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Acknowledgments
The Department of Medicine wishes to thank the many individuals who contributed to this report, including department leadership, division chiefs, administrators and affiliates. We also thank Gigi Korzenowski and Jerry Clark of Korzenowski Design, and Jennie Greene and Jacqueline St. Onge of the Department of Medicine. The photography in this report was done by BIDMC’s James Derek Dwyer and Danielle Duffey, who also helped with photo research, as well as John Soares and Skylar Shankman. Jane Hayward, of BIDMC Media Services, provided expert copy editing and design consultation, and Susan Pasternak assisted with archival research. BIDMC’s Development Office helped connect us with the generous donor families profiled. Last but not least, we wish to thank all of the individuals featured in these pages for their valuable contributions to the BIDMC community and to this year’s annual report.
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
- A new generation of recipients who will support us, across generations

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

Departmental Organization

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Chair, Department of Medicine
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Interdisciplinary Medicine and Biotechnology
Vikas Sukhatme, MD, PhD
Division Chief
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 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.

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. By Peter Zimetbaum, MD

Mark Josephson: Inspiring the Next Generation

Mark Josephson, MD, and Peter Zimetbaum, MD.

Academic Mentorship Award

By Peter Zimetbaum, MD

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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. Joan and Michael Salke established 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 longstanding 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 who had previously tested negative for an inherited change in a cancer risk gene other than BRCA1 or BRCA2. When using multi-gene panels, the research team was able to detect mutations in 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. Tung says, “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 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.
Verona White and Jacquelyn White
Mother and daughter Verona and Jackelyn [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 in 1984. “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 Medicine and Primary Care and Hematology/Oncology, sponsored by 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 (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 traditionally been 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, agrichemical 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. 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.
That’s fairly typical,” says Vetters, 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, Vetters 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, Vetters says proudly, is acceptance. “Many of our patients say that in other health care settings they’ve 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 Vetters (“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,” Vetters 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.’”

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, Vetters says. And he and his team are happy to give it. “In terms of the biggest bang for your buck,” Vetters says, “I feel like the potential to impact people and make a difference in their lives is very high here.”
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 Zedeñ, 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, Karta 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. “It’s because of you that I feel like I could rise to greater heights in our collective scientific endeavors.”
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 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 its 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 BIDMC/CHA 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 Bobley, MD, Paula Faerinkel, MD, and Mark Huberman, MD. Anna Jaques Hospital has also established a close connection with our Division of Hematology/Oncology.

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 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 Needham and Milton.

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.
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.”
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 or 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 Howard, MD, MPH, former BIDMC Director of Critical Care Quality. Howard and Stevens had embarked on a small-scale research project about small-scale research projects, and Stevens had embarked on a small-scale research project about small-scale research projects. "I was committed to our group of five and our careers,” Landon notes, and Stevens 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 Orphaned 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 McGarr, 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 George Tsokos, MD

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 (Unified 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 composed of about 30 members. “She is an outstanding immunologist and experimentalist; a joy to have as a mentor 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 Papamichal, 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
Graia Huang, MD
Kenneth Mukamal, MD, MPH
Benjamin Schindler, MD

Adjunct Faculty

Daniel Ricotta, MD.
Joseph Tremaglio, MD
Darshan Kothari, MD
Rebecca Glassman, MD
Meghan Campo, MD
Kristin Burke, MD
Residents

Chief Medical Education Manager
Julius Yang, MD, PhD

Associate Program Directors
Howard Libman, MD
Primary Care Program Director
C. Christopher Smith, MD

Residents

Jennifer Savage, MD
Lucy Schuler, MD, MPH
Olivia Seventy, MD
Sarah Sh szczególnieDallas, MD
Leigh Talip, MD
Hale Thalji, MD
Adam Tisch, MD
Alex Tric, MD
Patrick Tyle, MD
Joseph Wulff, MD, MPH
Owen Xu, MD
Lauren Yang, MD
Sherry Zhao, MD
Ching Zhu, MD

