

breakthrough

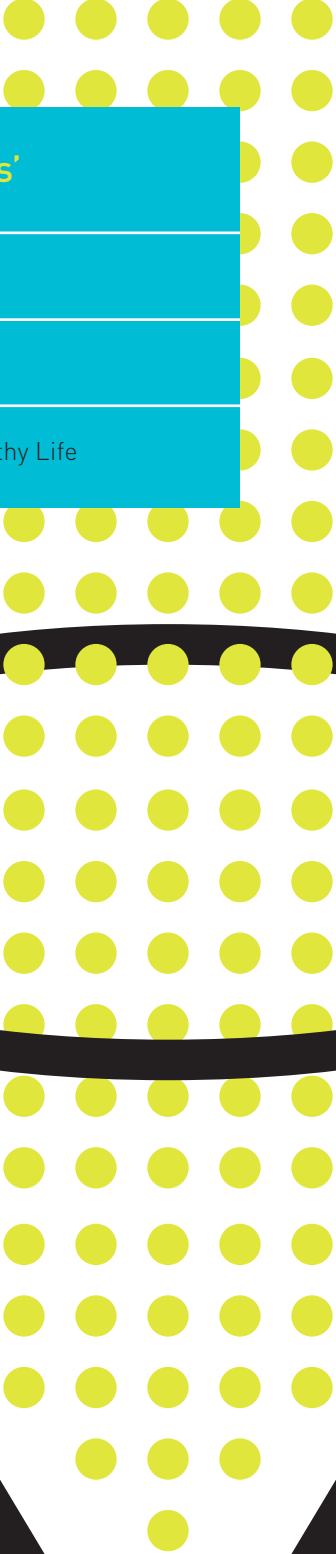
NUMBER 22 • HOLIDAY 2018

Investing in 'Genius'

Innovator Honored

Reducing Opioid Addiction

Ensuring a Long and Healthy Life



Medicine is a public trust

THE JOHNS HOPKINS CENTER
FOR INNOVATIVE MEDICINE

breakthrough



David B. Hellmann, M.D., M.A.C.P.
Aiki Perrati Professor of Medicine; Vice Dean, Johns Hopkins Bayview Medical Center; Chairman, Department of Medicine

THE PATIENT AS TEACHER

Throughout this year, we have been celebrating a landmark anniversary: 125 years of the Johns Hopkins University School of Medicine. Believe it or not, before the school opened its doors in 1893, medical students here in the United States could complete their entire education without ever seeing a patient. All that changed under the leadership of William Osler – considered by many historians to be the greatest physician North America has ever produced. Osler inspired students and faculty members at the nascent school of medicine to put the patient first, famously advising at a 1903 lecture: “For the junior student in medicine or surgery, it is a safe rule to have no teaching without a patient for a text, and the best teaching is that taught by the patient himself.”

All these decades later, I am pleased to let you know that here at the Center for Innovative Medicine, we are holding true to Osler’s founding mission. In this issue’s cover story, “Investing in Genius” (p. 2), for example, you’ll read about young doctors such as Brian Garibaldi, who has launched an international Society for Bedside Medicine in response to growing concern that physicians are spending less and less time with patients. In addition, Brian and his team have developed an innovative new tool – a point-of-care ultrasound – aimed at opening up communication between doctors and patients. His work as the Douglas Carroll MD CIM Scholar is made possible through generous funding from Susan Immelt and her husband, in honor of Susan’s father. I think of such awards as “genius grants,” similar to the famous MacArthur Fellowships that are awarded as an investment in a person’s “originality, insight and potential.” Until now, we’ve been funding about two new CIM Scholars a year. My vision, with your help, is to see the number of “genius grants” we award grow dramatically – to 10 or more annually.

Elsewhere in this issue, you’ll find compelling stories about other Johns Hopkins doctors who are committed to Osler’s exhortation that “medicine is learned by the bedside and not in the classroom.” For Megan Buresh, that bedside is a mobile van parked outside the Baltimore City Detention Center, where she and her team provide immediate treatment for opioid use disorder to people being released from prison. Their efforts are part of the CIM’s ambitious “5 in 10” initiative, aimed at increasing the life expectancy of the underserved in our local community by at least five years over a decade (p. 10). For esteemed radiologist Elliot Fishman, a member of the Miller Coulson Academy, clinical excellence means tapping into the latest technology to find and diagnose disease at an earlier stage, when it is easier to treat and even cure (p. 7).

Speaking of the Miller Coulson Academy of Clinical Excellence, I am pleased to note that this year marks an important milestone for the CIM: the 10th anniversary of the Academy, launched in 2008 through the vision and generosity of the Miller Coulson family. Now numbering 81, the standout physicians in the Miller Coulson Academy are truly a force for good, providing compassionate care to patients and families day after day, and sharing their expertise with students, trainees and colleagues. And this year, with the launch of the medical education website CLOSLER (p. 17), the reach of the Miller Coulson Academy has extended beyond the walls of Johns Hopkins – to doctors around the globe.

Clearly, we’ve got a lot to celebrate and be excited about, as 2018 winds down. We also have much to be thankful for: most notably your commitment to supporting the CIM in our continued efforts to make medicine a public trust.

David B. Hellmann, M.D.

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Investing in ‘Genius’

Plans are underway to significantly expand the number of “genius grants” that are awarded each year to Johns Hopkins’ most promising faculty members.

Innovator Honored with Endowed Professorship

Throughout his 35-year career, Elliot Fishman has been a trailblazer, moving the field of radiology forward through his innovative thinking and leadership in clinical care and education.

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Reducing Opioid Addiction

As part of an effort to increase the life expectancy of Baltimore’s underserved residents, doctors are pushing to reduce opioid-related deaths by 50 percent over five years.

