

Open Learning

2020 IMPACT REPORT



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Welcome from **Sanjay**

Since its founding, MIT has been a forerunner in educational innovation — from mens et manus to OpenCourseWare, MITx, edX and, now, MIT Open Learning.

Along the way, MIT and its community have been involved in the creation of several celebrated educational efforts: the Physical Science Study Committee (PSSC), Logo, Scratch, Khan Academy, Quizlet, First Robotics and much, much more. MIT has also established several universities worldwide, including the Indian Institute of Technology Kanpur and Birla Institute of Technology and Science, Pilani in India, Instituto Tecnológico de Aeronáutica in Brazil, Sharif University of Technology in Iran, Singapore University of Technology and Design, Skolkovo Institute for Science and Technology in Russia, and Masdar Institute of Science and Technology in the United Arab Emirates.

Here at Open Learning our work has evolved over the years to keep pace with the realities of the 21st century, many of which pose challenging questions for education today. A rapidly changing global economy demands new skills of its workforce. Conflict- and climate-driven global migration displaces more and more young learners, and strains regional education systems. A devastating pandemic that also severely disrupts education and access to teaching and learning. And the ever-rising cost of tuition and declining public trust in institutions raises new barriers to higher education.

Yet alongside these challenges and uncertainty, there is immense opportunity to apply MIT's aptitude for science, technology, and research to reinvent education for today's world. With MIT's hallmark spirit of innovation, Open Learning is reimagining education to better serve learners of all ages, and through the use of digital tools, new technologies, and applied research, to transform teaching and learning here at MIT, and around the world.

Join us in building a better world through open learning.


Sanjay Sarma

Vice President for Open Learning





LEARNING



MIT Open Learning creates and fosters educational opportunities by creating the next generation of digital and blended learning technologies, platforms, and communities. From professional education and residential learning to rich online libraries of content, we are committed to developing new and more agile pathways accessible for learners of all backgrounds and competencies.

MIT OPENCOURSEWARE (OCW)

OCW publishes teaching materials from across the MIT curriculum online, openly, and freely. It is a pure expression of MIT's mission to advance knowledge and serve the world, and a globally-recognized foundation of MIT's open learning strategy.



Educational innovation:

OCW pioneered a global Open Educational Resources movement to make education accessible and affordable for all. It shares MIT faculty insights on the evolving practice of teaching through OCW Educator.



Impact:

More than 200 million people have accessed OCW materials to improve their personal knowledge, learn new teaching methods, complement or prepare for a course of study, and explore areas outside their professional field.

[**Read more about OCW's impact.**](#) 



Current work:

While continuing to grow its collection of over 2,500 courses and supplemental materials, OCW is designing its next generation platform for greater access, usability, and new collaborative opportunities. OCW continues to develop new channels to reach people, with a new podcast that showcases MIT instructors and their inspiring teaching.

"The reason I fell in love with MIT OCW is Professor Gilbert Strang with his incredible Linear Algebra lessons. I watched them from end to end as if they were a blockbuster movie. All I ever learned about teaching I learned here, and it motivated me to start part-time university teaching, alongside with my regular job. I still do it, more than a decade after. I am really deeply grateful. Thank you for that!"

Mate, Educator, Mexico

“

OCW AND MIT'S DIGITAL RESOURCES HAVE DEFINITELY CHANGED THE WAY I LEARN AND MY EDUCATIONAL EXPERIENCE.... I STRONGLY BELIEVE IN OCW'S MISSION TO MAKE THIS SOPHISTICATED KNOWLEDGE AVAILABLE GLOBALLY. IT REALLY HAS CHANGED THE ENTIRE PATH OF MY EDUCATIONAL CAREER.

Kyle Lee, PhD student, SUNY Stony Brook



DISCOVERING MATH AND PHYSICS THROUGH MIT OPENCOURSEWARE

Now a PhD candidate at SUNY Stony Brook, Kyle Lee says that the way physicists think, combining physical intuition and mathematics to find creative solutions to problems, is what drew him to the field. He would quickly learn to problem-solve like a physicist. While he enjoyed his first physics course, Kyle found the classes at his community college to be insufficient and began looking online for other resources. That's when he came across MIT OpenCourseWare, and his newfound dream started to become a reality.

