Gerontology](#) and [Hematology/Oncology](#).

Conversation Ready

Conversation Ready is a BIDMC-wide initiative to improve end-of-life care, which often involves communication across generations. Affiliated with [The Conversation Project](#) and the Institute for Healthcare Improvement, Conversation Ready aims to ensure that people receive the type of care that they want at the end of their lives. A central aspect of this work is encouraging patients to select a [health care proxy](#) or someone who can speak for them if they're ever unable to make or express health care decisions for themselves. Having a proxy—and talking with that person about what matters most—is one of the most important ways that a patient can make sure that his or her wishes are represented. It's also one of the best ways to ensure that family members feel confident that their loved one is getting the care that he or she would have wanted.

Respect and Dignity

Conversation Ready is linked to another exciting initiative launched this year at BIDMC with support from the Gordon and Betty Moore Foundation. Using the “preventable harm” model—developed at BIDMC—the medical center now strives to identify and minimize emotional harms to patients by more reliably treating them with respect. The initiative has involved creating systems by which patients



Hospitalist Lauge Sokol-Hessner, MD, with patient Peter Walsh and his daughter, Margaret Walsh.

(or their families or health care proxies) and staff can report an incident, developing a categorization system for types of emotional harm, and exploring ways to review cases so as to identify and address some of the root causes of such incidents. By using the same rigor that has been traditionally applied to physical harms, BIDMC hopes to learn how best to prevent future emotional harms through systematic and focused improvements.

Family Meeting Project

Another way that the Department of Medicine aims to support family and friends during a patient's illness is by ensuring that there is effective and empathic communication between care teams and patients and those who are there to support them. To improve the communication skills of our physicians, the Department offers several skill-building courses

to trainees, including the Family Meeting Project, now in its seventh year. In the setting of the intensive care unit, communication between family members, health care proxies and health care providers is vitally important and often particularly difficult. It is in the ICU that tough decisions often need to be made and where clear and compassionate communication is critical. Each year 60 residents and 6 fellows are trained to lead family meetings, learning to communicate information about prognosis and options for care and to listen to the concerns, values and priorities of those closest to the patient.

Intensive Care Through the Eyes of a Patient

In 2015, Critical Care Quality, a division of the [Department of Health Care Quality](#), sponsored

a multidisciplinary Critical Care Grand Rounds event entitled “An ICU Stay Through the Eyes of the Patient,” which featured interviews with two former long-term ICU patients. Facilitated by an intensivist from the [Division of Pulmonary, Critical Care and Sleep Medicine](#), the former patients shared their stories and offered personal and honest reflections on their experiences, with a particular focus on provider behaviors that helped and hindered their sense of dignity and recovery. These insights were framed in the context of the available medical literature on this topic. This presentation has led to improved awareness of our approach to patients and to teaching patient-centered care. Due to positive feedback from staff, a follow-up event is being planned, this time featuring family members of former BIDMC ICU patients.

INVESTIGATING MESOAMERICAN NEPHROPATHY: *The Role of Genes in a Harsh Environment*

In the fall of 2008, BIDMC [nephrologist](#) and Brookline, Massachusetts, resident David Friedman, MD, saw a story in his local newspaper that caught his eye.

It was about a team of researchers from Boston University who were investigating a mysterious kidney disease with a high prevalence in Brookline's sister city of Quezalguaque, Nicaragua. Years later, Friedman was part of [a group that found a strong genetic predisposition to kidney disease specifically in African Americans](#). While the disease in Nicaragua—a form of chronic kidney disease (CKD) known as Mesoamerican nephropathy due to its prevalence in Central America—presented different signs and symptoms, Friedman remembered the article and wondered if the same research methods could be applied. “I contacted the Boston University research team and asked if they were studying genetic factors,” Friedman says. “The answer was no—all the research on this disease had focused on environmental factors.”

That no one had considered genetics was not a surprise to Friedman—CKD is most common in sugarcane workers along the Pacific coast of Central America, who work under extraordinarily

harsh conditions. Mostly men between the ages of 20 and 50, the laborers work long days in extreme heat. “These workers cut 5–10 tons of sugar cane in a typical workday,” says Friedman. But the presence of so many potential environmental risk factors—including dehydration, heat exhaustion, agricultural exposures, infectious diseases, poor nutrition and poverty—has made the disease's trigger(s) difficult to isolate. And this is where genetics comes in: Friedman and his team hypothesized that this unusual type of kidney disease is a result of gene/environment interaction. “Finding genes that predispose people to this illness may help bring the most relevant environmental factor to light,” says Friedman. “If we can identify the gene or genes that

make workers susceptible to kidney disease, we can use it to help us figure out which environmental factor is triggering the disease.”

The disease has taken an extreme toll on many Central American communities. Nicaragua's rate of kidney failure is 10 times that of the United States and is the highest in the Western Hemisphere. In the area where Friedman conducts his research, kidney disease rates are 10 times higher than the rest of Nicaragua. The uncontrolled epidemic and the lack of proper health care—Friedman estimates there are a mere 30–40 available spots for dialysis in a region of the country where many thousands need it—have proven devastating for rural Nicaraguans, whose major source of income is sugar cane harvesting. Due to new rules, once a worker develops even early signs of CKD, he can no longer obtain work.

Quezalguaque's neighboring town of Chichigalpa has come to be known as “Isla de las Viudas,” or “Island of the Widows,” due to the number of men who have died as a result of CKD. “There are two key purposes for finding a genetic component,” says Friedman. “First and foremost, it can be the avenue to finding the modifiable risk factors that may trigger disease in people with a certain genetic profile.” And second, he says, “It can teach us about other types of kidney disease found worldwide since it's possible that CKD in Central America is similar to the disease we see in other places, simply accelerated by the harsh environment.” By understanding the interaction that genetics and environmental factors may be having in this community, Friedman and his team ultimately hope to find ways to prevent the debilitating illness in Quezalguaque and beyond.



David Friedman, MD, with Juan Jose Amador, MD, the field team leader in Nicaragua.



David Friedman, MD.

SIDNEY BORUM JR. HEALTH CENTER: *A Home for Boston's Youth*

On a recent Friday, Ralph Veters, MD, was busy seeing several patients. They included a teenage transgender patient and his parents; a twenty-something who had just tested positive for HIV; a homeless young person requesting post-exposure prophylaxis after risky sexual behavior; and a college student with an anxiety disorder.

“That’s fairly typical,” says Veters, the Medical Director of the [Sidney Borum Jr. Health Center](#), a program of Fenway Health and affiliate of BIDMC. “The Borum,” as it is known, provides care to young people, from 12 through 29 years of age, out of its office on Kneeland Street in downtown Boston.

A large portion of the 2,500 patients who receive care at the Borum each year, Veters explains, “are on the streets or marginally housed, and a lot of them are LGBT.” Young people find the practice through word of mouth, online searches or referring social service organizations. “They may come for one health-related reason, but often it turns out they need a lot of different things—clean clothes, a shower, a blanket, temporary housing.” In fact, the Borum has received grants to create and distribute seasonal backpacks full of items that young people living on the streets or in transient housing often need.

What young people also find at the Borum, Veters says proudly, is acceptance. “Many of our patients

say that in other health care settings they’re seen as smelly or drug-seeking,” he explains. “But the word gets out that at the Borum people are nice to you—you won’t feel stupid.” In fact, the Borum team—consisting of Veters (“Dr. Ralph” to his patients), two nurse practitioners, three behavioral health clinicians, a pediatric psychiatrist, two nurses, two patient services staff and a patient navigator—not only welcome young people with open arms, but often wind up serving the role of parent or grandparent. “For a kid who’s been kicked out of his house and has no parental figures, we’re sometimes the only reliable adults in their lives,” Veters says. “They come in thinking they’re dying, and they just need someone to give them a cup of tea and say, ‘Don’t worry—it’s just a cold.’”

Veters, who trained in a joint pediatrics program at Boston Children’s Hospital and Boston Medical Center, says he was always interested in working with young people. “While babies are nice,” he says, “the medical needs of

teens and young adults are just so interesting.” So much happens in their development and maturation during those years, he explains, and along with their medical needs, there are often behavioral and familial issues that need to be addressed. “With our homeless youth, we’re always talking about family support and reunification.” But, he explains, “If a child shows any sign of being endangered, we may have to get child protective services involved.” They also have to handle issues around confidentiality and what information is shared with parents. “It can be tricky,” he says.

While the Borum serves a range of young people, including students at downtown colleges and people working in finance nearby, their base is young people who need a lot of help, Veters says. And he and his team are happy to give it. “In terms of the biggest bang for your buck,” Veters says, “I feel like the potential to impact people and make a difference in their lives is very high here.”



Sidney Borum Jr. Health Center patient Grayson Ward with Ralph Veters, MD.

COX TERHORST: *A Lifelong Coach for Young Investigators*

Cox Terhorst, PhD, Chief of the [Division of Immunology](#), received his doctorate in Molecular Biology from the University of Leiden in the Netherlands. His work there with the late Wim Möller, PhD, was on the ribosomal proteins L7/L12, which are docking sites for GTPase factors involved in protein synthesis.

Terhorst then did his post-doctoral work on HLA proteins at Harvard University under the mentorship of Jack Strominger, MD. “Not only were the Harvard BioLabs the top places in the country to study biochemistry, the Strominger lab consisted of exceptionally talented students and fellows. Jack instilled in my generation a sense of intellectual freedom, which I try to impart to my trainees,” says Terhorst.

In his own lab—first at the Dana Farber Cancer Institute and, since 1991, at BIDMC—Terhorst defined the role of the CD3 genes in assembly and signaling of the TCR/CD3 complex; identified the structure and function of CD1a,b,c and especially CD1d; developed a novel model of experimental colitis;

and conducted innovative studies on the gene that is defective in X-linked lymphoproliferative disease. Terhorst’s [trailblazing research](#) also focuses on the role of SLAMF genes in autoimmunity and, more recently, cancer immunology. Chair of the Department of Medicine Mark Zeidel, MD, applauds Terhorst, noting, “As a direct outcome of his scientific efforts, he has made many insights into human diseases. But equally importantly,” he adds, “Cox has trained many leading scientists here at HMS, and numerous full professors at other prestigious universities.”

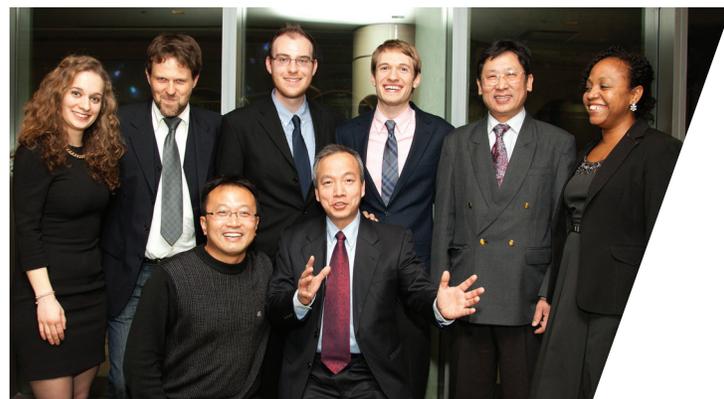
A 70th Birthday Symposium held in Terhorst’s honor this year was a celebration of collaboration and friendship, and of the many people whose careers he helped shape.