Ensuring a Long and Healthy Life

Renowned geriatrician Jeremy Walston shares why Johns Hopkins Bayview stands on the threshold of becoming *the* center for aging-related advances.

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CLOSLER Rapidly Builds Loyal Following

Unveiled less than a year ago, the new website has exceeded all expectations in its mission to improve clinical care around the world.

WE BELIEVE

Medicine belongs to the public. Our mission is to create a different kind of academic medicine, to tear down ivory towers, share knowledge and dedicate ourselves toward one goal – making life better for patients.

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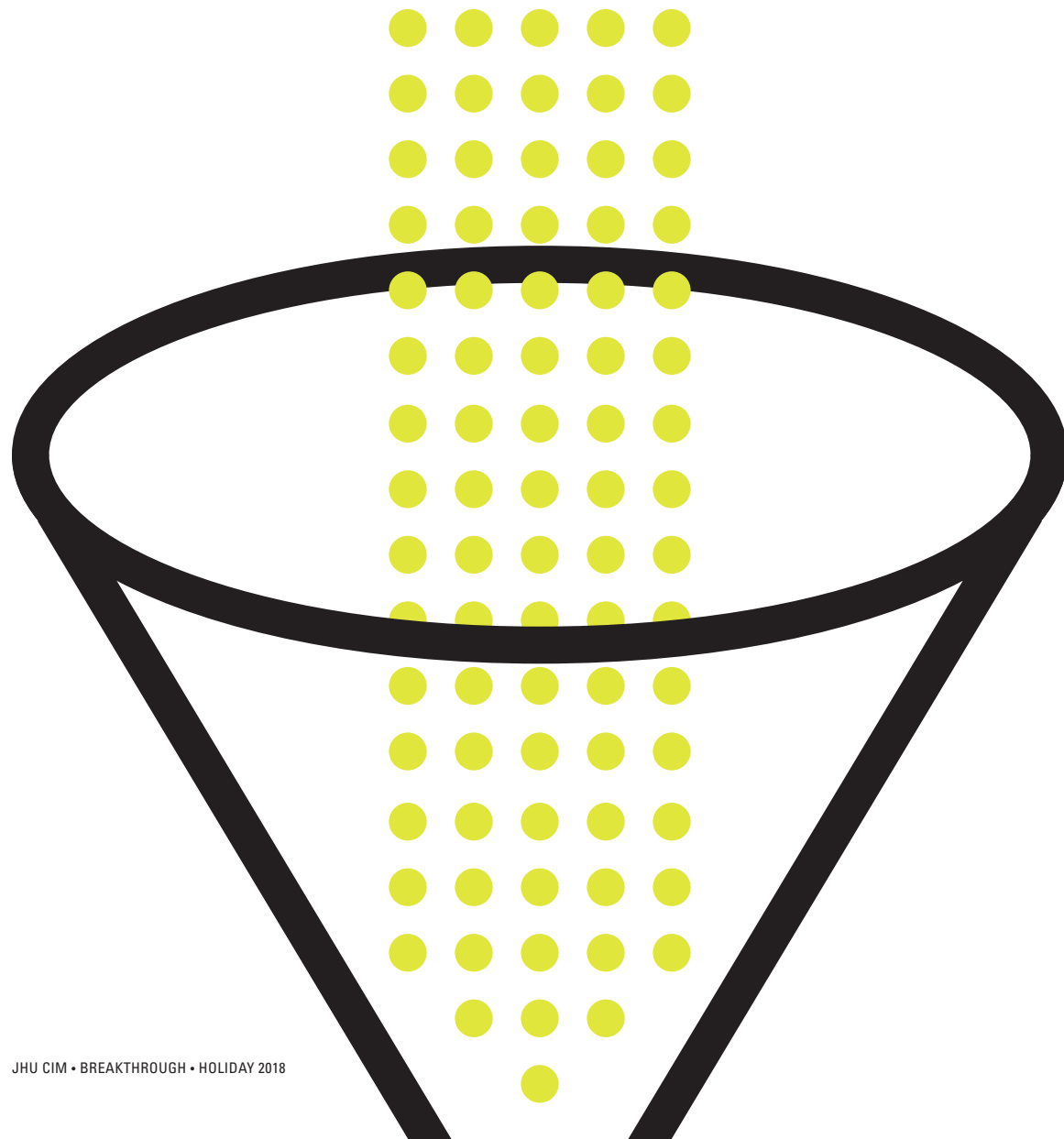
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on the web

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Investing in 'Genius'

Most kids bounce back from a bout with a sore throat or a cold within a week. But not Tara Sakraida Parker. Throughout her childhood years growing up in Oregon, she was chronically sick – with tonsillitis, sinusitis and ear infections. At age 11, a virus robbed her of her hearing in her left ear. In her 20s, she had her tonsils removed – twice, after tissue grew back following her first surgery. “I have taken a lot of antibiotics over my lifetime,” she says today. Then, in April 2015, a virus attacked her central nervous system, landing her in the hospital for over a week, followed by a long and arduous recovery.



Over the years, even as she built a highly successful career as a real estate attorney and then as a director of gift planning and major gifts at UCLA, Sakraida Parker saw doctor after doctor and underwent test after test. No one could definitively figure out what was plaguing her. Until a momentous afternoon in October 2016, when she sat down with Johns Hopkins immunologist Antoine Azar.

“He spent three hours with me, taking my medical history, my family’s medical history, asking me details about things no doctor had ever asked about before,” she recalls. “Then he ordered a bunch of tests – some really weird tests.” The upshot of Azar’s detective work? “It turns out that I have a severe deficiency of natural killer (NK) cells. I have what is known as adult primary immunodeficiency” – a group of disorders that affect one or more parts of the immune system, says Sakraida Parker.