"OCW and MIT's digital resources have definitely changed the way I learn and my educational experience," he says.

[READ THE COMPLETE STORY](#) 

MITx

MITx courses meld the content typically delivered on the MIT campus with advanced digital technologies to bring learners a variety of innovative curricula, available to learners across the globe with a computer or smartphone.



Educational innovation:

Pioneering the massive open online courses (MOOCs) movement, which led to the creation of edX and its platform that serves more than 20 million learners worldwide.



Impact:

More than 10 million people have registered for an MITx course, with 4.7 million unique learners. More than 242,000 certifications have been issued. MITx has supported faculty to develop over 197 MIT modules from across MIT's 5 schools that have been run over 700 times in total.

[**Read more about MITx's impact this year.**](#) 



Current work:

As MITx continues to build upon its MOOCs catalogue with new courses we are also building up MIT Open Learning Library (OLL) in conjunction with OCW. OLL is a selection of archived MITx courses, course materials from OCW, and teaching materials developed by MIT faculty for our students on the Residential MITx platform, materials that the OCW team then prepares for OLL. The OLL platform is built on OpenEdX, meaning that we can incorporate the interactive auto-graded assignments that are the hallmark of MITx courses and of what we offer MIT students via the Residential MITx platform. Everything in OLL will be made available to the public at no cost for an unlimited period. The OCW material in the Open Learning Library takes advantage of the OLL platform's capabilities to offer learners formative feedback. The purpose of this project is to broaden our reach and better realize our mission of sharing MIT with the world. On this site, we do not offer any certification or live support for learners—it is simply a free, open resource.



LEARNING OPPORTUNITIES FROM MIT SPARK GROWTH, EMPOWERMENT

For the past eight years, Innocent Tshilombo has worked in humanitarian supply chain management, learning on the job at a refugee camp in Kakuma, Kenya.

Innocent's interest in supply chain began in 2011, when he volunteered as a shopkeeper with the International Rescue Committee (IRC), a global NGO that provides health programming in the camp. Today, he serves as Operations Coordinator for the University of Geneva Refugee Management team — while also pursuing a MicroMasters credential from MIT.

Innocent's path has not been easy. Originally from the Democratic Republic of Congo, Innocent fled his country more than a decade ago, and has lived at the camp in Kakuma ever since.

[READ THE COMPLETE STORY](#) 

MITx MICROMASTERS® PROGRAMS

MITx MicroMasters programs aim to provide a cost-effective pathway for learners to earn a valuable professional and academic credential that counts towards half of select MIT and other university graduate degree programs.



Educational innovation:

The first of its kind, the MITx MicroMasters program offers learners the credentials necessary to apply for an accelerated, on campus, master's degree program at MIT or other top universities.



Impact:

More than 1 million people from 195 countries have taken an MITx MicroMasters program course. There are 2,929 learners have earned their credential, with 139 MicroMasters program credential holders matriculated into MIT and have graduated. The program has also enabled credential holders to apply to more than 136 graduate programs at 38 pathway universities in 25 countries.



Current work:

In addition to the four current MITx MicroMasters programs in Supply Chain Management; Data, Economics, and Development Policy; Principles of Manufacturing; and Statistics and Data Science, the team launched a new program in Finance during the Fall of 2020.

"When born in a third world country, you realize that there are so many additional challenges that we are faced with. The DEDP MicroMasters program has given me the opportunity to learn critical problem identification and problem solution skills through significant and modern application methods in data and economics. And so today, I am in a much better position to handle the problems and challenges we encounter. Personally, I feel this program has helped me grow to be a person who is able to come up with solutions to problems."

