

Beth Israel Deaconess
Medical Center



HARVARD MEDICAL SCHOOL
TEACHING HOSPITAL

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IN THEIR OWN WORDS



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Dear Colleagues and Friends,

“ Most annual reports, including our own, typically offer third-person accounts of an organization’s yearly highlights and significant achievements. This year however, we’ve decided to try something new. This year’s report, *In Their Own Words*, presents first-person accounts from faculty, staff, donors, and patients—a sampling of the passionate and thoughtful people who make this department what it is. The features take various forms, including personal reflections, interviews, and excerpts from talks given during the year. The report covers highlights in the areas of clinical care, scientific inquiry, medical education, and network growth. But it also touches on topics rarely addressed in annual reports—unconscious bias, inclusivity, and equity. Like most organizations across the country, we’re grappling with these difficult issues, and we think there’s virtue in honesty and transparency.

In addition to these first-person accounts, I am pleased to share with you additional information that tells the story of the department in 2017. This includes selected academic publications, research funding, major honors and awards, and notable clinical volume statistics.

As we know from practicing medicine, it is by listening to our patients’ stories and analyzing relevant data that we are most likely to understand their clinical condition. Here, too, we believe that by providing you with both narratives and data, you will get a fuller picture of our department. I’m proud of the many accomplishments of our faculty and staff this year, and I feel honored to work with them. We hope you enjoy this report. ”

Warm Regards,

Mark L. Zeidel, MD
Chair, Department of Medicine

Administration

Mark Zeidel, MD
Chair, Department of Medicine

Mark Aronson, MD
Vice Chair, Quality

Donald Cutlip, MD
Vice Chair, Clinical Care in the Community

Tony Hollenberg, MD
Vice Chair, Mentorship

Barbara Kahn, MD, MS
Vice Chair, Research Strategy

Eileen Reynolds, MD
Vice Chair, Education

Peter Weller, MD
Vice Chair, Research

Kevin Maguire, MS
Chief Administrative Officer

Jennie Greene, MS
Director, Communications

Tim McDermott, MHA
Executive Director, Finance and Business Operations

Paul Hart Miller
Director, Network Operations

Scot Sternberg, MS
Director, Quality Improvement

Clinical Divisions

Allergy and Inflammation

Peter Weller, MD
Division Chief

Nicholas Lord, MHA
Division Administrator

Cardiovascular Medicine

Robert Gerszten, MD
Division Chief

John DiGiorgio, MPS-HHSA
Division Administrator

Departmental Organization

This list reflects our administration and leadership as of September 2017.

Endocrinology, Diabetes and Metabolism

Anthony Hollenberg, MD
Division Chief

Nicholas Lord, MHA
Division Administrator

Gastroenterology

J. Thomas Lamont, MD
Division Chief (interim)

Sara Montanari
Division Administrator

General Medicine and Primary Care

Eileen Reynolds, MD
Division Chief

Blair Bisher, MHA
Division Administrator

Patrick Curley, MS
Division Administrator

Gerontology

Lewis Lipsitz, MD
Division Chief

Kerry Falvey
Division Administrator

Hematology/Oncology

Manuel Hidalgo, MD, PhD
Division Chief

Brian Duckman, MHA/MBA
Division Administrator (interim)

Infectious Diseases

Peter Weller, MD
Division Chief

Nicholas Lord, MHA
Division Administrator

Nephrology

Martin Pollak, MD
Division Chief

Kerry Falvey
Division Administrator

Pulmonary, Critical Care and Sleep Medicine

J. Woodrow Weiss, MD
Division Chief

Brian Duckman, MHA/MBA
Division Administrator

Rheumatology

George Tsokos, MD
Division Chief

Patricia Harris
Division Administrator

Research Divisions

Clinical Informatics

Charles Safran, MD
Division Chief

Clinical Nutrition

Bruce Bistrian, MD, PhD, MPH
Division Chief

Experimental Medicine

Jerome Gropman, MD
Division Chief

Genetics

Pier Paolo Pandolfi, MD, PhD
Division Chief

Hemostasis and Thrombosis

Bruce Furie, MD
Division Chief

Immunology

Cox Terhorst, PhD
Division Chief

Interdisciplinary Medicine and Biotechnology

Vikas Sukhatme, MD, PhD
Division Chief

Signal Transduction

Alex Toker, PhD
Division Chief

Translational Research

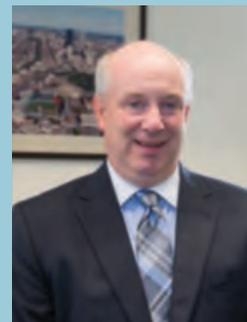
Steven Freedman, MD, PhD
Division Chief

Transplant Immunology

Terry Strom, MD
Division Chief

Center for Virology and Vaccine Research

Dan Barouch, MD, PhD
Division Chief



The Department Welcomes a New Chief Administrative Officer

Kevin Maguire, MS, joined the Department of Medicine in 2017 as its new Chief Administrative Officer. The position was previously held by Sam Skura, MPH, MBA, who moved into a new role as BIDMC's Senior Vice President of Ambulatory and Clinical Services. Maguire previously worked at Boston Medical Center (BMC) where he held leadership roles for 18 years, most recently as the Senior Administrative Director in the Departments of Neurology and Neurosurgery. Prior to BMC, he worked at New England Baptist Hospital for six years as the Director of Outpatient Programs. He reflects on his new role at BIDMC:

“It's always exciting to start a new job, but coming to BIDMC and the Department of Medicine at this particular juncture is thrilling. The BIDMC and Medicine networks are expanding, providing care to more people every day, closer to where they live and work. This growth will benefit our system and our patients, and the Department and the medical center are very well-positioned to make this a smooth process. I've been impressed by the strong leadership here, and I'm honored to have joined an organization dedicated to providing high quality and compassionate care across New England.”

Eileen Reynolds, MD

A Conversation with Molly Hayes, MD

Eileen Reynolds, MD, the Department of Medicine's Vice Chair for Education and a primary care physician in Healthcare Associates, was appointed Chief of the Division of General Medicine and Primary Care this year. She is the immediate past President of the Society of General Internal Medicine. Before becoming Vice Chair for Education, Dr. Reynolds spent 13 years as Director of BIDMC's Internal Medicine Residency Program. She received her MD at Harvard Medical School and completed residency at the University of California, San Francisco, before doing a general internal medicine fellowship at University of Pennsylvania.

Below are excerpts from a discussion that she had with Molly Hayes, MD, a faculty member in the Division of Pulmonary, Critical Care and Sleep Medicine. Dr. Hayes received her MD from Tufts University School of Medicine and completed her residency, chief residency, and fellowship at Johns Hopkins University. She is a new Associate Program Director of the Residency Program. Her research at BIDMC focuses on improving end-of-life communication in the Intensive Care Unit (ICU) and evaluating methods of teaching critical thinking.

Hayes: I was fortunate to have amazing clinical training, but the emphasis on education is unique here. I want to be a career educator, to perform rigorous research in an environment that would not only support me but allow me to thrive, which is why I came to BIDMC. What drew you to BIDMC?

Reynolds: As a medical student at Harvard, I appreciated the focus at this hospital on medical education in the context of a top research institution. I also thought the principles of generalism were palpable. Beth Israel Hospital stood out to me as a place where specialists were important, but generalists were too. I saw it as a place where, as a generalist woman, I could have many leadership opportunities.

