THE CAMPAIGN FOR HARVARD MEDICINE

THE WORLD IS WAITING

H

VE RI TAS

THE WORLD IS WAITING...

HARVARD MEDICAL SCHOOL IS THE EPICENTER OF THE LARGEST BIOMEDICAL RESEARCH COMMUNITY IN THE WORLD. TOGETHER WITH OUR 16 AFFILIATED HOSPITALS AND RESEARCH INSTITUTIONS, WE ARE MAKING BREAKTHROUGHS EVERY DAY. AND THESE DISCOVERIES HAVE A TANGIBLE IMPACT ON HOW THE WORLD UNDERSTANDS AND TREATS DISEASE.

THIS IS HARVARD MEDICINE.

THE HEART OF MEDICINE

HARVARD MEDICAL SCHOOL IS ON THE CUSP OF LIFE-CHANGING BREAKTHROUGHS THAT CAN IMPROVE THE HEALTH OF PEOPLE EVERYWHERE. THE CHALLENGE IS LEVERAGING THOSE ADVANCES—NOW.

We need to accelerate the path from innovation to cure. And we need the resources to ensure broad access to the many whose lives can be enhanced and extended.

Helping people live longer, healthier lives is more than a goal. It's our responsibility. And it inspires all that we do.

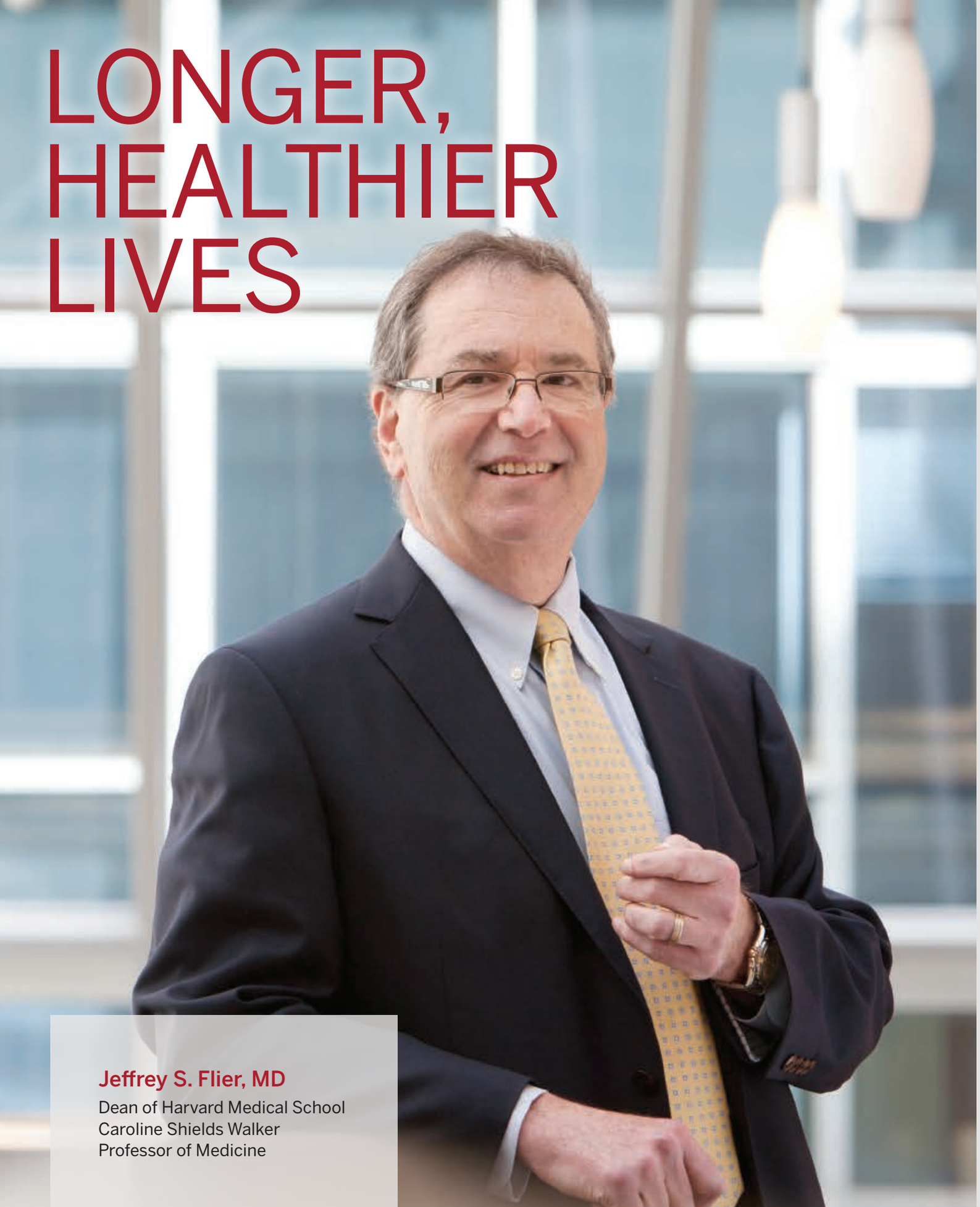
Our focus is educating brilliant, passionate minds. Encouraging innovative thinking. Translating research into cures. Reinventing the science of drug discovery. Creating sustainable health care systems.

We operate like no other institution. We are the very heart of medicine, with more research benches and bedsides within a 5-mile radius than anywhere else in the world. We're constantly pumping vital resources, diverse thinking, and leadership into the whole body of science and medicine.

Circulating new ideas. Fostering collaborations that create solutions far greater than any single idea. Training the next generation of physician-scientists. Incubating innovation. Curing vexing diseases. Improving patients' quality of life.

The heart of medicine keeps pumping. With your help, we could be less than a beat away from solving the biggest challenges of our time.

LONGER, HEALTHIER LIVES



Jeffrey S. Flier, MD
Dean of Harvard Medical School
Caroline Shields Walker
Professor of Medicine

The World Is Waiting: The Campaign for Harvard Medicine is about helping people live longer, healthier lives. Both the needs and the opportunities are great, and our success will be critical to the health of our families, our children and grandchildren, and indeed the whole human family around the globe.