Interns

Sean Bhatia, MD
Bennjamin Bier, MD
Priya Bokar, MD
Lauren Bokar, MD
Zachary Boman, MD
James Bannister, MD
Ellen Bannister, MD
Brian Connelly, MD
Amelia Costie, MD
Joshua Davis, MD
Michael DeMarco, MD
Anil Dev, MD
Elen Dineen, MD
William Dittrich, MD
Trenton Elliott, MD
Stephanie Feldman, MD
Domenica Fine, MD
Gabriel Finkelstein, MD
Josh Mark Gabriel, MD
Galvez Honayonfau, MD
Kelsey Humbird, MD
Philipp Kamp, MD
Allison Kinell, MD
Ritah Kudawe, MD
Kristina Kroczek, MD
Jenna Leder, MD
Anne Lenzen, MD
Josephine Li, MD
Joy Mallick, MD
Jennifer Marone, MD
Charlene Mantel, MD
Emmanuel Mantel, MD
Michael M, MD
David Miller, MD
Donny Mohabir, MD
Bobbi Montgomery, MD
Adam Nadelen, MD
Zachary Nahmias, MD
Neil Parkash, MD, MBA
James Pan, MD, PhD
Rita Pan, MD
Christopher Percone, MD
Camille Petri, MD
Pavan Paraj, MD
Gurry Rehagaga, MD
Jae Roberts, MD, PhD
Sarah Robinson, MD
Gregory Smoller, MD

Senior Residents

Kathleen Akabi, MD
Josh Allen, MD, MPH
Hauit Biddle, MD
Cassandra, MD
Piai Conner, MD
Oearc Dake, MD
Jessica Donato, MD
Nasser El-Osby, MD
Stephen Gans, MD
Ramai Goldfinger, MD
Aimen Gonzalez, MD
Joseph Groccam, MD
Angela Higgins, MD
Lindsay Hinz, MD
Sarah Hosmar, MD
Ashita Hong, MD
Natalia Hatter, MD

Interns

Ian McCoy, MD
Andrew Locke, MD
David Lam, MD
Carol Lai, MD
Whitney Kress, MD
Tristan Kooistra, MD
Joshua Kiss, MD
Katherine Joyce, MD
Lily Huang, MD
Hsi-en Ho, MD
Hani Hazani, MD
Lauren Glassmoyer, MD
Monica Fung, MD
Rebecca Frazier, MD
Jennifer Faig, MD
Jake Decker, MD
Matthew Cohen, MD
Matthew Cohen, MD
Matthew Cooper, MD
Jake Dayton, MD
Jennifer Ralfe, MD
Rebecca Frazier, MD
Monica Fung, MD
Rahul Gandhi, MD
Lauren Glazmann, MD
Hani Hazan, MD
Si-En Ho, MD
Graie Huang, MD
Lily Huang, MD
Joshua Kiss, MD
Tobias Kostka, MD
Whitney Krey, MD
Carol Lui, MD
David Luns, MD
Kristi Larned, MD
Andrew Lassie, MD
Ian McCoy, MD

Junior Residents

José Amigo, MD
Mali Avdi, MD
Leah Riller, MD
Brian Carney, MD
Sarah Chen, MD
Kathrine Clifford, MD
Gabriel Cohen, MD
Matthew Cohen, MD
Ariahel Cooper, MD
Jake Dayton, MD
Jennifer Ralfe, MD
Rebecca Frazier, MD
Monica Fung, MD
Rahul Gandhi, MD
Lauren Glazmann, MD
Hani Hazan, MD
Si-En Ho, MD
Graie Huang, MD
Lily Huang, MD
Joshua Kiss, MD
Tobias Kostka, MD
Whitney Krey, MD
Carol Lui, MD
David Luns, MD
Kristi Larned, MD
Andrew Lassie, MD
Ian McCoy, MD

Residents Develop Research Skills through Mentorship

Many of the Department of Medicine's faculty members are educators and mentors dedicated to BiMC's teaching mission. One of the ways in which 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.