Hayes: This year you assumed the position of Chief of the Division of General Medicine and Primary Care. What are some of the greatest challenges and rewards you've faced so far?

Reynolds: This is a very large division—it's about 130 total faculty members—so it's been a very fast-paced several months trying to get my arms around all that goes on. There are a lot of rewards. One is that the group is incredibly devoted to teaching and education. Also, it's rewarding to get to sit and talk with so many faculty members about what their aspirations are and what they value. One of our most exciting new initiatives is a comprehensive strategic plan for the primary care practice, thinking about how—in the future of population-based and value-based payments—we should be structuring our clinical practice, our teams, and our compensation models. It'll be a wonderful opportunity for engaging the faculty.

Hayes: You are also the Co-Chair of the Department's Committee for the Advancement of Women. Can you tell me about the Committee and what you're working on?



*Eileen Reynolds, MD (left)
and Molly Hayes, MD (right)*

Reynolds: The committee is a group of about a dozen of us (mostly women) nominated from across the Department and charged with working on advancing women's experience in the Department to feel as equitable and supported as possible. Some examples of our requests and work include a recently completed audit of salary equity, an annual series of networking lunches where speakers come with skill-building activities, and some planned trainings on unconscious bias. We've worked very hard with Harvard Medical Faculty Physicians (HMFP), along with Dr. Mark Zeidel (Chair of Medicine) and Dr. Hope Riciotti (Chair of Obstetrics/Gynecology), on maternity and paternity leave benefits, which were improved about a year ago.



Hayes: You wear a lot of hats: physician, educator, and leader. How do you do it all?

Reynolds: For anyone who wears many hats, you have to rely on a really great home support structure. My husband, who is a professor at Mass Eye and Ear, is an incredible partner. We moved to my hometown and my dad retired to be our nanny, which was an incredible gift that helped us with childcare early on. Under each of my hats are many incredibly talented and passionate faculty and staff colleagues who share my work. I feel really lucky to work in medical education at an institution with such rich resources. The support where I work is part of the reason I've been successful.

Hayes: What would you say is your proudest achievement at BIDMC?

Reynolds: I would have to say it was 13 years as the Residency Program Director and the close to 800 residents who came through our program. My achievements are actually their achievements. I'm reminded what a gift it was for me to be the Program Director whenever I hear about former residents—I get a note in the mail or a picture of their baby, or I see a publication or hear about a leadership position they've taken. We've been a home—hopefully both a supportive and rigorous home—for the residents who have come through our doors over many years. And now I hope to be able to do that same thing for the faculty in the Division of General Medicine and Primary Care.



UNDER EACH OF MY HATS ARE MANY INCREDIBLY TALENTED AND PASSIONATE FACULTY AND STAFF COLLEAGUES WHO SHARE MY WORK.

Jaclyn Giannakoulis

Jaclyn Giannakoulis is a member of BIDMC's Patient and Family Engagement Program and serves on the Intensive Care Unit (ICU) Advisory Council. Her mother and husband have both received care at the medical center. This year, she teamed up with Jennifer Stevens, MD, Assistant Professor of Medicine and Associate Director of the Medical Intensive Care Unit (MICU), on a new project to improve inpatient consultations. The project emphasizes effective communication between specialists, hospitalists, primary care physicians, patients, and family members. She is a co-principal investigator on the study with Dr. Stevens.

“ How did you first become involved in BIDMC's Patient and Family Engagement Program?

I became involved shortly after my mother passed. Someone reached out to me from the program to follow up on some of the things I had mentioned while my mother was in the ICU. I had talked about how grateful I was that she received such compassionate care while she was ill.

Right around the time that my mom passed, my husband got sick. He had been on dialysis, and after the experience we had with my mother at BIDMC, we knew that he should receive his care there as well. He now receives care through Jeffrey William, MD, a BIDMC nephrologist and wonderful doctor.

Based on my experiences, I've been very happy to be able to provide constructive feedback to the medical center through the BIDMC Patient and Family Engagement Program.

Overall, how did you feel about the care your family has received at BIDMC?

Amazing. Even with the outcome of my mother passing, which is something I think about on a daily basis, there's still something that differentiates BIDMC from other hospitals, and that's the compassionate care. That should always accompany excellent clinical care. You hear people say 'I don't care about bedside manner if they know what they're doing.' I think it has to be both, and BIDMC provides both high quality and compassionate care. Of course, there's always room for improvement. That's what the Patient Family Advisory Council (PFAC) is all about. I'm happy to be able to provide that feedback.

How did you wind up partnering with Dr. Stevens on the inpatient consultation project?

Dr. Stevens was one of the doctors involved in my mother's care. I happened to see her at one of our ICU PFAC meetings. We remembered each other, and soon she asked if I'd be interested in working on the grant. I jumped at it because she was so kind to my mother and because improving inpatient consultations is an important goal.

What's your role in the project?

I helped with some of the questions on a survey that we sent to patients and family members as well as to primary care doctors and consultants. Now that we're getting results, I'm helping to take some observations from each of the surveys to see if there are commonalities. There are several people involved in the project, but the team always makes me feel valued. That's what BIDMC is like—the people who work there always make you feel like you're contributing to something greater.

You have your own blog about your experience with your husband navigating his health issues. What kinds of things do you write about?

Yes, it's called *Paul and Jackie's Journey: Going Home* and it's about home hemodialysis versus in-center dialysis. We didn't know about home-based dialysis until Paul started to get care at BIDMC. It's been so great for him that we wanted more people to know about it. It's made him feel so much better. He and I love to travel, and now we can again because on home hemodialysis he doesn't need a full day after treatment to recover. He's been able to do more and see more. We went to Hawaii. It's been great to see him do some of the things that he felt like he couldn't do before.

COMPASSIONATE QUALITY CARE

Do you have any advice for health care providers at BIDMC in terms of things to continue or to improve upon?

At the beginning of my husband's journey, before we came to BIDMC, we were not given options like home hemodialysis because the care team assumed he wouldn't be interested. At BIDMC, the team at the Transplant Institute said, 'Here are all the options you have.' And then you get to choose what's right for you. That distinguishes an amazing medical staff from everyone else. So I'd just say, be sure to keep letting the patients make the decisions that are best for them using the knowledge provided by the medical staff. This also helps to build confidence and trust in the medical team.



Emmanuel Mensah, MD, MBA

Emmanuel Mensah, MD, MBA, a graduate of BIDMC's Internal Medicine Residency Program, is joining the Department of Medicine faculty. Originally from Ghana, he received a full scholarship to attend the United World College in Canada, where he completed high school. After graduating from Dartmouth College, he earned a joint MD/MBA at Harvard Medical School and Harvard Business School. He will be dividing his time between working as a hospitalist at BIDMC, providing care at a regional hospital in Ghana, and consulting for McKinsey and Company. Dr. Mensah delivered Medical Grand Rounds in May 2017, and the following are excerpts from his talk.