Stephen, MicroMasters Program in Data, Economics, and Development Policy credential holder



AMID SHUTDOWNS, SUPPLY CHAINS PIVOT AND GLOBAL DEMAND FOR SPECIALIZED TALENT INTENSIFIES

The global landscape of supply chain management has changed drastically in the past several months. Businesses, organizations, and people are rapidly innovating to improve supply chains and upskill and reskill the workforce and themselves to accommodate disruptions caused by the global Covid-19 health crisis. Online retailers and logistics providers are announcing vast hiring initiatives, while companies and organizations grapple with the logistics demands of supplying for vital services.

[READ THE COMPLETE STORY](#)



MIT xPRO develops and delivers online, fee-based programs targeted to adult learners who wish to expand their knowledge and build their skills, primarily in the context of professional education. MIT xPRO was formed in spring 2015 in response to market demand for MIT professional education, especially in rapidly changing technology and business disciplines, where MIT is recognized as a leader.



Educational innovation:

Using cutting-edge research on the science of learning, MIT xPRO creates and implements online digital programs for organizations to advance strategic objectives and build employee's skills.



Impact:

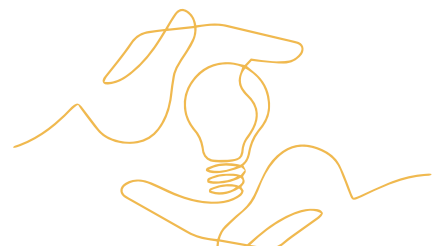
More than 50K employees at organizations such as Boeing, Ford, GM, Microsoft, US Navy, and BAE have taken MIT xPRO's learning programs. The online format provides flexibility for employees to learn while on the job.



Current work:

Launching four new courses on Systems Thinking, Leading Teams, Critical Thinking, and Technical Innovation targeted to early and mid-career technical professionals to build engineering leadership skills; launching two courses on Machine Learning targeted to early and mid-career engineers to build AI skills.

The Curve is an online learning blog for professionals, from MIT Open Learning. The blog shares the latest online learning, professional development, and technological insights from MIT xPRO.



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**BY GOING THROUGH THE
FOUR MODULES OF THE MIT
xPRO PROGRAM I GOT AN
UNDERSTANDING OF WHAT
SYSTEMS ENGINEERING IS,
HOW TO APPLY SYSTEMS
THINKING, AND MOVING
FORWARD UNDERSTANDING
HOW I CAN INFLUENCE
CERTAIN DECISIONS AND
TAKE ON CHALLENGES AND
COME UP WITH CREATIVE
SOLUTIONS TO RESOLVE
THOSE PROBLEMS THAT WE
SEE IN OUR EVERYDAY WORK**

Nicole Bickle, General Motors employee



MIT OPEN LEARNING'S ROADMAP FOR CHANGE IN WORKFORCE EDUCATION

Well before the coronavirus pandemic hit, society was facing serious and growing economic inequality. Formerly middle-class jobs have shifted downward, and many workers find themselves in lower-end, lower-paid service sector jobs. The COVID-19 upheaval has only accelerated these problems. With so many layoffs and furloughs, unemployment numbers are climbing.

At the same time, new and experienced workers alike need to up-skill to keep pace with the rise of new technologies in the workplace. Across all industries, digital literacy requirements are increasing rapidly, with new business models demanding employees become tech-fluent—from guiding customers through purchase decisions in retail, to understanding tools that can create more efficiency on manufacturing floors.

[READ THE COMPLETE STORY](#) 



MIT Horizon is a subscription content library designed to help large organizations educate their workforce on emerging technologies

**Educational innovation:**

Developing short-form, introductory educational content on emerging technologies like additive manufacturing, artificial intelligence, blockchain, robotics, and cybersecurity.

**Impact:**

In our first full year of operation, we added over 25 new organizations as customers and increased our learner license base to over 1 million working professionals. We also provided support for students & alumni within many MIT programs including MIT Solve, MITx MicroMasters programs and the MIT Innovation Initiative.

**Current work:**

Developing more content and new content formats, expanding commercial efforts and supporting current customers.

Horizon launched Horizon Plus, a collection of intermediate-level educational videos from MIT xPRO, and Expert Sessions which are short faculty/expert led virtual learning events.