In the months after her diagnosis, Sakraida Parker grew increasingly impressed with Azar’s keen medical acumen and caring bedside manner, and by his desire to build a center for adult primary immunodeficiency (API).

“I am on a focused mission to help Antoine launch this center at Johns Hopkins. I deeply believe in his work and in him.”

Tara Sakraida Parker

Until now, this condition has gotten very little attention in the medical community, leaving patients like Sakraida Parker without a proper diagnosis or effective treatment. “I am on a focused mission to help Antoine launch this center at Johns Hopkins. I deeply believe in his work and in him,” says Sakraida Parker.

“This is not the kind of work that gets funding from the National Institutes of Health. So Tara’s support comes at an especially crucial time for me.”

Antoine Azar

So she and her husband have generously funded a multiyear gift to make Azar a Scholar of the Center for Innovative Medicine – funding that is allowing Azar to treat patients with this complex condition and build the Adult Primary Immunodeficiency Center at Johns Hopkins. Azar’s goal: to make the center a global hub for research and clinical care for API.

“Patients with primary immunodeficiency can go for years being sick, without receiving a diagnosis, and there are very few centers in the country that are focused on adult PI, though these are disorders that are more common than we used to think,” says Azar. “Philanthropic support allows us to build a clinical infrastructure so these patients can receive the most optimal care possible.

“I am so grateful to be the **Tara Sakraida Parker and Richard Parker CIM Scholar**,” he says. “This is not the kind of work that gets funding from the National Institutes of Health. So Tara’s support comes at an especially crucial time for me.”

CREATIVITY AND POTENTIAL

CIM Director David Hellmann likens Azar’s funding to a prestigious MacArthur Fellowship, or “genius grant.” MacArthur awards are so-named because they reward those who have shown “extraordinary originality and dedication in their creative pursuit,” according to the John D. and Catherine T. MacArthur Foundation. Perhaps most crucially,

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the MacArthur Fellowship is not a reward for *past* accomplishment, but is rather “an *investment* in a person’s originality, insight and potential.”

In today’s current funding climate, it is more difficult than ever for junior researchers to earn grants from the National Institutes of Health and other agencies and foundations. With ever-tightening budgets, the funding that is available is typically awarded to senior scholars with a proven track record. They are considered the “safe bets.” This effectively squeezes out younger scientists who are in the early or middle phases of their careers.

“We should be supporting faculty members at this stage, precisely when they are thinking and working most creatively.”

David Hellmann

“That’s really unfortunate, considering most of the greatest biomedical breakthroughs have come from young scientists,” says Hellmann. It’s worth noting, for example, that nearly every Nobel Prize has been awarded to work that was started early in a researcher’s career. “We should be supporting faculty members at this stage, precisely when they are thinking and working most creatively,” he says.

Over the past decade, generous donors to the Center for Innovative Medicine have on average provided funding to establish two new CIM faculty scholars each year. Among them:

- At the Amos Center for Food, Body and Mind, two **Amos Center CIM Scholars** – neuro-gastroenterologist **Pankaj “Jay” Pasricha** and psychiatrist **Glenn Treisman** – are leading efforts to study links between diet and disease, and also the role of good and bad bacteria in making us sick and keeping us

healthy. The center, established with the help of a generous gift provided by Mrs. Courtney Amos and Mr. Paul S. Amos, is one of the few such centers in the world pursuing this important line of inquiry.

- Co-founder and co-director of Medicine for the Greater Good, **Panagis Galiatsatos**, is the **Aliki Perroti CIM Scholar**. Similar to a “medical Peace Corps,” Medicine for the Greater Good is a unique partnership between Johns Hopkins, the city of Baltimore and its citizens that is training medical residents to bridge the gap in health disparities. Volunteers – from medicine, nursing, public health and other parts of Johns Hopkins – work with schools, churches and community centers to promote good health practices through discussions about diabetes, high blood pressure, cancer screening, diet and exercise.

- **Cynthia Boyd**, a **Lavinia Currier CIM Scholar**, is charting new paths in the health care of chronically ill and frail older adults. While aging patients typically have to deal with three or more distinct and often chronic health conditions, our medical system is currently based on a single disease model. Boyd is leading national efforts to create medical guidelines to ensure effective patient-centered care for the growing population of patients with “co-morbidities.” **Nadia Hansel**, who is also a **Lavinia Currier CIM Scholar** and acting chief of the Division of Pulmonary and director of the Obstructive Lung Disease Research Group, is focused on finding genetic and environmental determinants of obstructive airway diseases. **Jonathan Zenilman**, the third **Lavinia Currier CIM Scholar**, is chief of the Division of Infectious Diseases at Bayview. He is internationally known for his work in infectious disease epidemiology, and his current research examines the rise of antibiotic-resistant illnesses in developing nations.

“Imagine the multiplier effect we could have if we expand the number of new CIM Scholars from two to 10 or more each year!”

David Hellmann

“The work that our CIM Scholars are doing to improve patient care and find answers to vexing health issues is nothing short of amazing,” says Hellmann. Buoyed by the success of the existing CIM Scholars, he has an ambitious goal: to significantly expand the number of “genius grants” that are awarded each year to Johns Hopkins’ most promising faculty members.

“For every Antoine Azar who is changing the medical world and transforming patient lives, there are dozens more incredibly talented faculty members at Johns Hopkins who are struggling to find the funding they need to pursue their promising ideas,” says Hellmann. “Imagine the multiplier effect we could have if we expand the number of new CIM Scholars from two to 10 or more each year!”

A BOOST FOR MEDICINE AT THE BEDSIDE

Susan Immelt is a believer.