“ I'm here to talk to you about the power of unconscious bias. I started learning about this over a cup of coffee. I have a really good friend, Ben, whom I've known for a long time. He's a white kid from Connecticut. He is very smart. He reads a lot, and we have these amazing conversations. And one thing Ben brought up in one of our conversations was this concept of the Implicit Association Test. It's a concept within social psychology that assesses a person's automatic associations. Ben wanted us to take this online test on race. I was a little worried because I've known Ben for a long time; and my fear was if his results were against black people this would destroy our friendship. But Ben was persistent, and so we took the test. And, lo and behold, Ben's result showed an automatic preference for white people over black people. Now I was highly disappointed. This is someone I've known for a long time; I trust him, I thought he saw me as an equal, respected me. So the question now is how do I go about talking to Ben about race? What made this conversation even more difficult was that this was also my result. I took this test six more times just to make sure, and it was real. At first I thought: Hold on a second, I'm black. What is going on here? I was really frustrated and within that frustration I decided to go on a journey to explore

hidden biases in my life and in medicine, as well as what I could do about it. As the first part of my journey, I started looking at an Institute of Medicine report from 2003. This report came out at that time because there were a lot of studies out there stating that the majority of Americans were uninformed about the disparities in care between blacks and whites. If you look at some of the data for HIV, black people die 7.5 times more than whites. The question is why? Is HIV more powerful

IT'S NOT JUST ABOUT BEING A GOOD DOCTOR, BUT IT'S ABOUT BEING COMPASSIONATE AND THOUGHTFUL, REALIZING THAT OUR HUMANITY IS INTERTWINED WITH THE HUMANITY OF OTHERS

in the blood of black people than white people? And this goes for so many other conditions—from coronary bypass to renal replacement therapy, breast cancer, even kidney transplantation in kids. Why these differences in care? Being the smart people we are, we can come up with so many theories: social determinants of health care, genetics, this and that. But the one thing we don't talk about is hidden biases. The Institute of Medicine actually concluded

that prejudice and stereotypes on the part of providers may actually lead to a lot of these biases and a lot of these disparities.

So why all these biases and why do people have all these beliefs? Whenever I had a question of why, my journey took me to the history of medicine. Because I believe that when we don't know where we came from, it's hard to understand where we are or where we are going. In addition, the truth is, until the lion learns to speak, stories of the hunt shall always glorify the hunter. In my journey through the history of medicine, I realized that medical culture often mirrors the larger culture of inequality.

What can we do? Here are some solutions that I started thinking through. There was a good paper last year in the *New England Journal of Medicine*, talking about Black Lives Matter. And I like the values it presented. The first one is to learn and

accept the United States' racist roots. The second one was understand how racism has shaped our narrative. And the third thing is to define and name it, whether it be sexism or racism. I've been in so many situations where we let it go because we don't want to make people uncomfortable.

So how to interrupt biases? Be open and aware of your own biases because it's really hard to stop this. You have to find tricks to

interrupt it, but this awareness is the first step. The other thing is to increase health care workforce diversity. Well-intentioned providers are not immune to stereotypes, and when we make decisions based on these, we cause significant unintended disadvantages to others. Because of this, I'm still on my journey, and doing three things: educate, accept, and act.

We all work really hard to make a difference in the lives of our patients. But the fact that these differences in care exist, whether it be by race, gender, sexual orientation, or language, means that we have a lot of work to do. We need to look in the mirror and realize that it's not just about being a good doctor, but it's about being compassionate and thoughtful, realizing that our humanity is intertwined with the humanity of others.

But I'm hopeful. I'm hopeful because I know that there are so many people in this room who are doing amazing work to solve some of these problems. And so I'm here to tell you something that Milton tells me whenever he sees me. Milton is an elderly black gentleman on the West campus who carries trays from patients' rooms to the kitchen. Every time he sees me—proud of seeing a black doctor—he runs up and says, 'Doc! Keep moving on.' And so I'm here to tell you the same thing—'Keep moving on'—because when I look at some of the worst crimes on earth—from slavery, to colonization, to apartheid, to Tuskegee, to holocaust, to genocide—what bothers me about these crimes is that so many good people did nothing. Martin Luther King framed it well when he said, 'In the end we will remember not the words of our enemies, but the silence of our friends.'



Barbara Kahn, MD, MS

Barbara Kahn, MD, MS is an internationally recognized physician-scientist who has made seminal discoveries elucidating the molecular mechanisms underlying obesity and diabetes. Dr. Kahn's work establishing that the fat cell regulates whole body insulin sensitivity has led to important insights into Type 2 diabetes pathogenesis and new therapeutic approaches. In 2017, the originality and impact of her work was recognized by her election to the National Academy of Sciences, and she became the first female faculty member from BIDMC to receive this prestigious honor. Dr. Kahn was elected to the National Academy of Medicine in 2005. Dr. Kahn is the first woman in the Department of Medicine to receive an endowed chair at Harvard Medical School (the George R. Minot Chair) and was the 2016 recipient of the Banting Medal for Scientific Achievement, the highest award given by the American Diabetes Association. She has mentored nearly 100 trainees and is leading efforts to implement unconscious bias training as a member of Medicine's Advancement of Women Committee. She is the Department's Vice Chair for Research Strategy and has served as Chief of both the Diabetes Unit and the Division of Endocrinology, Diabetes, and Metabolism.

“What originally drew you to medicine and later endocrinology?”

I went to medical school to find out how the human body works. I was interested in helping people learn to live with chronic illnesses like diabetes. During my internal medicine residency, I was amazed to learn how little was known about the cellular mechanisms by which hormones like insulin work and about the complex physiological interactions that regulate blood glucose. At that time, people with diabetes still monitored their glycemic control with crude tests of urinary glucose. Reports began to emerge from the United Kingdom of small studies in which patients were learning to perform home blood glucose monitoring. I thought that could be a major breakthrough in diabetes management but we needed to determine whether it was superior to urine glucose monitoring and whether it would have psychological effects. Would patients become frustrated if their blood glucose was not in the desired range and they did not know what to do about it? So my first research study was to compare the physiological and

psychological effects of home urine and fingerstick blood glucose monitoring in a county hospital diabetic population. The result was that all the patients who stayed in the study improved their diabetes control regardless of monitoring modality (i.e., the attention and feedback from the study personnel had a positive impact on glycemic control). When I visited major diabetes research centers in the UK to compare our results, I sensed the excitement and promise of diabetes research and realized that diabetes care might not have to be so stagnant and depressing. I was highly motivated to learn how to do cutting-edge research and I entered a cell biology laboratory at the National Institutes of Health (NIH) to investigate the cellular mechanisms by which insulin stimulates glucose uptake into cells.

What has been your most exciting or seminal research to date?

After my Endocrine Fellowship at the NIH, I came to Beth Israel Hospital as an Instructor. Shortly thereafter, the insulin-regulated glucose transporter, GLUT4, was cloned. I was fortunate to carry out some of

the first investigations of GLUT4 regulation in humans with obesity and diabetes. This work, along with my team's observations in genetic mouse models that we created, led to the discovery that reduction of GLUT4 and glucose transport in adipocytes is a critical early factor in the development of Type 2 diabetes. In fact, eliminating GLUT4 selectively from adipocytes severely impairs insulin action on glucose transport, and surprisingly, results in insulin resistance in muscle and the liver as well. This was paradigm-shifting. Our ensuing studies have elucidated the molecular pathways mediating these effects. Most recently, my lab, along with the lab of Alan Saghatelian, PhD, showed that GLUT4-mediated glucose





WHAT I WANT MOST FOR MY PATIENTS IS A CURE FOR BOTH TYPE 1 AND TYPE 2 DIABETES.

transport in adipocytes stimulates the synthesis of a novel class of bioactive lipids that are made in our tissues and have anti-diabetic and anti-inflammatory effects. We are very excited about moving these lipids to the clinic to prevent and treat Type 2 diabetes.

