

# Mass General

M A G A Z I N E

FOR SUPPORTERS AND  
FRIENDS OF MASSACHUSETTS  
GENERAL HOSPITAL

SUMMER 2018

## The Power of Bold Giving and Big Ideas

The work of Guillermo (Gary) J. Tearney, MD, PhD, underscores the progress and promise of the MGH Research Scholars program.

### ALSO INSIDE:

Upping the Odds for  
Addiction Recovery

Diversity and  
Determination



FROM THE PRESIDENT



**MGH RESEARCH SCHOLARS PROGRAM REFLECTS SCIENCE WITH A STRONG PATIENT FOCUS**

At Massachusetts General Hospital, we believe that great medicine is based on great science. That belief is tempered and strengthened by a spirit and a motivation to do the best for our patients. Far too often, in medicine, there is a huge gap between research studies and better patient care. The result of many research studies is simply a paper published in a journal.

This is not the case at Mass General. Our scientists and clinicians work together to ensure that research informs care and vice versa. This accelerates progress on both fronts.

Our cover story features Guillermo (Gary) Tearney, MD, PhD, an optics researcher, who has long had an interest in gastrointestinal cancers. Trained as a pathologist, Gary believed the traditional pathological approach for diagnosing disease was inefficient and imprecise. Working with an engineering team, he developed a small capsule that can be swallowed and used to detect Barrett's esophagus, a precursor to esophageal cancer. This innovative tool has tremendous potential as 80 percent of people with esophageal cancer die within five years.

Gary is part of the MGH Research Scholars program. Launched in 2011, the program provides exceptional early and mid-career investigators like Gary with the funding to make transformative advances in their research. After a highly competitive selection process, scholars are given \$100,000 a year for five years to fund their newest and most out-of-the-box ideas. We select people based on their talent and creativity. Then we give them resources and let them run with it.

The impact of this unrestricted support from visionary donors has been remarkable. Our first 42 scholars have received an additional 277 research grants totaling close to \$300 million. They've published more than 1,400 scientific papers and delivered more than 1,000 national and international talks, which means that our scholars are not only doing remarkable science, they are sharing it with the world. Amazingly, this group has also been granted 66 patents and has filed for 86 more. This is particularly notable because this is often the first step in moving fundamental discoveries into the clinic.

It is an exciting and challenging time in science. The average age at which our investigators obtain their first significant grant is approaching 40. That means reaching your potential in science takes time, patience, and certainly, financial resources.

Your broad support for all our programs at Mass General helps us recruit and retain the sort of talented investigators who take part in the MGH Research Scholars program. We thank you on behalf of them and the patients who will one day benefit from their innovative research.

With much appreciation,

**Peter L. Slavin, MD**  
President, Massachusetts General Hospital

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Robert Kraft speaks in front of the CareZone mobile health van.

KRAFT CENTER LAUNCHES MOBILE HEALTH INITIATIVE

The Kraft Center for Community Health at Mass General, established by a generous gift from Robert Kraft and The Kraft Family Foundation, unveiled CareZONE, a mobile health van aimed at better engaging individuals struggling with addiction and complex health conditions.

This community outreach initiative provides care and harm-reduction services in areas of Greater Boston with high rates of fatal and non-fatal opioid overdoses. Its goal is to increase access to addiction and healthcare services, engage individuals in recovery and connect them with long-term, community-based care.

To learn more, visit [www.massgeneralmag.org/carezone](http://www.massgeneralmag.org/carezone)

LIQUID BIOPSIES PROVIDE NEW CANCER TREATMENT CLUES

Many cancer patients eventually develop a resistance to their treatments. To help oncologists quickly and accurately identify early signs of treatment resistance, researchers have developed a new diagnostic tool called a liquid biopsy. At an international conference focused on gastrointestinal cancer, a team from the Mass General Cancer Center presented data that may help move liquid biopsies into clinical practice.

To test the effectiveness of liquid biopsies, Mass General Cancer Center investigators followed nearly 40 patients with various forms of gastrointestinal cancers who began to show signs of treatment resistance. Using liquid biopsies, researchers identified one or more mutations or mechanisms that contributed to treatment resistance in 31 of the 40 patients.

To learn more, visit: [www.massgeneralmag.org/liquid-biopsy](http://www.massgeneralmag.org/liquid-biopsy)



GUN VIOLENCE AND SAFETY: MASS GENERAL'S ADVOCACY

In the aftermath of recent school-shooting tragedies, Mass General President Peter L. Slavin, MD, discussed Mass General's role in addressing gun violence and safety. "As an organization committed to heal, to prevent injuries, to promote good health, Massachusetts General Hospital bears a responsibility to be part of the national dialogue on this epidemic," Dr. Slavin said.

Dr. Slavin also shared a related position statement from the Mass General Physicians Organization, as well as steps the hospital is taking to address the crisis through advocacy, education and prevention.

To learn more, visit: [www.massgeneralmag.org/gun-violence](http://www.massgeneralmag.org/gun-violence)



On March 14, 2018, Mass General staffers joined together to call attention to gun violence as a public health issue.



From left, Andrew Nierenberg, MD, Liz Dauten and Kent Dauten

CENTER FOR BIPOLAR RESEARCH HAS GLOBAL REACH

Thanks to a generous gift from Kent and Elizabeth Dauten, researchers in the Mass General Department of Psychiatry have launched a new center to advance the treatment of bipolar disorder. The Dautens' commitment was inspired by the compassionate treatment their family received at Mass General and by the research of Andrew Nierenberg, MD, the center's director.

The mission of the Dauten Family Center for Bipolar Treatment Innovation includes research, global collaboration and education. Its goal is to revolutionize the understanding of a disease that disrupts the lives of an estimated 2 to 4 percent of the adult population in the United States.