Organized by George Tsokos, MD, research collaborator and Chief of the [Division of Rheumatology](#), and Raif Geha, MD, Chief of Immunology at Boston Children’s Hospital, the day-long event drew more than 300 people. Speakers included Harvard Medical School professors Steven Balk, MD, PhD, Katia Georgopolous, PhD, Hans Oettgen, MD, PhD, and Richard Blumberg, MD, all of whom trained with Terhorst. Many other former trainees traveled from across the country and overseas to attend, including professors Hans Clevers, MD, PhD, of the University of Utrecht and President of the Royal Academy of Sciences of the Netherlands; Georg Holländer, MD, of Oxford University; Hergen Spits, PhD, of the University of Amsterdam; Matt van de Rijn, MD, PhD, of Stanford University; Jannie Borst, PhD, of the Netherlands Cancer Institute and the University of Amsterdam; and Balbino Alarcon, PhD, of the Spanish National Research Council. Many others traveled from across the globe to partake in the symposium.

When Terhorst was interviewed for Dutch radio about one of his former post-doctoral students’ selection to President of the Royal Academy of Sciences of the Netherlands, he used a sports metaphor to describe the role of a mentor. Like a sports coach, a mentor first needs to

recognize talent. Then he or she needs to give players “freedom within a context”—the context in research, he notes, is set by the scope of the lab’s research and funding. Then, the coach must try to “foster a spirit of collaboration, friendship and common interests among the team members,” he explains.

Indeed, Terhorst is proud of his role coaching the next generation of investigators. “When you’re young, you don’t think about it that much. But I’m really proud of it now.” In his closing remarks at the symposium, Terhorst showed a painting by his wife called *Cowboys Can Fly* and reflected: “It’s because of you that I feel like I could rise to greater heights in our collective scientific endeavors.”



Mentees and colleagues at the symposium.



Left photo: Cox Terhorst, PhD, presenting at the symposium. Right photo: Terhorst in his office.



THE FLIER FAMILY: *Generations in Medicine*

When Sarah Flier, MD, was in kindergarten, her class visited her father, Jeffrey Flier, MD, then an endocrinologist at Beth Israel Hospital, at work. As a thank you, she recalls, “We made a giant poster detailing our day with stick figure drawings, which hung on my dad’s office door for over a decade.”

She remembers being proud of the fact that both of her parents were doctors—her mother, Terry (Eleftheria) Maratos-Flier, MD, is also an [endocrinologist](#)—and was intrigued by the discussions they’d have about medicine and research at dinner or in the car. “I suppose some kids would have tuned it out. I happened to find the discussions interesting and think that my early introduction to medicine by osmosis, so to speak, probably helped steer me towards my career.” Having declared that she wanted to be a doctor when she was 11, Sarah is now a member of the Department of Medicine’s [Division of Gastroenterology](#).

Sarah’s younger sister, Lydia Flier, also recalls, “[My parents] have always talked about insulin receptors and such over dinner, for as long as I can remember.” But it took her somewhat longer to settle on a career in medicine. “I’d say that my family being involved in medicine actually pushed me away, and gave me a need to prove to myself that it’s what I myself am interested in.” Lydia says that if she hadn’t gone into medicine, she would have tried her hand at

“the production side of comedy or theater.” Now in her fourth year at [Harvard Medical School](#), where she does rotations at BIDMC, Lydia has skillfully merged her interests in production and medicine. She has produced several videos while at HMS, including “[What Does the Spleen Do?](#)” This parody of the popular song “What Does the Fox Say?” has become an HMS sensation and has received over two million hits on YouTube.

Reflecting on the experience of being at the school where her father has been [Dean of the Faculty of Medicine](#) since 2007, Lydia says, “It has made me interested in the communication between students and faculty, and the types of roles students can and should have in curricular design. I’m even designing a course on primary care and teaching with some HMS (and BIDMC) faculty for the new curriculum.”

While her parents and sister are active researchers—Sarah’s lab space is near her mother’s and she attends her parents’ joint lab meetings—Lydia says, “I must have missed the ‘bench science’ gene...I just don’t

have the patience.” But, she notes, “Everyone in the family has a pretty strong medical education leaning and seems very satisfied by that aspect of their job.” Indeed, Terry is actively involved in assisting other faculty in her role as Director of the Office of [Academic Careers and Faculty Development](#), and works with Harvard Medical Students as an advisor in the Peabody Society. The four Fliers also agree that on the whole they’re curious, competitive and chatty, although their personalities are “pretty different,” Terry comments. “We’re all curious, driven and willing to work hard... [and] we all seem to have ‘diagnostic acumen’ in that we are pretty good at looking beyond the obvious.” And, Jeffrey says, “From what I can tell, we are all invested in our patients and students and want to do the best by them. I suspect we all talk and try to explain things more than we have to.”

In the Flier family, history appears to be repeating itself, at least at the dinner table. Like their parents before them, Sarah and Lydia say they now talk shop with their husbands: a basic scientist and a fourth-year medical student, respectively. “My three-year-old daughter has started asking us to ‘stop talking’ when we get too excited,” Sarah says. “But she does have a toy pager and returns calls



From left to right: Lydia Flier, Terry Maratos-Flier, MD, Jeffrey Flier, MD, and Sarah Flier, MD.

saying ‘Hello, this is Dr. Penelope answering a page!’” Only time will tell whether the next generation of Fliers will be drawn to medicine and to the BIDMC community, but

one thing is certain: if they are, they will have two generations of extraordinary role models to help guide them.

THE EVOLUTION OF MEDICINE: A Growing Community System

During “Town Hall” presentations he gave across BIDMC in 2015, CEO Kevin Tabb, MD, cited the medical center’s mission “to serve our patients compassionately and effectively, and to create a healthy future for them and their families.” Tabb emphasized the need to ensure BIDMC’s longevity, growth and health as an institution for the sake of future generations of health care providers and patients.

According to the numbers, BIDMC is poised to do just that: the medical center has grown significantly over the past several years with the addition of several new BIDCO members and the expansion of member hospitals in [Milton](#), [Needham](#) and [Plymouth](#). Today the BID network is serving more patients and employing more providers than ever before. In fact, with a 50% increase in primary care providers, a 44% growth in fundraising, 34% more patients and a 30% boost in market share, BIDMC has seen more (and more rapid) growth than any other health system in the Massachusetts area.

In turn, the Department of Medicine is making its own strides in embracing and expanding our family of affiliates. Paul Hart Miller, Medicine’s new Administrative Director of Network Operations, says, “We are working to expand quality specialty care at the community level to ensure we are providing our patients the right care, at the right time, in the right place.” In particular, at BIDMC’s

community hospitals there has been a growing demand for the specialty care that BIDMC provides. BID-Milton, Needham and Plymouth have set up hospitalist programs; the Cancer Center at BIDMC has recently opened a new facility in Needham; Anna Jaques Hospital has recently established a new Cancer Center; and pulmonary care in several community intensive care units has been bolstered by Medicine faculty. All of these initiatives are being led or managed by physicians from BIDMC.

Hospitalist Programs

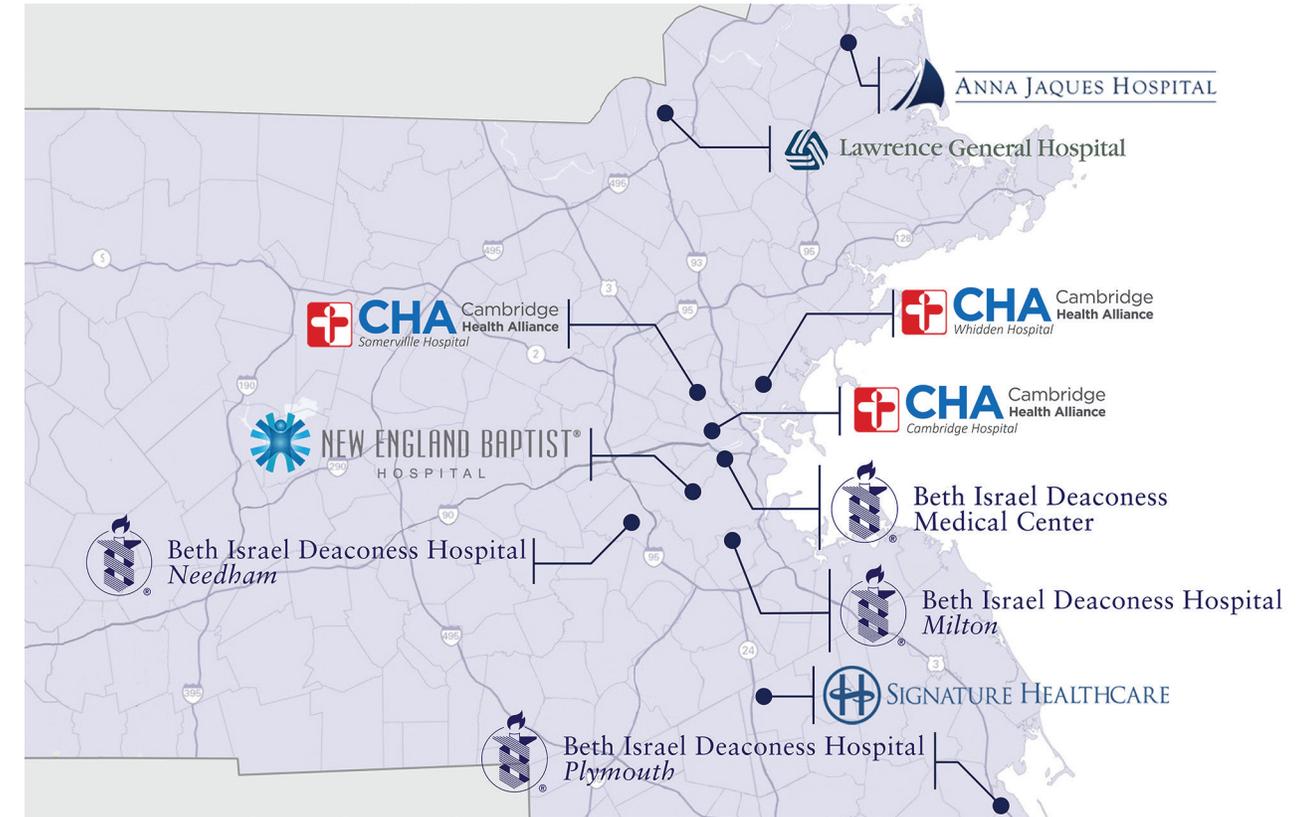
To keep up with growing demand for urgent care, BIDMC’s three member hospitals in Milton, Needham and Plymouth have put together teams of hospitalists—doctors who are available to cover medical admissions and inpatient emergencies on a 24/7 basis. These hospitalist teams are largely comprised of BIDHC/APG members and work closely with BIDMC to ensure quick and seamless transitions when tertiary care is needed.