The scope of our goals is extremely ambitious, both because of who we are and because of Harvard Medical School's boundless potential. Even more, it is our duty to accept the challenge.

Biomedical science has created enormous opportunities to understand and treat diseases for which we currently have no—or only partial—answers. While we have made stunning breakthroughs, the overall rate of progress is too slow. Our health care system is in urgent need of repair. And medical education needs to be reimagined to incorporate new learning environments and bolster critical thinking.

Harvard Medical School not only has powerful ideas about how to change all of this, but we have the convening power and tools to revolutionize health and medicine, and to make a potent impact. After 36 years on the faculty of Harvard Medical School and seven years having the privilege of being Dean, I have never been more excited about what we can and will accomplish to improve human health.

Through this Campaign, we will use our most effective tools—education, discovery, service, and leadership—with skill and passion to attack disease and address the biggest health care challenges of our time. But we cannot do it alone.

Your partnership and passion are crucial to the success of our mission to alleviate human suffering caused by disease.

Join us. The world is waiting.

OUR COLLECTIVE FUTURE

"The future we face together is one in which knowledge will be the most important currency. Harvard must be at the forefront of creating knowledge, of integrating knowledge across disciplines and fields, and of deploying knowledge in service to the world. Harvard Medical School embodies these aspirations, driving discovery and developing practices that will help generations of people lead longer and healthier lives."

Drew Gilpin Faust
President of Harvard University
Lincoln Professor of History

CAMPAIGN PRIORITIES

EDUCATION

Training the next generation of leaders in science and medicine

DISCOVERY

Illuminating the cause of disease and advancing lifesaving cures

SERVICE

Building health equity and transforming health systems worldwide

LEADERSHIP

Incubating innovation and piloting change to improve human health

GOAL: $750 MILLION

EDUCATION

SINCE 1782, HARVARD MEDICAL SCHOOL HAS SET THE STANDARD FOR MEDICAL EDUCATION THROUGHOUT THE WORLD.

ENSURING ACCESS TO EDUCATION IS FUNDAMENTAL TO OUR MISSION. TOGETHER, WE CAN LIFT THE DEBT BURDEN SO THAT THE BEST AND BRIGHTEST STUDENTS, WHO WILL INFUSE THE PIPELINE OF TOMORROW'S EXPERTS AND INNOVATORS, WILL CONTINUE TO CHOOSE HARVARD MEDICAL SCHOOL. AND WE WILL CREATE STATE-OF-THE-ART SPACES FOR TEACHING AND LEARNING THAT FOSTER THE KIND OF TEAM DYNAMICS THAT ARE ESSENTIAL TO SUCCESSFUL CARE DELIVERY AND INTERDISCIPLINARY MEDICAL DISCOVERY.

THE WORLD IS WAITING FOR: DOCTORS WHO ARE TRAINED TO REASON AND TO THINK CRITICALLY

Greatness demands progress. Amidst the sweeping state of medical education reform in the U.S., Harvard Medical School (HMS) is uniquely positioned to address not just what we teach but how we teach it.

No one understands this better than Richard Schwartzstein, MD '79, director of the HMS Academy, the Ellen and Melvin Gordon Professor of Medicine and Medical Education at HMS, and executive director of the Carl J. Shapiro Institute for Education and Research at HMS and Beth Israel Deaconess Medical Center.

His flipped-classroom model of teaching problem solving moves medical students and residents from the memorization of fact patterns to an inductive-reasoning process that relies upon the application of first principles learned in basic science courses. Content transfer is accomplished largely outside the classroom, allowing contact time between faculty members and students to focus on applying the material to solve real-life patient challenges.

"I am inspired by the passion, curiosity, and dedication of our students," says Schwartzstein. "Every time a student comes to me with a question that goes beyond the course material, it demonstrates they have been puzzling over a problem that they cannot let go. That shows me they care about becoming the best doctor possible, and I am motivated to do everything in my power to assist them in their journey."

AT HMS, RICHARD SCHWARTZSTEIN, MD '79, DIRECTS THE MOST ACTIVE ACADEMY OF MEDICAL EDUCATORS IN THE COUNTRY, WITH MORE THAN 270 MEMBERS.

RICHARD SCHWARTZSTEIN IS HARVARD MEDICINE.

THE WORLD IS WAITING FOR: A NEW GENERATION OF PHYSICIAN-SCIENTISTS

Ramone Williams, a fourth-year medical student from Orlando, Fla., is one of the more than 80 percent of Harvard Medical School students who relies on financial aid to make their medical ambitions a reality.

"I chose Harvard Medical School because it had been my dream school for a long time," says Williams, who is a member of the Class of 2015. "I had really bad asthma as a child and developed a close relationship with my physician through that experience. My personal and academic interests aligned, and I knew medicine was the right field for me."

At HMS, Williams's passion for medicine has blossomed. Originally interested in oncology, her current areas of focus include medical dermatology and autoimmune blistering diseases. She hopes to match with the Harvard Combined Dermatology Residency Program.

Outside of class, Williams has served as president of the HMS chapter of the Student National Medical Association, whose goal is to diversify the physician workforce through pipeline and mentorship programs that bring high school and undergraduate students to campus to experience what HMS and its affiliate hospitals have to offer.

Ultimately, she plans to go into academic medicine, where she can combine her clinical practice with research and teaching. While she considers her professional ambitions, paying back her student loans—which average nearly $105,000—is top of mind. "The debt burden is a very real factor," says Williams. "But knowing my financial aid package would remain unchanged has helped to eliminate any anxiety over whether I could continue to afford my medical education."

RAMONE WILLIAMS IS HARVARD MEDICINE.

RAMONE WILLIAMS, MD '15, IS LOOKING FORWARD TO HER GRADUATION AND TO MATCH DAY, WHEN SHE AND OTHER MEDICAL STUDENTS AT HMS AND ACROSS THE NATION LEARN WHICH RESIDENCY PROGRAM THEY WILL BE ATTENDING TO COMPLETE THE NEXT PHASE OF THEIR TRAINING.

