

Report of the President

Beginning a Journey Together

MIT's openness to people from every background in every corner of the nation and the world is central to its capacity for impact. Thirty-two years ago, I experienced that openness for the first time when I arrived at MIT as a young assistant professor in electrical engineering. From the first moment I stepped foot on campus, MIT became my community and my home. On September 21, 2012, I was deeply honored to begin my presidency, serving a community that means so much to me.

In assuming leadership of MIT, I am keenly aware that higher education in the United States has reached a challenging crossroads. Facing grave problems around water and food, poverty and disease, and energy and climate, society needs the creative force of its universities more than ever. Yet the financial model of the American research university is unsustainable. Many families struggle to pay tuition, and many universities struggle to cover the cost of a hands-on, research-intensive education.

Digital learning technologies have the power to reshape this landscape by lowering costs and bringing a high-quality education within the reach of many more people. But these new technologies may also threaten the residential campus model, and by extension, research universities, which generate much of the knowledge that allows humanity to solve its most challenging problems. Given MIT's unique strengths and early leadership in putting its course materials online, we have an opportunity and an obligation to play a leading role in creating a new model of higher education, one that offers the greatest possible benefit for humanity.

In my inaugural speech, I articulated a vision for MIT as a source of insights into the ways technology can expand access to education globally, and at the same time elevate its quality, as we continue to deliver and assess interactive online courses and learn more about the nature of learning itself. I also committed MIT to act in a number of other areas: focusing the nation on basic research, and focusing MIT on research that addresses the most pressing global problems; helping the innovations that emerge from MIT reach the marketplace, where they can do the most good for the most people; increasing our impact around the globe; and leading in diversity, equity, and inclusion, so that everyone at MIT feels at home.

This report will summarize MIT's progress this year in each of these areas:

- Pioneering online learning
- Championing research, both basic and mission-driven
- Accelerating innovation and entrepreneurship
- Heightening our global impact
- Cultivating a caring community

The last point—cultivating a caring community—is especially on my mind as we struggle to come to grips with the death of [MIT Police Officer Sean Collier](#), a young man who was killed on April 18, 2013, while protecting our campus in the aftermath of the Boston Marathon bombing. In the days that followed, the MIT community came together in mourning. In just 15 months at MIT, Officer Collier had made a lasting impression on our community with his kindness, curiosity and dedication to those around him.

During a memorial service on Briggs Field, I witnessed an extraordinary outpouring of respect and gratitude for Officer Collier and the MIT police. As sympathy flowed from the heart of the MIT family to the family of Officer Collier and the MIT Police Department, I felt both extreme sadness at the tragic and senseless murder of this promising young officer and great pride in our community's heartfelt and overwhelming response.

Pioneering Online Learning

After a decade at the forefront of online learning, MIT continues to break new ground. In 2002, the Institute introduced [MIT OpenCourseWare \(OCW\)](#), which succeeded in publishing virtually all MIT course materials online and offering them to the world at no cost. OCW has since drawn more than 150 million users.

Recognizing the global demand for MIT course content, in December 2011 the Institute launched [MITx](#), a more tutorial online learning experience. Unlike OCW, MITx is interactive, allowing us to offer assessments and certificates. With MITx, we have two goals: to teach learners worldwide and to enhance the on-campus educational experience. MITx offers us the option of conveying basic concepts to our students online, freeing up the classroom for the hands-on, team-focused learning that defines an MIT education.

In May 2012, we joined with Harvard University to introduce [edX](#), an open platform for massive open online courses, or MOOCs. Now, a year later, one million learners—representing every country in the world—have engaged with edX, exploring courses offered by 27 top institutions free of charge. With 40% of the world's population connected to the Internet, MITx and edX give us the power and the opportunity to overturn the assumption that higher education is only for the lucky few.

Digital technologies open the door to less rigid, more modular curricula and make it possible to reimagine the traditional four-year residential college experience. They also generate new data about how people learn, providing insights that can help us systematically improve how we teach, on campus and online.

This year, to further advance the frontiers of digital learning:

- We established the Office of Digital Learning (ODL) and appointed as its director Sanjay Sarma, the Fred Fort Flowers and Daniel Fort Flowers Professor of Mechanical Engineering. Working closely with MIT faculty and students, Professor Sarma will help us find the best ways to integrate new models of online instruction into the MIT campus experience. Under his leadership, ODL will help the community reconsider everything from how course content is delivered to how we shape the physical campus.

- We launched the [Institute-wide Task Force on the Future of MIT Education](#), co-chaired by Professor Sarma, Professor Karen Willcox, and Executive Vice President and Treasurer Israel Ruiz. The task force will consider how MIT can best preserve and enhance its core tradition of hands-on learning through the targeted use of digital learning tools. It will also propose a series of experiments and pilot projects to explore these ideas and evaluate the future strength and sustainability of MIT's current financial model.
- With leadership from Professor Anant Agarwal, president of edX, we made edX an open-source project, available for free to institutions and coders everywhere to use and improve.
- Together with our edX founding partner, Harvard University, we hosted Online Learning and the Future of Residential Education, a first-of-its-kind daylong summit that brought together senior academic leaders from dozens of top universities to explore the opportunities and risks for higher education as digital learning technologies become mainstream.