To learn more, visit: [www.massgeneralmag.org/dauten-center](http://www.massgeneralmag.org/dauten-center)



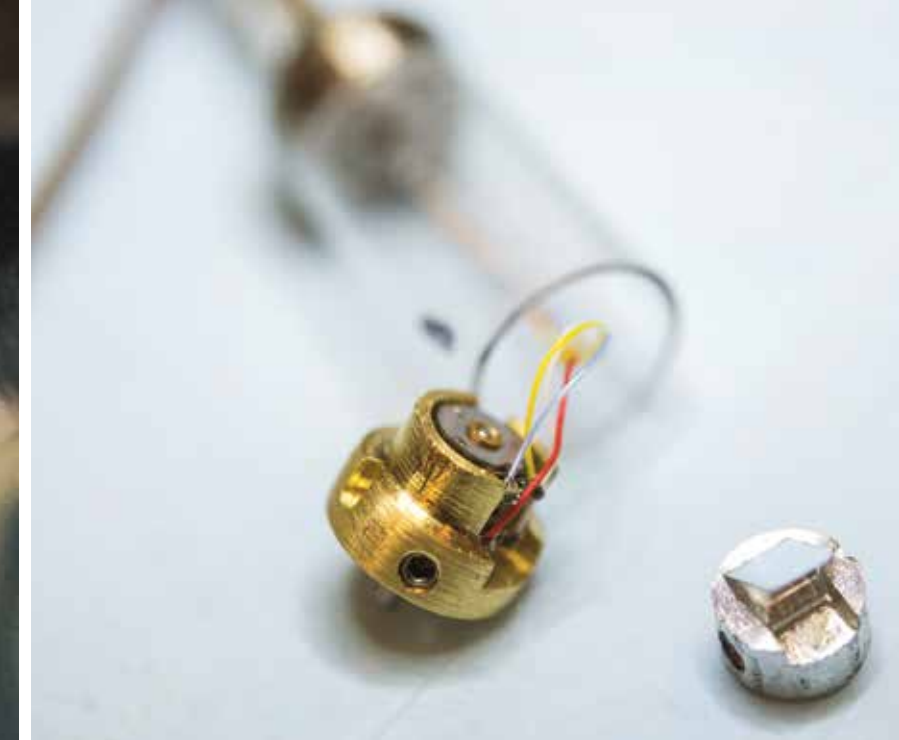
CHILDHOOD CARE STIRS SUPPORT FOR MGH FUND

Every Sunday, John Guertin drives from his New Hampshire home to climb up and down the Bunker Hill Monument in Charlestown, Mass. Every month, he donates \$1,000 to the MGH Fund at Mass General.

He does both in honor of Mass General doctors who restored his ability to walk when he suffered from Legg-Calvé-Perthes disease at age 7. Now cured, Mr. Guertin feels that without the medical care he received decades ago at Mass General, he would not be able to walk. As Mr. Guertin climbs the 294 steps to the top of the Bunker Hill Monument, "The least I can do is not stop walking," he says.

To learn more, visit: [www.massgeneralmag.org/bunker-hill](http://www.massgeneralmag.org/bunker-hill)





## THE POWER OF BOLD GIVING AND BIG IDEAS

One researcher's development of a swallowable, diagnostic capsule underscores the progress and promise of the MGH Research Scholars program.

Above: From left, postdoctoral fellow David Otuya, MD, PhD, primary investigator Guillermo (Gary) Tearney MD, PhD, and research design engineer Hamid Farrokhi, PhD, assess a new imaging prototype device. Top right: a tethered capsule microscopy device during the fabrication process. Bottom right: postdoctoral fellow Hui Min Leung, PhD, processes data.

### What sort of difference is the MGH Research Scholars program making?

Imagine swallowing a small capsule that travels down your gastrointestinal (GI) tract, capturing multiple microscopic images along the way in order to detect Barrett's esophagus, a precursor to esophageal cancer.

While this device may sound like something from the future, it in fact exists today.

Guillermo (Gary) J. Tearney, MD, PhD, an optics researcher at Massachusetts General Hospital, is working to make it available to primary care practices around the world.

Dr. Tearney has long had an interest in GI cancers. Despite the relative ease with which the GI tract can be accessed via the mouth, these cancers still account for more than their share of what Dr. Tearney calls "unnecessary deaths." For example,

about 80 percent of people diagnosed with esophageal cancer die within five years.

The traditional approach for diagnosing disease — pathology — can be inefficient, says Dr. Tearney, who was trained as a pathologist. (Pathology involves the study of the causes and effects of diseases, often through laboratory examination of tissue samples.) Dr. Tearney cites the imprecise nature of choosing which part of the organ to biopsy, the risks that come with



removing tissue from the body and the extended length of time it takes to make the diagnosis.

Dr. Tearney's solution, known as tethered capsule endomicroscopy (TCE), has received praise and funding from the Bill & Melinda Gates Foundation as well as local family foundations. He credits his involvement in the MGH Research Scholars program as critical to his success.

"The MGH Research Scholars program offers greater freedom," says Dr. Tearney, who was the Mike and Sue Hazard Family MGH Research Scholar from 2012 to 2017. "You can have a crazy idea that nobody believes will work, and you can try it."

"The funding allowed me to generate completely new projects that resulted in preliminary data that ended up getting new grants from the National Institutes of Health (NIH)," he continues. "Those grants wouldn't have happened if I hadn't had the freedom to try those high-risk

ideas that the MGH Research Scholars program allowed me to pursue."

**JUMP-STARTING A CAREER**

Founded in 2011, the MGH Research Scholars program was designed to give exceptional early- and mid-career investigators like Dr. Tearney the funding they need to make transformative advances in their research. This mission is particularly important in an era when funding from organizations such as the NIH is limited.

Mass General researchers must make it through a very rigorous and competitive hospital-wide selection process to gain acceptance to the MGH Research Scholars program. After selections are made, donors who have committed the amount of a full award — \$500,000 over five years — may choose to have one of the MGH Research Scholars named in their honor. Donors may also make a gift of any amount to the program. All donors are

offered opportunities to connect with the individual researchers.

MGH Research Scholars like Dr. Tearney have leveraged the money to pursue work that is unlikely to receive initial funding from traditional sources such as the NIH. The funding enables them to hire more researchers, purchase new equipment and make other essential investments.

By generating relevant data from their research, they better position themselves to attract future funding from the NIH or, in Dr. Tearney's case, the Gates Foundation and other organizations. In fact, the first 42 MGH Research Scholars were awarded 277 grants from outside sources totaling over \$292 million.

In addition to the financial benefits, Dr. Tearney values the personal connections that the MGH Research Scholars program has made possible.

"One important factor is the exposure I've gotten to people with tremendous expertise and capabilities — donors, venture capitalists, industry professionals and others throughout various areas of the institution," he says. "All of these things jump-started my career in a way that never would have happened without the program."

**REFINING THE TECHNOLOGY**

Early in his tenure as an MGH Research Scholar, Dr. Tearney met philanthropists Dorothy and John Remondi at fundraising event. The couple took a keen interest in his work and went on to become major supporters.