DRAWING ON THE EXPERTISE OF MORE THAN 12,000 HMS FACULTY, PHYSICIANS, AND SCIENTISTS, DEAN FOR EXTERNAL EDUCATION DAVID ROBERTS, MD ’95, IS TRANSFORMING TRADITIONAL METHODS OF DELIVERING KNOWLEDGE WITH HIGHLY INTERACTIVE AND INNOVATIVE PROGRAMS FOR GLOBAL AUDIENCES.

THE WORLD IS WAITING FOR: LIFELONG LEARNING OPPORTUNITIES IN HEALTH CARE, WELLNESS, AND BIOMEDICAL RESEARCH

Learning is lifelong. And Harvard Medical School now has something to offer everyone, everywhere.

Through HMS’s new and rapidly expanding external education initiatives, medical professionals are enrolling in continuing medical education courses to increase their knowledge and improve their performance, business executives are deepening their understanding of the complex world of medicine and health care, students are jump-starting their medical careers, and the general public is learning more about preventive health, treatments for disease, and other health issues.

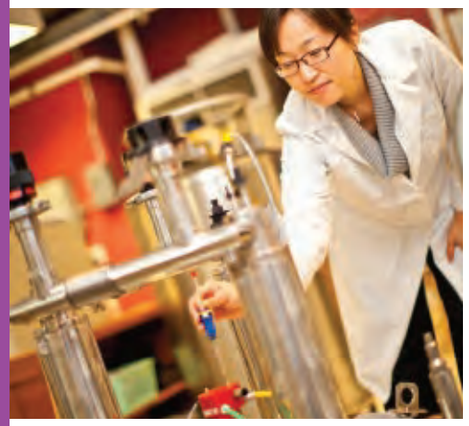
“There are a number of opportunities through which you can learn from Harvard and be connected to our extraordinary community of leaders in health care and medical research,” says David Roberts, MD ’95, dean for external education and an associate professor of medicine at Harvard Medical School. “We believe that digital technologies can transform lifelong learning while maintaining the personalized and compassionate nature of health care. We have something to offer everyone.”

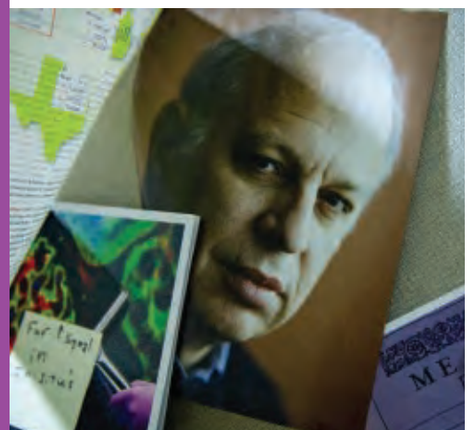
Among its flagship programs is the Global Clinical Scholars Research Training Program, which provides health care professionals with advanced training in the methods and conduct of clinical research. The one-year program incorporates an innovative, blended-learning format that combines online teaching with team exercises and short, intensive workshops enabling the participation of busy clinicians and scientists from around the world. The program enrolls more than 150 learners annually throughout Africa, Asia, Canada, the Middle East, and the U.S.

DAVID ROBERTS IS HARVARD MEDICINE.

DISCOVERY

AT HARVARD MEDICAL SCHOOL, THE PATH TO RESEARCH BEGINS WITH CURIOSITY AND DRIVE.





WE CONVENE INTERDISCIPLINARY TEAMS OF BIOCHEMISTS, CELL AND COMPUTATIONAL BIOLOGISTS, GENETICISTS, IMMUNOLOGISTS, MOLECULAR PHARMACOLOGISTS, NEUROBIOLOGISTS, SOCIAL SCIENTISTS, AND SYSTEMS BIOLOGISTS TO MINE THE DEPTHS OF BASIC SCIENCE TO ASK NEW QUESTIONS AND FIND ANSWERS ABOUT THE ROOT CAUSES OF DISEASE. TOGETHER, WE CAN ACCELERATE THE DEVELOPMENT OF NEW TECHNOLOGIES, FORM POTENT NEW PARTNERSHIPS, AND APPLY OUR KNOWLEDGE SO THAT PROMISING RESEARCH BREAKTHROUGHS CAN BE TRANSLATED RAPIDLY INTO LIFESAVING CURES.

THE WORLD IS WAITING FOR: NEW APPROACHES TO IMMUNOTHERAPY

For more than 100 years, medicine has been trying to mobilize the immune system to combat cancer the same way it fights infections: activate the troops to recognize and repel invaders. Scientists like Arlene Sharpe, AB ’75, AM ’76, PhD ’81, MD ’82, George Fabyan Professor of Comparative Pathology at HMS, co-director of the Harvard Institute of Translational Immunology, and co-director of the Evergrande Center for Immunologic Diseases at Harvard Medical School and Brigham and Women’s Hospital, are taking a different tack.

Realizing that cancer has turned off the immune response, they are uncovering ways to release the brakes that keep the immune system from clearing cancer cells away. Much of this cancer immunology research has been conducted at HMS, from the early identification of one of those brakes to later discoveries about how they work.

Now, basic science discoveries by Sharpe and Gordon Freeman, AB ’73, PhD ’79, of Dana-Farber Cancer Institute, about how cancer cells hijack the *PD-1* protein to turn off the immune system are being translated into promising cancer immunotherapies. After 15 years, drugs by several pharmaceutical companies based on the scientists’ work are awaiting approval by the U.S. Food and Drug Administration—one, pembrolizumab, was recently approved for treatment of patients with advanced melanoma.