How do your clinical practice and research intersect?

Taking care of patients keeps me in touch with the ongoing challenges that people with diabetes face. I am constantly reminded of the unpredictable nature of blood glucose regulation even when patients are meticulous and dedicated to tight glycemic control. This makes me

passionate about finding better, more reproducible and durable therapies and prevention strategies for diabetes. In my laboratory, we design mechanistic studies based on insights from caring for patients. We perform the studies at the cellular and molecular levels and in animal models to definitively show ‘cause and effect.’ Then we return to humans to prove these mechanisms are truly important for human metabolic health.

What advice do you have for aspiring biomedical researchers?

I encourage my trainees and junior faculty members to pursue the unexpected results even more than the expected results. Some

of our most important findings have come from data that challenged accepted dogma. We need paradigm shifts to find a cure for diabetes. I also encourage trainees to develop collaborations with scientists from other disciplines to expand the mechanistic insights and potential impact of their work. I currently work closely with a chemical biologist and a synthetic chemist; our collaborations are making make this one of the most exciting and powerful stages in my career.



Adam Rodman, MD, MPH



Adam Rodman, MD, MPH, first visited Botswana during his residency at Oregon Health and Science University (OHSU) in Portland, Oregon. Through the BIDMC-OHSU Botswana Program, he did a residency elective in 2015 and then a global health fellowship in 2016-2017 at Scottish Livingstone Hospital, located in Molepole, Botswana. Dr. Rodman recently joined the Department of Medicine's faculty as a hospitalist. He hosts a popular podcast, *Bedside Rounds*, which features medical histories and mysteries. The podcast includes a special annual report installment he produced during his final days in Botswana. Dr. Rodman reflects on global health and his past year, split between Boston and Botswana.

“ As a member of the second cohort of clinical fellows in global health at BIDMC, I hope I can be forgiven for having a little bit of whiplash. I've spent half of the last year attending with the Hospital Medicine Program at BIDMC and the other half attending at Scottish Livingstone Hospital (SLH), a district hospital in Botswana in southern Africa. On the surface, the two hospitals couldn't look more different. When it's cold in Botswana, I round with my team in a winter coat and gloves since the windows need to be opened to combat the spread of tuberculosis. There

are drug and equipment shortages, and I've had to scrounge and improvise kits for essential procedures like a thoracentesis or a lumbar puncture. My patients often call me at home or show up on my ward unannounced, ready for their follow up. And if I have to start a patient on a drip medication, I do about five minutes of math and then mix the medications myself before connecting them to a drip counter. There are no clinical pharmacists to rely on at SLH. But if you dig a little bit deeper, you start to notice that the medical centers aren't so different after all. In both places, I work with eager young interns and medical

officers, guiding them through the care of their very sick patients. At SLH, in addition to working with Botswanan trainees, I oversee a rotating cadre of American medical residents from BIDMC and across the United States who visit SLH for a month-long global health elective. In both places I work with my colleagues to improve health systems. In fact, the data from my early-goal directed therapy quality improvement project for sepsis treatment were presented at the International Society for Quality in Healthcare. And in both settings I have the honor of caring for my patients, counseling and comforting them and their families through some of the hardest times in their lives.

Even my hobbies mostly stayed the same. I continued to produce my medical podcast *Bedside Rounds* while in Botswana, releasing episodes about topics as varied as the assassination of President Garfield and the Victorian fear of being buried alive—though the speed of the internet

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Adam Rodman, MD, MPH (middle) with members of a sepsis quality improvement team at Scottish Livingstone Hospital in Botswana

often conspired against me. And somehow, despite our busy days, my wife and I still managed to go hiking and exploring throughout beautiful southern Africa.

This last year has been an amazing and also eye-opening experience, not only for all the differences but also the unexpected similarities. And ultimately

global health is about recognizing these similarities and using them to build lasting relationships.



Vicki Boussiotis, MD, PhD

Vicki Boussiotis, MD, PhD, is a Professor of Medicine at Harvard Medical School and a member of the Department of Medicine's Division of Hematology/Oncology. A native of Greece, she is a world-renowned researcher in cancer immunology. In 1991, she joined the Harvard community as a postdoctoral student in the laboratory of Lee Nadler, MD, at the Dana-Farber Cancer Institute. The team was generating insights that profoundly impacted the field of immunology: the discovery of the B7 family of costimulatory molecules. Dr. Boussiotis's first postdoctoral project revealed that additional B7-like molecules exist and led to the cloning of the second member of the B7 family (B7-2; CD86). The subsequent discovery of additional members of the B7 superfamily and modulation of these pathways has elicited the most robust anti-tumor responses in the history of cancer immunotherapy—seminal work that Dr. Boussiotis has advanced over the eight years she has been at Beth Israel Deaconess Medical Center.

“ Did you know from an early age that you wanted to be a scientist?”

I did. I always loved science. I always wanted to ask the basic questions and understand ‘why’ from a molecular standpoint. But I wanted to take it in a direction that would have an impact on people's lives, particularly in the context of disease. That's why I chose to go to medical school, and I have no reservations about that choice. I enjoy taking the knowledge from basic science that we develop in our lab and seeing that it is going to help patients. I have been blessed to see the work of my basic research repeatedly translated to treatments that helped patients who received stem cell transplantation and cancer therapy. It's a very rewarding and humbling experience.

Why was cancer research of particular interest?

Cancer touches people's lives in a way that is unique and irreversible and makes a big mark. I felt this is where I wanted to be—first to support people at the moment that they need it more than anything and, second, to be able to make a difference to future development of treatments and discoveries. I was particularly attracted to hematological diseases and cancers, leukemia, and transplantation. I felt that bone marrow stem cells were magical and had so much potential—all the energy, wisdom, and abilities for a cell to go from being new to very well-differentiated.

What is your team currently working on?

My research group is investigating mechanisms and signaling pathways involved in regulation of activating and inhibitory T cell responses. Mechanistic understanding of signaling and molecular pathways that regulate T cell responses

is of major therapeutic interest in cancer. Specifically, targeted intervention to such pathways provides the means to modulate the immune responses either for augmentation in order to induce anti-tumor immunity or for suppression in order to prevent graft versus host disease (GvHD). This is the leading cause of non-relapse mortality in patients with hematologic malignancies, who receive allogeneic hematopoietic stem cell transplantation. Our laboratory was among the first to determine that T cell tolerance is not a default state but is induced and maintained by active signaling processes. Ongoing work involves the mechanistic understanding of how metabolic reprogramming affects of the functional fate of immune cells toward productive immunity versus tolerance and immune exhaustion in the tumor microenvironment by dissecting the role of co-stimulatory and co-inhibitory receptors in regulating energy generation and metabolic programs in the context of cancer. Our group is part of hematopoietic stem cell transplantation research team at the Dana-Farber/Harvard Cancer Center and has conducted several translational studies on the mechanisms of immune reconstitution after hematopoietic stem cell transplantation. Our ultimate goal is to translate our findings from basic T cell biology into novel approaches for induction of anti-tumor immunity, prevention of GvHD and improvement of immune reconstitution after allogeneic hematopoietic stem cell transplantation.

Having completed residency in Greece and in the United States, how would you compare medical education in the two countries?