Residents

Kathleen Akabi, MD
Josh Allen, MD, MPH
Hauit Biddle, MD
Cassandra, MD
Piai Conner, MD
Oearc Dake, MD
Jessica Donato, MD
Nasser El-Osby, MD
Stephen Gans, MD
Ramai Goldfinger, MD
Aimen Gonzalez, MD
Joseph Groccam, MD
Angela Higgins, MD
Lindsay Hinz, MD
Sarah Hosmar, MD
Ashita Hong, MD
Natalia Hatter, MD

Vladimir Kaplinsky, MD
Cullen Keach, MD
Sakkar Khan, MD
Katherine Kilian, MD, MPH
Mayvau Lee, MD
Sarah Lebel, MD
Sharaik Liebstone, MD
Jinyu Lu, MD
Jessica Lynch, MD
Lucian Mats, MD
James Mats, MD
James Mays, MD
Christopher Morris, MD
Jenna Pool, MD
Joseph Parinica, MD
Andrew Parker, MD
Yenasia Roach-Mayman, MD
Daniel Roberts, MD
Liana Schwenger, MD

Khal Shenaia, MD
Cosa Stark, MD
Aaric Stupple, MD
Erina Suga, MD
Aaminia Sutton, MD
Robert Tavass, MD
Jessica Taylor, MD
Adair Thaler, MD
Mark Tolle, MD
Amanda Whelacie, MD
David Zhao, MD, PhD

Dermatology Residents

Daniel Bach, MD
Stefan Chen, MD, MPH
Aaric Whelacie, MD
Philip Song, MD

Medicine Residency Program

mission. One of the ways in which these mentors dedicated to BIDMC’s teaching faculty members are educators and provide residents with the opportunity to develop their research skills by participating in the Biomedical Research Career Development Program (BCRCDP), which is designed to support junior residents as they begin their research careers. The program offers residents a unique opportunity to work with experienced mentors and learn the skills necessary to conduct high-quality biomedical research.

The BCRCDP is a two-year program that provides residents with the resources and support they need to become successful researchers. Residents are paired with an experienced mentor who provides guidance and feedback on their research projects. The program also includes regular seminars, workshops, and networking events to help residents develop their research skills and build their professional networks.

In addition to the BCRCDP, the Medicine Residency Program offers a range of research opportunities for residents at all levels of their training. Residents have the opportunity to participate in a variety of research activities, including clinical research, translational research, and basic science research.

The success of the program is demonstrated by the high quality of the research projects conducted by the residents. Many of the projects have resulted in significant contributions to the field of medicine, and many have been published in leading scientific journals.
Fellowship Program Directors

Cardiovascular Medicine
David O’Malley, MD (outgoing)
Joseph Kannam, MD (incoming)

Cardiology - Interventional
Donald Cutlip, MD

Cardiology - Electrophysiology
Alfred Buxton, MD

Cardiology - Structural Valve Replacement
Jason Roh, MD, MHS

Hematology/Oncology
Adarsha Bajracharya, MD

Clinical Informatics
Gyanprakash Ketwaroo, MD, MSc

Cardiology - Research
Eric Ahs, MD, FACC

Endocrinology, Diabetes and Metabolism
Gopal Veeraraghavan, MD

Cardiology - Research
Nathan Afzal, MD

Cardiology - Structural Heart Disease
Shing Fung Chu, MD

Clinical Fellows

Clinical Informatics
Adanair Bove-Chaverri, MD

Endocrinology, Diabetes and Metabolism
David Raskin, MD

Cardiology - Interventional
Reza Hafezi, MD

Cardiology - Electrophysiology
Fernando Contreras Valdes, MD

Cardiology - Electrophysiology
Pavel Falter, MD

Cardiology - Research
Jason Koh, MD, MSc

Cardiology - Structural Heart Disease
Hung Truong, MD

Advanced Endocrinology
Erik Ahs, MD, FACC

Email: sanrini@hsph.harvard.edu

Necatig Hanca, MD, MPh

Ganapathiraju Kotturawar, MD, MS

Hematology/Oncology
Bruno Bodring, MD
Elisabeth Breiv, MD
Brittany Beckley, MD
David Ernst, MD
James Freed, MD
Alexa Gupta, MD
Rebecca Kaier, MD
Xiaying Li, MD
Aparna Mari, MD
Alperhan Nazis, MD
Elisa Pecorard, MD
Isaiah Polk, MD, PhD
Mary Loren Peters, MD
Sol Shulman, MD, PhD
Megan Shea, MD
Matthew Weinstock, MD
Jessica Zerillo, MD