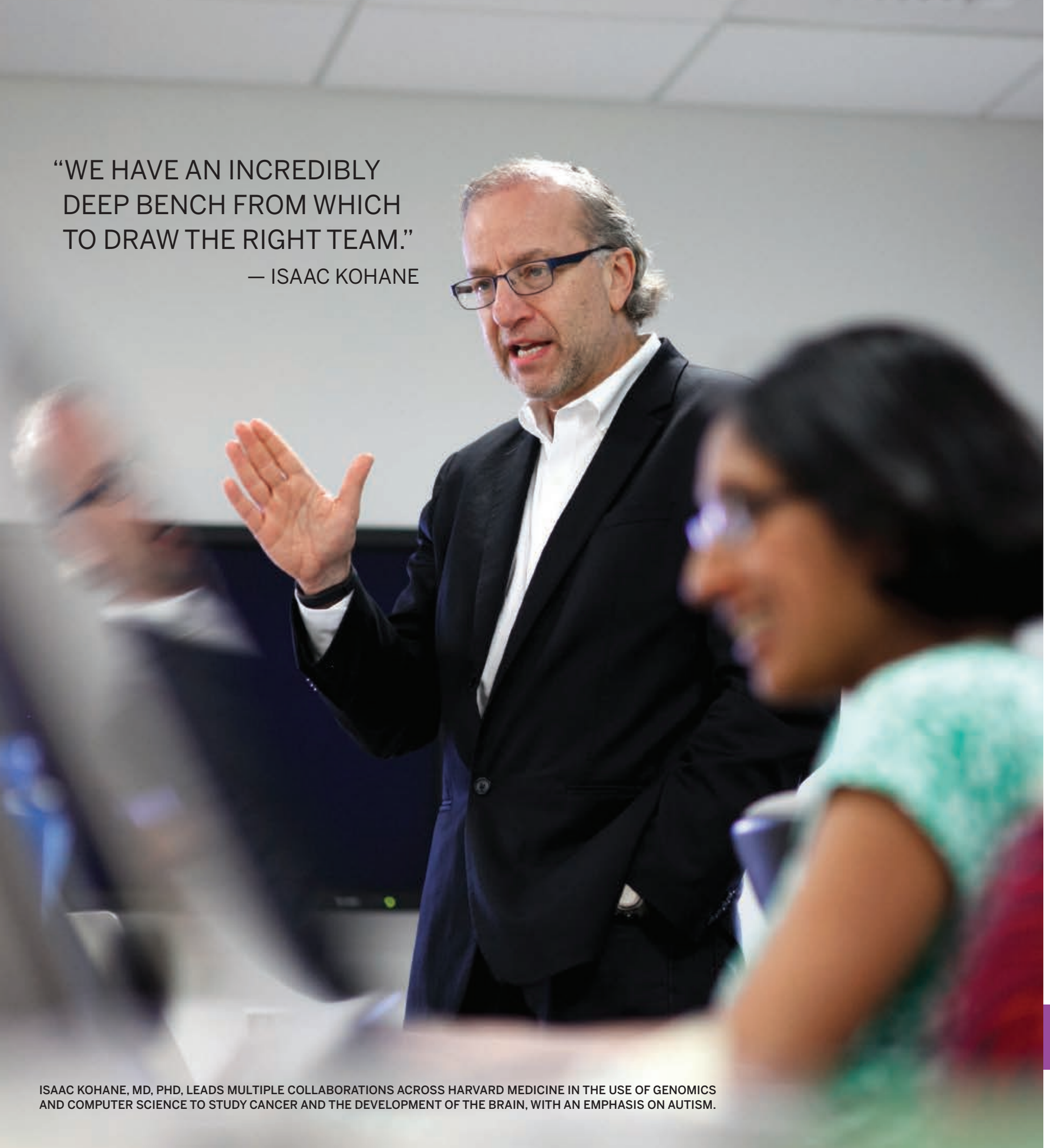
“This is shepherding a whole new era in cancer therapy,” says Sharpe, who, along with Freeman, licensed the intellectual property behind their discoveries widely, allowing many therapeutic scientists to attack the problem simultaneously.

ARLENE SHARPE IS HARVARD MEDICINE.

“THE TALENTED STUDENTS, FELLOWS, AND COLLABORATORS, ALONG WITH ACCESS TO CUTTING-EDGE TECHNOLOGIES, MAKE THIS A MARVELOUS ENVIRONMENT IN WHICH TO CONDUCT THIS RESEARCH.”

— ARLENE SHARPE

INSIGHTS FROM RESEARCH BY ARLENE SHARPE, AB ’75, AM ’76, PHD ’81, MD ’82, ARE INFORMING NEW THERAPEUTIC APPROACHES TO CANCER, CHRONIC INFECTIONS, AND AUTOIMMUNE DISEASES.



ISAAC KOHANE, MD, PHD, LEADS MULTIPLE COLLABORATIONS ACROSS HARVARD MEDICINE IN THE USE OF GENOMICS AND COMPUTER SCIENCE TO STUDY CANCER AND THE DEVELOPMENT OF THE BRAIN, WITH AN EMPHASIS ON AUTISM.

THE WORLD IS WAITING FOR: EVERY PATIENT VISIT TO INFORM THE CARE OF ALL PATIENTS

Big data is having a big impact on conquering disease—from early diagnosis to treatment. Researchers in the Center for Biomedical Informatics at Harvard Medical School are implementing computer-based systems that allow clinical data from dozens of hospitals across the country and internationally to be scanned rapidly and analyzed in tandem with genomics to study the genetic basis of disease while preserving patient privacy.

What are the results? Under the leadership of Director Isaac Kohane, MD, PhD, professor of pediatrics and health sciences and technology, the department has uncovered several new subtypes of autism defined by the clinical course of patients. This process has also spurred the development of an inexpensive yet highly accurate gene expression test for the early diagnosis of the disease, which affects 1 in 100 children in the U.S. These are essential steps toward treating individual patients with the correct therapy, as one diagnosis and one treatment do not fit all.

“Across most diseases, rare or common, important discoveries will be massively accelerated by allowing the whole health care system to serve as a living laboratory,” says Kohane, adding that this new brand of trial, which pairs genomic data with clinical interventions, will take one-tenth of the time at one-tenth of the cost. “If we want more cures in our lifetime, there is no more effective accelerator toward that goal.”