The difference between medical education here and in Greece is huge. What I found was that everything here is really provided to the learner. You have a very experienced

mentor, you have somebody who is guiding you in every little step—a second-year resident or a fellow. There is nothing like this in Greece. Basically what you learn in Greece in medical education is how to teach yourself. So I think that people who have the opportunity to do medical school and residency here are so blessed.

What do you enjoy most about your job?

I love research. For me, my lab is my life. There's a song that says 'love is life,' and I say 'lab is life.' For me, research is so important—it's a way of thinking,

it's a way of living, it's a way of being. It's really... myself. This is why I get so excited to see the young generation come into science, feeling the passion and the enthusiasm. It reinforces my interest and my heart connection to science. Working on science projects and science papers is, for me, the number one highlight of the day. Usually what is rewarding is the same thing that is very frustrating: when you get the results of an experiment on which you already have an established hypothesis and an expectation of what's going to be and you don't see that: you see something completely different. And

then you start thinking completely out of the box – called 'hypothesis.' Then you start thinking in these other terms to which your experimental results guide you and you start discovering the exciting part, which is, in fact, knowing Nature. Because that's how Nature reveals itself – through the unexpected result. I find that is the major highlight of every day and a reward that is worth every effort.



**RESEARCH
IS SO
IMPORTANT.
IT'S A WAY
OF THINKING,
IT'S A WAY
OF LIVING,
IT'S A WAY
OF BEING.**



Alexa McCray, PhD

A Discussion with Jorge Rodriguez, MD



Alexa McCray, PhD, is a Professor of Medicine and a founding Co-Director of the Center for Biomedical Informatics at Harvard Medical School. She is also a member of BIDMC's Division of Clinical Informatics. She previously directed a research division of the National Library of Medicine at the National Institutes of Health. Dr. McCray was elected to the National Academy of Medicine (formerly the Institute of Medicine) in 2001.

Below are excerpts from a discussion she had with Jorge Rodriguez, MD, a Clinical Informatics fellow and hospitalist at BIDMC. As an immigrant to the U.S., Dr. Rodriguez is particularly interested in the experience of limited-English-speaking individuals navigating online health information. He is using census data and "web scraping" technology to study 1,400 different sites regarding their accessibility.

Rodriguez: I've always been interested in bringing together medicine, social justice, and technology, and clinical informatics has been an exciting and somewhat unexpected path for me. How did you become interested in the field of clinical informatics?

McCray: I have a long, serendipitous route as to how I got here. I am trained as a theoretical linguist so I did my PhD in linguistics and became involved in computational linguistics through a short-term stint that I did at the IBM Watson Research Center. Then I had the opportunity to work for almost twenty years at the National Institutes of Health's National Library of Medicine where I was eventually the director of the research division called the Lister Hill National Center for Biomedical Communications. There I did a whole range of biomedical informatics research and was very lucky to have the opportunity to design and develop ClinicalTrials.gov.

Rodriguez: What are some of your current projects?

McCray: I work on a project called the Undiagnosed Diseases Network where we are trying to integrate clinical information with genomic data. In clinical informatics, people tend to analyze data, for example, in the electronic health record system. And, yes, we want to do that, but that's primarily clinical information. But now we bring that together with genomic information. We do whole exome and whole genome sequencing, together with a complete clinical evaluation, and then you have a much better chance of figuring out what's going on with this individual, particularly if you can find similar individuals by structuring the data in such a way that you can compare 'apples to apples.'

Rodriguez: BIDMC has been referred to as one of the 'most wired' hospitals and has been recognized by the American Hospital Association for this. In what ways do you think we're leading the way?

McCray: Beth Israel was one of the first hospitals to have its own electronic health record (EHR), developed in the Division of Clinical Informatics. But we haven't just rested on our laurels; we have continued to improve the system over time. For

instance, Tom Delbanco and colleagues have created the now widely implemented OpenNotes, which makes it possible for me, as a patient, to see my medical record. In addition to that, BIDMC's Chief Information Officer, John Halamka, is nationally involved in these activities.

Rodriguez: On a clinical level, working directly with patients, I mostly see the benefits of clinical informatics, such as clinical decision support through the EHR. But I know there may be drawbacks in terms of one-on-one communication between physicians and patients. Is this a concern you have?

McCray: The EHR can become a real problem if the clinician is typing into the computer and not interacting with the patient. Clinicians have to spend so much time with electronic health records, entering data into a computer—they say, 'This is not why I went to medical school, to become a clerk entering data into a computer.' On the other hand, there are significant benefits to both patients and their doctors if there is ready access to the patient's information at the time of the clinical encounter.



Rodriguez: I feel like BIDMC has been great in terms of its commitment to community health, especially in the area of informatics. The Office of Diversity, Inclusion and Career Advancement supports a lot of the work that I do. How have you found the culture here in terms of supporting your work?

McCray: I've found the Department of Medicine to be nothing but supportive. The Chair of Medicine, Dr. Zeidel, sets the tone, and there's a collaborative nature and openness to different ways of being a faculty member here. I'm not a clinician, but I have something to offer, and there's recognition of that.





Donald Cutlip, MD (left) and Paul Hart Miller (right)

Clinical Care

Continuously Improving Patient Care in an Expanding Health System

New Leadership for a Growing Network

The Department of Medicine’s network of community partners continued to expand in 2017. Our physicians now provide care in over 40 locations, including member and clinically-affiliated hospitals, and community health centers. The medical center recently signed a definitive agreement with Lahey Health, New England Baptist Hospital, Mount Auburn Hospital, and Anna Jaques Hospital to create a high-quality, lower-cost health care system. In response to our recent growth, the Department has created a new clinical leadership position to oversee the expanding network. Donald Cutlip, MD, assumed the role of Vice Chair for Clinical Care in the Community, in which he works closely with Paul Hart Miller, Medicine’s Director of Network Operations. Dr. Cutlip is a Professor of Medicine at Harvard Medical School, and prior to assuming this role, served as Cardiology Section Chief for Interventional Cardiology and as the Director of BIDMC’s renowned Interventional Cardiology Fellowship Program. Dr. Cutlip reflects on his new role and the exciting growth that necessitated it.

“As an academic cardiologist for the past 20 years and a community primary care internist for 10 years before that, I appreciate the importance of providing high-quality, convenient, and cost effective care to people in the geographic areas where they live and work. I have always valued the relationships we at BIDMC have with our owned and affiliated community health centers and partnering community hospitals. So I was pleased and proud to accept the Department of Medicine’s newly-created position of Vice Chair for Clinical Care in the Community. Working closely with Paul Hart Miller, I will be reviewing our current collaborations with various partners and affiliates, and helping to develop a proactive approach to meeting our patients’ needs in their communities. This work is particularly exciting and necessary given the network expansion that is underway. This year we also welcomed Peter Healy as the new president of BIDMC. I’m thrilled to be part of these efforts, and I look forward to being a part of our ongoing leadership in responding to the changing healthcare environment as the shining example of value-based population health care.”

