

## Report of the President

### Priming MIT for the Future

In response to the ubiquity of computing and the rise of artificial intelligence (AI), MIT made a bold, unprecedented move to reshape itself. In October, we introduced a \$1.1 billion, cross-cutting initiative that will transform how we educate leaders for the algorithmic future: the [MIT Stephen A. Schwarzman College of Computing](#), which Mr. Schwarzman helped launch with a visionary gift.

The college represents the Institute's largest restructuring since the 1950s. It will allow us to build on our established leadership in computing and AI and to position the Institute as a world hub for collaborative education, research, and innovation. It will foster breakthroughs in computing, integrate this work with the wisdom of other disciplines, and deliver the power of AI tools to researchers in every field. It will enable MIT to prepare students to thrive in the digital economy, by training them to become "bilingual" — as fluent in computing as in their chosen academic and professional fields. And finally, the college will give us the opportunity to advance understanding of the societal impact of new technologies and help ensure their ethical use.

Twenty-five new faculty will be appointed to the college, and another 25 appointed jointly in the college and departments across the Institute. In a few years, the college will have a newly constructed home on campus. Dan Huttenlocher SM '84, PhD '88, the inaugural dean, has experience building and leading new academic entities at Cornell University as well as an interdisciplinary approach to computing and a background in industry.

In February, we held a [three-day launch celebration](#), which featured a daylong symposium that drew 1,500 people. Speakers included MIT Corporation members Ursula Burns, Ashton Carter, Megan Smith, and Massachusetts Governor Charlie Baker; Pulitzer Prize winner and Compton Lecturer Tom Friedman; and more than 25 MIT faculty, including Sir Tim Berners-Lee.

The [MIT Campaign for a Better World](#) saw more than \$741 million in commitments for the college this year. Encouraged by the enthusiasm of MIT's alumni and friends — and making the most of the momentum created by the announcement of the college — once we reached our \$5 billion campaign goal, we were inspired to raise it to \$6 billion.

Campaign gifts this year came from more than 100,000 individuals and organizations and included \$60 million in new commitments for capital projects, including a state-of-the-art music building. The new building will be located in the heart of campus to amplify the positive power of music in the life of MIT.

### Pioneering Online Learning

On our campus and around the globe, MIT continues to expand access to online learning opportunities. This year the [MITx](#) residential platform offered 79 courses for MIT students led by 107 faculty from 16 departments. Ninety-nine percent of our undergraduates took at least one course using the platform.

Beyond MIT, 3.7 million learners accessed more than 170 massive open online course (MOOC) modules corresponding to 123 MIT courses. Modules from 32 more courses are in development, and MOOCs based on most MIT core science General Institute Requirements are now online. edX also continues to grow, reaching more than 20 million learners with more than 2,600 courses.

We expanded MIT's global educational impact through our MicroMasters program, which now offers four options: Supply Chain Management, Principles of Manufacturing, Data Economics and Developmental Policy, and Statistics and Data Science. MIT has awarded 1,780 MicroMasters credentials, and recipients attest to their quality and value: 84% of learners who enrolled with the goal of advancing at their companies report that their MicroMasters credential has helped them do just that.

MITxPRO offered six programs for learners interested in gaining technical expertise through MIT's classic learning-by-doing approach. The programs reached more than 11,000 people—many of whom already held advanced degrees and chose MITxPRO to upgrade their knowledge and skills. And MIT learning opportunities remain open to the world through [OpenCourseWare \(OCW\)](#), with approximately two million sessions per month. With nearly two million subscribers, OCW has become the largest “.edu” channel on YouTube.

### **Leading and Championing Research**

This year we took a step that Vice President for Research Maria Zuber called “a game-changer for the MIT research enterprise.” After years of design and construction, we opened [MIT.nano](#).

As an open-access resource for the entire community, MIT.nano is centrally located in Building 12, making it a natural convening place for interdisciplinary research. The facility includes two large floors of connected cleanroom spaces open to view from the outside, undergraduate chemistry teaching labs, and an ultrastable basement level dedicated to electron microscopes and other sensitive tools.

The measurement, imaging, and fabrication capabilities of MIT.nano will dramatically advance science and technology in a wide range of disciplines, from engineering and physics to biology, chemistry, and art, and will allow MIT to harness the power of nanotechnology in service to humanity's greatest challenges.

From the very, very small, to the very, very large: this year MIT researchers were part of a global team of scientists that captured the [first images of a black hole](#), located in the Virgo galaxy cluster, 55 million light-years from Earth. The image was captured using the event horizon telescope (EHT), a consortium of 13 institutions that includes MIT Haystack Observatory. By linking telescopes around the globe, the EHT makes it possible for scientists to study the most extreme objects in the universe predicted by Einstein's general relativity. The black hole has a mass 6.5 billion times that of the Sun.

Back on Earth, we launched the [Abdul Latif Jameel Clinic for Machine Learning in Health \(J-Clinic\)](#). It will have three main areas of focus: preventative medicine for

noninfectious disease, cost-effective diagnostics, and drug discovery and development, particularly for individually customized therapies.

J-Clinic will leverage MIT's research strengths and our strong relationship with industry and Boston-area hospitals to test, integrate, and deploy new technologies. By combining machine learning with clinical and biological insight, J-Clinic aims to both save lives and improve the healthcare industry around the globe.