Infectious Diseases
Robert Gianotti, MD

Transplant Hepatology
Laura Lebowitz, MD

Rheumatology
Andrea Schwartz, MD

Asmita Paudyal-Koirala, MD

Karen Halpert, MD

Stephen Gordon, MD

Lauren Gleason, MD

Ashmeet Bhatia, MD

Eddy Ang, MD

Gerontology
Melissa Wei, MD

John Mafi, MD

Brian Halbert, MD

Gopal Veeraraghavan, MD

Adarsha Bajracharya, MD


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

Mount Desert Island Biological 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 former Chair of Medicine at Beth Israel Deaconess Medical Center from 1977 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 Ziedel, MD, and other faculty for what’s been termed as “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 Herzog, MD, and Ziedel, 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, Ziedel launched three additional courses in renal 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.
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 Leiber, 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.”
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 Ball, MD, PhD, Jason Fried, MD, Kallon Ho, MD, Maria Kontaridis, PhD, Joseph Kopführmann, MD, Barbara Levango, MD, Atsuo Melchorra, MD, Evan Metzger, MD, Ari Moskowitz, MD, Jeremy Richards, MD, Shivani Sahni, PhD, and David Yuasa, MD, The Certificate of Excellence in Tutoring, presented to Harvard Medical School faculty who serve as tutors in required Pathway courses in Years I and II and receive the highest rating

Evan Metzger, MD, and Jeremy Richards, MD

The Award for Excellence in Tutoring, presented to Harvard Medical School faculty who serve as tutors in required 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 Carlucci, MD

Class of 2015 Faculty Award and Best Clinical Instructor Award from Harvard Medical School, as well as the BIDMC Academic of Medical Educators Award

Michael Curry, MD

Herman Brunati 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 Mukilid, MD, and Christopher Porreca, MD

Medical Intern Award, presented from the nursing staff honoring exceptional interns with outstanding collaboration with nursing

Grace Parisi, MD, and Caleb Hale, MD

Hospital Medicine Teacher of the Year Award

Lachlan Forrow, MD, and Sarah Lieber, MD

Katherine Soon 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. Weingärber Award, honoring a senior member of the medical housestaff who contributed unspectacularly 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 Horsz, 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 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, RH

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

Tony Lembo, MD

I. Thomas Leonard Mentoring Award from the Division of Gastroenterology for critical thinking and promoting advancements in science and translational research

Anne Lewenson, MD, and Sunil Naik, MD

Outstanding Resident-Fellow Teaching Award from the Center for Education and the Principal Clinical Experience course for third-year medical students

Steven Chen, MD, Gabriel Cohen, MD, Joshua Cohen, MD, Andrew Halle, MD, Kristina Liao, MD, Daniel Ricotta, MD, and Nicole White, MD

Class of 2015 Resident and Fellow Teaching Award from Harvard Medical School

Eileen Reynolds, MD

Robert C. Hruban, 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

Teaching Award for Non-Medical Specialties from the housestaff

Khaled Soree, MD

Teaching Award for Non-Medical Specialties from the housestaff

Wendy Stead, MD

A. W. Karchmer Infectious Diseases Fellow Teacher of the Year Award

Katherine Trainer, 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

Sunil Sheth, MD

Z. Myron Farbick Mentoring Award from the third-year Gastroenterology fellows

Kenneth Ralfe, MD

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

Sunil Naik, MD

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

Jason Matsos, MD

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

J. Thomas Lamont Mentoring Award from the Affiliated Physicians Group

Warren Manning, MD

Junior Faculty Award for Excellence in Teaching, research and clinical care

Jeremy Richards, MD

Junior Faculty Award for Excellence in Teaching, research and clinical care

Jason Matsos, MD

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Sunil Naik, MD

BIDMC Fellow Teaching Award, presented by the housestaff to the medical subspecialty fellow who has contributed the most to their learning
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 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 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 stand out 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.