ISAAC KOHANE IS HARVARD MEDICINE.

THE WORLD IS WAITING FOR: NEW UNDERSTANDING OF THE BRAIN THAT WILL REVOLUTIONIZE MEDICINE AND OTHER FIELDS

Understanding the human brain is one of the most challenging research frontiers of the 21st century. One of biology's most complex systems, it contains roughly 100 billion neurons, with 100 trillion connections among them. To understand this complexity and leverage it to conquer disease, scientists must draw upon multiple academic disciplines and powerful technologies.

Harvard may very well be the only institution with the full breadth and depth of scholarship across the life, physical, and social sciences needed to undertake this ambitious endeavor. A keystone of this broader, University-wide effort, Harvard Medical School is focusing its attention and resources on neurodevelopmental, neurodegenerative, and neuropsychiatric diseases and disorders—from autism, ALS, and Alzheimer's to Parkinson's and schizophrenia.

Here, cell biologists, computational biologists, biochemists, geneticists, immunologists, neurobiologists, and systems biologists are investigating these brain functions, dysfunctions, and conditions from their unique vantage points, while also forming new, interdisciplinary teams to pursue previously unanswered questions for which their contributions are essential.

"We are making a high-stakes investment in our future—in our young investigators and their creativity, in teams of researchers who have not previously worked together, in research that unites fields before seen as only distantly related, and in the application of technologies in new and unanticipated ways," says Michael Greenberg, PhD, Nathan Marsh Pusey Professor and chair of the Department of Neurobiology at Harvard Medical School.

SUSAN DYMECKI, CHENGHUA GU, WADE HARPER, CHRISTOPHER HARVEY, BERNARDO SABATINI, AND BRUCE YANKNER ARE HARVARD MEDICINE.

GENETICIST SUSAN DYMECKI, MD, PHD, LEADS A TEAM IN DECODING THE SEROTONERGIC NEURONAL SYSTEM IN PURSUIT OF NEW STRATEGIES FOR TREATING DISORDERS FROM DEPRESSION TO AGGRESSION TO SLEEP APNEA.

CELL BIOLOGY CHAIR WADE HARPER, PHD, IS IDENTIFYING NEW CELLULAR SIGNALING NETWORKS, INCLUDING THOSE THAT ARE ALTERED IN NEURODEGENERATIVE DISEASE.

BRUCE YANKNER, MD, PHD, PROFESSOR OF GENETICS AND CO-DIRECTOR OF THE PAUL F. GLENN LABORATORIES, HAS DISCOVERED A NEW GENE NETWORK THAT IS CENTRALLY INVOLVED IN THE AGING OF THE HUMAN BRAIN AND MAY REGULATE THE ONSET OF ALZHEIMER'S DISEASE.

NEUROBIOLOGIST CHENGHUA GU, PHD (LEFT), HAS DISCOVERED A CHIEF MECHANISM THAT REGULATES THE BLOOD-BRAIN BARRIER.

NEUROBIOLOGIST CHRISTOPHER HARVEY, PHD, CAN PREDICT A MOUSE'S DECISIONS IN A VIRTUAL ENVIRONMENT WELL BEFORE IT REPORTS ITS DECISION.

NEUROBIOLOGIST BERNARDO SABATINI, BS '91, MD '95, PHD '99, HAS IDENTIFIED BRAIN CIRCUITRY COMPONENTS UNDERLYING ON-THE-FLY DECISION MAKING.

THE WORLD IS WAITING FOR: MORE EFFECTIVE CANCER THERAPIES

Cancer research is personal for Joan Brugge, PhD, the Louise Foote Pfeiffer Professor of Cell Biology at Harvard Medical School and co-director of the Ludwig Center at Harvard. She was an undergraduate at Northwestern University when her sister was diagnosed with brain cancer. From that moment, she has devoted her career to understanding what causes cancer—and how to stop it.

Now regarded as one of the leading breast cancer researchers in the country, Brugge and her team are working to develop more effective cancer therapies by dissecting and understanding the mechanisms responsible for therapy resistance. Her work is highly collaborative, incorporating the perspectives and expertise of geneticists, cell biologists, pathologists, oncologists, pharmacologists, and systems biologists to bring new ideas to bear toward solving this complex problem.

Toward that end, her laboratory has identified a previously unrecognized adaptive response to cancer therapies that protects tumors from being killed. This adaptive response involves a highly conserved cellular program that is used by many organisms, from flies to humans, to respond to stress.

"Our goal is to reduce the recurrence of cancer for patients and extend their lives," says Brugge. "Harvard Medical School is the best place to conduct this work because of the proximity and interplay between basic and clinical scientists, together with the ease of mutually beneficial collaborations."

JOAN BRUGGE, PHD, HAS BEEN A CANCER RESEARCH PIONEER SINCE HER POSTDOCTORAL TRAINING, WHEN SHE ISOLATED THE VIRAL AND CELLULAR FORMS OF THE SRC PROTEIN, WHICH IS PRESENT IN A MAJORITY OF TUMORS IN THE BREAST, COLON, LIVER, LUNG, AND PANCREAS.

JOAN BRUGGE IS HARVARD MEDICINE.

THE WORLD IS WAITING FOR: INNOVATIVE AND AFFORDABLE MEDICINES FOR SERIOUS DISEASES

It's no secret that effective and accessible medicines are lacking for many serious diseases, including diabetes, Alzheimer's disease, and many forms of cancer. Even when drugs are available, it is not clear which patients will benefit.

Under the leadership of Peter Sorger, AB '83, PhD, Otto Krayer Professor of Systems Pharmacology at Harvard Medical School, the Harvard Program in Therapeutic Science (HiTS) is tackling this problem in an innovative way. They are replacing the one disease, one gene, one drug approach with a systems focus that incorporates a more holistic view of drug action based on combining computational approaches drawn from engineering, single-cell analysis, and high-throughput data.