Past support from the Remondi Family Foundation has enabled Dr. Tearney to refine his TCE technology for the

Barrett's capsule. Over the course of about 10 iterations, the Barrett's capsule has gotten smaller (it is now roughly the size of a large vitamin pill) while offering progressively better resolution.

The Barrett's capsule is attached to a tether containing an optical fiber. On the other end of the tether is an imaging system; once the size of a refrigerator, it is now more akin to a briefcase. After the patient swallows the capsule, it passes down the GI tract. The velocity at which the capsule travels is managed by maneuvering the tether.

"While it goes down, the mechanics inside the capsule start spinning and scan a beam around the circumference of the wall of the GI tract," Dr. Tearney explains. "As it does that, light is reflected back from the wall of the GI tract and travels through the optical fiber in the tether. It's received by the imaging system. The system processes the detected light to create a very high-resolution image of the GI tract from where the capsule is at any given point in time."

The imaging system reconstructs the data being transmitted as three-dimensional microscopic images of the organ being explored. These extraordinarily detailed images give clinicians the information they need to make a diagnosis.

The advantages of TCE technology abound. It provides images of the entire organ — not just a small piece, as is the case with a biopsy. The patient doesn't need to be sedated, which lowers costs and means the process can be completed in an outpatient setting in about five minutes. After the procedure, the capsule can be disinfected and used multiple times in other patients, reducing costs even further. And perhaps most importantly, the



Discussing a TCE capsule are, from left, engineering technician Sarah Zemlok, Guillermo (Gary) Tearney MD, PhD, and engineering technician Sohaila Ayad



"The MGH Research Scholars program offers greater freedom. You can have a crazy idea that nobody believes will work, and you can try it."

GUILLERMO (GARY) J. TEARNEY, MD, PHD



clinician can identify the cause of illness — and start the appropriate treatment — sooner.

Currently, Dr. Tearney is working on a primary care initiative for the capsule that has been funded by the Remondi Family Foundation. The generous gift has enabled the Tearney Lab to collaborate with the Department of Medicine to initiate capsule-based screening clinics in selected Mass General primary care centers.

“It’s a really exciting development where we’re going to use this device in the real world for screening,” Dr. Tearney says. “It will be a capability that’s only available at Mass General, and we’re on pace to start this year.”

**FINDING FREEDOM IN FUNDING**

MGH Research Scholars is one of the signature programs of the Mass General Research Institute. Founded in 2014, the institute aims to guide, support and promote the entire research enterprise at Mass General. Susan A. Slaughaupt, PhD, scientific director of the institute, hopes to endow the program in order to fund new MGH Research Scholars every year in perpetuity and launch similar programs targeting other subsets, such as very early-career investigators.

“Our field is losing young people. They’re not pursuing science because it’s just too hard,” Dr. Slaughaupt says. “It’s very difficult to have such insecurity in your life. You want to be able to take home your own paycheck and put dinner on the table for your family, and this insecurity is driving a lot of people away from science.”

Dr. Slaughaupt just completed a five-year term as the Elizabeth G. Riley

and Dan E. Smith Jr. MGH Research Scholar, an experience she describes as “life-changing.” Her research focuses on finding genes and then treatments for a handful of very rare diseases.

Echoing Dr. Tearney’s words, Dr. Slaughaupt says she found greater freedom in her research thanks to the MGH Research Scholars program. “When we write our grants, frequently it’s for what I call ‘safe science.’ In order to get the grant funded in the first place, you have to have a lot of data already suggesting that what you propose will be successful,” she says. “With the unrestricted funding that comes from the MGH Research Scholars program, if you want to take a chance — and most major scientific discoveries come from taking a chance — you can do that kind of work.

“It allowed me to pursue some really big experiments to evaluate the effect of the drug we’re developing on the entire genome that I wouldn’t have been able to do otherwise,” Dr. Slaughaupt adds. “That’s the kind of impact this program is designed to have. It’s about supporting bright, promising investigators who just need the funds to make the next great discovery.”

**A VALUABLE INTRODUCTION**

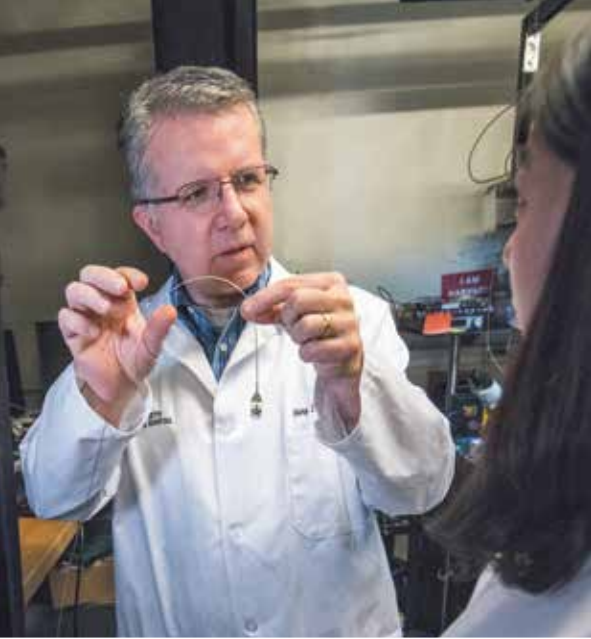
Soon after Dr. Tearney was named an MGH Research Scholar, he crossed paths with Galit Alter, PhD, the Kristine and Bob Higgins MGH Research Scholar from 2012 to 2017, and currently a Samana Cay MGH Research Scholar. It turned out to be the start of a great friendship.

Dr. Alter, a primary investigator at the Ragon Institute of MGH, MIT and Harvard, performs research to understand the immune system’s response to chronic



infections such as HIV, tuberculosis and malaria. Within a year of becoming an MGH Research Scholar, she parlayed the \$500,000 award into three new patents and more than \$18 million in additional funding.

“The problem in the infectious disease space is that infectious diseases emerge so rapidly, requiring immediate diagnostics,



therapeutics and vaccine discovery, that common funding mechanisms such as the NIH and other funding agencies can’t keep up with the required pace of the research,” Dr. Alter notes. “The MGH Research Scholars dollars are flexible funds and have been incredibly transformative because I can jump onto a new question the minute I have it.

Photos clockwise from upper far left: Susan A. Slaughaupt, PhD, says her MGH Research Scholar experience was “life-changing.” Guillermo (Gary) Tearney MD, PhD, (left), and postdoctoral fellow Jing Dong, PhD, discuss a capsule device. Kinematic mount for a cardiovascular imaging system in the Tearney Lab. Galit Alter, PhD, parlayed her MGH Research Scholar award into more than \$18 million in additional funding.