Clinical Volume

Department of Medicine Clinical Volume at BIDMC’s Boston Hub

Clinical revenue	\$67,718,696
Patient days in hospital	104,901
Inpatient discharges	16,765
Observation discharges	3,642
Work RVUs	988,246
Outpatient visits	271,063
Endoscopic procedures	28,832
Cardiac catheterizations	4,765
Electrophysiology procedures	1,831
Patients in BIDMC’s Boston-based Healthcare Associates primary care practice	40,306

Clinical Care (continued)

Continuously Improving Patient Care in an Expanding Health System

Cardiac Direct Access Unit Reinvents Cardiac Care in New England



The Department of Medicine's Division of Cardiovascular Medicine and BIDMC's CardioVascular Institute (CVI) reached several milestones this year. The CVI, a comprehensive care center that combines expertise from Cardiovascular Medicine, Cardiac Surgery, and Vascular and Endovascular Surgery, celebrated its 10th anniversary.

BIDMC's Smith Center for Outcomes Research in Cardiology thrived in its second year, applying rigorous scientific methods to assess clinical practices, therapies, and devices used in cardiovascular medicine. And BIDMC opened the Cardiac Direct Access Unit (CDAC). The first of its kind in New England, this outpatient unit offers immediate evaluation and treatment in an urgent care setting designed specifically for cardiology patients. Cardiologist **Michael Gavin, MD**, Medical Director of the CDAC, reflects on the new unit and what it means to patients and physicians.

“People shouldn't have to wait to see a specialist when it involves their heart. Nor should they be forced to seek emergency care when they experience symptoms that are worrisome but not life-threatening. The CDAC solves this problem. Patients experiencing cardiac symptoms can be

referred by their physician to the CDAC to be seen the same day in a setting specially equipped to meet the needs of people with cardiac conditions. Operating around the clock Monday morning through noon on Saturday and staffed by experienced cardiologists, a nursing director, nurse practitioners, and nurses, the unit offers advanced diagnostic technologies and treatment options. Patients also have streamlined access to advanced cardiac imaging and treatment facilities, including a cardiac catheterization laboratory and an electrophysiology laboratory noted for pioneering innovative procedures. The launch of CDAC places BIDMC at the forefront of medical innovation. As a BIDMC cardiologist, I find it exciting and rewarding to know that we're developing a new model for providing the best care to our patients when and where they need it.

Donors Support Groundbreaking Cancer Treatment, Research, and Outreach

Generous gifts from BIDMC donors this year are helping to advance Department of Medicine cancer treatment, research, and outreach. Randi and Brian Schwartz generously donated \$1.5 million to help further the research of David Avigan, MD, a member of the Division of Hematology/Oncology, the Chief of the Section of Hematological Malignancies and Bone Marrow Transplantation, and a leader in the field of patient-specific immunotherapy, vaccine development, and multiple myeloma research. The gift will also help support the development of a new translational research center, to be called the Randi and Brian Schwartz Family Cancer Immunotherapy and Cell Manipulation Facility. Randi Schwartz notes: “We truly feel blessed to support BIDMC's incredible efforts to extend, improve, and ultimately save the lives of patients with myeloma and other cancers.”

Also this year, former chair of the BIDMC Board of Directors Steven B. Kay and his wife, Lisbeth Tarlow, helped support the BRCA Founder Mutations Outreach and Research Project by hosting a fundraising event at their home with members of the Boston Symphony Orchestra. The project is the first-ever national genetic testing campaign for cancer risk. It is being led by genetic specialists at five institution, including BIDMC's Nadine Tung, MD, a member of the Division of Hematology/Oncology and a nationally-recognized expert in cancer genetics. Dr. Tung reflects, “Being able to identify these mutations in individuals who would not have received genetic testing otherwise is about saving lives. It is not just about the individuals who test positive. It is about their children, their siblings, their nieces, and nephews. It is about saving families.”

“ I WAS VERY SATISFIED WITH MY EXPERIENCE AT BIDMC. THE DOCTORS AND NURSES WERE VERY ATTENTIVE TO MY MEDICAL NEEDS AND PROVIDED EXCELLENT CARE. ”

—Bonnie Montgomery



Bonnie Montgomery with internal medicine resident Noah Schwartz, MD

Honors and Accolades

Every year, members of the Department of Medicine receive numerous local, national, and international awards for their outstanding work in the areas of clinical care, research, and medical education. This is a sampling of the accolades bestowed upon members of the Department during the 2016-2017 academic year.

Dan Barouch, MD, PhD

Named "Bostonian of the Year" by the *Boston Globe Magazine*

Stephen Cannistra, MD

Named Editor-in-Chief of the *Journal of Clinical Oncology*



Ohn Chow, MD, Susan McGirr, MD, Donya Mohebali, MD, and Jazmine Sutton, MD

Harvard Medical School Class of 2017
Housestaff and Fellows Teaching Awards

Jon Crocker, MD

Humanitarian Services Award from the
Society of Hospital Medicine

Tom Delbanco, MD, and Jan Walker, RN, MBA

The Health Data Liberator Award
from Academy Health

Robert Flaumenhaft, MD, PhD

Outstanding Investigator Award from the
National Heart, Lung, and Blood Institute

Gabriel Foster, MD

Harvard Medical School Dean's Community
Service Award



Jerome Groopman, MD

Nicholas E. Davies
Memorial Scholar Award
from the American
College of Physicians



Marian Hannan, DSc, MPH

Excellence in Investigative
Mentoring Award from the
Rheumatology Research
Foundation

Shoshana Herzig, MD, MPH

Named "Top Doc" by *ACP Hospitalist*

Kalon Ho, MD, MSc

F. Mason Sones, Jr, MD, FSCAI, Distinguished
Service Award from the Society for
Cardiovascular Angiography and Interventions



Barbara Kahn, MD, MS

Elected Member of the
National Academy
of Sciences



Dae Hyun Kim, MD, ScD
Outstanding Junior Investigator of the Year Award from the American Geriatrics Society

Samir Parikh, MD
Elected Member of the American Society for Clinical Investigation

Russell Phillips, MD
Barbara J. McNeil Faculty Award for Exceptional Institutional Service to Harvard Medical School and the Harvard School of Dental Medicine

Kathryn Stephenson, MD, MPH
Omolou Falobi Award for Excellence in HIV Prevention Research Community Advocacy from a coalition of HIV/AIDS advocacy organizations



Theodore Steinman, MD
Lifetime Achievement Award in Nephrology Education from the International Society of Nephrology



Vasileios Kyttaris, MD
Mary Betty Steven Young Investigator Prize from the Lupus Foundation of America



Martin Pollak, MD
Homer W. Smith Award for Outstanding Contributions in the Science of Nephrology from the American Society of Nephrology

John Torous, MD
Carol Davis Ethics Award from the American Psychiatric Association

Kenneth Mayer, MD
Appointed Editor-in-Chief of the *Journal of the International AIDS Society*

Alexa McCray, PhD, and Charles Safran, MD
Elected Founding Members of the International Academy of Health Sciences Informatics

Susan Redline, MD, MPH
William C. Dement Academic Achievement Award from the American Academy of Sleep Medicine

Harold Rosen, MD
Dr. Paul D. Miller ISCD Service Award from the International Society for Clinical Densitometry

Connie Tsao, MD
Heart Failure Young Investigator Award from the *Journal of the American College of Cardiology*

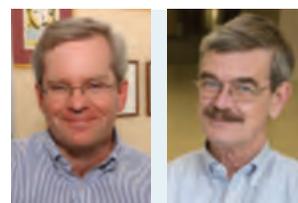
Junghong Zhou, PhD
Received the Health Sciences Research Award from the Gerontological Society of America