Cancer Centers

BID-Needham and the [BIDMC Cancer Center](#) celebrated the opening of the new \$24 million [BID Cancer Center and Surgical Pavilion](#) in Needham. Opened in 2014, the 30,000 square foot, three-floor center provides the same expert care and many of the services currently offered at BIDMC. Many of our [Hematology/Oncology](#) faculty members have taken on key roles at the new facility, including Robb Friedman, MD (Needham Cancer Center Medical Director), Glenn Bublely, MD, Paula Fraenkel, MD, and Mark Huberman, MD. [Anna Jaques Hospital](#) has also established a close connection with our Division of Hematology/Oncology. Opened in 2015, [the Newburyport hospital’s new Cancer Center](#) encompasses a team of highly trained providers and a full spectrum of diagnostic and treatment programs. Nadine Tung, MD, and Marc Garnick, MD, have been particularly active on BIDMC’s part in growing this collaboration.

Pulmonary and Critical Care

In keeping with the mission to improve access for patients at the community level, our Division of [Pulmonary, Critical Care and Sleep Medicine](#) has extended its reach to community hospitals’ ICUs. At BID-Needham, Henry Koziel, MD, is leading an effort to enhance care in the ICU by providing an on-site



Clinically affiliated and member hospitals included in BIDMC’s growing system.

intensivist presence at the hospital. Board certified intensivists from BIDMC spend the day in Needham seeing ambulatory sleep and pulmonary patients and providing consultative services in the ICU. Intensivists will also provide coverage nights and weekends. At BID-Milton, the Division has worked with leadership to recruit

Heidi O’Connor, MD, to be Chief of Critical Care. She will be working to expand critical care services to better serve the increasingly complex patient population seeking care at Milton. In addition to this increased presence at Needham and Milton, intensivists from BIDMC are helping to provide ICU coverage at

[Cambridge Hospital](#), part of BIDMC affiliate [Cambridge Health Alliance](#).

Through these and future collaborations, the Department of Medicine aims to build a network that will serve patients in their communities for years to come.

PROTECTING THE NEXT GENERATION: *Preventing Mother-to-Child HIV Transmission*

When Roger Shapiro, MD, MPH, and his wife, Shahin Lockman, MD, MSc, arrived in Botswana in 1999, the prevalence rate of HIV was nearly 30%—one of the highest in the world. HIV/AIDS was still a death sentence; treatment options, by then available in the U.S., were not yet accessible in Africa.

What's more, the Southern African country lacked a program to prevent mother-to-child HIV transmission (MTCT). Up to 40% of children born to infected women were contracting HIV *in utero*, at delivery or through breastfeeding. Of those children who became infected, at least half died before their second birthday.

Shapiro and Lockman had met a few years earlier during their Internal Medicine residencies at Beth Israel. As aspiring infectious disease specialists, both found their calling in Botswana. “This was such a devastating illness being passed from one generation to the next. We both felt compelled to work in this area,” Shapiro explains. They became involved in research and clinical care at a new field site established by Max Essex, DVM, PhD, of the [Harvard T.H. Chan School of Public Health](#) (HSPH). Their goals were to improve survival among HIV-infected adults and children, and reduce the toll that HIV/AIDS was taking on the next generation.

Shapiro helped support the Botswana government as it established an MTCT prevention program in 1999 and a treatment

program in 2002, and began to conduct clinical trials to prevent MTCT. Ultimately, these trials helped pave the way for Botswana to develop Africa's leading program for MTCT prevention. A few years later, Shapiro rallied colleagues and resources and established a Clinical Care and Research Fellowship at [Scottish Livingstone Hospital \(SLH\)](#) in Molepolole, near Botswana's capital. The program supports fellows and junior faculty starting careers in international HIV work.

[BIDMC's partnership with SLH](#) has grown significantly since its inception. This year, the Department of Obstetrics/ Gynecology announced that it would join the Department of Medicine in supporting a full-time faculty member at SLH to provide care to the local population and precept the over 25 American residents who do rotations there annually. In the area of research, the BIDMC-SLH partnership is also expanding. In addition to being faculty in BIDMC's [Infectious Diseases Division](#) and at HSPH, Shapiro is now the Research Director of the BIDMC-Botswana Program and is working with colleagues from BIDMC and Harvard to establish an inpatient

research program at SLH.

Although they no longer live in Botswana, Shapiro and Lockman (now an ID specialist at Brigham and Women's Hospital) still travel there regularly with their three sons. Shapiro continues to conduct [research in Botswana](#), including randomized clinical trials evaluating optimal antiretroviral strategies to prevent MTCT at delivery and during breastfeeding; a randomized trial to study the efficacy of prophylactic cotrimoxazole among HIV-exposed uninfected infants; and several studies to evaluate the mechanisms by which antiretrovirals impact adverse birth outcomes.

In 2015, Shapiro began a new study to evaluate very early diagnosis and treatment for HIV-infected infants. His goal is to screen the newborn infants of HIV positive women while they're still in the maternity wards and, for those babies who test positive, to start treatment immediately. They've taken this approach both because treatment is most successful when started early and because infants are often lost to follow-up once they've left the hospital. “We now have antiretroviral treatment that can break the cycle of disease that took so many lives in the early days of the epidemic,” Shapiro says. “But we're still working to implement treatment more effectively to help the next generation.”



Roger Shapiro, MD, MPH, and Shahin Lockman, MD, MSc, in Botswana with their sons.

MENTORSHIP

From Generation to Generation



Bruce Landon, MD, MBA, MSc, and Jennifer Stevens, MD

The 2014-2015 academic year marked the last year of fellowship for Jennifer Stevens, MD, and the start of her new role as a junior faculty member in the [Division of Pulmonary, Critical Care and Sleep Medicine](#). “Periods of transition can be challenging and vulnerable times for new junior faculty,” she says. But this transition has gone smoothly for Stevens, who’s engaged in a national research project and recently assumed an Associate Director position for the [Medical Intensive Care Service \(MICU\)](#). For support during this period of growth and change, Stevens thanks Bruce Landon, MD, MBA, MSc, her mentor at BIDMC and faculty in the [Division of General Medicine and Primary Care](#). Landon and Stevens met four years ago through another of Stevens’ mentors: Mike Howell, MD, MPH, former BIDMC Director of Critical Care Quality. Howell and Stevens had embarked on a small-scale research project about inpatient consultation in BIDMC ICUs, and Landon helped the pair expand the project to a national scale and publish their findings.

“Bruce serves as a mentor to me in a lot of different spaces,” says Stevens. Landon agrees, saying, “If she’s doing anything where I can help, I help.” For example, Landon is assisting Stevens apply for an NIH K Award and also encouraged her to apply for a [Charles A. King Trust grant](#), which she recently received. Landon, who has been at BIDMC since his internship in 1992, mentors a number of BIDMC community members and says the best part of mentoring is the mentees: “They’re smart, excited and full of energy; they’re really going to advance their fields.”



Mary LaSalvia, MD, Mark Aronson, MD, Anjala Tess, MD, and Andrew Locke, MD

Anjala Tess, MD, first met Mark Aronson, MD, when she was a resident at BIDMC about twenty years ago. As she recalls, “He was the kind and unassuming clinic preceptor and firm chief that recruits trainees.” But it was when Tess later took a position in his fledgling hospital medicine group that she got to know him well. At

the time, Aronson was directing the quality and safety work in the Department of Medicine and asked her to get involved. “He was committed to our group of five and our careers,” Tess notes, and soon she went from working on small quality improvement projects to assuming her current role as Director of [Quality and Safety Education](#) for the Department of Medicine.

“I still rely on Mark to be a guide when I end up at a crossroads,” Tess says, noting his ability to see potential in people and nudge them in the right direction. “Many people will listen and can share their opinion, but not as many will try to see true potential,” she explains. “And when your mentor sees your potential, you see yourself differently.” Now herself a mentor to several junior faculty and trainees, Tess says, “I try to emulate Mark.” One of her mentees has been Mary LaSalvia, MD, a former BIDMC resident who is now a faculty member in the [Division of Infectious Diseases](#). With Tess’s support and gentle “nudges,” LaSalvia is making a name for herself in quality improvement at BIDMC. Through her redesign of the Outpatient Parenteral Antibiotic Clinic and work to standardize the care of all patients who leave BIDMC with parenteral therapy, her work has impacted thousands

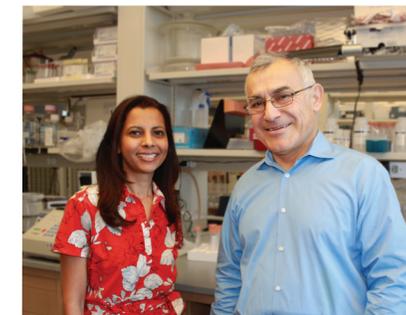
of patients. Tess also mentors residents, including Andrew Locke, MD, and Susan McGirr, MD, who serve as Vice Chairs of the BIDMC Housestaff Quality Improvement Council. “There is no greater reward than seeing my mentees succeed,” Tess says. “Just hearing something wonderful about them from leaders here or elsewhere, or even better, from their own mentees, keeps me motivated.”



Graham Snyder, MD, SM, Sharon Wright, MD, MPH, and David Yassa, MD, MPH

In the 20 years that Sharon Wright, MD, MPH, has been at BIDMC, she has had important mentors and been a key mentor to dozens of people. “I feel fortunate to have had amazing mentors,” she says, mentioning two in particular: Ken Sands, MD, MPH, of BIDMC and Don Goldmann, MD, currently at the Institute for Healthcare Improvement and Boston Children’s Hospital. “Now I want to pay it forward,” she explains. A member of the [Division of Infectious Diseases](#), she has mentored at least 14 fellows, including David Yassa, MD, MPH, and Graham Snyder, MD, SM, both of whom

are now faculty in the Division and responsible for mentoring fellows themselves. As Director of Infection Control/Hospital Epidemiology, Wright also mentors Northeastern Co-op students in nursing and health sciences. Three are now BIDMC employees, she notes proudly. “Mentoring reminds you why you do what you do. It keeps the work exciting,” she says. And her reach is not limited to BIDMC trainees; Wright often serves as a mentor through national societies, where she helps people at other organizations advance professionally. “Mentoring involves a lot of career counseling—helping trainees think through what type of work they want to do, where they want to do it, what skills they need—but it can also be quite personal in that you’re seeing people through big life changes,” she explains.