“That’s what the MGH Research Scholars program does,” she adds. “It finds these promising minds and allows them to run free. And that’s where innovation happens.”

Dr. Alter also appreciates that the program brings together researchers from different disciplines. At the time she and Dr. Tearney met, he was focused on diagnosing early cancer and heart disease. She wondered if his technology could be used to sample immune responses and immune damage deep within tissues. Dr. Tearney has since developed the technology so that it may eventually be able to fulfill the purpose Dr. Alter has in mind as well as other unforeseen applications.

As she got to know Dr. Tearney, Dr. Alter thought the Gates Foundation — which already funded her work — might also take an interest in his research. But first, she encouraged him to emphasize the potential of his technology to enhance understanding of infectious diseases, particularly those of the gut. This was a critical shift. Recognizing that diarrhea is the second leading cause of death globally among children under the age of 5, the foundation awarded Dr. Tearney a large grant.

“Introducing him to the Gates Foundation and having them start funding his technology and help him push it into the infectious diseases area was huge for Gary,” Dr. Alter says. “I want to see him get the support he needs now, at the time that

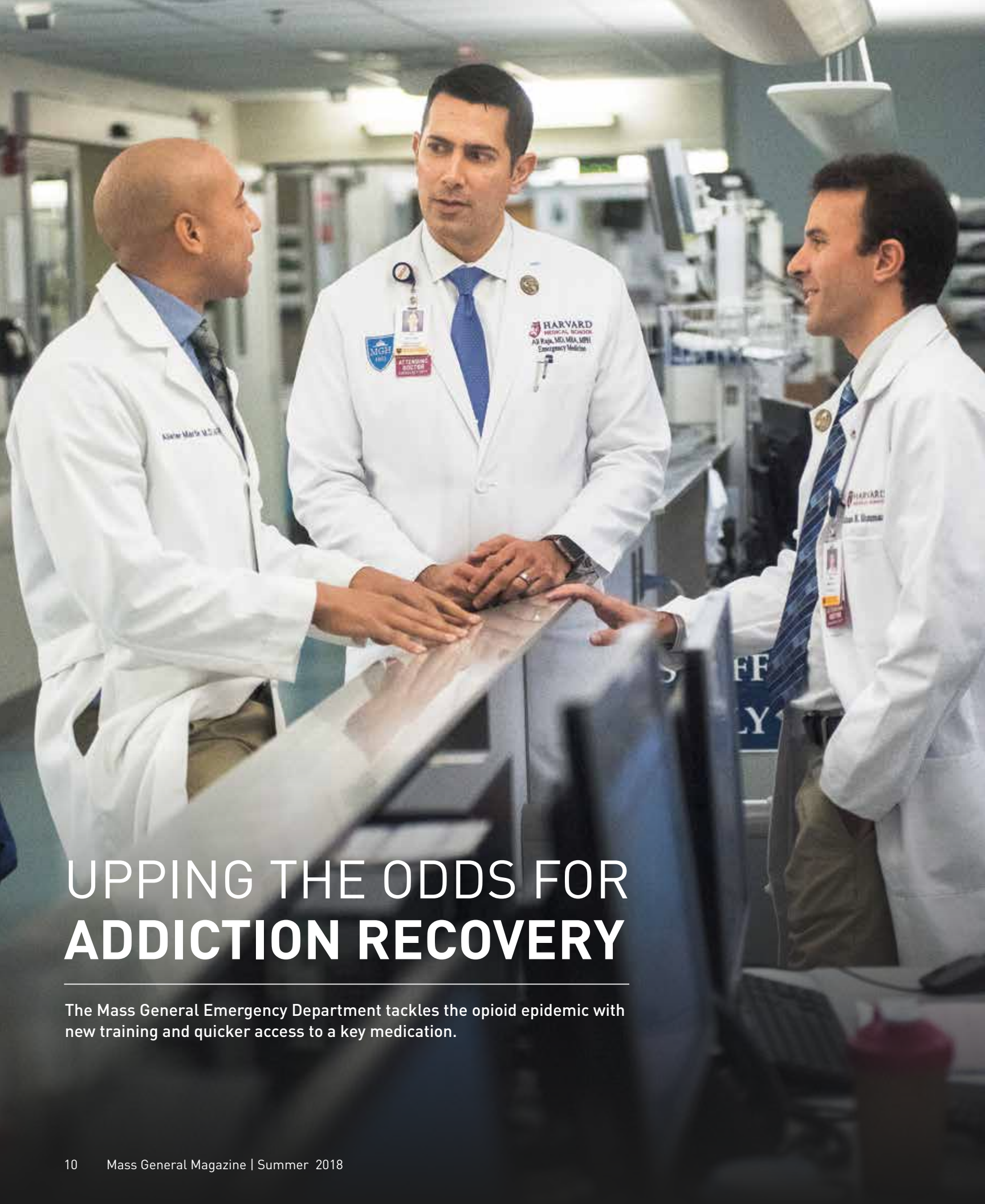
is most critical to building his technology. And then once the technology is there, he can essentially deploy it in a million different ways.”

Moving forward, Dr. Tearney will continue to focus on bringing the Barrett’s capsule to primary care settings. This work could lead to the development of other primary care-based screening technologies that could catch diseases early and save thousands of lives.

As he looks to the future, Dr. Tearney is pleased to be part of Mass General’s vibrant research environment. “This is an amazing institution,” he says. “It’s got top-notch clinical care, a tremendous patient base, many of whom want to participate in research, and a spirit that research is an important component of what we do here. I can’t imagine a better place to be.” ■

To learn more about how you can support the MGH Research Scholars program, please contact **Kate Gutierrez** at **kgutierrez3@partners.org** or **617-726-9234**.





# UPPING THE ODDS FOR ADDICTION RECOVERY

The Mass General Emergency Department tackles the opioid epidemic with new training and quicker access to a key medication.

Never known to shy away from a crisis, the Emergency Department at Massachusetts General Hospital is mobilizing on a new front to address one of the most pressing issues facing American health care — the opioid overdose epidemic.

Mass General emergency medicine clinicians, who handle the most life-threatening situations daily, are changing long-established protocols to become the first emergency department in the state and one of the first in the country to initiate medication treatment for patients with opioid addiction.