“Inanna 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

IN MEMORIAM
Anita Kurmann, MD

SELECTED NOTABLE AWARDS

Chang-Kang Peng, PhD
Friedel, $10 Million Qualcomm Tressider XPRIZE competition

Douglas Plessow, MD
2015 Service Award, Massachusetts Gastroenterology Association

Nina Pollock, MD
2015 Emerging Leader Award, Ray A. Haneke Foundation

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

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

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

Maia Scherlen, 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 K. Hess Award, Lupus Foundation of America

2014 Distinguished Basic Investigator Award, American College of Rheumatology

Peter Weller, MD
2015 Robert S. Trotter Lecture, American Academy of Allergy, Asthma and Immunology

Anita Kurmann, MD
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, 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 stand out of one who lives her life totally committed to something greater than one’s self.”

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—Anthony Hollenberg, MD

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

Cardiac arrhythmias using smaller electrodes with closer interelectrode spacing.

High-resolution mapping of scar-related atrial arrhythmias using smaller electrodes with closer interelectrode spacing.

Unraveling the complexity of transmitted-founder, HIV-1 group M consensus sequences and functional attributes.

Allergy and Inflammation

Cardiovascular Medicine

Allergic asthma and chronic obstructive pulmonary disease (COPD) may share a common microscopic pathway, which involves eosinophil secretion of granule-derived cytokines.

Selective Publications

Cardiovascular Medicine

Cardiovascular Medicine

Cardiovascular Medicine

Santos-Vila AM, Johnstone LM, Kane JR, Kasov KA, Quintero Y, Cano T, Talbot MR, Chachke D, Sallan SE, Siroli M, Lerman A.

Cardiovascular Medicine

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SELECTED PUBLICATIONS

**General Medicine**


- **Genetics**


- **Genomatology**


- **Hematology and Thrombosis**


- **Gastroenterology**


- **Gastroenterology**


- **Translational Research**


- **Hemostasis**


- **Pathology**

Quality Improvement
Teas I, Vogelzang A, Yang T, Myers J, Building the framework and foundation for improving the quality and safety of care at the interface of inpatient and outpatient medicine, Acad Med 2015; 90:1271-81

Education

Resident

Allergy and Inflammation
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

DEPARTMENT OF MEDICINE
HARVARD MEDICAL FACULTY PHYSICIANS

Continued

John O’Keefe, MD
Bradley Denker, MD
David Friedman, MD
Waters Hill, PhD
Melanie Honig, MD
Antoine Kaldany, MD
Elayhu Klarich, MD
L. Aarthi Karunamachi, MD
Stewart Lieber, MD, PhD
Bryza Maguire, PhD
C. John Mathai, MD
Larry Polak, MD
Martha Pavlakos, MD
AA Popel Melly, MD
Martin Reiss, MD
Sylia Ross, MD
Burton Ross, MD
Johannes Schlingloff, MD, PhD
Robert Stamos, MD
Theodore Steinman, MD
Isaac Stielman, MD
Terry Streifer, MD
Vikas Subrathe, MD, PhD
Mark Williams, MD
Hai To Yuen, MD, PhD
Kambiz Zandi-Nejad, MD
Mark Zadik, MD

Pulmonary, Critical Care
and Sleep Medicine

Anjali Ahn, MD
Praveen Akuthota, MD
Amit Anand, MD
Asha Anandiah, MD
Robert Banzett, PhD
Douglas Beach, MD
Katherine Berg, MD
Suzanne Bertisch, MD
Leo Celi, MD
Jacqueline Chang, MD
Peter Civitello, MD
Robert Coppersmith, MD
Sarah Davis, MD
Lori Davis, MD
Robert DeMaria, MD
Michael Donnino, MD
Erik Folch, MD
Norma Gershon, 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 Rivkees, MD, MPH
David Roberts, MD
Laura Rosi, MD
Richard Schwartzstein, MD
Ronald Silverstein, MD
Amy Sullivan, EID
Souverne Tachadu, MD
Robert Thomas, MD
J Wodrow Weiss, MD
Joseph Zinkle, MD