This interdisciplinary program, comprising education, basic and translational research, and entrepreneurship, is tackling problems in the development, evaluation, and use of therapeutic drugs. HiTS investigators aim to change fundamentally how drugs are developed and used to treat serious disease. They are finding new uses for existing drugs, identifying those patients most likely to benefit from combinations of new and existing therapies, and making drug discovery and development faster, cheaper, and more predictable.

"Because up to 75 percent of the price of a new drug represents the cost of past failure, reducing failure through better science will have an immediate impact on the affordability of medicines and the sustainability of biomedical innovation," says Sorger.

PETER SORGER IS HARVARD MEDICINE.

IN THE NEW LABORATORY OF SYSTEMS PHARMACOLOGY, HITS DIRECTOR PETER SORGER, AB '83, PHD, IS MENTORING FACULTY, FELLOWS, AND STUDENTS FROM EIGHT INSTITUTIONS WHO ARE CO-LOCATING, WORKING IN TEAMS TO INVESTIGATE CANCER, INFLAMMATORY, AND NEURODEGENERATIVE DISEASES.

SERVICE

SERVICE TO HUMANITY IS A GUIDING PRINCIPLE FOR HARVARD MEDICINE.

WE ARE WORKING PASSIONATELY TO ENHANCE THE PROVISION OF HEALTH AND HEALTH EQUITY WORLDWIDE. TOGETHER WE CAN REVERSE THE U.S. CRISIS IN PRIMARY CARE, SHAPE HEALTH CARE POLICY, AND TRANSFORM HEALTH SYSTEMS TO DELIVER IMPROVED HEALTH, BETTER CARE, AND LOWER COSTS. AND WE WILL TRAIN THE NEXT GENERATION OF GLOBAL HEALTH LEADERS, FOCUSING ATTENTION WITHIN AND BEYOND OUR BORDERS TO ALLEVIATE HUMAN SUFFERING CAUSED BY DISEASE.

THE WORLD IS WAITING FOR: THE FRUITS OF MEDICAL SCIENCE TO BE DELIVERED WHERE PEOPLE LIVE

Though essentially a curable disease, tuberculosis (TB) still kills approximately 1.5 million people every year. Salmaan Keshavjee, MD, ScM '93, AM '95, PhD '98, director of the Program in Infectious Disease and Social Change and an associate professor in Harvard Medical School's Department of Global Health and Social Medicine, and his colleagues are working tirelessly to change this.

Together they are translating existing knowledge about how to contain tuberculosis and other infectious diseases into a set of scientifically based roadmaps with actionable strategies that can be implemented immediately. Determining how best to deliver these tried and tested approaches in resource-poor settings provides essential knowledge both for stopping the current global TB epidemic and for strengthening underlying health systems to confront myriad other diseases, from diabetes and heart disease to Ebola, Hepatitis C, and mental health disorders.

Keshavjee and his colleagues have been at the forefront of demonstrating the effectiveness of community-based delivery of complex health interventions for more than 20 years, from developing systems to treat multi-drug-resistant TB (MDR-TB) in the slums of Lima, Peru, to working with the government of Lesotho in South Africa to establish the first community-based treatment program for MDR-TB patients co-infected with HIV—a model subsequently adopted by the United Nations and other agencies.

"It is clear that a one-size-fits-all approach that ignores social context and a patient's life situation cannot optimize the delivery of health care," says Keshavjee. "A biosocial model is essential: one that embraces both the biological complexity of a disease and the social complexity within which treatment needs to occur."

SALMAAN KESHAVJEE IS HARVARD MEDICINE.

SALMAAN KESHAVJEE, MD, SCM '93, AM '95, PHD '98, REVIEWS A MULTI-DRUG-RESISTANT TUBERCULOSIS PATIENT'S CHEST X-RAY WITH YELENA KOSTUKOVA, MD, DEPUTY CHIEF OF MEDICAL AFFAIRS AT THE REPUBLICAN TUBERCULOSIS DISPENSARY IN PETROZAVODSK, IN THE REPUBLIC OF KARELIA, RUSSIA.