The Division of General Medicine and Primary Care Research Section
Inaugural Program Award for a Culture of Excellence in Mentoring from Harvard Medical School



Susan Mitchell, MD, MPH
Method to Extend Research in Time (MERIT) Award from the National Institute on Aging

Lowell Schnipper, MD
Special Recognition Award from the American Society of Clinical Oncology



Gerald Smetana, MD, and Peter Weller, MD
Selected 2016 Masters by the American College of Physicians



Daniele Ölveczky, MD, MS
Harvard Medical School Shore Fellowship and the Harvard Medical School Academy Fellowship in Medical Education

Medical Education

Training the Next Generation of Physicians



Graduating residents,
chief medical residents,
and education leadership

Residency Leadership

Residency Program Director

C. Christopher Smith, MD

Primary Care Program Director

Howard Libman, MD (outgoing)

Kelly Graham, MD (incoming)

Associate Program Directors

Jonathan Crocker, MD

Grace Huang, MD

Jakob McSparron, MD

Kenneth Mukamal, MD, MPH

Benjamin Schlechter, MD

Anjala Tess, MD

Anita Vanka, MD

Christina Wee, MD

Julius Yang, MD, PhD

Education Manager

Ruth Colman

Chief Medical Residents

Jake Decker, MD

Rahul Ganatra, MD, MPH

Sarah Lieber, MD

Jason Matos, MD

Jason Moran, MD

Jazmine Sutton, MD

Undergraduate Education Leadership

Core I Clerkship

Amy Weinstein, MD, MPH

Course Director

John Danziger, MD

Course Co-Director

Core II Clerkship

Pamela Hartzband, MD

Course Director

Alexander Carbo, MD

Course Director

Practice of Medicine Clerkship

Ronald Silvestri, MD

Site Director

Daniel Sullivan, MD

Associate Site Director

Anita Vanka, MD

Associate Site Director

Primary Care Clerkship

Susan Frankl, MD

Site Director

Fellowship Program Directors

Cardiovascular Medicine

Joseph Kannam, MD

Electrophysiology

Alfred Buxton, MD

Interventional Cardiology

Jeffrey Popma, MD

Non-Invasive Cardiology

Warren Manning, MD

Clinical Informatics

Charles Safran, MD

Endocrinology, Diabetes, and Metabolism

Alan Malabanan, MD

Gastroenterology

Ciaran Kelley, MD

Advanced Endoscopy

Ram Chuttani, MD

Celiac Disease

Daniel Leffler, MD

Hepatology

Michelle Lai, MD

Inflammatory Bowel Disease

Alan Moss, MD

Motility

Anthony Lembo, MD

Transplant Hepatology

Nezam Afdhal, MD

General Medicine and Primary Care

Christina Wee, MD, MPH

Gloria Yeh, MD, MPH

Gerontology

Sarah Berry, MD, MPH

Global Health

Jonathan Crocker, MD

Hematology/Oncology

Reed Drews, MD

Hospice and Palliative Medicine

Mary Buss, MD, MPH

Infectious Diseases

Wendy Stead, MD

Christopher Rowley, MD, MPH

Associate Director

Nephrology

Stewart Lecker, MD

Pulmonary and Critical Care

Pulmonary and Critical Care

Jakob McSparron, MD

Associate Director

Asha Anandaiah, MD

BIDMC Site Director

Sleep Medicine

Robert Thomas, MD

Rheumatology

Robert Shmerling, MD (*outgoing*)

Vasileios Kytтарis, MD (*incoming*)



Residency Track Enhanced for Aspiring Physician-Scientists

Steve Freedman, MD, PhD, is the Director of the BIDMC Pancreas Center, Chief of the Division of Translational Research, Director of the Grant Review and Support Program (GRASP) at Harvard Catalyst, and Director of the Residency Program's newly reformatted Physician-Scientist Track. He is an internationally recognized expert in exocrine pancreatic disease, particularly pancreatitis and cystic fibrosis in adults and children. Dr. Freedman reflects on the track and his longtime connection to research at BIDMC:

“ As the Director of the updated Physician-Scientist Track in BIDMC's Internal Medicine Residency Program, I'm proud to announce that we welcomed our first new group of Physician-Scientist Track residents this year. Our program has always been supportive of residents with a passion for scientific investigation through mentoring programs and research electives, and we are excited about this new opportunity to provide even more guidance and dedicated research time

to MDs or MD/PhDs interested in pursuing a career as a physician-scientist. Through workshops, the track aims to improve skills like strategic grant writing, publication best practices, and technical writing. Additionally, we provide the opportunity to work alongside the many BIDMC faculty members performing cutting-edge research—basic, translational, epidemiologic, and clinical research. Residents receive BIDMC's exceptional clinical training and have the potential to pursue 'short tracking' through the ABIM Research Pathway.

As an MD/PhD alumnus of our residency program, I have first-hand knowledge of how committed and successful our program and its faculty are to nurturing the research career goals of our residents. Thanks to my residency and fellowship mentors, I enjoy a rich and rewarding career as a clinician-scientist; now I am thrilled with this opportunity to help train and nurture the next generation.



New Education Director Appointed in Response to Opioid Epidemic

In response to the dramatic increase in opioid use disorder in New England, the Department of Medicine has appointed **Christopher Rowley, MD, MPH**, to serve in the newly created role of Director of Addiction and Opioid Use Disorder Education. A member of the Division of Infectious Diseases (ID) and Associate Program Director of its fellowship program, Dr. Rowley earned BIDMC's ID Service and Leadership Award this year. Dr. Rowley sees patients in Boston as well as at the BIDMC-affiliated Outer Cape Health Services' Provincetown Health Center, and he is the Director of HIV Medicine for Outer Cape. Dr. Rowley comments on the crisis and the Department's response:

“ As providers, we are caring for an increasing number of patients suffering from the physical and psychosocial consequences of opioid use disorder. But as a national medical community, we have been slow to address our limitations and implicit biases in caring for patients who are often marginalized in society due to this highly stigmatized illness. The Department of Medicine recognizes the imperative to address the disorder in patients under our care, realizing that this is often the greatest health concern each is facing. By educating medical students, house staff, and attending physicians—and empowering them to recognize and treat opioid use disorder—the Department is helping to ensure that we deliver the best care possible to patients and family members who are impacted by this devastating illness.

Biomedical Research

Pushing Boundaries and Advancing Science to Save Lives

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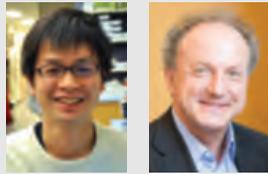
Pushing Boundaries and Advancing Science to Save Lives

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Pushing Boundaries and Advancing Science to Save Lives

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Kenneth Mukamal, MD, MPH, Associate Professor of Medicine and member of the Division of General Medicine and Primary Care, received a major grant this year from the National Institute on Alcohol Abuse and Alcoholism, part of the National Institutes of Health (NIH). One of the largest NIH grants in the history of the Department (with a commitment of over \$37 million in its initial phase), this funding will support Dr. Mukamal's Moderate Alcohol and Cardiovascular Health Trial (MACH15). A multicenter, worldwide, randomized clinical trial, MACH15 aims to determine the effects of one serving of alcohol daily compared to no alcohol on cardiovascular disease among adults at above-average risk. A secondary objective of the study is to evaluate the impact of one serving of alcohol (versus no alcohol) on diabetes risk. The study will involve 7,800 participants aged 50 years and older. Enrollees will come from up to 16 sites around the world and will be involved in the study for an average of six years. Dr. Mukamal comments on this significant grant and the important research it will enable.