Medication for addiction treatment is the most effective treatment available for opioid addiction. Compared to treatment without medication, it improves the likelihood that patients will stay in treatment and abstain from using dangerous opioids. The risk of death is also reduced.

To deliver such medication treatment, Mass General emergency clinicians are training to qualify for federal waivers allowing them to prescribe buprenorphine. The medication works by attaching to the same opioid receptors in the brain as heroin, oxycodone or fentanyl. It allows people to function normally without causing a high.



“Medication treatment is what’s been shown to work,” says Ali Raja, MD, vice chairman of the Department of Emergency Medicine and the first emergency physician waived to prescribe buprenorphine at Mass General. “Patients tell us it allows them to lead highly functional, normal lives. Some say their lives go back to where they were before they developed addiction.”

## THE GET WAIVERED PROGRAM

The “Get Waivered” program was conceived last fall by a young emergency medicine resident, Alister Martin, MD, MPP, in collaboration with Mass General’s Substance Use Disorder Initiative (SUDI). The SUDI is a high priority, \$5 million-a-year hospital-wide program. It is comprised of an inpatient consult service, a Bridge Clinic for follow-up treatment, recovery coaches and enhanced care in Mass General’s health centers and primary care practices.

The Emergency Department plays a pivotal role. “Thousands of people come to our emergency room every year because

For more information about the Mass General Substance Use Disorders Initiative or to make a donation, please contact **Lorraine Fanton** at [lfanton@partners.org](mailto:lfanton@partners.org) or **617-724-6439**.



Opposite page photo: Ali Raja, MD, vice chair of the Department of Emergency Medicine, (center) confers with emergency physicians Alister Martin, MD, (left) and Kamal Medlej, MD. Upper photo: Sarah Wakeman, MD, medical director of the Substance Use Disorders Initiative, says the Get Waivered program’s goal is to connect people with treatment at the moment they seek help in the Emergency Department. Lower photo: Laura Kehoe, MD, director of the Bridge Clinic, says young physicians in training are eager to treat illnesses related to opioid addiction.



Left: The “Get Waivered” program was conceived by Alister Martin, MD, MPP. Center: Laura Kehoe, MD (left) and Sarah Wakeman, MD, conduct a buprenorphine training session. Right: Ali Raja, MD, was the first emergency physician waived to prescribe buprenorphine at Mass General.



of consequences or complications of opioid use,” says Sarah Wakeman, MD, SUDI medical director. “There’s a tremendous opportunity to engage with these people at the moment they are seeking help and connect them with our system.” The goal is to help people who come to the Emergency Department begin treatment immediately and connect to ongoing care.

Dr. Wakeman and Bridge Clinic Director Laura Kehoe, MD, train clinicians in buprenorphine prescribing so they can qualify for the necessary federal waiver.

It’s a sea change for the Emergency Department. Traditionally, it has been dedicated to saving lives of patients in the midst of an immediate, life-threatening crisis, like a heart attack or traumatic injury, not those with chronic relapsing health conditions like substance use disorders.

“We’re seeing a kind of national movement as young physicians in training want to treat this illness,” Dr. Kehoe says. “Thankfully, their generation sees that this is a medical illness that we should be able to treat as seamlessly as we do diabetes or heart disease or other chronically lasting conditions.”

**A NEW VISION**

When Mass General launched SUDI in 2014, it created an in-house Addiction Consult Team and a new Bridge Clinic

for follow-up treatment and counseling. Soon, these programs began collaborating with the Emergency Department, offering consultations for patients with opioid addiction and often transitioning them immediately to the Bridge Clinic to begin medication treatment and engage in care.

But Dr. Martin, who arrived at Mass General at the same time, thought another step could be taken.

Research shows that medically supervised withdrawal, frequently referred to as “detox,” doesn’t work, he points out. People nearly always relapse. A landmark 2003 study showed that 100 percent of patients who were randomly assigned to supervised withdrawal followed by a year of counseling relapsed. Twenty percent died within the year. But 75 percent of those randomly assigned to buprenorphine treatment for a year stayed in treatment, 75 percent were abstinent, and none died.

“The data show that detox doesn’t work for opioid use disorder,” Dr. Martin says. “In fact, it is actually more harmful.”

Using his training in behavioral economics from Harvard Kennedy School, he assembled a team to design the program, which included interviews, surveys, a website and a Twitter feed. The goal was to enlist the faculty emergency physicians — known as “attendings” — to take the 8-hour training course with Drs. Wakeman and Kehoe.

After the Emergency Department leadership got involved, others followed. Today, 90 percent of the attendings are trained as are some of the residents, nurse practitioners and physicians assistants. Philanthropic support is helping to fund the training. More donations will help train more clinicians and support patients in their ongoing care.

**IN THE VAULT**

On a recent afternoon, Dr. Raja strides down a busy hallway into the Emergency Department’s acute care area where the most seriously ill patients are treated. Stopping in front of a closed door, Dr. Raja turns to department pharmacist Lanting Fuh, PharmD, and asks permission to enter the “med room.” Inside, a large metal vault spans one wall. Dr. Fuh punches a code and a drawer slides open, revealing a plastic bottle containing two doses of buprenorphine.

Dr. Raja lifts it out. “It’s not a pill. It’s a film that dissolves under the tongue,” he explains. “It’s designed to deter misuse. You can’t inject it or snort it without getting sick.”

One or two doses of buprenorphine can protect a patient who is leaving the emergency room from going into drug withdrawal until he or she can make it to the Bridge Clinic for further treatment. “The goal is help them get their lives back,” Dr. Raja says.

**HAVING THE CONVERSATION**

Recently waived emergency physician Kamal Medlej, MD, says he feels more prepared to work with patients who ask for help. Having joined Mass General in 2017, he recalls the frustration of previous jobs where no addiction services were available. In one memorable case, a young man walked in with his father seeking help for heroin addiction. “At the time, all I could do was print out a list of programs for him to call,” Dr. Medlej says. But they had already called the programs and found no openings. Upon arriving at Mass General, he was happy to learn the hospital has addiction consultants who come right into the emergency room.

Now with his training and legal waiver, Dr. Medlej says he knows that prescribing buprenorphine is a safe treatment and he feels prepared to have the conversation with patients seeking help. It’s empowering, he says, to be able to provide a treatment and give hope to patients and their families.

“When these patients come through the door,” Dr. Medlej says, “we now have so much more to offer them.” ■





# EMBRACING EVERY MINUTE

Daniel Moran II says his dad’s strength during cancer treatment inspired him to raise funds in support of palliative care programs at Mass General.