A longtime pediatric nurse at Johns Hopkins who retired in 2012, Immelt is the daughter of the late Douglas Gordon Carroll Jr., who launched the Department of Rehabilitation Medicine at Baltimore City Hospitals (which later became Johns Hopkins Bayview Medical Center) and who enjoyed a long and esteemed career at Johns Hopkins, where his portrait now hangs.

Immelt was looking to make a gift in her father’s memory – Carroll died in 1977 – when Hellmann introduced her to Brian Garibaldi, associate program director of the Osler Medical Residency Training

The CIM’s first funded faculty scholars can be traced back to 2006, when Anne Miller expressed concern that academic medical centers – despite their remarkable success in scientific discovery – were not producing enough skilled, thoughtful clinicians who were committed to providing the very best in patient-centered care. A gift from her daughter and son-in-law, Sarah Miller Coulson and Frank Coulson, made it possible to name four respected clinicians as the first Miller Coulson CIM Scholars.

- **Colleen Christmas**, associate professor of medicine, is former director of the Johns Hopkins Bayview Internal Medicine Residency Program.
- **S. Chris Durso**, Mason F. Lord Professor of Medicine at the Johns Hopkins University School of Medicine, is director of the Division of Geriatric Medicine and Gerontology.
- **Steve Kravet**, associate professor of medicine, is president of Johns Hopkins Community Physicians.
- **Scott Wright**, Anne Gaines & G. Thomas Miller Professor in the Center for Innovative Medicine, is director of the Division of General Internal Medicine at Johns Hopkins Bayview and director of the Miller Coulson Academy of Clinical Excellence.

The Miller Coulson Scholars’ mission has been to define clinical excellence in an academic setting, to develop a systematic means of measuring it, and to recognize the clinicians who provide excellent patient care, so that they may be rewarded for their work – just as excellent scientists are rewarded for their research. The Scholars’ work laid the foundation for the Miller Coulson Academy for Clinical Excellence.

Program. “I found Dr. Garibaldi to be like my dad in many ways,” she says. “He is very curious and extremely oriented to the patient experience.”

Indeed, Garibaldi is co-president of the Society of Bedside Medicine, a group he helped launch in response to growing concern that physicians are spending less and less time with patients – as little as 12 percent of their time, according to some studies. One resulting casualty has been a decline

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in skills needed for the physical exam, he says – a practice “that plays an integral role in developing a meaningful and therapeutic relationship.”

Concerned by the lack of existing residency training curricula for physical exams, Garibaldi and his colleagues have crafted an intervention called Advancing Bedside Cardiopulmonary Examination Skills (ACE), which is already improving attitudes, confidence and skill among residents at The Johns Hopkins Hospital.

Garibaldi, with colleagues Gigi Liu and Timothy Niessen, is also pioneering the use of “point-of-care” (POC) ultrasounds at the bedside. It is this concept that excited Immelt and inspired her to fund Garibaldi as the **Douglas Carroll, MD, CIM Scholar**.

“There was a lot going on in rehabilitation technology when my dad was practicing, and I feel like this little gadget that Brian is working on is something that Dad would have found very cool,” says Immelt. “I’m convinced it will be very useful in nursing, as well.”

The “little gadget” is a handheld ultrasound that examining doctors can use at the bedside. “We’re finding this opens up communication between doctor and patient,” explains Garibaldi. “We can point to fluid that’s accumulated and say, ‘This is what a sick heart looks like – this is why you have this symptom. Or, here is how you know that your medication is actually working.’ It engages patients in becoming more motivated to get better, and it allows medical residents to have these eureka moments of shared discovery with their patients.”

Garibaldi says his funding as the Douglas Carroll, MD, CIM Scholar came at just the right time. It will allow him and his colleagues to build upon ACE, the bedside training curricula, expanding it to include the residency program at Johns Hopkins Bayview

“The beauty of this CIM Scholarship is that it will fund my work over a three- to five-year period, which is critical to someone like me at the early stage of my career.”

Brian Garibaldi

and beyond. And he has plans to make POC ultrasound more widely available, by first conducting studies to show its efficacy for patients and in physician training.

“The beauty of this CIM Scholarship is that it will fund my work over a three- to five-year period, which is critical to someone like me at the early stage of my career,” says Garibaldi. “So many grants today are limited in time and scope – you receive X amount of money to accomplish X, Y, and Z within a year. Without sustained funding, you have to spend more time looking for your next grant than doing the work you need to do to show the long-term impact of your ideas.”

For her part, Immelt hopes that the scholarship she and her husband funded in her father’s honor will inspire others to support the work of CIM faculty – and inspire early- and mid-career faculty members, as well: “I hope this encourages other young clinicians coming along to know, ‘Wow! I *can* get funding for projects I am passionate about. I don’t have to wait until I’m a senior faculty member who has proven myself in many different areas.” ■

Innovator Honored with Endowed Professorship

It’s “like 3D on steroids.”

That’s how Johns Hopkins radiologist Elliot Fishman describes a new imaging technique, known as cinematic rendering, that is taking radiology to a whole new level. Gone are the grainy black-and-white scans of yesteryear. By using advanced data reconstruction techniques, Fishman and his team at Johns Hopkins can create images from CT and MRI scans that are amazingly lifelike.

“It’s a very easy way of understanding complex anatomy, and our surgeons love them,” says Fishman of the images. “We can create very realistic and accurate images that look exactly like what the surgeon is going to see when doing a laparoscopic procedure. So when they get inside the patient, there are no surprises.”

Cinematic rendering even allows for texture mapping. As the technology progresses, Fishman says, “we’ll be able to recognize very early tumors that you wouldn’t be able to see yet on routine scans.”