MIT HORIZON



MIT LAUNCHES DIGITAL CONTENT LIBRARY FOR WORKFORCE LEARNING ON EMERGING TECHNOLOGIES

In the age of blockchains, 3D printing, CRISPR-Cas9 — and the inevitable new technologies that are yet to emerge — today's workforce is struggling to keep up with the latest developments. For large companies and executives, finding resources for workers to learn from that are current, reputable, and unbiased can be challenging.

To address this unmet need, MIT has assembled a team of writers, educators, and subject matter experts from both academia and industry to power the Institute's newest online learning offering — a digital content library designed to help organizations keep their workforces apprised of the latest developments in technology and science. Known as MIT Horizon, the platform contains bite-sized articles, videos, and podcasts on emerging technologies, with early topics including additive manufacturing, artificial intelligence, blockchain technology, and robotics.

[READ THE COMPLETE STORY](#) 



BECAUSE OF MY SCHEDULE, I COULDN'T HAVE JOINED A PROGRAM IF IT MEANT THAT I WOULD HAVE TO ATTEND CLASS. EVEN THOUGH I MOVED FROM ONE COUNTRY TO ANOTHER, I CAN STILL CONTINUE WITH THE MICROMASTERS PROGRAM, BECAUSE OF THE FLEXIBILITY OF THE PROGRAM. I CAN TAKE THE COURSES FROM ANYWHERE.

Maria, MITx MicroMasters credential earner

210M INDIVIDUALS

have accessed OCW since launch

10M TOTAL

MITx MOOC registrations

LEADERSHIP ACADEMY FOR SCIENTISTS, ENGINEERS, AND RESOURCES PROGRAM

was developed and piloted by xPRO

50K+ EMPLOYEES

at organizations and corporations have taken
MIT xPRO's learning programs

At the beginning of the COVID-19 pandemic,

HUNDREDS OF THOUSANDS OF LEARNERS

turned to MIT Open Learning educational
resources to support their academic and
lifelong learning goals.