THE WORLD IS WAITING FOR: COMMUNITY-BASED, COMPREHENSIVE, PATIENT-CENTERED CARE

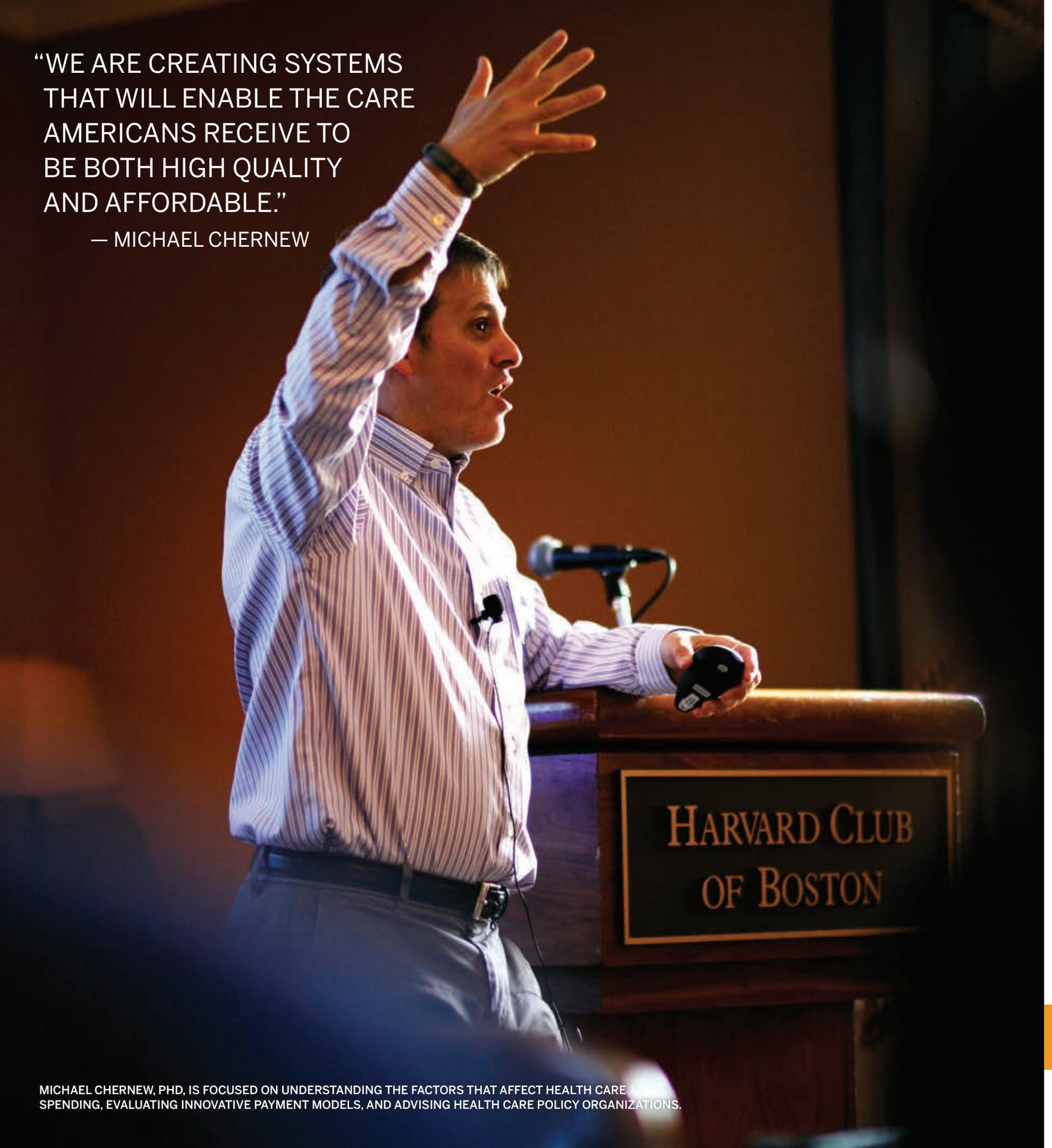
How do we improve the health of our communities? Harvard Medical School is tackling this issue head-on through its Center for Primary Care, which is transforming how primary care is delivered and how medical leaders and practitioners are trained. One of the center's flagship programs, the Academic Innovations Collaborative fosters innovation in education and care delivery at 20 Harvard-affiliated primary care teaching practices that collectively serve more than 275,000 patients. The program allows students and residents to work with local clinics to transform how they deliver primary care.

At The Dimock Center, one of the participating clinics, in Roxbury, Mass., President and CEO Myechia Minter-Jordan, MD, MBA, and her colleagues are working to integrate and provide access to behavioral health, primary care, and education as a way to improve the overall health and welfare of the community. By measuring the impact of this model with patient and provider input, they are able to improve programs and services in real time.

"The Center for Primary Care is taking the lead in bringing stakeholders together to improve the field," says Minter-Jordan, who is also a clinical instructor in medicine at HMS and faculty director of the center's Abundance Agents of Change Program, which charges Harvard students to create projects that promote innovation in health care delivery. "We are creating a pipeline of students who will change the world as we know it and work to improve our system and the care that we provide to our patients and families."

MYECHIA MINTER-JORDAN IS HARVARD MEDICINE.

AS PRESIDENT AND CEO OF THE DIMOCK CENTER IN ROXBURY, MASS., MYECHIA MINTER-JORDAN, MD, MBA, IS HELPING TO REDEFINE THE MODEL OF INTEGRATED, FAMILY-CENTERED CARE.



"WE ARE CREATING SYSTEMS THAT WILL ENABLE THE CARE AMERICANS RECEIVE TO BE BOTH HIGH QUALITY AND AFFORDABLE."

— MICHAEL CHERNEW

MICHAEL CHERNEW, PHD, IS FOCUSED ON UNDERSTANDING THE FACTORS THAT AFFECT HEALTH CARE SPENDING, EVALUATING INNOVATIVE PAYMENT MODELS, AND ADVISING HEALTH CARE POLICY ORGANIZATIONS.

THE WORLD IS WAITING FOR: AN EQUITABLE, EFFICIENT, AND FINANCIALLY SUSTAINABLE HEALTH CARE SYSTEM

It's no secret that health care spending has spiraled out of control. Fiscal pressures driven by higher spending per person and an aging population threaten the fiscal health of the nation. Moreover, despite high spending, there are demonstrable gaps in the quality of care. Michael Chernew, PhD, the Leonard D. Schaeffer Professor of Health Care Policy, is working to understand and reverse these troubling trends.

An economist, Chernew studies the causes and consequences of health care spending growth to understand why Americans spend more on health care now than they did five, 10, or 20 years ago. By leveraging statistics and data from health plans and health care providers, he is working to understand how the programs they implement influence the care their patients receive and how they affect health care spending and the health outcomes associated with that care.

"If we don't control health care spending growth, we will have higher taxes and lower employment," explains Chernew, who is a member of the Congressional Budget Office's Panel of Health Advisors and vice chair of the Medicare Payment Advisory Commission (MedPAC), an independent agency established to advise the U.S. Congress on issues affecting the Medicare program.

"We need to understand the mechanisms that we can use to control spending growth so that we not only have a healthy population, but a healthy economy."

MICHAEL CHERNEW IS HARVARD MEDICINE.

LEADERSHIP

HARVARD MEDICAL SCHOOL HAS BEEN INNOVATING FOR MORE THAN 230 YEARS.

WE ARE A POWERFUL ENGINE FUELED BY NEW IDEAS. TOGETHER, WE CAN GIVE DEAN JEFFREY S. FLIER, MD, THE RESOURCES TO NOT ONLY INSPIRE OUT-OF-THE-BOX THINKING AND PARTNERSHIPS AMONG STUDENTS AND FACULTY, BUT TO INVEST IN THOSE IDEAS THAT HE FEELS ARE TRULY EXTRAORDINARY AND WILL HAVE THE GREATEST IMPACT ON OUR MISSION: TO ALLEVIATE HUMAN SUFFERING CAUSED BY DISEASE.