In the five years since he launched an annual conversation series, “Leading Change: Perspectives from Outside of Medicine,” Fishman has drawn an impressive array of big thinkers, who spend the day at Johns Hopkins meeting with faculty and students before delivering a talk.

It should probably come as no surprise that Elliot Fishman, a member of the Miller Coulson Academy of Clinical Excellence, is at the forefront of bringing this latest life-saving technology to patients at Johns Hopkins and beyond. Over the course of his 35-year medical career, he has been a trailblazer, moving the field of radiology forward through his innovative thinking and leadership in clinical care and education.

“Elliot’s unwavering commitment to patient care and clinical excellence is extraordinary,” notes Karen Horton, director of the Russell H. Morgan Department of Radiology and Radiological Science.

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“His impact as an innovator, researcher and educator extends way beyond the walls of Johns Hopkins and throughout the world.”

In October, friends and colleagues celebrated his many contributions to the field of radiology when he was honored with a newly established endowed professorship. The Elliot K. Fishman, M.D. Professorship in Radiology was created through the generosity of lifelong friends of Fishman who he has worked with over the years in developing new techniques and technologies in visualization.

“Endowing a professorship helps ensure that pathbreaking work in radiology will continue and live on in perpetuity.”

Elliot Fishman

“This is the ultimate honor,” says Fishman, director of Diagnostic Imaging and Body CT at Johns Hopkins. “Endowing a professorship helps ensure that pathbreaking work in radiology will continue and live on in perpetuity.”

He continues, “At the end of the day, it all comes down to providing the very best patient care possible. I’m so proud to be part of the Miller Coulson Academy, which puts such a primacy on clinical excellence, and to be a part of the important work of the Center for Innovative Medicine.

CT IS US

From his first years as a radiologist, Fishman has recognized the importance of sharing radiological advances with his peers. “I’ve been running continuing medical education courses here for 35 years,” he says.

But he wanted a broader reach. In the late 1990s, recognizing that the internet was transforming communication, he had the foresight to establish a website dedicated to providing radiology professionals with all the latest information on computed tomography and CT scanning. Dubbed “CT is Us” (CTisus.com), the website today has more than 250,000 users.

“The goal with CTisus.com is to share how to do CT, how to read CT, how to understand CT – with radiologists and technologists all across the world,” Fishman explains. “It’s a simple goal, and it’s worked well. I’ve done CT my entire career, and this provides a way of sharing the latest information. It’s a payback to help others.”

The site is a rich treasure trove for radiologists. There are more than 250,000 case studies showing scans from every region of the body, videos of weekly lectures, a journal club, quizzes and podcasts. Among the most popular features is “Ask the Fish”: Radiologists from around the globe can write in with questions, and Fishman answers each and every one.

In recent years, recognizing the value of social media, he has also developed an active presence on Facebook, Instagram and Twitter. “Patients are on social media, so we need to be there, too – to get across the message that radiology is important, that radiology cares, that we are looking at doing the very best for our patients,” says Fishman. He has lectured at national meetings of radiologists on the importance of adopting social media and says, “I think it’s important for radiologists to get very involved in social media in a very positive way.”

THE FELIX PROJECT

More recently, Fishman has helped launch an ambitious project that is using a branch of artificial intelligence known as “deep learning” to dramatically improve the early detection of pancreatic cancer.

The multiyear, multimillion-dollar effort supported by the Lustgarten Foundation is using sophisticated

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Elliot Fishman

computer programs that are trained to read CT scans. It is named the Felix Project, after the Felix Felicis potion in the Harry Potter books, which gives drinkers success in everything they do.

The project’s team, which meets weekly, also includes oncologist Bert Vogelstein, molecular geneticist Ken Kinzler, radiologists Karen Horton and Linda Chu, pathologist Ralph Hruban, and machine learning expert Alan Yuille. To aid their quest, the scientists have tapped into the expertise of leading visual imaging and machine learning companies like Nvidia and Pixar.

“Often, a pancreatic cancer patient presented with vague symptoms six or nine months earlier, but the tumor wasn’t detected. By the time they receive a diagnosis, 80 percent of pancreatic cancers aren’t resectable,” says Fishman. By training computers to look for any slight abnormality in the pancreas – a minuscule enlargement or even a change in texture – the team ultimately aims to be able to spot cancers far sooner than humans can do alone.

“This is our Manhattan Project,” says Fishman. “We’re on a mission to make a difference in people’s lives.”

PERSPECTIVES FROM OUTSIDE OF MEDICINE

When Elliot Fishman isn’t seeing patients, collaborating with fellow researchers, maintaining his web and social media presence, or teaching continuing education courses, chances are good you might find him on the phone, cajoling high-powered business leaders from around the world to visit Johns Hopkins and share their insights.

In the five years since he launched an annual conversation series, “Leading Change: Perspectives from Outside of Medicine,” Fishman has drawn an impressive array of big thinkers, who spend the day at Johns Hopkins meeting with faculty and students before delivering a talk (followed by a Q&A) to standing-room only crowds.

Speakers, about a half dozen each year, have included Ed Catmull, president of Walt Disney Animation studios and Pixar; Christy Tanner, senior vice president at CBS News Digital; Jensen Huang, co-founder and CEO of Nvidia; and Brian King, global office at Marriott International, among many others. The 2018–19 series was kicked off in October by David Isbitski, chief evangelist for Alexa and Echo at Amazon.

“In the field of medicine, we tend to hear the same voices over and over,” says Fishman. “The Leading Change series provides a rare opportunity to listen and learn from the ‘best of the best’ and then apply their strategies into our world to improve the experiences of our ‘guests.’”

Judging by the enthusiastic attendance for the series, the innovative ideas being presented are definitely having an impact.