The word “strength” took on a new meaning for Daniel Moran II as he watched his father face liver cancer during his treatment at Massachusetts General Hospital.

“It was my father’s relentless mental strength that stood out to me during his journey with cancer,” Dan recalls.

To honor his father, Dan Sr., who died in 2016, and to thank Mass General for the exceptional care it provided, Dan organized a fundraiser with the theme of STRENGTH at CrossFit 13 Stars, a gym he co-owns in Morristown, N.J.

“I wanted to channel my energy in a positive direction,” Dan says. “I didn’t know how to grieve, but I knew this fundraiser would be something that would allow my father’s inspiration to spread beyond our family.”

In October 2017, about 40 participants took part in a challenge that included cardio, free weights and gymnastics. Most had never met Dan Sr., but knew what he meant to his son. The participants and another 60 donors raised \$5,000 for Mass General’s Palliative Care program.

BeCause, Mass General’s fundraising community, helps friends and supporters like Dan raise funds to support the hospital by organizing and participating in events, social gatherings and online campaigns.



## CREATING PRECIOUS MEMORIES

Guidance from the Mass General Palliative Care team was a great comfort to the Moran family. Among other things it helped to inspire a lakeside cookout that Dan Sr. enjoyed with his wife, two children and three grandchildren during the 2016 Labor Day weekend.

Although the family knew Dan Sr. was dying from liver cancer, the gathering was a special one.

Dan Sr. splashed in the lake with his grandchildren and then savored three lobsters. The family drew from his strength. They took photos to remember their joy of being together.

Earlier, Dan Sr. and Fran, his wife, had talked to Karen O’Brien, MD, of Palliative Care at Mass General about how they could approach cancer.

## GUIDANCE ABOUT PALLIATIVE CARE

“We took from Palliative Care the suggestion to live our lives with cancer — rather than always thinking about how Dan was dying from cancer,” Fran says. “Dan’s model was: We’re moving forward as a family.”

Mass General was one of the first U.S. hospitals to offer palliative care services. Today, the program helps patients and families manage cancer and other illnesses in collaboration with their physicians and specialists. Palliative care physicians discuss in-depth with patients their treatment options, end-of-life preferences and spirituality.

A 2010 Mass General study found patients with lung cancer who received palliative care lived more than two months longer and had a better quality of life than patients who did not.

“We took from Palliative Care the suggestion to live our lives with cancer — rather than always thinking about how Dan was dying from cancer.”

FRAN MORAN

Palliative care was invaluable to Dan Moran Sr. (back row, far right) and his family: (back row, from left) daughter-in-law Marie Moran, son Daniel Moran II, daughter Katie Moran Ellis and wife Fran, (front row, from left) grandchildren Makayla Ellis, Gracie Moran and Zachary Ellis.





Left: The Morans, Dan Sr. and Fran. Below: Dan during a visit to Mass General.



Vicki Jackson, MD, MPH

## LIVING WELL IN THE FACE OF SERIOUS ILLNESS

A Mass General expert explains the advantages of palliative care

By Vicki Jackson, MD, MPH

Dan Sr. received his diagnosis near the end of his second career as an electronics teacher at McDougal-Walker Correctional Institution in Connecticut in 2013.

For two years, he and Fran regularly drove the two hours from their Springfield, Mass., home to Mass General’s Boston campus for treatment. During that time, Dan Sr. had 75 percent of his liver removed, negative reactions to chemotherapy and a stroke that, at 65, led to him re-learning how to read and write.

### INVALUABLE EXTRA SUPPORT

The extra support from Palliative Care was invaluable. “Being a nurse, I knew what to expect. Did I want to face it? No,” Fran says. “It was helpful to put a frame around how we could plan.”

One role of a palliative care physician is to open the door for difficult discussions. “We always ask patients, ‘If your time is shorter than you had hoped, what would be important to you?’” says Dr. O’Brien, the Mass General palliative care physician who helped the Morans.

Palliative care is about living well in the face of serious illness. Much more than simply end-of-life care, it is appropriate at any age, for any diagnosis, at any stage in a serious illness. Here at Massachusetts General Hospital, our palliative care efforts focus on asking patients what is most important to them and then supporting those needs.

In our quest to heal disease, many physicians find it difficult to open these conversations with their patients. However, by encouraging discussion, and by listening carefully, palliative care can serve as an extra layer of support for a patient and the family at a critical time. We have learned that patients with serious illnesses want to:

- ease pain and other symptoms
- relieve burdens on their family
- find a sense of control
- receive assistance strengthening their relationships with loved ones
- share decision-making with their medical team

### THE BENEFITS OF STARTING EARLY

The sooner palliative care is included in the patient’s care program, the better the results. Studies show that early palliative care improves quality of life, decreases depression and may even prolong survival.

Although palliative care is often confused with hospice care, they are not the same. Hospice care is an insurance benefit that provides care for those in the last weeks of life. Patients qualify for hospice when they have been given a prognosis of less than six months to live and give up insurance coverage for life-prolonging treatment.

Palliative care is given in conjunction with efforts to cure a disease or prolong a life. It brings together an interdisciplinary team that works with patients, families and other healthcare professionals.

### EDUCATION KEY TO PALLIATIVE CARE

Mass General is a leader in palliative care education and research. We are one of only a few hospitals in the country to have a

Dan Sr. told Dr. O’Brien he valued spending time with family and friends. When he felt Fran needed extra support, he let Dr. O’Brien know. “He was somebody who never, ever thought of himself first,” Dr. O’Brien recalls. “He wasn’t worried about dying. Dan had a really, strong faith.”

She gave Dan strategies for pacing himself after chemo and taking advantage of good days. In his final two years, in between treatments, he enjoyed attending the Masters Tournament, a Caribbean cruise, golfing, visits with his children and grandchildren and day excursions with his wife.

### SPENDING TIME WITH DAD

Fran says support from Mass General made a huge difference to Dan Sr. and their family. Palliative Care helped the family understand how the liver cancer was progressing. It was Dr. O’Brien who first explained to Fran that Dan Sr. only had days to weeks left.

With that knowledge, Fran called her son, Dan, and daughter, Katie, who traveled from their homes to spend more time with their dad.

truly integrated palliative care model. Our specially trained team works hard to educate caregivers, patients and families about the value of such care. But education is still needed to ensure patients and clinicians have access to available support.