THE WORLD IS WAITING FOR: US TO PREPARE FOR THE UNKNOWN UNKNOWNS OF TOMORROW

Why is basic science so important? Ask Rachel Wilson, AB '96, PhD, a professor of neurobiology at Harvard Medical School and a Howard Hughes Medical Investigator, and she will say it's about putting knowledge in the bank. When a public health crisis arises, it's critical that scientists have a fund of existing knowledge to draw upon. For example, when the AIDS epidemic hit, scientists already knew a lot about retroviruses and, as a result, when HIV was first recognized, effective antiviral therapies were developed quite quickly.

In the coming decades, it's already clear that many new public health crises will be neuropsychiatric, including increased incidence of Alzheimer's disease and autism spectrum disorders. For these reasons, it's critical to build up our depository of basic knowledge about brain function. As Wilson puts it, "Who knows what piece of information will turn out to be essential to treating Alzheimer's or autism?"

"In order to build up our bank account of knowledge, to prepare for the unknown unknowns of tomorrow, we need to invest in a variety of scientific problems," says Wilson, adding that some of these investments will be risky, in that they may never pay off with medical advances. "What we do know is that a diversified portfolio of scientific research is best for the long-term. And public funds won't support risky bets.

RACHEL WILSON IS HARVARD MEDICINE.

"PRIVATE PHILANTHROPISTS ARE THE ONES WITH THE VISION TO INVEST IN RISKY SCIENTIFIC ENTERPRISES."
— RACHEL WILSON

TOGETHER WITH HER COLLEAGUES, RACHEL WILSON, AB '96, PHD, HAS MADE THE FIRST RECORDINGS OF ELECTRICAL ACTIVITY FROM THE BRAIN CELLS OF FRUIT FLIES. SHE IS LEVERAGING THIS INFORMATION TO UNDERSTAND THE BASIC ELEMENTS OF THE HUMAN BRAIN'S ELECTRICAL CODE.

AMONG HIS MANY ACCOMPLISHMENTS, LEE NADLER, MD '73, HAS DISCOVERED AND CHARACTERIZED THE B1 MOLECULE (CD20), LEADING TO THE DEVELOPMENT OF RITUXAN, WHICH HAS SIGNIFICANTLY IMPROVED THE SURVIVAL OF PATIENTS WITH LYMPHOMAS AND OTHER B-CELL DISEASES THROUGHOUT THE WORLD.

THE WORLD IS WAITING FOR: THE PROMISE OF "ONE HARVARD" TO CONFRONT THE MAJOR ISSUES THAT WILL IMPACT HEALTH CARE IN THE NEXT 50 YEARS

There are 75 million Baby Boomers. Lee Nadler, MD '73, Virginia and D.K. Ludwig Professor of Medicine and dean for clinical and translational research at Harvard Medical School, is one of them, and he points out that they have a 30 percent chance of reaching age 90. That means soon there will be 20 million 90-year-olds.

Therein lies one of the major health issues confronting the U.S. and the world: our aging population. How do we care for them? And how do we ensure that the cost of their medical care doesn't destroy society?

"If we wait for our population to age and then try to make drugs for old people, it's hopeless," says Nadler, who is also senior vice president for experimental medicine and the Pan Mass Challenge Senior Investigator at Dana-Farber Cancer Institute. "The challenge over the next 50 years is to identify those at risk for getting a major illness with enough lead time that disease progression can be slowed or reversed."

As director of Harvard Catalyst, that's precisely what he's working to do. He and his colleagues are bringing together investigators representing different institutions, training, and backgrounds as "One Harvard" to solve major issues in human health.

"Harvard Medical School is the convener; we are the hub," explains Nadler. "We articulate the problem, explain why it's important, determine who and what it will take to solve it, and then launch initiatives that have the highest likelihood of success. At the end of the day, this is about people's lives."

LEE NADLER IS HARVARD MEDICINE.

THE WORLD NEEDS HARVARD MEDICINE

Joshua Boger, AM ’75, PhD ’79
Campaign Chair
Founder and Former CEO,
Vertex Pharmaceuticals Incorporated

“The major medical challenges of our time require deep domain expertise and broad, cross-domain understanding. You get both at Harvard Medical School. If you’re looking to advance human medicine, investing in the best means investing in Harvard Medicine.”

Ellen R. Gordon, GSA ’69
Honorary Campaign Co-chair
President, Tootsie Roll Industries, Inc.

“I cannot think of any greater cause than people’s health in all parts of the world, and Harvard Medical School is at the forefront of solving some of the greatest medical challenges of our time.”

Jack M. Connors Jr.
Honorary Campaign Co-chair
Founding Partner and Chairman Emeritus,
Hill, Holliday, Connors, Cosmopulos, Inc.

“There exists at Harvard Medical School an extraordinary concentration of both talent and investment in the idea of better health for mankind. It is therefore impossible to believe that this institution will not have a major impact on the future of health care and medicine.”

WE ARE ALL HARVARD MEDICINE

THE WORLD IS WAITING...

FOR US

THE WORLD IS WAITING

THE CAMPAIGN FOR HARVARD MEDICINE

Learn more at:
hms.harvard.edu/campaign

HARVARD MEDICAL SCHOOL

PRINCIPAL PHOTOGRAPHY: CHANNING JOHNSON

Additional Photography: Mim Adkins Photography, Patrick Bibbins, William Campbell/Partners In Health, Stuart Darsch, Beatrice De Gea, Mark Finkenstaedt, Justin Ide, Tom Kates, Steve Lipofsky, Viktoriya Livchits, Stephanie Mitchell, Sam Ogden/DFCI, Rebecca E. Rollins/Partners In Health, Len Rubenstein Photography, John Soares

PRODUCED BY: HARVARD MEDICAL SCHOOL OFFICE OF RESOURCE DEVELOPMENT

HARVARD MEDICAL SCHOOL

THE WORLD IS WAITING

THE CAMPAIGN FOR HARVARD MEDICINE