Vaishali Moulton, MD, PhD, and George Tsokos, MD

George Tsokos, MD, and Vaishali Moulton, MD, PhD, came to BIDMC from Maryland (Uniformed Services University and the University of Maryland, respectively) in 2006. Moulton started as a postdoctoral research fellow, one of three

members of [Tsokos’ new lab](#). Since then, she’s been promoted twice. Now an Assistant Professor, Moulton says, “I am extremely fortunate to have a mentor who is committed to the success of his trainees; research is hard work, but it’s been nothing but positive.” For Tsokos, Moulton proved “instrumental in building the lab,” which is now comprised of about 30 members. “She is an outstanding immunologist and experimentalist; a joy to have as a mentee because you know she is destined to thrive,” says Tsokos. They both agree that the role of a mentor is unique and important: “It’s different from teaching somebody to do what you’re doing,” says Moulton. “You’re helping someone advance in their career.” Moulton herself has had a chance to mentor research assistants, proudly citing examples of mentees who went on to medical school.

Tsokos thanks his own mentors—most notably Michael Papamichail, MD, a professor from Tsokos’ time at the University of Athens—for teaching him the value of creative experimentation, strategy and good listening. The success of Tsokos and Moulton’s partnership as mentor and mentee is clear; their research in lupus has been extraordinarily fruitful over the course of the last decade, resulting in numerous publications and grants. “I love research,” says Moulton. “I deeply value and cherish the opportunity to work towards improving the lives of lupus patients.” And, Tsokos says, “She’s committed to accomplishing this.”

MEDICAL EDUCATION

Residency Leadership

Residency Program Director
C. Christopher Smith, MD

Primary Care Program Director
Howard Libman, MD

Associate Program Directors
Grace Huang, MD
Kenneth Mukamal, MD, MPH
Benjamin Schlechter, MD
Anjala Tess, MD
Anita Vanka, MD
Julius Yang, MD, PhD

Education Manager
Ruth Colman

Chief Medical Residents

Kristin Burke, MD
Meghan Campo, MD
Rebecca Glassman, MD
Jared Grochowsky, MD
Darshan Kothari, MD
Joseph Tremaglio, MD



Daniel Ricotta, MD.

Interns

Sean Bhalla, MD
Benjamin Bier, MD
Priya Borker, MD
Zachary Borman, MD
Jillian Canton, MD
Ohn Chow, MD, PhD
Brian Connolly, MD
Amanda Cooke, MD
Joshua Davis, MD
Michael DeSimone, MD
Anjan Devaraj, MD
Ellen Dinerman, MD
William Einhorn, MD
Trenton Elliott, MD
Stephanie Feldman, MD
Danielle Fine, MD
Gabriel Foster, MD
John Mark Gubatan, MD
Gelareh Homayounfar, MD
Kelley Humbert, MD
Philip Kemp, MD
Allison Kimball, MD
Ritesh Kotecha, MD
Kristina Krecko, MD
Jenna Lester, MD
Anne Levenson, MD
Josephine Li, MD
Joy Makdisi, MD
Jennifer Manne, MD
Charlene Mantia, MD
Emmanuel Mensah, MD
Michael Mi, MD
David Miller, MD
Donya Mohebbali, MD
Robert Montgomery, MD
Adam Nadelson, MD
Zachary Nahmias, MD
Neil Parikh, MD, MBA
James Parris, MD, PhD
Ritika Parris, MD
Christopher Perrone, MD
Camille Petri, MD
Paawan Punjabi, MD
Guilly Rebagay, MD
Jane Roberts, MD, PhD
Sarah Robinson, MD
Gregory Salber, MD

Jennifer Sawaya, MD
Lucy Schulson, MD, MPH
Olivia Severdija, MD
Sarah Shannahan, MD
Samuel Snider, MD
Robert Stretch, MD
Paige Szymanowski, MD, MPH
Leah Taffel, MD
Hailu Tilahun, MD
Adam Tosh, MD
Alexa Triot, MD
Patrick Tyler, MD
Joseph Wallins, MD, MPH
Wenxin Xu, MD
Lauren Yang, MD
Sherry Zhao, MD
Ching Zhu, MD

Junior Residents

Jose Anguiano, MD
Maki Aoki, MD
Omar Baber, MD
Leah Biller, MD
Brian Carney, MD
Sarah Chen, MD
Katherine Clifton, MD
Gabriel Cohen, MD
Matthew Cohen, MD
Avraham Cooper, MD
Jake Decker, MD
Jennifer Faig, MD
Rebecca Frazier, MD
Monica Fung, MD
Rahul Ganatra, MD
Lauren Glassmoyer, MD
Hani Hazani, MD
Hsi-en Ho, MD
Grace Hsieh, MD
Lily Huang, MD
Katherine Joyce, MD
Joshua Kiss, MD
Tristan Kooistra, MD
Whitney Kress, MD
Carol Lai, MD
David Lam, MD
Kristi Larned, MD
Andrew Locke, MD
Ian McCoy, MD



Lauren Yang, MD.

Susan McGirr, MD
Jessica Meisner, MD
Shimontini Mitra, MD
Elliot Naidus, MD
Sunil Nair, MD
Asongu Ncho, MD
Erin Nuzzo, MD
Joseph Palatinus, MD, PhD
Patrick Reeves, MD, PhD
Alaina Ritter, MD
Megan Ritter, MD
Alexandra Rose, MD
Erika Runge, MD
Carolyn Shammias, MD
Elizabeth Targan, MD
Alok Tewari, MD
Sheeja Thomas, MD
Javier Villafuerte Galves, MD
Christopher Whitcomb, MD
Manida Wungjiranirun, MD

Senior Residents

Kathleen Abalos, MD
Josh Allen-Dicker, MD, MPH
Neal Biddick, MD
Jessica Camacho, MD
Paige Comstock, MD
Ogechi Dike, MD
Jessica Donato, MD
Nasser El-Okdi, MD
Stephen Gannon, MD
Randal Goldberg, MD
Alimer Gonzalez, MD
Joseph Grossman, MD
Angela Higgins, MD
Lindsay Hintz, MD
Sarah Housman, MD
Adelina Hung, MD
Natasha Hunter, MD

Vladimir Kaplinskiy, MD
Colleen Kershaw, MD
Saikiran Kilaru, MD
Katherine Killian, MD, MPH
Mengyao Liang, MD
Sarah Lieber, MD
Sharukh Lokhandwala, MD
Jinyu Lu, MD
Jessica Lynch, MD
Lucian Marts, MD
Jason Matos, MD
Jason Moran, MD
Christopher Morris, MD
Jenna Pace, MD
Joseph Paonessa, MD
Andrew Parker, MD
Yesenia Risech-Neyman, MD
Daniel Roberts, MD
Liana Schweiger, MD

Masih Shinwa, MD
Conor Stack, MD
Aaron Stupple, MD
Erina Sugai, MD
Jazmine Sutton, MD
Robert Tavares, MD
Jessica Taylor, MD
Adarsh Thaker, MD
Mark Tuttle, MD
Amanda Westlake, MD
David Zisa, MD, PhD

Medicine-Dermatology Residents

Daniel Bach, MD
Steven Chen, MD, MPH
Anar Mikailov, MD
Philip Song, MD



Jim Parris, MD, and Sylvia Yang, MD.



Resident Priya Borker, MD, presenting her work.

Residents Develop Research Skills through Mentorship

Many of the Department of Medicine's faculty members are educators and mentors dedicated to BIDMC's teaching mission. One of the ways in which these educators engage trainees is through an elective course offered by the [Internal Medicine Residency Program](#) that pairs junior residents with research

mentors. The course, first offered in 2005, is directed by Kenneth Mukamal, MD, MPH, of the [Division of General Medicine and Primary Care](#), and prepares residents for clinical, translational, educational or quality improvement research. Residents come to the course with an abstract of their project plans, which are then expanded and developed in workshops with other residents and research faculty tutors. At the end of the course, residents present their proposals in a dedicated seminar.

The two-week course is a rigorous introduction to research methods, writing and mentorship, and provides residents connections to people key to the research process: biostatisticians, experts in study design, directors of core research facilities

and others. Residents also receive advice on building an academic career and enjoy informal lunches with Medicine research faculty of the Department of Medicine. By showcasing a variety of faculty members—junior and senior; clinical, translational and bench investigators; men and women—the course exposes residents to a range of role models, who illustrate that there are many paths to a research career.

The success of the course is demonstrated by the total number of first author research papers produced by the residents (over 100 and counting), as well as by the expansion of the course to include residents from the Departments of Surgery and Anesthesia, Critical Care and Pain Medicine.

MEDICAL EDUCATION *Continued*

Fellowship Program Directors

Cardiovascular Medicine

David O'Halloran, MD (outgoing)
Joseph Kannam, MD (incoming)

Cardiology - Interventional

Donald Cutlip, MD

Cardiology - Electrophysiology

Alfred Buxton, MD

Clinical Informatics

Charles Safran, MD

Endocrinology, Diabetes and Metabolism

Evan Rosen, MD

Gastroenterology

Ciaran Kelly, MD

General Medicine and Primary Care

Edward Marcantonio, MD

Gerontology

Sarah Berry, MD

Pulmonary, Critical Care and Sleep Medicine

Peter Clardy, MD

Hematology/Oncology

Reed Drews, MD

Infectious Diseases

Wendy Stead, MD

Nephrology

Stewart Lecker, MD

Rheumatology

Robert Shmerling, MD

Sleep Medicine

Robert Thomas, MD

Transplant Hepatology

Nezam Afdhal, MD

Clinical Fellows

Cardiovascular Medicine

Yaw Adjei-Poku, MD
Hector Aguilar, MD, MPH
Paul Bailey, MD
Anuj Basil, MD
Barry Bui, MD
Brett Carroll, MD
Shweta Motiwala, MD
Colin Philips, MD
Gene Quinn, MD
Alefiyah Rajabali, MD
Sudip Saha, MD
Aferdita Spahillari, MD
Jordan Strom, MD
Jill Whelan, MD
Sylvia Yang, MD
Jessica Zhou, MD

Cardiology - Non-Invasive

Craig Benson, MD, MSc
Marshall Brinkley, MD
Sara Carroll, MD
Stuart Chen, MD
Apranta Patel, MBBS, MD
Christopher Song, MD

Cardiology - Interventional

Reza Fazel, MD
Hashim Gazi, MD
Joanna Ghobrial, MD
Shamail Tariq, MD
Young Yu, MD

Cardiology - Electrophysiology

Fernando Contreras Valdes, MD
Henry Huang, MD
Yehoshua Levine, MD
Jianqing Li, MD
Daniel Steinhaus, MD
Patricia Tung, MD
Jonathan Waks, MD

Cardiology - Research

Jason Roh, MD, MHS

Cardiology - Structural Heart Disease

Shing Fung Chui, MD



An Interventional Cardiology fellow works with faculty to perform a transcatheter aortic valve replacement.