242K

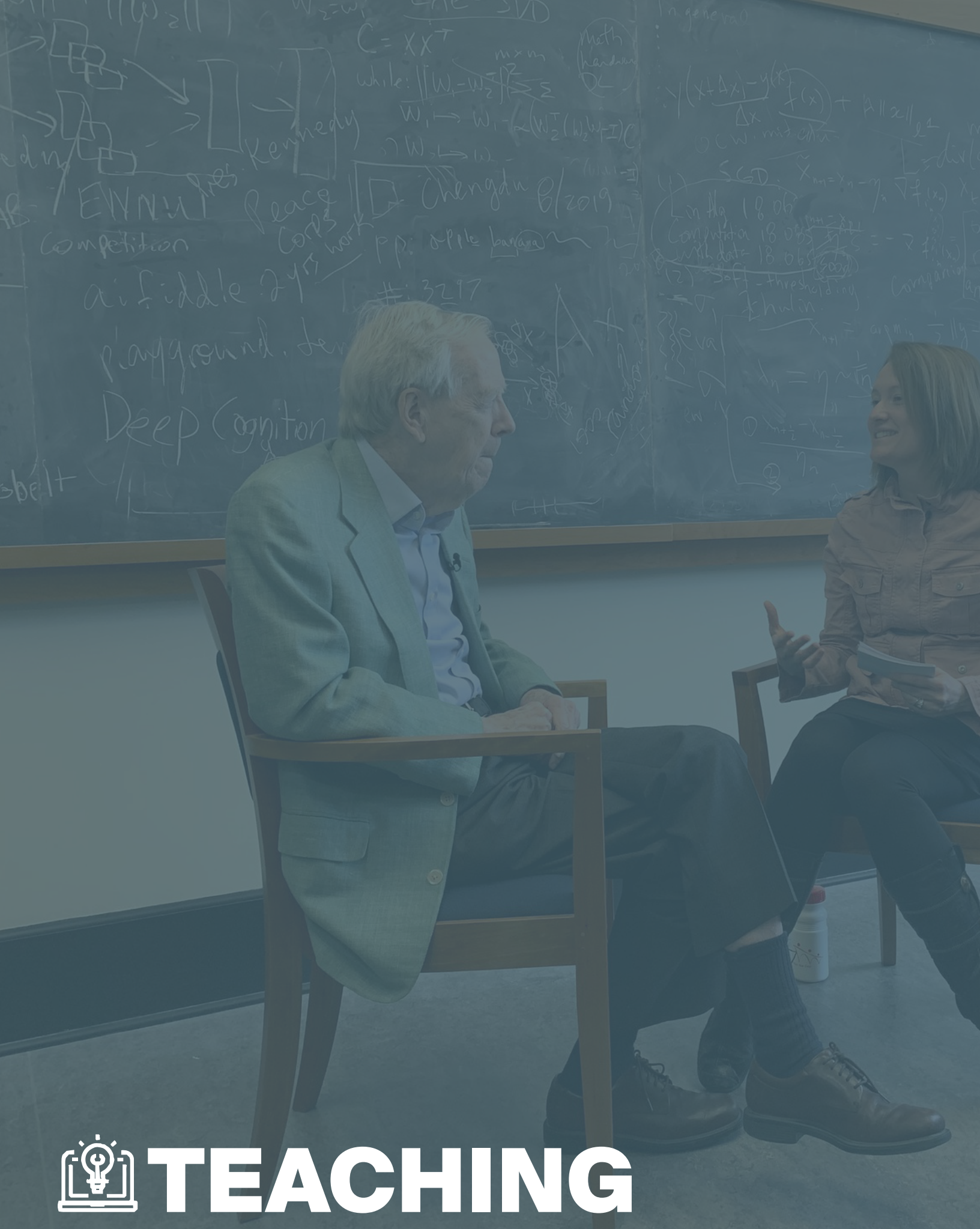
MITx certificates issued

25 ORGANIZATIONS

joined Horizon as customers

34 INSTRUCTORS AND 20 STAFF AND TEACHING ASSISTANTS

support the MITx MicroMasters Programs



TEACHING



MIT faculty are the backbone of our educational efforts. Open Learning has become the central resource on campus for MIT faculty who recognize the public good of sharing their teaching with the world or wish to enhance their teaching at MIT with digital technologies.



RESIDENTIAL EDUCATION

The Residential Education team empowers MIT faculty to use digital technologies to augment and transform how they teach. Efforts center around collaborating with MIT faculty to instigate, explore, test, and institutionalize pedagogical models that enhance on-campus education through the use of digital technology.



Educational innovation:

Using the Residential MITx online platform, the Canvas Course Management System, and a wide array of additional digital teaching, learning, and communications tools, MIT students and faculty benefit from a rich and full-featured remote learning environment, with rapid feedback on online assessments, active learning remote classrooms, flexibility in course delivery, and multiple opportunities for student-student engagement and faculty-student engagement.



Impact:

Residential staff worked closely with the Academic Continuity Working Group, MIT's Teaching & Learning Lab (TLL) and Information Systems & Technology group (IS&T) to support all Spring 2020 MIT classes in the emergency transition to remote teaching & learning. Two key websites, teachremote.mit.edu and open.mit.edu/c/teachremote, supported faculty with a flotilla of tools and resources. The Residential team led the MIT-wide transition from Stellar to the Canvas Learning Management System, in conjunction with colleagues in IS&T. In addition, they created and supported course sites for the Residential MITx platform, automatic lecture capture, video storage, user-editing for videos, and special-use lightboard rooms.



Current work:

Residential's outreach strategy includes a curated collection of best practices in remote teaching, a digital learning speaker series, and several institute wide events. Residential Education team's recent [white paper](#) outlines an agile and effective response to remote learning. Other publications include a research-based treatise on the [Science of Remote Learning](#) and [best practices](#) in the discipline.