After Marriott’s Brian King spoke last year, Fishman says he was tickled to hear longtime Johns Hopkins surgeon John Cameron say, “I’m 80 years old, and this may have been the best talk I’ve ever heard here at Hopkins.” ■

Reducing Opioid Addiction

Every day, patients come in to the Emergency Department at Johns Hopkins Bayview Medical Center with a variety of health problems: heart issues, respiratory illness, gunshot wounds, car accident injuries. Since the summer of 2017, a triage nurse now screens each and every patient for one problem that often underlies all the others and can too easily go overlooked: substance use disorders and addiction.

Patients who screen positive for substance problems are immediately connected to a variety of Johns Hopkins resources – including peer recovery counselors, social workers and addiction treatment programs. This universal screening program for substance use disorders will soon be rolled out in the Emergency Department at The Johns Hopkins Hospital as well.

“Unfortunately, many patients coming in for other things – and even for health issues that are a direct consequence of substance use – are not ready yet to confront or deal with the problem. But you don’t know unless you ask,” says emergency medicine doctor Peter Hill, senior vice president of medical affairs for the Johns Hopkins Health System. “So it’s vital to ask, and to consistently provide follow-up help and to show people that we are there for them.”

The universal screening program is one important element of an ambitious new initiative of the Center for Innovative Medicine (CIM), known as the “5 in 10” initiative. It is sweeping in scope and breathtaking in what it aims to accomplish.

“If you live in certain zip codes, such as the neighborhoods that surround our hospitals, you live an average of 61 years. Contrast that to more affluent

areas of Baltimore, such as Roland Park, where average life expectancy is a more robust 84 years old,” notes CIM Director David Hellmann, Aliko Perroti Professor of Medicine. “It really bothers us that if you live in poverty, you don’t live as long. So 5 in 10 was created to commit us to increasing the life expectancy of our underserved residents by at least five years over a decade. It’s a colossal effort, but one we are truly committed to achieving.”

A major initial focus of 5 in 10 will be to reduce opioid-related deaths by 50 percent over five years. “Opioids have caused a dramatic increase in mortality and Johns Hopkins Bayview has more people discharged with a diagnosis of substance use disorder than any other hospital in Maryland,” notes Hellmann. “At the same time, Bayview has incredible strengths in helping people with addiction” – including the Comprehensive Care Practice, the Chemical Dependency Unit, the Department of Psychiatry, the National Institute of Drug Abuse and partnerships with the Bloomberg School of Public Health and the Welch Center for Prevention, Epidemiology and Clinical Research.

Many of the substance use disorder efforts unfolding now at Bayview and beyond build on the work of internist Michael Fingerhood, an expert in addiction medicine.

In the decades since he joined Johns Hopkins in 1993, he has built one of the country’s most respected chemical dependence clinics at Bayview. And over the last few years, in part with funding from the Center for Innovative Medicine, he has worked with colleagues to redesign opioid-related care from top to bottom.

In addition to establishing the universal substance use disorder screening programs at Johns Hopkins Bayview and The Johns Hopkins Hospital, he and his team have worked to vastly increase the number

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David Hellmann

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“We know that release from prison is a highly vulnerable time for patients, particularly for overdose. Many who walk on the van to see us have been struggling with opioid use for years,” and most don’t have access to treatment while they are behind bars.

Megan Buresh

of health care providers who can prescribe buprenorphine, an under-the-tongue medication that blocks cravings for opioids. Last June, some 40 care providers at Bayview – including hospitalists, internists and emergency department physicians – received the extra training they need to begin prescribing the lifesaving medication.

Hand in glove has been the growth of a peer recovery coaching system at Bayview, which will soon expand to The Johns Hopkins Hospital. Peer coaches, who have a history of substance use disorder and have been in recovery for at least five years, are specially trained to meet with new patients.

“They can interact as a peer and engage with these patients in a way that we can’t, laying out the options for different treatment programs and then following up to make sure they stay in treatment,” says Johns Hopkins addiction specialist Megan Buresh, an assistant professor of medicine, who works closely with Fingerhood.

TREATMENT WHERE IT’S NEEDED

When Buresh isn’t seeing patients at Bayview, you can find her in an unassuming mobile van, which pulls up outside the walls of the Baltimore City Detention Center on East Eager Street four mornings a week. The mission? To provide people newly released from prison with immediate treatment for their opioid use disorder.

“We know that release from prison is a highly vulnerable time for patients, particularly for overdose,” says Buresh. “Many who walk on the van to see us have been struggling with opioid use for years,” and most don’t have access to treatment while they are behind bars.

Buresh and her team, which includes a nurse – and a nurse practitioner on days when Buresh is not on site – take a medical history, do a physical exam and assess whether it’s appropriate to prescribe buprenorphine. About half of those who walk onto the van get a prescription for buprenorphine and begin treatment for their opioid disorder that same day.

Even more encouraging: “We have found that about two-thirds of those who begin treatment return for at least a second visit, and about one-third have remained in care for 30 days and beyond,” she says, noting that care includes being connected to Johns Hopkins’ peer recovery coaches and programs such as Dee’s Place, an alcohol and drug addiction recovery support center near The Johns Hopkins Hospital that is run by Fingerhood.

Those treatment figures are impressive, considering the myriad challenges that many of these newly released citizens face: unemployment, homelessness, mental health issues, and a long history of substance use and involvement with the criminal justice system.

Buprenorphine is not a quick fix, as Buresh is fast to remind patients. “Opioid dependence is a chronic



“Opioid dependence is a chronic disease, just like diabetes or high blood pressure. We tell people to think of being in treatment for three to five years to truly stabilize. Some may need to remain on it for the rest of their lives.”