Clinical Informatics

Adarsha Bajracharya, MD
Mujeeb Basit, MD

Endocrinology, Diabetes and Metabolism

David Baidal, MD
Anna Feldman, MD
Natasha Kasid, MD
Holly Kilim, MD
Roeland Middelbeek, MD
Alexandra Migdal, MD
Christopher Mulla, MD
Giulio Romeo, MD

Gastroenterology

Mona Akbari, MD
Jonah Cohen, MD
Laurie Gashin, MD
Katharine Germansky, MD
Robert Gianotti, MD
Doug Grunwald, MD
Z. Gordon Jiang, MD, PhD
Sveta Shah Oza, MD
Neil Sengupta, MD
Elliot Tapper, MD

Transplant Hepatology

Vilas Rashmi Patwardhan, MD

Advanced Endoscopy

Eric Ahn, MD, FRCP
Emad Suliman E Aljahdli, MD
Nazia Hasan, MD, MPH
Gyanprakash Ketwaroo, MD, MSc

Hepatology

Suzanne Chan, MD, PhD
Nikhil Rau, MD

Inflammatory Bowel Disease

Marie Boyle, MB, BCh, BAO
Aoibhlinn O'Toole, MD

Celiac Disease

Dharmesh Kaswala, MD, MB
Thimmaiah Theethira, MD, DM
Gopal Veeraraghavan, MD

Gastrointestinal Motility

Mohammed Zakari, MD

General Medicine and Primary Care

Brian Halbert, MD
John Mafi, MD
Melissa Wei, MD

Gerontology

Eddy Ang, MD
Ashmeet Bhatia, MD
Nadya Davila Lourido, MD
Lauren Gleason, MD
Stephen Gordon, MD
Karen Halpert, MD
Harkinder Khangura, MD
Perla Macip Rodriguez, MD
Asmita Paudyal-Koirala, MD
Andrea Schwartz, MD
Mousumi Sircar, MD

Hematology/Oncology

Bruno Bockorny, MD
Elizabeth Brem, MD
Brittany Bychkovsky, MD
David Einstein, MD
Jason Freed, MD
Anasuya Gunturi, MD
Rebecca Karp, MD
Xiuning Le, MD
Aparna Mani, MD
Myrna Nahas, MD
Eirini Pectasides, MD
Ioannis Politikos, MD
Mary Linton Peters, MD
Sol Schulman, MD, PhD
Meghan Shea, MD
Matthew Weinstock, MD
Jessica Zerillo, MD

Infectious Diseases

Roger Araujo Castillo, MD
Abdullah Chahin, MD

Spyros Chalkias, MD
Andrew Hale, MD
P. Alexander Leahey, MD
Ruvandhi Nathavitharana, MD, MPH
Lovisa Olafsdottir, MD
Payal Patel, MD
Alison Rapoport, MD
Elana Rosenthal, MD
Francisco Salgueiro, MD
John Winters, MD
Rebecca Zash, MD

Nephrology

Zubia Alam, MD
David DeWolfe, MD
Neetika Garg, MD
Ljubomir Ilic, MD
Lee Leeaphorn, MD
Matthew Lynch, MD
Kenneth Ralto, MD
Joseph Tremaglio, MD

Raman Vinod, MD
Vaughan Wascho, MD

Pulmonary, Critical Care and Sleep Medicine

George Alba, MD
Elias Baedorf Kassir, MD
Laura Brenner, MD
Robert Busch, MD
George Cheng, MD
Joshua Davis, MD
Amy Dickey, MD
Paul Dieffenbach, MD
Hilary DuBrock, MD
Katherine Dudley, MD
David Dudzinski, MD
Adel El Boueiz, MD
Adam Gaffney, MD
Brian Hobbs, MD
Douglas Hsu, MD
Daniela Lamas, MD
Anica Law, MD

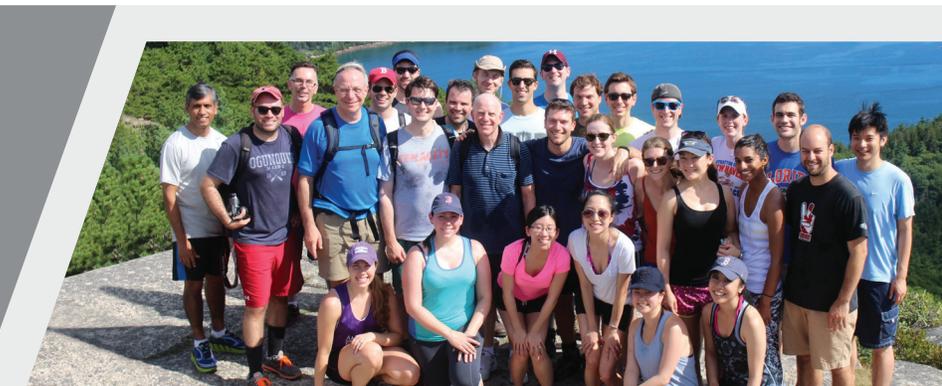
Sean Levy, MD
Ari Moskowitz, MD
Crystal North, MD
Rachid Putnam, MD
Rod Rahimi, MD, PhD
Krishna Reddy, MD
Christopher Richards, MD
Jennifer Stevens, MD
Alison Witkin, MD

Sleep Medicine

Xi Chen, MD, PhD
Lucas Donovan, MD
Bashar Zleik, MD

Rheumatology

Gelareh Atefi, MD
Irina Gavenscu-Stockton, MD, PhD
Jonathan Hausmann, MD
Isaac Kasper, MD
Christine Konya, MD
Ziv Paz, MD



Faculty and residents at Mount Desert Island.

Mount Desert Island: A Research Retreat for Generations of Medicine Faculty and Trainees

Mount Desert Island Biologic Laboratories (MDIBL) has been a special place to the Department of Medicine for nearly 50 years. Frank Epstein, MD, a nephrologist and former Chair of Medicine at Beth Israel Hospital, began doing research there in 1968. He served as a trustee and Chairman of the Scientific Advisory and Long Range Planning Committees before

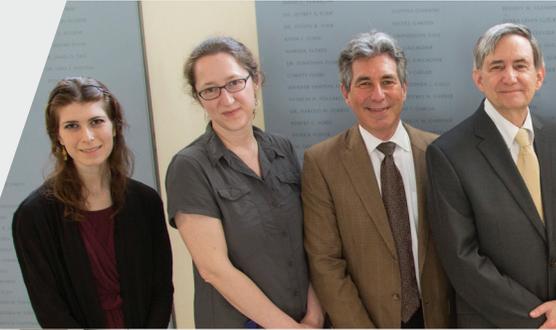
becoming president of MDIBL from 1986 through 1995. It was under his leadership that members of the Department of Medicine began visiting the island for research courses—a tradition that continues today with trainees joining Department Chair Mark Zeidel, MD, and other faculty for what's burgeoned into [four different research courses](#).

Now in its eighth year, a group of junior and senior residents spend a week in

August at MDIBL for a basic science immersion experience in comparative physiology. Originally spearheaded by former chief resident and current hospitalist Shani Herzig, MD, and Zeidel, the course is comprised of multiple modules including water metabolism, NaCl excretion, coagulation and cardiovascular physiology. Each module entails basic science experiments utilizing aquatic species accompanied by clinical correlation discussions. Due to the success of the resident course, Zeidel launched three additional courses in renal physiology (for medical students, fellows and hospitalists) that attract attendees from across the country.

Beyond the laboratory experience, all BIDMC trainees at MDIBL are encouraged to enjoy all that the Maine coastline has to offer, including hiking, kayaking, rock climbing, fishing and a final end-of-the-week lobster bake.

MEDICAL EDUCATION *Continued*



From left to right: Sarah Lieber, MD, Natasha Hunter, MD, Geoffrey Ginsburg, MD, PhD, and Mark Linzer, MD.

From left to right: Dodie Swan, Susan Rice, Brad Rice, Geoffrey Ginsburg, MD, PhD, Sheila Horwitz, Robin Ginsburg, Lachlan Forrow, MD, Ellie Swan and Amy Ship, MD.

Fostering Humanism in Medicine: Former Resident's Family Supports Unique Program

The Swan and Ginsburg families have supported the Internal Medicine Residency Program for over two decades in memory of Katherine Swan Ginsburg, MD, a highly-regarded house officer at Beth Israel Hospital who passed away in 1992 at the age of 34 from cancer. In memory of Swan Ginsburg, remembered for her compassion, selflessness, intelligence and medical talent, her family and friends established the [Katherine Swan Ginsburg \(KSG\) Humanism in Medicine Program](#). Led by Amy Ship, MD, of the [Division of General Medicine and Primary Care](#), the KSG Program aims to foster values of compassionate care, clinician well-being, communication and collaboration, reflective practice and integration of the arts and humanities. "I believe that the KSG Humanism in Medicine Program is unique in the

country," says Ship. "I'm proud of our program, which continues to maintain Kathy's legacy, placing humanism at the center of all that we do."

Each year, housestaff vote to give one faculty member and one resident the [KSG Award for Humanism in Medicine](#). This year, Lachlan Forrow, MD, (faculty) and Sarah Lieber, MD, (resident) received the awards. The program also [sponsors a fellow](#) each year who pursues a project related to humanism in medicine. The 2015 fellow, Natasha Hunter, MD, investigated end-of-life care in the inpatient setting. Each spring, the program organizes a week-long "Celebration of Humanism," which includes a conference at which residents share poetry, play music and display artwork. During the week, a visiting professor also presents at two [Grand Rounds conferences](#), leads a Journal Club and meets with housestaff and

faculty. The 2015 KSG Visiting Professor was Mark Linzer, MD, who led several interactive sessions addressing physician burnout and approaches to diminish it.

Swan Ginsburg's husband, Geoffrey Ginsburg, MD, PhD—also an alumnus of the BIDMC internal medicine residency program and now faculty at Duke University Medical Center—remains connected to BIDMC, attending annual KSG events along with other members of the Swan and Ginsburg families. "The Katherine Swan Ginsburg Program is now part of the fabric of BIDMC," says Ginsburg. "It has become a revered series of events that are a testament to Kathy's values, her enduring memory, and the importance of compassion in caring for patients that is so emblematic of the program's housestaff and providers."



Paige Comstock, MD, with patient Mohan Dali.

HONORS AND ACCOLADES

Every year, members of the Department of Medicine receive numerous local, national and international awards for their outstanding work. This is a sampling of the accolades bestowed upon faculty from across our divisions this academic year.