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**IN A YEAR OF SUDDEN,
UNANTICIPATED TRANSITION,
RESIDENTIAL EDUCATION
HAS PLAYED A CRITICAL
ROLE IN BOTH LEADERSHIP
AND FACULTY SUPPORT IN
THE ACCELERATED AND
COMPREHENSIVE MIGRATION
TO AN ONLINE ACADEMIC
ENVIRONMENT.**

Sheryl Barnes, Director, Digital Learning in Residential Education



ROLLING OUT REMOTE LEARNING

Moving some 1,200 MIT subjects to a remote teaching and learning model, launched today, has been less like flipping a switch and more like building the switch itself — with whatever was on hand. In short, it's a very MIT kind of problem.

In late February, before the coronavirus altered daily life and work in the U.S., Meghan Perdue, a digital learning lab fellow in Open Learning and an instructor in the School of Humanities, Arts and Social Sciences, noticed some rumblings on the horizon: Universities in Asia were switching to teaching online as the virus took hold there. She shared her concerns with Krishna Rajagopal, dean for digital learning, who, in turn, looped in Ian A. Waitz, vice chancellor for undergraduate and graduate education, and Sheryl Barnes, director of residential education in Open Learning. They began thinking, hypothetically, of how MIT could address such a challenging situation. With the help of other digital learning lab fellows across MIT, they began planning in earnest, designing online learning workshops and developing best practices.

[READ THE COMPLETE STORY](#) 

OCW EDUCATOR

OCW Educator shares MIT teaching approaches and helps education professionals navigate the vast library of open educational resources available through MIT OpenCourseWare.



Educational innovation:

Articulating and sharing the educational ideas, practices, and pedagogical experiences of MIT faculty and enhancing users' ability to take best advantage of course materials on OCW by helping them understand the context and manner in which the materials are used here on campus.



Impact:

Educator resources have been viewed over 1.1 million times. The Educator portal has an average of 500 visits per day, with the most active users in India and the United States. Professors have told us they are reusing and remixing materials from OCW to enhance learning experiences of undergraduate students.



Current work:

Producing Chalk Radio, an OCW podcast featuring MIT faculty who have published on OCW. The podcast helps educators and learners experience the “buzz” of connecting with MIT faculty, and encourages listeners to access OCW content.

“The lecturers blast you with theory, fill blackboards with information, and it’s up to the students to figure it out. And the professors aren’t always that accessible, either in terms of being available to answer students’ questions, or in terms of the way that they present the material. They explain it the way they know it, and it makes sense to them, but it doesn’t necessarily make sense to today’s students. The current folks in the nuclear department there recognize this. Mongolia has classically been a powerhouse of nuclear science and theory, and they want to hold on to that. But they know they want to change, though they don’t exactly know how to do it.”

Professor Michael Short



Photo courtesy of notthatdark on Flickr. License: CC BY-NC-SA.

PROFESSOR MICHAEL SHORT TRAVELS FROM MIT TO CENTRAL ASIA—AND FINDS THAT OCW IS ALREADY THERE

In early June of this year, Professor Michael Short returned from a trip to Mongolia sponsored by the International Atomic Energy Agency. His mission? To work with the National University of Mongolia to assess and improve its nuclear education curriculum. The university has a small nuclear science sub-department within its School of Engineering, and the administrators there are eager to update the nuclear science program.

When he got to Mongolia, Professor Short learned that the country's educational system has a strong emphasis on theory, a legacy of its Soviet past.

[READ THE COMPLETE STORY](#)



MIT DIGITAL LEARNING LAB

The MITx Digital Learning Lab is a joint program between MIT Open Learning and MIT's academic departments. Their goal is to learn, collaborate, and innovate with digital learning on campus and beyond. The Lab is composed of Digital Learning Scientists and Digital Learning Fellows who play a critical role in advancing digital learning initiatives across MIT.



Educational innovation:

The model of the Digital Learning Lab, embedding subject matter experts with expertise in digital learning who can collaborate with faculty within the departments, is helping to expand the use of technology in teaching and learning at MIT and for the world. We aim to help develop a new pathway for “learning engineers.”