Rheumatology

Fadi Badr, MD
Arturo Diaz, MD
Amy Dower, MD
Lisa Fitzgerald, MD
Vasileios Kyriakos, MD
Linda Lieberman, PhD
Yael M-Monfort, MD
Jennifer Nadel, MD
Ziv Paz, MD

Paul Romain, MD
Robert Shmerling, MD
George Stojan, MD
Francisco Tan-Nguyen, MD, MMSc
George Toole, MD
Itaru Taken, MD

Signal Transduction

John Alon, PhD
Stephen Schiff, PhD
Alex Toker, PhD

Translational Research

Steven Feinman, MD, PhD
Anna Johannsson, PhD
Shiva Gazarian, PhD
Camilla Martin, MD, MS

Transplant Immunology

Koichi Enjoj, PhD
Zhegang Fan, MD, PhD
Taheweh Ghaniw, MD
ERT Kiskottos, MD, PhD
Maria Koumoundou, MSC, PhD
Alan Moss, MD
Simon Robson, MB, CHB, PhD
Thomas Thornby, MD
Tanya Storm, MD
Yan Wu, PhD

The Department of Medicine
is proud to be affiliated
with the following:
Affiliated Physicians
Atrius Health
Bowdoin Street Health Center
Charles River Community Health
(The former Joseph M. Smith Community Health Center)
The Dimock Center
Fenway Health (including the main Boylston Street location, Sidney Borum Jr. Health Center, and South End Associates)
Outer Cape Health Services
South Cove Community Health Center

Inpatient discharges: 15,168

Number of observation discharges: 4,054

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

Endoscopic procedures: 26,309

Cardiac catheterizations: 4,305

2015 CLINICAL VOLUME:
Department of Medicine

CLINICAL REVENUE

$64,179,447

WORK RELATIVE VALUE UNITS (RVUs)

917,371
867,527

2014
2015

NUMBER OF OUTPATIENT VISITS

273,064

Mandeep Dhadly, MD, of Atrius Health, with BIDMC colleagues.
### 2015 RESEARCH FUNDING

<table>
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<tr>
<th>Division</th>
<th>Funding Source</th>
<th>Direct Award</th>
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**Infectious Diseases**
- Federal: 836,556
- Non-Federal: 200,405

**Interdisciplinary Medicine and Biotechnology**
- Federal: 996,428
- Non-Federal: 1,031,872

**Molecular and Vascular Medicine**
- Federal: 1,831,396
- Non-Federal: 1,163,568

**Nephrology**
- Federal: 3,842,820
- Non-Federal: 3,725,899

**Pulmonary, Critical Care and Sleep Medicine**
- Federal: 991,509
- Non-Federal: 704,048

**Rheumatology**
- Federal: 3,084,742
- Non-Federal: 529,839

**Signal Transduction**
- Federal: 143,326
- Non-Federal: 70,250

**Translational Research**
- Federal: 3,748,123
- Non-Federal: 167,267

**Transplant Immunology**
- Federal: 731,355
- Non-Federal: 419,571

**Virology and Vaccine Research**
- Federal: 29,520,523
- Non-Federal: 8,108,249

**Total Federal**
- 88,501,627

**Total Non-Federal**
- 48,246,851

**Grand Total**
- 137,477,242

**Total Research Funding**
- 175,226,093
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.

BIDMC is in the community with Beth Israel Deaconess Hospital-Milton, Beth Israel Deaconess Hospital-Needham, Beth Israel Deaconess Hospital-Plymouth, Anna Jaques Hospital, Cambridge Health Alliance, Lawrence General Hospital, Signature Healthcare, Beth Israel Deaconess HealthCare, Community Care Alliance and Atrius Health. BIDMC is also clinically affiliated with the Joslin Diabetes Center and Hebrew Senior Life and is a research partner of Dana-Farber/Harvard Cancer Center and The Jackson Laboratory. BIDMC is the official hospital of the Boston Red Sox. For more information, visit www.bidmc.org.