TEACHING AWARDS

Steven Balk, MD, PhD, Jason Freed, MD, Kalon Ho, MD, Maria Konaridis, PhD, Joseph Kupferman, MD, Barbara Leverage, MD, Ateev Mehrotra, MD, Eran Metzger, MD, Ari Moskowitz, MD, Jeremy Richards, MD, Shivani Sahni, PhD, and David Yassa, MD
The Certificate of Excellence in Tutoring, presented to Harvard Medical School faculty who serve as tutors in required New Pathway courses in Years I and II and receive the highest rating

Eran Metzger, MD, and Jeremy Richards, MD
The Award for Excellence in Tutoring, presented to Harvard Medical School faculty who serve as tutors in required New Pathway courses in Years I and II and receive a score the highest rating for three consecutive years

Neal Biddick, MD
Jeffrey Silver Ambulatory Care Award for exemplifying qualities of knowledge, skill, empathy, thoroughness and a commitment to teaching; a new award given by Janet M. Spellman in appreciation of her physician, Dr. Jeffrey Silver, and the medical housestaff for the outstanding care she has received

Alexander Carbo, MD
Class of 2015 Faculty Award and Best Clinical Instructor Award from Harvard Medical School, as well as the BIDMC Academy of Medical Educators Award

Michael Curry, MD
Herrman Blumgart Award, presented to the faculty member who has contributed most to both housestaff education and professional development during the past academic year

Trenton Elliot, MD, Joy Makdisi, MD, and Christopher Perrone, MD
Medical Intern Award, presented from the nursing staff honoring exceptional interns with outstanding collaboration with nursing



Steven Chen, MD, Gabriel Cohen, MD, Jonah Cohen, MD, Andrew Hale, MD, Kristina Liu, MD, Daniel Ricotta, MD, and Nicole White, MD
Class of 2015 Resident and Fellow Teaching Award from Harvard Medical School

Grace Farris, MD, and Caleb Hale, MD
Hospital Medicine Teacher of the Year Award

Lachlan Forrow, MD, and Sarah Lieber, MD
Katherine Swan Ginsburg Award for Humanism in Medicine, Faculty and Resident Awards, respectively, for embodying Dr. Ginsburg's qualities of intelligence, courage, dignity and compassion

Randal Goldberg, MD
Steven E. Weinberger Award, honoring a senior member of the medical housestaff who contributed unselfishly to the residency program

Kelly Graham, MD, MPH
Preceptor of the Year Award, chosen by the housestaff in recognition of patience, mentorship and superior clinical care

Doug Horst, MD
Gastroenterology and Liver Division Special Award for Excellence and Contributions to Fellows' Education



Grace Huang, MD
S. Robert Stone Award for Excellence in Teaching at BIDMC for outstanding achievement in the teaching of medical students and housestaff

Lily Huang, MD, and Alexa Triot, MD
Elmer Hinton Award in recognition of outstanding physician-patient relationships, Junior and Intern recipients, respectively

Colleen Kershaw, MD
Stoneman Center Quality and Safety Award, awarded to a resident whose work has improved care at BIDMC

Elizabeth Langley, RN
L. James Wiczai, Jr. Award, presented to a staff member from a Harvard-affiliated hospital who fosters innovation and excellence in medical education

Tony Lembo, MD
J. Thomas Lamont Mentoring Award from the Division of Gastroenterology for critical thinking and promoting advancements in science and translational research

Anne Levenson, MD, and Sunil Nair, MD
Outstanding Resident-Fellow Teaching Award from the Center for Education and the Principal Clinical Experience course for third-year medical students



Warren Manning, MD
Gordon J. Strewler, MD Faculty Mentorship Award, honoring a faculty member who has significantly contributed to the development of the research skills and experiences of housestaff

Jason Matos, MD
Resident as Teacher Award, nominated by Harvard Medical School students who rotate on BIDMC medicine clerkships

Jason Moran, MD
Lowell McGee Award, given to the senior resident who contributed the most to educating his or her fellow house officers

Bruce Pastor, MD
Excellence in Teaching Award from the Affiliated Physicians Group



Kenneth Ralto, MD
BIDMC Fellow Teaching Award, presented by the housestaff to the medical subspecialty fellow who has contributed the most to their learning

Eileen Reynolds, MD
Robert C. Moellering, Jr. Teaching Award for excellence in teaching, research and clinical care

Jeremy Richards, MD
Junior Faculty Award for Excellence in Mentoring and Advising from Harvard Medical School

Alaina Ritter, MD, and Sarah Shannahan, MD
James Tullis Award, intellectual growth and enthusiasm for learning, Junior and Intern recipients, respectively

Simon Robson, MD
Excellence in Ambulatory Teaching in Subspecialty Medicine Award

David Savitz, MD
Career Educator Achievement Award from the Affiliated Physicians Group

Sunil Sheth, MD
Z. Myron Falchuk Mentoring Award from the third-year Gastroenterology fellows

Khaled Sorour, MD
Teaching Award for Non-Medical Specialties from the housestaff

Wendy Stead, MD
A. W. Karchmer Infectious Diseases Fellow Teacher of the Year Award

Katelyn Trainor, RN
Internal Medicine Residency Nursing Excellence Award, to a nurse chosen by housestaff who best exemplifies the qualities of compassion, dedication and excellence in nursing

Li Zhou, MD
Excellence in Ambulatory Student Teaching in Primary Care Medicine Award

HONORS AND ACCOLADES *Continued*

SELECTED NOTABLE AWARDS

Mark Andermann, PhD
Director's New Innovator Award,
National Institutes of Health



Mary Buss, MD, MPH
2015 Cunniff-Dixon Physician Award,
Hastings Center

Suzanne Bertisch, MD, MPH
Investigator Award, American Academy
of Sleep Medicine Insomnia Section

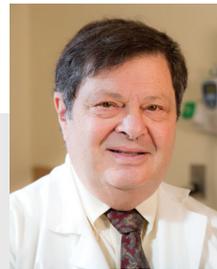
Adam Cheifetz, MD
Humanitarian of the Year Award, New England
Chapter of the Crohn's and Colitis Foundation
of America



Melina Claussnitzer, PhD
2015 Science Award in Diabetes Research,
German Diabetes Association

Michael Donnino, MD
2015 ACLS Scientific Guidelines Editor,
American Heart Association
Chair of the Board, Alliance of Academic
Internal Medicine

Erik Folch, MD, MSc
Board of Directors, American Association of
Bronchology and Interventional Pulmonology



Bruce Furie, MD
Distinguished Scientist Award, American
Heart Association

Mark Josephson, MD
2015 Distinguished Scientist Award,
Heart Rhythm Society

Ananth Karumanchi, MD
Arthur C. Corcoran Memorial Lecturer Award,
American Heart Association's Council for
High Blood Pressure Research

Member, Association of American Physicians

Douglas Kiel, MD, MPH
President-Elect, American Society of Bone and
Mineral Research

Honorary Fellowship, American Heart Association

Long Ngo, PhD
2014 Sherman Award for Excellence in Patient
Engagement Contribution, OpenNotes Collaborative
U.S. Faculty Scholarship, Vietnam
Education Foundation



Pier Paolo Pandolfi, MD, PhD
2014 America Award from the
Italy-USA Foundation

2015 Outstanding Investigator Award, National
Institutes of Health/National Cancer Institute

Officer of the Order of the Star of Italy, an order
of knighthood granted by the President of Italy

Chung-Kang Peng, PhD
Finalist, \$10 million Qualcomm Tricorder
XPRIIZE competition

Douglas Pleskow, MD
2015 Service Award, Massachusetts
Gastroenterology Association

Nira Pollock, MD
2015 Emerging Leader Award,
Bay Area Lyme Foundation

Eileen Reynolds, MD
President-Elect, Society of General Internal
Medicine

Simon Robson, MD
Honorary Fellowship, Royal College
of Physicians of Ireland

Charles Safran, MD
2014 Morris F. Collen Award, American College
of Medical Informatics

Mara Schonberg, MD, MPH
2015 Clinician-Investigator of the Year,
New England Region of the Society of General
Internal Medicine



Robert Thomas, MD
Member at Large for North America,
World Association of Sleep Medicine

Co-chair, World Association for Sleep Medicine
Education Committee

George Tsokos, MD
2015 Lupus Insight Prize, Alliance for Lupus
Research, Lupus Foundation of America, and Lupus
Research Institute

2014 Evelyn V. Hess Award, Lupus Foundation
of America

2014 Distinguished Basic Investigator Award,
American College of Rheumatology

Peter Weller, MD
2015 Robert G. Townley Lecturer, American
Academy of Allergy, Asthma and Immunology

IN MEMORIAM *Anita Kurmann, MD*



Anita Kurmann, MD, a post-doctoral fellow in the Division of Endocrinology, Diabetes and Metabolism, died on August 7, 2015 at the age of 38 in a biking accident. An accomplished thyroid surgeon, Kurmann came to the U.S. three years ago from Switzerland to conduct research at BIDMC and Boston University (BU). Mentored by Tony Hollenberg, MD, Chief of the Division of Endocrinology, Diabetes and Metabolism, and Darrell Kotton, MD, Director of BU's Center for Regenerative Medicine, her work focused on transforming embryonic stem cells into functional thyroid tissue. During the time she was in Boston, she made remarkable progress in the lab, but it was her selflessness, generosity and collaborative spirit

that colleagues and friends remember most. Hollenberg notes, "Above and beyond her many professional achievements, Anita was—most importantly—brilliant in life. She was dynamic and kind-hearted and the consummate friend, professional and achiever." During her memorial service, Kotton reflected: "Almost as if she knew her time on Earth was short, she committed almost every waking moment to the relentless pursuit of helping those who suffer from thyroid disease. She trained hard to be the best thyroid surgeon

she could be and put her patients first. She sought basic science training in the thyroid believing that as a surgeon-scientist she could make the most meaningful, lasting impact on those who suffer from thyroid diseases. She was the exemplary standout of one who lives her life totally committed to something greater than one's self." Just days before her death, Kurmann learned that the research to which she had been so committed would be [published in *Cell Stem Cell*](#).

"Anita was a brilliant surgeon and scientist. She was deeply passionate about science, medicine and learning. Above and beyond her many professional achievements, Anita was most importantly brilliant in life. She was dynamic and kind-hearted, and the consummate friend, professional and achiever."

—Anthony Hollenberg, MD

SELECTED PUBLICATIONS

The following publications highlight just some of the scholarly work conducted in the Department of Medicine this academic year.

Allergy and Inflammation

Gokhin DS, Nowak RB, Khoory JA, Piedra Ade L, Ghiran IC, Fowler VM. [Dynamic actin filaments control the mechanical behavior of the human red blood cell membrane.](#) *Mol Biol Cell* 2015; 26:1699-710.

Melo RC, Morgan E, Monahan-Earley R, Dvorak AM, Weller PF. [Pre-embedding immunogold labeling to optimize protein localization at subcellular compartments and membrane microdomains of leukocytes.](#) *Nat Protoc* 2014; 9:2382-94.

Melo RC, Weller PF. [Unraveling the complexity of lipid body organelles in human eosinophils.](#) *J Leukoc Biol* 2014; 96:703-12.



Spencer LA, Bonjour K, Melo RC, Weller PF. [Eosinophil secretion of granule-derived cytokines.](#) *Front Immunol* 2014; 5:496.

Ueki S, Konno Y, Takeda M, Moritoki Y, Hirokawa M, Matsuwaki Y, Honda K, Ohta N, Yamamoto S, Takagi Y, Wada A, Weller PF. [Eosinophil extracellular trap cell death-derived DNA traps: their presence in secretions and functional attributes.](#) *J Allergy Clin Immunol* 2015; [Epub ahead of print].