“ Humans have been drinking alcohol for perhaps as long as there have been humans, and the consequences of its consumption in excess are obviously profound and well-known. Remarkably, though, we have essentially no gold-standard evidence for what its effects are over the long run when consumed within sensible limits. This is the first opportunity ever to conduct a true long-term experiment with alcohol, to gain the type of knowledge that physicians have for literally every approved drug in the US but haven't had for alcohol until now.

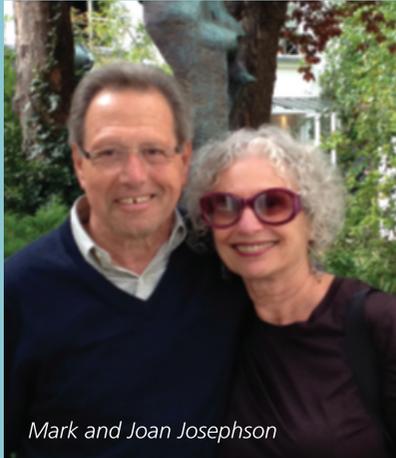


2017 RESEARCH FUNDING

Division	Funding Source	Direct Award	Indirect Award
Allergy and Inflammation	Federal	\$675,914	\$418,303
	Non-Federal	\$213,126	\$150
Cardiovascular Medicine	Federal	\$5,386,736	\$3,297,151
	Non-Federal	\$7,784,653	\$1,345,440
Clinical Informatics	Federal	\$888,233	\$144,763
	Non-Federal	\$257,177	\$25,917
Clinical Nutrition	Federal	—	—
	Non-Federal	\$32,807	—
Endocrinology, Diabetes, and Metabolism	Federal	\$6,872,557	\$4,056,827
	Non-Federal	\$2,854,099	\$244,275
Experimental Medicine	Federal	\$617,335	\$325,114
	Non-Federal	\$749,709	\$105,820
Gastroenterology	Federal	\$3,111,800	\$1,917,204
	Non-Federal	\$4,183,975	\$938,541
General Medicine and Primary Care	Federal	\$10,998,944	\$1,655,825
	Non-Federal	\$5,339,109	\$561,071
Genetics	Federal	\$4,510,456	\$2,473,393
	Non-Federal	\$3,167,416	\$145,333
Gerontology	Federal	\$232,420	\$1,661
	Non-Federal	\$729,650	\$82,546
Gerontology/Hebrew Senior Life	Federal	\$5,989,899	\$2,305,164
	Non-Federal	\$1,363,821	\$137,088
Hematology/Oncology	Federal	\$10,424,616	\$4,452,105
	Non-Federal	\$8,905,258	\$1,276,610
Hemostasis and Thrombosis	Federal	\$1,914,371	\$875,249
	Non-Federal	\$146,248	\$11,556
Immunology	Federal	\$1,211,770	\$623,174
	Non-Federal	\$160,940	\$73,962
Infectious Diseases	Federal	\$1,821,200	\$614,853
	Non-Federal	\$294,350	\$61,739
Interdisciplinary Medicine and Biotechnology	Federal	\$2,012,194	\$599,232
	Non-Federal	\$1,869,430	\$274,375
Nephrology	Federal	\$3,310,668	\$1,887,282
	Non-Federal	\$5,056,740	\$850,300
Pulmonary, Critical Care, and Sleep Medicine	Federal	\$784,086	\$89,198
	Non-Federal	\$839,671	\$67,927
Rheumatology	Federal	\$1,991,655	\$1,232,509
	Non-Federal	\$141,185	\$16,081
Signal Transduction	Federal	\$113,082	\$80,727
	Non-Federal	\$86,889	\$70,112
Translational Research	Federal	\$579,650.75	\$382,995.54
	Non-Federal	\$1,296,004.72	\$257,995.80
Transplant Immunology	Federal	\$906,383	\$427,301
	Non-Federal	\$227,495	\$2,217
Virology and Vaccine Research	Federal	\$32,128,897	\$5,983,795
	Non-Federal	\$9,199,418	\$1,861,021
GRAND TOTAL		\$151,382,036	\$42,253,905

In Memoriam

Mark Josephson, MD



Mark and Joan Josephson

This year marked the passing of Mark Josephson, MD, an exceptional leader, researcher, clinician, and friend. Chief of the Department of Medicine's

AS MANY OF YOU KNOW, I'VE ALWAYS CONSIDERED MY LEGACY TO BE THE SUCCESS OF MY ACADEMIC CHILDREN AND GRANDCHILDREN. TO HAVE THE OPPORTUNITY TO NURTURE YOUNG PEOPLE AND WATCH THEM MAKE AN IMPACT IN MEDICINE IS SOMETHING FOR WHICH I AM ETERNALLY GRATEFUL.

Division of Cardiovascular Medicine from 2001 through 2015, he was a renowned leader and innovator in the field of electrophysiology and is considered the founder of the discipline. The Joan and Mark Josephson Scholar Award has been established to honor a faculty member who demonstrates commitment to the highest qualities of humanism in the care of patients within the Division of Cardiovascular Medicine.

Dr. Josephson earned his medical degree from Columbia University and completed his residency at Mount Sinai Hospital. While serving as a military medical officer during the Vietnam War, he was introduced to cardiac electrophysiology research at the Public Health Service Hospital in Staten Island, NY. He later completed a cardiology fellowship at the Hospital of the University of Pennsylvania, where he went on to build a premier electrophysiology service and become Chief of Cardiology. In 1992, Dr. Josephson established the Harvard-Thorndike Electrophysiology Institute and Arrhythmia Service at Beth Israel Hospital. In 2001, he was named the Chief of Cardiovascular Medicine at BIDMC and the Herman Dana Professor at Harvard Medical School.

Dr. Josephson transformed the field of cardiac electrophysiology to provide state-of-the-art therapies for those suffering from arrhythmias. He was the author of *Clinical Cardiac Electrophysiology Techniques and Interpretations*, a definitive work that has guided generations of cardiologists and electrophysiologists. He was the recipient of the American College of Cardiology's Distinguished Scientist Award. Dr. Josephson took the greatest

pride in the more than 250 cardiac electrophysiology fellows he trained.

The following are excerpts from remarks he made upon receiving the American Heart Association's Eugene Braunwald Award in 2013:

“As my career was developing, I had the privilege to teach and mentor young physicians who would ultimately become leaders in clinical electrophysiology and role models for future generations. It has been very rewarding to help develop young physicians both professionally and personally, to watch these young mentees grow from enthusiastic young physicians to independent investigators, clinician educators, division chiefs, deans, and excellent clinicians, has been very gratifying. In my opinion, the title 'mentor' is the highest title one can achieve in academic medicine. While the university rank of Professor by itself is a great achievement, it only recognizes one's personal accomplishments. The title of mentor means you have helped to mold and develop the careers of others. Their success is a much greater contribution to medicine. As many of you know, I've always considered my legacy to be the success of my academic children and grandchildren. To have the opportunity to nurture young people and watch them make an impact in medicine is something for which I am eternally grateful. I'd also like to thank my wife Joan for supporting me and encouraging me in these efforts and mostly for lovingly co-parenting all of these academic children.”

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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.

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 SeniorLife 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.



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