Megan Buresh

disease, just like diabetes or high blood pressure. We tell people to think of being in treatment for three to five years to truly stabilize. Some may need to remain on it for the rest of their lives,” she says. The aim of the mobile van program is to serve as a bridge. “We are transitional,” she says. “We work with people over the course of several weeks to months until we can get them into long-term treatment.”

The mobile van initiative was launched by Deborah Agus, executive director of the Behavioral Health Leadership Institute and an associate professor at the Johns Hopkins Bloomberg School of Public Health. The funding the project has received from foundations has been crucial to the pilot program’s success, says Buresh. “Funding from foundations covers my time and also makes it possible to provide buprenorphine to all, regardless of whether or not the patient has health insurance to cover it,” she says.

Buresh and Fingerhood would love to see the mobile van program expand, by increasing staffing to handle more patients and perhaps by adding an additional van to a different underserved area of the city, such as Dundalk.

“Currently the demand for treatment is much higher than we can meet,” says Buresh. “We have to turn people away.”

The early results of the mobile van program have impressed Joshua Sharfstein, former Baltimore City Health Commissioner, who is now the vice dean for public health practice and community engagement at the Johns Hopkins Bloomberg School of Public Health.

“Overdose claims a lot of lives in Baltimore. Providing lifesaving treatment is going to increase life expectancy,” says Sharfstein. “The work of Dr. Fingerhood, Dr. Buresh and their team is an important part of the solution.” ■

Ensuring a Long and Healthy Life

The United States is on the verge of a demographic shift that is nothing short of seismic. By 2030, all baby boomers will be older than 65, which means that 1 in every 5 people will be of retirement age, according to projections of the U.S. Census Bureau.

Put another way: Within just a couple decades, older people are projected to outnumber children for the first time in U.S. history.

The massive graying of the population is bringing a host of health issues, notes geriatrician Jeremy Walston, the Raymond and Anna Lublin Professor of Geriatric Medicine and the **Salisbury Family CIM Scholar**. “We’ve gotten better and better at treating chronic disease, so that many people now live through their 60s and 70s and into their 80s, 90s and beyond. But they become increasingly disabled as they age, suffering muscle loss, falls and cognitive decline, among other things,” he says.

“Since this is the fastest growing segment of our population, it’s crucial that we identify interventions to improve quality of life and increase resilience, strength and vigor in our oldest patients,” notes Walston, who is also co-director of the Biology of Healthy Aging program at the Johns Hopkins School of Medicine.

Fortunately, he and a team of geriatricians and researchers at Johns Hopkins Bayview Medical Center are perfectly poised to do just that, thanks to impressive resources (see sidebar) – including donor and federal grant support – that have been coalescing and are expected to expand even more in the years ahead.

The ultimate goal, says Walston: to make Johns Hopkins Bayview the epicenter – nationally and even globally – for research and health care related to ensuring a long and healthy life for all.



BUILDING RESILIENCY AND REDUCING FRAILTY

Thanks to multimillion-dollar funding from three different federal grants, researchers at Johns Hopkins Bayview are already well underway in their quest to improve life for the aged.

In one promising area of study, scientists are looking at the biological underpinnings of resilience to figure out why some older patients bounce back relatively quickly after medical procedures, while others fail to recover and instead experience a cascade of complications.

Additional Resources for Aging Care and Research at Bayview

Center on Aging and Health

Established in 1998 as a center of excellence for aging research at the Johns Hopkins Medical Institutions, the center is sponsored by the Johns Hopkins schools of medicine and public health. Other core partners include the school of nursing. COAH is home to an interdisciplinary group of research faculty from all three schools, as well as the Edward R. Roybal Center for Translational Research, and other key research programs.

National Institute on Aging Intramural Research Program

Housed on the Bayview Campus, the program features state-of-the-art research laboratories, clinical space and administrative areas for scientists and supporting staff in both clinical and basic research programs.

Beacham Center for Geriatric Medicine

This interdisciplinary team of doctors, specialists and nurse practitioners offers a full range of primary care for seniors, including post-hospitalization referrals, and treatment for fractures and falls, frailty, confusion and memory problems.

Memory and Alzheimer’s Treatment Center

A collaborative partnership between the Johns Hopkins departments of psychiatry, neurology, and geriatric medicine, the center offers comprehensive evaluation and innovative treatment to patients with a range of conditions that affect cognition and memory, including Alzheimer’s disease and other dementias, traumatic brain injury and brain vascular disease.

Hopkins Elder Plus

Also called PACE (Program of All-inclusive Care for the Elderly), this program is designed to provide and coordinate all needed preventive, primary, acute and long-term care services so that older individuals can continue living in the community. Services include a Day Health Center at Bayview, which provides health, social, rehabilitative, recreational and personal care services.

The Daniel and Jeannette Hendin Schapiro Geriatric Medical Education Center

Generous and visionary support from an anonymous donor led to the establishment of this center in 2012. The Schapiro Center is a unique collaboration with Johns Hopkins

Bayview’s Division of General Internal Medicine with a goal of expanding training in the care of older adults through the development of practical educational programs that prepare physicians, trainees and allied health professionals.

The Center for Transformative Geriatric Research

The center’s mission is to perform and advance research that transforms healthcare and the lives of older adults. Major areas of person-oriented research focus on health service delivery for people with complex care needs, the care of people with multiple chronic conditions, person-oriented research on issues related to late-life memory disorders and health information technology.

Johns Hopkins Home-Based Medicine

Many older adults have chronic medical conditions – such as arthritis, heart failure, dementia or other illnesses – that make it difficult or impossible for them to go to their doctors’ offices. Through Johns Hopkins Home-Based Medicine (JHOME), physicians and other health care professionals visit participants at home.