Cardiovascular Medicine

Anter E, Tschabrunn CM, Josephson ME. [High-resolution mapping of scar-related atrial arrhythmias using smaller electrodes with closer interelectrode spacing.](#) *Circ Arrhythm Electrophysiol* 2015; 8:537-45.

Melman YF, Shah R, Danielson K, Xiao J, Simonson B, Barth A, Chakir K, Lewis GD, Lavender Z, Truong QA, Kleber A, Das RK, Rosenzweig A, Wang Y, Kass DA, Singh JP, Das S. [Circulating microRNA-30d is associated with response to cardiac resynchronization therapy in heart failure and regulates cardiomyocyte apoptosis: a translational pilot study.](#) *Circ* 2015; 131:2202-16.

Lauriol J, Keith K, Jaffre F, Couvillon A, Saci A, Goonasekera SA, McCarthy JR, Kessinger CS, Wang J, Ke Q, Kang P, Molkentin JM, Carpenter C, Kontaridis MI. [RhoA signaling in cardiomyocytes protects against stress-induced heart failure.](#) *Sci Signal* 2014; 7:ra100.

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Reardon MJ, Adams DH, Kleiman NS, Yakubov SJ, Coselli JS, Deeb GM, Gleason TG, Lee JS, Hermiller JB, Chetcuti S, Heiser J, Merhi W, Zorn GL, Tadros P, Robinson N, Patrossian G, Hughes GC, Harrison JK, Maini B, Mumtaz M, Conte JV, Resar JR, Aharonian V, Pfeffer T, Oh JK, Qiao H, Popma JJ. [Two-year outcomes in patients undergoing surgical or self-expanding transcatheter aortic valve replacement.](#) *J Am Coll Cardiol* 2015; 66:113-21.

Center for Virology and Vaccine Research

Agnihotri SP, Wuthrich C, Nauen D, Karimi R, Viscidi R, Troceno J, Bord E, Batson S, Koranik II. [A fatal case of JC virus meningitis presenting with hydrocephalus in an HIV-seronegative patient.](#) *Ann Neurol* 2014; 76:140-7.

Hulot SL, Korber B, Giorgi EE, Vandergrift N, Saunders KO, Balachandran H, Mach LV, Lifton MA, Pantaleo G, Tartaglia J, Phogat S, Jacobs B, Kibler K, Perdiguero B, Gomez CE, Esteban M, Rosati M, Felber BK, Pavlakis GN, Parks R, Lloyd K, Sutherland L, Scarse R, Letvin NL, Seaman MS, Alam SM, Montefiori D, Liao H-X, Haynes BF, Santra S. [Comparison of immunogenicity in rhesus macaques of transmitted-founder, HIV-1 group M consensus and trivalent mosaic Envelope vaccines formulated as a DNA prime, NYVAC and Envelope protein boost.](#) *J Virol* 2015; 89:6462-6480.

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Barouch DH, Alter G, Broge T, Linde C, Ackerman ME, Brown EP, Borducchi EN, Smith KM, Nkolola JP, Liu J, Shields J, Parenteau L, Whitney JB, Abbink P, Ng'ang'a DM, Seaman MS, Lavine CL, Perry JR, Li W, Colantonio AD, Lewis MG, Chen B, Wenschuh H, Reimer U, Piatak M, Lifson JD, Handley SA, Virgin HW, Koutsoukos M, Lorin C, Voss G, Weijtens M, Pau MG, Schuitemaker H. [Protective efficacy of adenovirus/protein vaccines against SIV challenges in rhesus monkeys.](#) *Science* 2015; 349:320-4.

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Clinical Informatics



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Tosh PK, Feldman H, Christian MD, Devereaux AV, Kisson N, Dichter JR, on behalf of the Task Force for Mass Critical Care. [Business and continuity of operations: care of the critically ill and injured during pandemics and disasters: CHEST consensus statement.](#) *Chest* 2014; 146:e103S-17S.

Clinical Nutrition

Bistran BR. Nutritional Assessment (chapter), Goldman's Cecil Medicine. 25th ed. Goldman L, Schafer A Eds. Elsevier, St. Louis. 2015.

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Mandeep Sawhney, MD, MS
Sunil Sheth, MD, MB, BS
Jacqueline Wolf, MD
Yan Wu, PhD
Dezheng Zhao, PhD

General Medicine and Primary Care

Kim Ariyabuddhiphongs, MD
Mark Aronson, MD
Daniel Barker, MD
Nisha Basu, MD, MPH
Carol Bates, MD
Jennifer Beach, MD
Sigall Bell, MD
Suzanne Bertisch, MD, MPH
Heidi Blake, MD
Diane Brockmeyer, MD
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Catherine Buettner, MD, MPH
Risa Burns, MD, MPH
Mary Buss, MD, MPH
Rafael Campo, MA, MD, DLitt (Hon)
J. Jacques Carter, MD, MPH
Marc Cohen, MD
Lisa Conboy, MA, MS, ScD
Bradley Crotty, MD, MPH
Katherine Dallow, MD, MPH

H. Leon Daneschvar, MD
Roger Davis, ScD
Tom Delbanco, MD
John Doweiko, MD
Sara Fazio, MD
Leonor Fernandez, MD
David Fessler, MD, MPH
Kelly Ford, MD
Lachlan Forrow, MD
Angela Fowler-Brown, MD, MPH
Susan Frankl, MD
Peter Gonzalez, MD
Kelly Graham, MD, MPH
Mary Beth Hamel, MD, MPH
James Heckman, MD
James Heffernan, MD, MPH
Elizabeth Housman, MD
Joyce Jen, MD
Ted Kaptchuk
Hans Kim, MD, MPH
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Gila Kriegel, MD
Bruce Landon, MD, MBA, MSc
Anya Lepp, MD
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Howard Libman, MD
Julia Lindenberg, MD
Timothy Loo, MD
Harvey Makadon, MD
Vasudev Mandyam, MD
Edward Marcantonio, MD, SM
Ellen McCarthy, PhD, MPH
Felipe Molina, MD
Kenneth Mukamal, MD, MPH
Asghar Naqvi, MD, MPH
Aditi Nerurkar, MD, MPH
Long Ngo, PhD
Kay Petersen, MD
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Debra Poaster, MD
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Eileen Reynolds, MD
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Kenneth Sands, MD, MPH
Mara Schonberg, MD, MPH

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Janice Walker, RN, MBA
Christina Wee, MD, MPH
Amy Weinstein, MD, MPH
Robin Wigmore, MD
Joseph Wright, MD
Gloria Yeh, MD, MPH
Chunbai Zhang, MD, MPH
Li Zhou, MD, MPH

Hospital Medicine

Andrew Ahn, MD, MPH
Joshua Allen-Dicker, MD, MPH
Tomer Barak, MD
Jessica Berwick, MD
Jonathan Bortinger, MD
Alexander Carbo, MD
Jonathan Crocker, MD
Lauren Doctoroff, MD
Bonnie Dunne, MD
Ghideon Ezaz, MD
Elizabeth Farrell, MD
Grace Farris, MD
David Feinbloom, MD
Henry Feldman, MD
Evan Gwyn, MD
Caleb Hale, MD
James Hart, MD, MBA
Shoshana Herzig, MD, MPH
Matthew Hill, MD
Grace Huang, MD
Douglas Kiel, MD, MPH
Dae Hyun Kim, MD
Elizabeth LaSalvia, MD
Tae Ho Lee, PhD
Lewis Lipsitz, MD
Brad Manor, PhD
Edward Marcantonio, MD, SM
Melissa Mattison, MD
Robert McLean, DSc
Eran Metzger, MD

Ian McCormick, MD
Ateev Mehrotra, MD
Amber Moore, MD
Daniele Olveczky, MD
Kavitha Prakash, MD, MPH
Daniel Ricotta, MD
Cory Ritter, MD
Matthew Ronan, MD
Kristen Scully, MD
Lauge Sokol-Hessner, MD
Roy Sriwattanakomen, MD
Anjala Tess, MD
Jesse Theisen-Toupal, MD
Nancy Torres-Finnerty, MD
Anita Vanka, MD
Navin Yadlapalli, MD
Julius Yang, MD, PhD

Genetics

John Sean Clohessy, PhD
Kevin Haigis, PhD
Letizia Longo, PhD
Pier Paolo Pandolfi, MD, PhD

Gerontology

Alan Abrams, MD, MPH
Sarah Berry, MD, MPH
Jennifer Brinckerhoff, MD
Madalena Costa, PhD
Virginia Cummings, MD
Katalin Danji, MD
Jesse Foote, MD
Jane Givens, MD
Marian Hannan, DSc
Susanne Hartmann, MD
Evan Gwyn, MD
Yi-Hsiang Hsu, ScD
Sharon Inouye, MD, MPH
Susan Kalish, MD
Ruth Kandel, MD
David Karasik, PhD
Grace Huang, MD
Douglas Kiel, MD, MPH
Dae Hyun Kim, MD
Elizabeth LaSalvia, MD
Tae Ho Lee, PhD
Lewis Lipsitz, MD
Brad Manor, PhD
Edward Marcantonio, MD, SM
Melissa Mattison, MD
Robert McLean, DSc
Eran Metzger, MD

Susan Mitchell, MD, MPH
Medha Munshi, MD
Jennifer Rhodes-Kropf, MD
Frederick Rowland, MD, MPH
Shivani Sahni, PhD
Suzanne Salamon, MD
Elizabeth Samelson, PhD
Robert Schreiber, MD
David Tsai, MD
San Wang, MD
Luis Zegada, MD
Anthony Zizza, MD

Hematology/Oncology

William Aird, MD
Jon Arnason, MD
Michael Atkins, MD
David Avigan, MD
Steven Balk, MD, PhD
Kenneth Bauer, MD
Rupal Bhatt, MD, PhD
Vassiliki Boussioutis, MD, PhD
Glenn Bubley, MD
Andrea Bullock, MD
Mary Buss, MD
Stephen Cannistra, MD
Lisa Cavacini, PhD
Shao-Yong Chen, MD
Hak Soo Choi, PhD
Steven Come, MD
Daniel Costa, MD, PhD
Anupam Desai, MD
Reed Drews, MD
Alexander Ebralidze, PhD
Mark Exley, PhD
Laurie Feldman, PhD
Paula Fraenkel, MD
John Frangioni, MD, PhD
Robb Friedman, MD
Marc Garnick, MD
Ayad Hamdan, MD
Christina Herold, MD
Mark Huberman, MD
Salvia Jain, MD
Robin Joyce, MD
Walk Kagan, MD
Susumu Kobayashi, MD, PhD
Stephen Landaw, MD
Tae Ho Lee, PhD

Elana Levantini, PhD
James Levine, MD
Lequn Li, PhD
Jessica Liegel, MD, MPH
Bing Lim, MD, PhD
Fangbing Liu, PhD
Kun Ping Lu, MD, PhD
Kathleen Mahoney, MD, PhD
David McDermott, MD
Malgorzata McMasters, MD
Lourdes Mendez, MD
James Mier, MD
Rebecca Miksad, MD
Firas Najji, DO
Kim-Son Nguyen, MD
David Panka, PhD
Lucia Pastorino, PhD
Akash Patnaik, MD, PhD
Hanna Radomska, PhD
Deepa Rangachari, MD
Jacalyn Rosenblatt, MD
Diane Savarese, MD
Benjamin Schlechter, MD
Lowell Schnipper, MD
Ralph Scully, MB, PhD
Anish Sharda, MBBS, MPH
Dimitrios Spentzos, MD
Neeharika Srivastava, MD
Jennifer Stone, MD
Ryan Sullivan, MD
Arthur Sytkowski, MD
Daniel Tenen, MD
Sheila Thomas, MD
Nadine Tung, MD
Haider Warraich, MD
Nicole White, MD
Gerburg Wulf, MD, PhD
Anyong Xie, PhD
Min Ye, PhD
Xiaocong Yu, PhD
Xin Yuan, MD, PhD
Pu Zhang, PhD
Xiao Zhou, PhD
Jeffrey Zwicker, MD



Elizabeth Riviello, MD, MPH, with resident Annie Levenson, MD.