Championing Research, Both Basic and Mission-Driven

In the grand human struggle to understand the natural world and our place in it, new knowledge is valuable for its own sake. At the same time, it is the wellspring of innovation and economic growth. In my inaugural remarks, I argued that a society that gives up on basic research is giving up on its future, and called upon the MIT community to serve as champions for a strong national investment in fundamental research. This year, many faculty and administrative leaders joined me in making that case to congressional leaders.

To help us advance this vital cause, I appointed Maria Zuber, the E.A. Griswold Professor of Geophysics, as MIT's new vice president for research.

From the [Rad Lab](#) and [Lincoln Lab](#) to the [MIT Energy Initiative \(MITEI\)](#), MIT has a remarkable history of success with ambitious, problem-focused research efforts—classic expressions of the Institute's mission to bring knowledge to bear on humanity's great challenges. This year we worked with faculty across the five schools to identify areas where MIT could make a substantive and distinctive contribution. We look forward to introducing Institute-wide initiatives in three areas of pressing need:

- Water and food security
- Health and health care
- Manufacturing and production

Accelerating Innovation and Entrepreneurship

From its earliest days, MIT has produced, in disproportionately large numbers, innovators and entrepreneurs who transform laboratory discoveries into products, companies, and jobs—and in the process, drive economic growth and improve lives on a global scale.

For the most part, this legacy of entrepreneurial success has occurred organically. Yet the people of MIT have developed many renowned programs to encourage entrepreneurship on campus—the [MIT \\$100K Entrepreneurship Competition](#), the [Deshpande Center for Technological Innovation](#), and the [Venture Mentoring Services](#) to name just a few. Today, when innovation and entrepreneurship are so vital in solving urgent global problems, MIT is the magnetic center of one of the most rapidly growing innovation hubs on Earth.

We believe we can do even more to support entrepreneurs in our own community and to connect MIT to innovation hubs around the world. We are beginning to assess the range of needs and opportunities, and explore what new efforts would be most valuable.

Heightening Our Global Impact

For MIT to realize its full potential, we must tend carefully to our existing global collaborations, weigh options for new ones, and actively prepare our students to be culturally alert and globally attuned leaders in their communities and careers.

This year, we continued our close partnerships with several major overseas universities. The [Singapore-MIT Alliance for Research and Technology](#) and the Singapore University of Technology and Design (SUTD), founded in collaboration with MIT, continue to thrive. SUTD awarded master’s degrees to its first graduate class this year. This spring, the Masdar Institute of Science and Technology in the United Arab Emirates approved a new set of joint flagship research projects as the centerpiece of its second five-year cooperative program with MIT. The Moscow-based Skolkovo Institute of Science and Technology (Skoltech) is about to receive its first students; MIT is collaborating with Skoltech to build its capacity in education, research, and entrepreneurship programs.

We also welcomed to our Cambridge campus the new [Tata Center for Technology and Design](#), founded with generous support from the [Tata Trusts](#), one of India’s oldest philanthropic organizations. Part of MITEI, the Tata Center brings innovation and entrepreneurship to bear on challenges in the developing world, including sustainability. MIT graduate students and faculty engage in hands-on projects that consider societal, economic, environmental, and political factors, while improving lives in resource-constrained communities.

To support these and other global efforts, I appointed Professor Claude Canizares, the Bruno Rossi Professor of Physics, as vice president with responsibility for overseeing the Institute’s wide range of international engagements.

Cultivating a Caring Community

The MIT that welcomed me, an outsider from another country, was meritocratic in principle and strove to be so in practice—a place where the most precious currency was a good idea with the best intention. The Institute’s willingness, under the leadership of President Charles Vest, to acknowledge and commit to correcting inequities for our women faculty members made MIT a national model. In terms of creating a culture of true inclusion—in which diversity is at once a mere fact of life and recognized as a key source of our strength—MIT remains a work in progress. But we have the potential to lead the way.

To help us realize this potential, in February MIT appointed Professor Edmund Bertschinger as MIT's first [Institute Community and Equity Officer \(ICEO\)](#). Professor Bertschinger has been a strong promoter of equity and inclusion, both in his home department of Physics and across MIT. As ICEO, he will organize and lead campus activities and conversations around diversity, equity, inclusion, and fostering a more caring community.

This year, I wrote to the MIT community about [harassment](#), noting in the strongest terms that it violates both the Institute's policies and its values. While we work to eliminate harassment of all kinds, we also strive to achieve what no policy can enforce: that as members of one community we treat each other with decency, integrity, respect, and kindness.

To encourage the sharing of ideas and perspectives, I have set up monthly office hours that are open to everyone who studies, teaches, or works at MIT. I am committed to ensuring that all members of our community know their voices are valued and will be heard—and that MIT is their home, just as it has been mine for 32 wonderful years.

L. Rafael Reif
President