Studies show 80 percent of patients want to talk to their doctors about what to expect with their illness and plan for the future. However, in our commitment to healing, we, as physicians, too often wait for patients to initiate the conversation. As a result, these conversations rarely happen.

Philanthropy is critical because it gives clinicians the time needed for these often difficult discussions. But the investment has been shown to pay off with fewer hospital admissions and decreased stress on the patient and family.

### EMBEDDING SPECIALISTS

With the support of private philanthropy, Mass General has established fellowships for physicians and nurse practitioners in palliative care. These fellowships embed palliative care specialists throughout the hospital, providing education and support for patients, as well as physicians, nurses and other caregivers.

Our goal is to ensure that all our patients receive appropriate care at the appropriate time.

Under the visionary leadership of Peter L. Slavin, MD, Mass General’s president, the hospital convened a task force that developed several strategies to improve care for patients living with a serious illness. Their findings included expanding education, patient engagement and advance care planning along with the creation of an operational team.

Dan took to heart his father’s philosophy of squeezing in as much life as possible. Dan and Katie planned a final party for Dan Sr.

At the family’s lake house in Monson, Mass., just eight days before he died, Dan Sr. was surrounded by friends and family for a final celebration of his life.

“It was beautiful,” Fran remembers. ■

To learn more about supporting Palliative Care at Mass General, please contact Jocelyn Meter at **617-726-1305**, or [jmeter@partners.org](mailto:jmeter@partners.org)

For information about how you can hold a fundraiser for Mass General, please visit our BeCause website at [because.massgeneral.org](http://because.massgeneral.org)

Our goal is to ensure that all our patients receive appropriate care at the appropriate time.

*Vicki Jackson MD, MPH, is chief of the Division of Palliative Care and Geriatric Medicine at Mass General. At the Harvard Medical School, she is co-director of the HMS School Center for Palliative Care and an associate professor of medicine. ■*





From left, Caroline, Caroline, Margot, Thomas and Kirsten Vaughan

MASTERCARD DANCES FOR ALS RESEARCH

The family and coworkers of Mastercard senior vice president Margot Vaughan, who is battling amyotrophic lateral sclerosis (ALS), are launching a global social media fundraising campaign showcasing salsa dancing to support ALS research around the world.

The #sALSaForaCure campaign will support international ALS research led by the Mass General Department of Neurology. The campaign began internally at Mastercard headquarters with a salsa dancing party in January. The sALSa For a Cure fundraising effort is intended to accelerate the development of ALS therapies to help patients like Margot.

To learn more, visit: [www.massgeneralmag.org/salsa](http://www.massgeneralmag.org/salsa)

COMMUNITY FUNDRAISING SUPPORTS DIABETES RESEARCH

The Noble family of Rancho Santa Fe, Calif., came up with the idea for their Kiss the Sky fundraisers during a vacation in California. Driving past Mt. Whitney, the tallest mountain on the continental U.S., Rick Noble said, “I’d like to climb that someday.” His 11-year-old daughter Kate, who had lived with diabetes since age 1 responded, “Why don’t you do it for diabetes?”

Fifteen years later, Rick has climbed Mt. Whitney plus more than a dozen other summits in the U.S. and one in Bolivia to raise funds to support the research of Mass General’s Denise Faustman, MD, PhD. The Noble family says they will keep raising funds to support Dr. Faustman until it results in a cure for type 1 diabetes. “If a cure is to be found,” Karen Noble says, “I think it’s going to come from Dr. Faustman.”

To learn more, visit [www.massgeneralmag.org/diabetes](http://www.massgeneralmag.org/diabetes)



Rick Noble and his daughter Sarah

FIANCEE’S CARE INSPIRES BOSTON MARATHON RUNNER

Mike Tripaldi, a member of the Mass General Marathon Team for Pediatric Hematology-Oncology, crossed the finish line on April 16 in honor of his fiancée, Lauren Dudley. Lauren was diagnosed with Stage III breast cancer in 2017.

Mike, a longtime athlete, saw how innovative treatments at Mass General can improve cancer patients’ lives — and how frustrating it is to watch a loved one struggle despite medical advances.

“You see people fighting for their lives, just to have another day,” he says. “I knew I had to do anything I could to get involved, so one day others won’t have to worry like we do.”

To learn more, visit: [www.massgeneralmag.org/tripaldi](http://www.massgeneralmag.org/tripaldi)



MGHFC LIGHTS UP AUTISM AWARENESS AT ASPIRE GALA

MassGeneral Hospital for Children kicked off National Autism Awareness Month by hosting the 18th annual Aspire Spring Gala on April 5.

Held at the Four Seasons Hotel Boston, the event raised nearly \$2.6 million to support Aspire. The program helps children, teens and adults with high cognitive autism spectrum disorder or a related social profile develop the skills necessary to live full, independent lives.

This year’s event theme, “Light Up! Inspiring Knowledge + Illuminating Confidence,” produced by longtime partner Rafanelli Events, shed light on living with autism.

Through an interactive lighting installation, a light bulb lounge and an animated video presentation entitled “Five Questions About Autism,” guests experienced “Aha moments” about life on the autism spectrum.

To learn more, visit: [www.massgeneralmag.org/aspire-2018](http://www.massgeneralmag.org/aspire-2018)



Patients, families, friends and staff celebrate the 500th heart transplant.

MASS GENERAL MARKS ITS 500TH HEART TRANSPLANT

On Feb. 24, the Mass General Corrigan Minehan Heart Center and the Mass General Transplant Center hosted patients, families, friends and staff for a celebration of the milestone 500th heart transplant at Mass General.

The recipient of the 500th heart transplant was Kevin Daignault, 55, of Vermont, who suffered from end-stage heart failure. “It really feels like a new lease on life,” says Mr. Daignault. “I feel like I’m starting life all over again.”

To learn more, visit: [www.massgeneralmag.org/heart](http://www.massgeneralmag.org/heart)





Q&A WITH  
O'NEIL A. BRITTON, MD

Massachusetts General Hospital — Harvard Medical School's first and largest teaching hospital — trains about 15,000 healthcare professionals at any given time. They include medical students, nursing students, as well as residents and fellows furthering their medical training. The hospital has bold plans for modernizing its educational mission. O'Neil A. Britton, MD, chief medical officer and senior vice president, explains.

Why does hospital-based education need to change?