In support of continued funding for science and technology research and development, a group of MIT graduate students, postdocs, and undergraduates traveled to Washington, DC, in March to speak with members of Congress. The delegation met with offices of the US Senate and House of Representatives from 23 states, including the House Committee on Science, Space, and Technology.

MIT also prepared a white paper for meetings at the White House, laying out a plan that became the centerpiece for discussions on US investment in science and technology as a way to help address the challenge from China. We are working closely with Hill offices to turn it into legislation.

### **Accelerating Innovation and Entrepreneurship**

The Kendall Square innovation ecosystem offers powerful advantages to MIT, and it is clear that the future success of the Institute depends on ensuring that Kendall Square succeeds as a *place* where people want to live, work, and play. This year, the revitalization of the square progressed at multiple sites, with plans for new commercial space, academic space, graduate student housing, a new MIT Museum, and even a grocery store.

[The Engine](#), MIT's venture firm for tough-tech startups, continued building momentum for bringing innovation out of the lab and into the marketplace. The Engine has invested in 16 companies tackling some of the hardest global problems in areas from climate change to human health. This fall, The Engine's inaugural Tough Tech Summit convened founders, investors, and corporate and academic leaders to work together to ensure a thriving innovation ecosystem.

[MIT Solve](#) continues to bring together social impact entrepreneurs and investors. Its annual flagship meeting, Solve at MIT, drew more than 550 attendees. Solve announced \$1.5 million in prize funding as well as the Solve Innovation Fund, a new donor-advised fund for philanthropists who contribute through tax-deductible gifts to MIT.

We also continue to support entrepreneurs through [MIT Bootcamps](#). MIT has now run 25 such bootcamps, attended by more than 2,200 entrepreneurs from around the world. Bootcamp graduates have gone on to establish hundreds of new ventures—in health care, robotics, artificial intelligence, and other key areas—and have generated more than \$70 million in venture capital funding. This year, eight bootcampers were admitted to MIT.

## Strengthening Global Connections

In November, MIT faculty, senior leadership, and the Executive Committee of the MIT Corporation traveled to China for meetings with government and corporate leaders to explore possible areas of collaboration in solving urgent global challenges.

At the [MIT China Summit](#), hosted in partnership with the Chinese Academy of Sciences, I delivered opening remarks with Chunli Bai, President of the Academy. The program featured 15 MIT professors, together with prominent Chinese scientific and business leaders. Wide-ranging discussions explored the frontiers of science and technology, the state of artificial intelligence, global challenges that could benefit from multinational collaboration, and innovations in finance and education. A closing session considered how research universities in the United States and China will educate the next generation.

I also had the opportunity to represent MIT at the Bloomberg New Economy Forum in Singapore, a gathering of business and government leaders from around the world. The forum included discussion of the potential positive and negative influences of emerging technologies on work, as well as opportunities for both companies and workers.

## Cultivating a Caring Community

Within our community, we addressed obstacles faced by women in academia in response to the release of the National Academies of Sciences, Engineering, and Medicine report [Sexual Harassment of Women: Climate, Culture, and Consequences in Academic Sciences, Engineering, and Medicine](#). Institute Professor Sheila Widnall co-chaired the committee that produced the report, which found that between 20% and 50% of female students, and more than 50% of female faculty and staff, have experienced sexually harassing behavior while in academia.

MIT is establishing new working groups to take the lead in responding to the report's wide-ranging recommendations, which include addressing gender harassment, improving transparency and accountability, and involving the entire academic community in promoting an environment of civility and respect.

In a related effort, this spring we invited all undergraduate and graduate students to complete the [2019 AAU Campus Climate Survey](#), a comprehensive survey to help us understand students' experiences with sexual assault and misconduct. The survey will enable us to measure the progress we have made in the five years since our [2014 Community Attitudes on Sexual Assault survey](#), to identify and respond to new issues and to understand MIT's results in the context of national data and trends. Results of the survey will be released in the fall of 2019.

The Institute is not immune to the effects of the injustice and unrest across our nation, and this year our community has been deeply disturbed by increasing mass violence in the United States. To honor those who have been injured or killed, we came together in October on the steps of the Student Center in a Vigil for Hope in the Face of Hate.

In a [letter to the MIT community](#), I affirmed MIT's tradition of welcoming talent from everywhere and our policy against harassment of all kinds. The letter included the

following statement: “No matter how government policy may change, it will not change or weaken MIT’s commitment to protecting the rights and safety of every member of the MIT community... Our openness to talent from every faith, culture, nation, and background is central to our success, and central to our humanity. We should never forget the value and strength of this deeply American idea.”

Later in the year, I wrote another letter to the community to share my dismay that MIT community members of Chinese descent were experiencing unfair scrutiny and stigma, especially in dealing with government agencies. I reiterated the view that while a university like MIT must take national security extremely seriously, we cannot forget that the Institute—like our nation—has flourished because it has been a magnet for the world’s finest talent. In the letter, I described immigration as a kind of oxygen, with each fresh wave reenergizing the body as a whole.

We concluded the spring semester by gathering for music, dance, food, and fun at [OneWorld@MIT](#). The Institute-wide festival featured student performers in a variety of styles, from bhangra to salsa—a wonderful way to celebrate our remarkably multifaceted, multitalented global community.

**L. Rafael Reif**  
**President**