Barbara Furie, PhD
Bruce Furie, MD
Mingdong Huang, PhD
Jeffrey Zwicker, MD

Interdisciplinary Medicine and Biotechnology

Manoj Bhasin, PhD
Madalena Costa, PhD
Ary Goldberger, MD
Junichi Hanai, MD, PhD
Zaheed Husain, PhD
Towia Libermann, PhD
Chung-Kang Peng, PhD
Jian Guo Ren, PhD
Pankaj Seth, PhD
Vikas Sukhatme, MD, PhD
Griffin Weber, MD, PhD

Immunology

Gongxian Liao, PhD
Cox Terhorst, PhD
Ninghai Wang, MD, PhD

Infectious Diseases

Mary Albrecht, MD
Carolyn Alonso, MD
Rachel Baden, MD
Clyde Crumpacker, MD

George Eliopoulos, MD
David Fessler, MD
Howard Gold, MD
Camilla Graham, MD, MPH
Adolf Karchmer, MD
Doug Krakover, MD
Mary LaSalvia, MD
Kenneth Mayer, MD
Jennifer Mitty, MD, MPH
Anne Nicholson-Weller, MD
Lori Panther, MD, MPH
Nira Pollock, MD, PhD
Chris Rowley, MD
Roger Shapiro, MD, MPH
Graham Snyder, MD
Wendy Stead, MD
Sabrina Tan, MD
Peter Weller, MD
Robin Wigmore, MD
Sharon Wright, MD
David Yassa, MD

Nephrology

Seth Alper, MD, PhD
Robert Brown, MD
Francesca Cardarelli, MD
Robert Cohen, MD
John Danziger, MD

DEPARTMENT OF MEDICINE HARVARD MEDICAL FACULTY PHYSICIANS *Continued*

John D'Elia, MD
Bradley Denker, MD
David Friedman, MD
Warren Hill, PhD
Melanie Hoenig, MD
Antoine Kaldany, MD
Eliyahu Khankin, MD
S. Ananth Karumanchi, MD
Stewart Lecker, MD, PhD
Bryce MacIver, PhD
C. John Mathai, PhD
Samir Parikh, MD
Martha Pavlakis, MD
Ali Poyan Mehr, MD
Martin Pollak, MD
Sylvia Rosas, MD
Burton Rose, MD
Johannes Schlondorff, MD, PhD
Robert Stanton, MD
Theodore Steinman, MD
Isaac Stillman, MD
Terry Strom, MD
Vikas Sukhatme, MD, PhD
Mark Williams, MD
Hai-Tao Yuan, MD, PhD
Kambiz Zandi-Nejad, MD
Mark Zeidel, MD

Pulmonary, Critical Care and Sleep Medicine

Anjali Ahn, MD
Praveen Akuthota, MD
Amit Anand, MD
Asha Anandaiah, MD
Robert Banzett, PhD
Douglas Beach, MD
Katherine Berg, MD
Suzanne Bertisch, MD
Leo Celi, MD
Jacqueline Chang, MD
Peter Clardy, MD
Michael Donnino, MD
Erik Folch, MD
Norma Gerard, PhD
Geoffrey Gilmartin, MD
Robert Hallowell, MD
Henry Koziel, MD
Barbara LeVarge, MD
Adnan Majid, MD
Jakob McSparron, MD

Carl O'Donnell, ScD, MPH
Michael Parker, MD
Sanjay Patel, MD
Melanie Pogach, MD
Susan Redline, MD, MPH
Mary Rice, MD
Jeremy Richards, MD
Elisabeth Riviello, MD, MPH
David Roberts, MD
Laura Rock, MD
Richard Schwartzstein, MD
Ronald Silvestri, MD
Amy Sullivan, EdD
Souvenir Tachado, MD
Robert Thomas, MD
J. Woodrow Weiss, MD
Joseph Zibrak, MD

Rheumatology

Fadi Badlissi, MD
Arturo Diaz, MD
Amy Devlin, MD
Lisa Fitzgerald, MD
Vasileios Kytтарis, MD
Linda Lieberman, PhD
Vaishali Moulton, MD, PhD
Jennifer Nashel, MD
Ziv Paz, MD

Paul Romain, MD
Robert Shmerling, MD
George Stojan, MD
Francine Ton-Nghiem, MD, MMSc
George Tsokos, MD
Ritu Valiyil, MD

Signal Transduction

John Asara, PhD
Stephen Soltoff, PhD
Alex Tokor, PhD

Translational Research

Steven Freedman, MD, PhD
Anna Johansson, PhD
Shiva Gautam, PhD
Camilia Martin, MD, MS

Transplant Immunology

Keiichi Enyoji, PhD
Zhigang Fan, MD, PhD
Tahereh Ghaziani, MD
Effi Kokkotou, MD, PhD
Maria Koulmanda, MSc, PhD
Alan Moss, MD
Simon Robson, MB, ChB, PhD
Thomas Thornley, PhD
Terry Strom, MD
Yan Wu, PhD

The Department of Medicine is proud to be affiliated with the following:

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Mandeep Dhadly, MD, of Atrius Health, with BIDMC colleagues.

2015 CLINICAL VOLUME: *Department of Medicine*



CLINICAL REVENUE

\$64,179,447

Inpatient discharges: **15,168**

Number of observation discharges: **4,054**

Number of patient days in hospital: **97,075**

Patients in our on-site primary care practice ("covered lives"): **40,959**

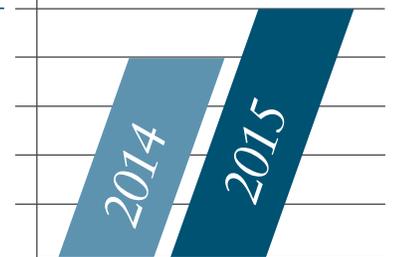
Endoscopic procedures: **26,309**

Cardiac catheterizations: **4,305**

WORK RELATIVE VALUE UNITS (RVUS)

917,371

867,527



NUMBER OF OUTPATIENT VISITS

273,064

2015 RESEARCH FUNDING

| Division | Funding Source | Direct Award | Indirect Award |
|--|----------------|--------------|----------------|
| Allergy and Inflammation | Federal | 1,100,838 | 631,579 |
| | Non-Federal | 252,025 | 9,868 |
| Cardiovascular Medicine | Federal | 3,843,093 | 1,794,603 |
| | Non-Federal | 6,730,585 | 1,578,555 |
| Clinical Informatics | Federal | 445,391 | 47,462 |
| | Non-Federal | 110,391 | 2,609 |
| Clinical Nutrition | Federal | — | — |
| | Non-Federal | 43,964 | — |
| Endocrinology, Diabetes and Metabolism | Federal | 7,936,405 | 4,683,118 |
| | Non-Federal | 4,519,298 | 729,226 |
| Experimental Medicine | Federal | — | — |
| | Non-Federal | 226,551 | 56,364 |
| Gastroenterology | Federal | 2,135,632 | 985,270 |
| | Non-Federal | 4,495,108 | 908,968 |
| General Medicine and Primary Care | Federal | 5,515,730 | 1,628,963 |
| | Non-Federal | 3,413,512 | 342,387 |
| Genetics | Federal | 1,477,349 | 1,069,289 |
| | Non-Federal | 4,428,627 | 238,215 |
| Gerontology | Federal | 847,303 | 21,057 |
| | Non-Federal | 597,951 | 52,944 |
| Gerontology/Hebrew SeniorLife | Federal | 6,351,817 | 2,038,077 |
| | Non-Federal | 433,807 | 75,506 |
| Hematology/Oncology | Federal | 10,044,789 | 3,932,866 |
| | Non-Federal | 7,299,597 | 1,283,865 |
| Hemostasis and Thrombosis | Federal | 2,022,679 | 1,164,774 |
| | Non-Federal | 172,770 | 6,055 |
| Immunology | Federal | 953,822 | 418,033 |
| | Non-Federal | 129,441 | 11,250 |

| Division | Funding Source | Direct Award | Indirect Award |
|--|----------------|--------------------|-------------------|
| Infectious Diseases | Federal | 836,556 | 306,441 |
| | Non-Federal | 200,405 | 43,220 |
| Interdisciplinary Medicine and Biotechnology | Federal | 996,428 | 430,075 |
| | Non-Federal | 1,031,872 | 306,406 |
| Molecular and Vascular Medicine | Federal | 1,831,396 | 1,079,917 |
| | Non-Federal | 1,163,568 | 53,417 |
| Nephrology | Federal | 3,942,820 | 2,048,316 |
| | Non-Federal | 3,725,899 | 462,835 |
| Pulmonary, Critical Care and Sleep Medicine | Federal | 991,509 | 583,817 |
| | Non-Federal | 704,048 | 62,537 |
| Rheumatology | Federal | 3,084,742 | 1,857,721 |
| | Non-Federal | 529,839 | 28,830 |
| Signal Transduction | Federal | 143,326 | 104,135 |
| | Non-Federal | 70,250 | 13,410 |
| Translational Research | Federal | 3,748,123 | — |
| | Non-Federal | 167,287 | 23,640 |
| Transplant Immunology | Federal | 731,355 | 483,829 |
| | Non-Federal | 419,571 | 40,470 |
| Virology and Vaccine Research | Federal | 29,520,523 | 5,157,728 |
| | Non-Federal | 8,109,249 | 951,201 |
| Total Federal | | 88,501,627 | 30,467,072 |
| Total Non-Federal | | 48,975,616 | 7,281,780 |
| GRAND TOTAL | | 137,477,242 | 37,748,851 |

TOTAL RESEARCH FUNDING
175,226,093



Beth Israel Deaconess
Medical Center



HARVARD MEDICAL SCHOOL
TEACHING HOSPITAL

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Beth Israel Deaconess Medical Center is a patient care, teaching and research affiliate of Harvard Medical School and consistently ranks as a national leader among independent hospitals in National Institutes of Health funding.

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