“We believe there are underlying biological triggers, related to the stress response systems in the body, that make older adults more or less resilient,” says Walston. Now in the second year of a five-year \$11.5 million grant from the National Institutes of Health (NIH), he and his team have begun recruiting older patients who are undergoing one of three procedures: knee replacement, hemodialysis or bone marrow transplant.

“We are studying patients who bounce back and those who don’t to identify biological differences between the groups,” says Walston. Based on an earlier research program funded by Mr. and Mrs. Charles H. Salisbury, he believes that an overactive inflammatory system may be part of the reason that some people don’t recover well.

“The Salisbury’s philanthropy was critical in allowing us to put the necessary clinical and laboratory infrastructure in place in order to better compete for this NIH grant,” says Walston.

If his hypothesis does pan out, then scientists could potentially develop methods to modify that inflammation response in susceptible patients *before* they undergo a medical procedure. Taking an even longer view: Identifying the biological underpinnings of resilience could hold the key to keeping stress response systems intact and operating more optimally as we age.

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CLOSLER Rapidly Builds Loyal Following

“Here at Johns Hopkins Bayview, we stand on the threshold of becoming *the* center for aging-related advances. We’ve got the talent, the pipeline of high-quality trainees, the infrastructure, and a vision that has set the stage for the next big findings that will help older adults live an even longer and healthier life.”

Jeremy Walston

In a related area of inquiry, Johns Hopkins researchers are continuing their work on the causes of frailty, a syndrome marked by unintended weight loss, weakness, fatigue, slow speed and low physical activity. Frailty predicts very high risk for medical and surgical complications, hospitalizations and death.

The NIH recently renewed a five-year \$6 million grant that funds the work of the Johns Hopkins Claude D. Pepper Older Americans Independence Center, a federally designated center of excellence at Bayview that is supported by the National Institutes on Aging.

"Investigators in our center continue to focus on a common biological pathway that influences both age-related changes in the energy production of mitochondria (the energy 'powerhouses' of cells) and on the decline of skeletal muscle," Walston says. "Their findings have helped put into motion an important novel treatment for chronic wounds in older adults that is now in development for human studies."

HOW OLD ARE YOUR CELLS?

This fall, Walston and collaborators at the Johns Hopkins Whiting School of Engineering and Bloomberg School of Public Health secured a \$3.5 million NIH grant to fund their efforts to develop cellular biomarkers for aging.

This work builds on attention-grabbing findings, published recently in *Nature Biomedical Engineering*, in which the Johns Hopkins team led by Denis Wirtz, vice provost for research at Johns Hopkins, reported a method to accurately determine the age of cells based on their physical properties.

They found that their novel methodology very closely tracked with age. The team believes that these new measurement technologies will be quite good at identifying middle-age and younger adults who are at high risk of developing some chronic diseases, and perhaps of aging at an accelerated rate.

Walston is very excited about this new area of research. The findings to come, he hopes, could one day help clinicians see aging in cells before a patient begins to experience age-related health decline. This would offer doctors an opportunity to recommend treatments or changes in lifestyle, such as exercise or diet changes, or specifically targeted biological agents, to stave off cellular aging and prevent chronic disease.

Pointing to this latest vein of research, and to all the clinicians, scientists, clinics and programs aligned at Johns Hopkins Bayview to improve care for older adults, Walston says, optimistically, "Here at Johns Hopkins Bayview, we stand on the threshold of becoming *the* center for aging-related advances. We've got the talent, the pipeline of high-quality trainees, the infrastructure, and a vision that has set the stage for the next big findings that will help older adults live an even longer and healthier life." ■

Only nine months have passed since the debut of CLOSLER, a robust, free and open-access medical education website hosted by the Miller Coulson Academy of Clinical Excellence. But already the site has gained a loyal following among clinicians, and the number of people who tap into the online resource is growing by the day – with more than 3,000 subscribers signed up to receive weekly email highlights.

"The engagement we're seeing in CLOSLER is truly an astounding achievement, exceeding all of our expectations," says executive editor Scott Wright, director of the Miller Coulson Academy and the Anne G. and G. Thomas Miller Professor of Medicine. "We couldn't be more excited about the potential of the possible: to make a huge global impact on clinical care around the world."

Adds managing editor Gretchen Miller, "Since launching last March, we continue to fulfill our ambitious goal of posting fresh content every day that offers perspectives on clinical excellence, and we are building a dynamic Twitter community of medical education learners around the world. We're off to a very strong start!"

The CLOSLER team posts compelling two- and three-minute reads written by Miller Coulson scholars and other doctors. Among the pearls: Hopkins psychiatrist Angela Guarda, for example, writes movingly about the importance of believing in recovery for all – inspired by an unforgettable experience she had with a young patient with an eating disorder. And hemato-oncologist Satish Shanbhag shares insights about developing empathy for patients "by visualizing ourselves as an extension of the patient's family."

“In less than a year, CLOSLER has taken off and engaged healthcare providers around the world.”

Psychiatrist Margaret Chisolm, a Miller Coulson Academy scholar and website planner

Most recently, the CLOSLER team has looked to social media to reach new audiences, cultivating a Twitter community composed of more than 1,700 health care providers from around the globe.

And over the summer, CLOSLER launched a YouTube channel, which now features short, three-minute video interviews with Miller Coulson scholars, who share their wisdom on a variety of topics. Psychiatrist Susan Lehmann, for example, tells how learning to play the piano has made her adept at listening to patients and maintaining eye contact while taking notes. And neurologist Raf Llinas shares thoughts about using humor as an effective teaching tool. ■

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Mason F. Lord Building
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BREAKTHROUGH is published by The Johns Hopkins Medical Institutions, Baltimore, MD 21287-2101.

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Joshua Sharfstein, vice dean for public health practice and community engagement at the Johns Hopkins Bloomberg School of Public Health

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