Like everything else, the way we educate people is evolving. The tools we use to deliver content, how we assess student competency, and how we individualize to meet each student's developmental needs are all opportunities for improvement. Healthcare — and especially medical — education has been largely centered on the concept of "see one, do one, teach one." But there is great variation in our teaching skills, the educational tools used and the education environment. That paradigm is ripe for transformation. We at Mass General, which was founded with education as one of its pillars, have an opportunity to lead the nation in rethinking

what our education will look like. How can we adapt existing tools and develop new ones? That includes tools like video education, animation, artificial intelligence, virtual reality and practicing in a simulated environment. It includes tools that allow us to test hypotheses and challenge closely held misinformation.

How do you hope to put these ideas into practice?

We want to create an academy to catalyze the education initiatives already occurring across our community of educators. We want to enhance communication and further promote education research and innovation. Now, education largely occurs in the confines of the individual departments and disciplines. The academy would be an attempt to give education across disciplines a home, an institutional recognition of its importance to the future of health care.

We envision a space — a "hospital" within the hospital — dedicated to education, which is fully staffed and simulates patients going through all the activities that happen in the hospital, from an initial visit to discharge.

How would simulation improve education?

There would be space configured to be an operating room, an emergency department, a clinic and an intensive care unit as well as classrooms. Training personnel pretending to be patients would come in, get tests, have their needs assessed, get a care plan and get transferred, admitted or discharged.

Simulation would give clinicians from different specialties an opportunity to practice procedures and decision-making as a team without putting patients at risk. It would be interprofessional — nurses, doctors, physician assistants, therapists, interpreters and others would be there together learning to manage the complexity of caring for patients.

This proposed facility, which we call The Learning Hospital, would also have self-learning modules, designed with interactive images, animations, narrations and self-assessments. In a controlled environment

with simulation and self-learning modules, learners can develop familiarity and master skills.

Education tools can help bring out the inner brilliance in all of us. They can promote the inquisitiveness and curiosity that pushes medicine forward.

Why is interprofessional learning so important?

It reflects actual clinical practice. A simulated interprofessional learning experience will encourage interaction and teamwork. There is nothing stronger than when we work together as a team. With or without a new space, we also plan to develop and test models for successful interprofessional education.

Isn't cost a barrier, particularly since health-care professionals are reimbursed for their clinical time but not their teaching time?

That is why we are interested in philanthropy. We don't see this barrier being overcome by federal funding. It is largely the institution that subsidizes education, understanding that it contributes to how we care for patients and unrelentingly try to improve that care.

I'm just throwing out ideas, but there are many creative thinkers at Mass General trying to execute these plans. And they need time and space to do it.

Why should patients care about education?

Patients should feel confident that whomever is in front of them learned 100 percent of the material they're supposed to know. They should feel comfortable that we're always practicing and trying to be safer and more humane.

We are committed to educating the next generation of healthcare professionals; to lifelong learning of all hospital staff; and to patient education. That will benefit patients here and around the globe. ■

To learn more about how you can support education programs at Mass General, please contact Mary Hanifin at [mhanifin@partners.org](mailto:mhanifin@partners.org) or 617-643-0468.

QUILTER STITCHES TOGETHER  
LEGACY OF GIVING

Grateful for the compassionate care her family has received at Mass General, Daryl Kreindel expands her long-time support for the hospital.



Just as she sews multicolored quilts for those in need, Daryl Kreindel is stitching together a legacy of giving in honor of the decades of compassionate care she and her late husband, Burt Kreindel, experienced at Massachusetts General Hospital.

Through a gift to the MGH Fund that first pays her income in retirement, the avid quilter is expanding her support for the hospital that has been a source of care, inspiration and comfort for her family.

The MGH Fund provides unrestricted support for the hospital's most urgent and innovative projects. They include up-and-coming research, innovative technologies and state-of-the-art clinical centers and groundbreaking global health programs in places where they are needed. The MGH Fund also supports programs that give patients access to the latest advanced

technologies, clinical trials and promising treatments.

A LONG AND FRUITFUL RELATIONSHIP

Nearly 60 years ago, Burt began to see a primary care physician at Mass General. Years of good health followed. Then at age 55, just before marrying Daryl, a routine stress test showed Burt had suffered a small heart attack sometime in the past. Undeterred and under the compassionate care of Mass General physicians, Burt and now Daryl continued to live life fully. Burt worked full time at Mitre Corp. and maintained a part-time law practice in Newton while Daryl worked as a computer programmer. They camped regularly and enjoyed the theater.

At 70, Burt began to experience indigestion and breathlessness — classic symptoms of cardiac distress. Minutes before a stress test, Burt suffered a major heart attack at the Mass General testing facility — a fortunately short distance from the Emergency Department. "They saved his life and gave him 20 more years," Daryl says.

Daryl and Burt made the most of that gift — still hiking and traveling. Working with Mass General cardiologist Claudia Chae, MD, Burt thrived on a heart-healthy diet and exercise plan.

COMPASSIONATE CARE SPURS INVOLVEMENT

During those years, the grateful couple deepened their relationship with Mass General. They became involved in The 1811 Society, a special giving circle comprised of the MGH Fund's most generous donors.

And they joined the Phillips Society, for those who remember Mass General in their long-term plans. As members, they enjoyed social events and learned about the latest medical breakthroughs at various lectures.

QUILTING, FRIENDS AND SOLACE

A dozen years ago, Daryl's love for quilting led her to join a group of Mass General volunteers who meet monthly to create quilts for patients — from newborns in intensive care to adults undergoing chemotherapy.

Last year, at age 90, with Daryl by his side, Burt died from cardiac arrest while en route to Mass General. Though he had slowed physically in the previous year, he remained mentally active, keeping up with technology, politics and his beloved grandson. When Daryl arrived with Burt at the ED, Dr. Chae ran to join them. "We both cried together," Daryl says. "She stayed with me until my stepson came."

Her Mass General quilting group came to Burt's funeral and sent cards. Today, her quilting with the volunteers remains a way to pass on the kindness she experienced.

After Burt's death, Daryl, now 75, established a gift annuity to represent her long-range support for the hospital. "I trust MGH to use it responsibly," Daryl says.

Gifts like Daryl's inspire Dr. Chae. "They are looking beyond their own lives to share their experience and to make it possible for others to benefit from what Mass General has to offer," Dr. Chae says. ■



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To learn more about ways to include Mass General in your will or for more information about the Phillips Society, call the Mass General Office of Planned Giving at (617) 643-2220 or visit our website at [giving.massgeneral.org/planned-giving](http://giving.massgeneral.org/planned-giving)



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