Impact:

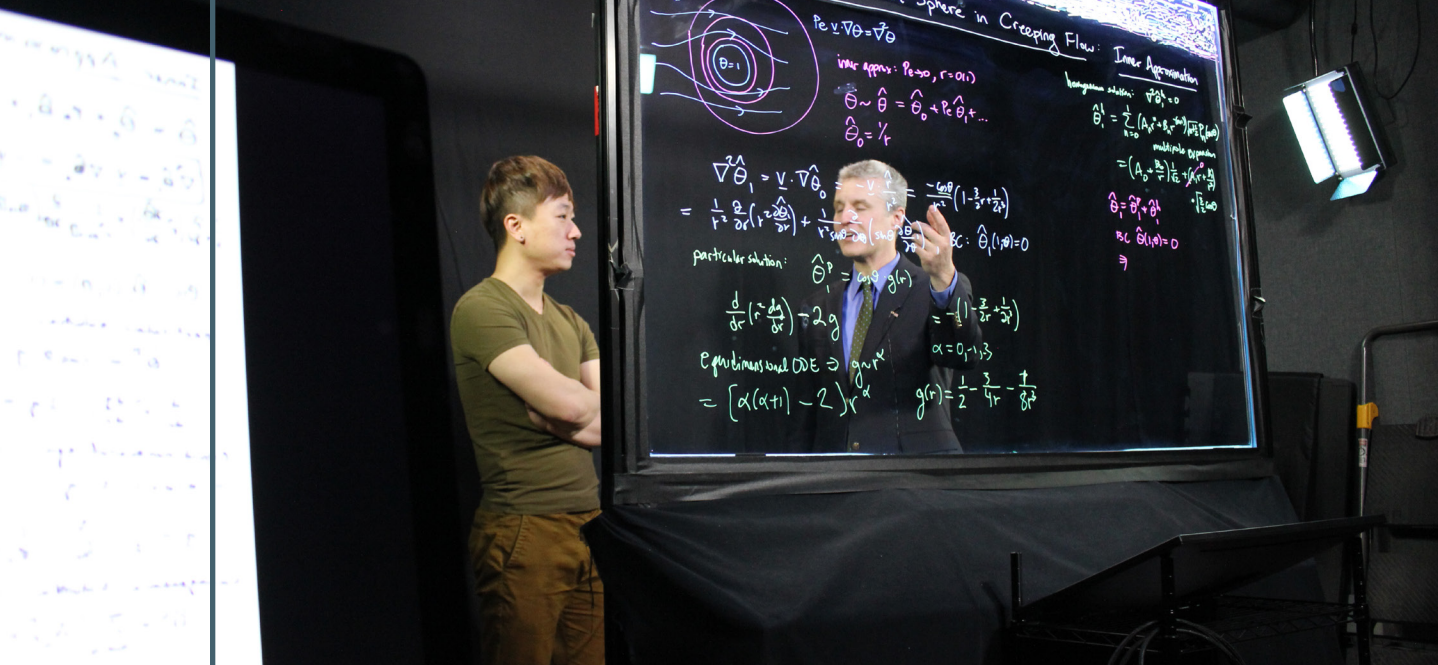
Expand the production pipeline of MIT MOOCs for learners around the world. Improve MIT on-campus teaching and learning through new educational technologies and pedagogies.



Current work:

The Digital Learning Lab is developing 8 new modules and rerunning nearly 70 more existing modules, across 15 different departments in the 2019-2020 academic year, as well as continuing to grow their community of practice and research efforts in teaching and learning with technology.

The afternoon the decision to go remote was being finalized, Meghan Perdue, the DLL fellow for the School of the Humanities, Arts, and Social Sciences (SHASS), developed a two-hour crash course to help faculty shift their classes online. She then led 15 workshops to SHASS departments in eight days, followed by a week of several small-group training sessions per day. She also shared her materials with DLL fellows elsewhere on campus so they could offer similar workshops.



ADVANCING DIGITAL LEARNING STRATEGIES

A joint program between MIT Open Learning and MIT's academic departments, the MITx Digital Learning Lab continues to work collaboratively with MIT faculty to enhance their pedagogy with the latest digital teaching and learning theories and technologies.

The value of a robust Digital Learning Lab was never more pronounced than in recent months as the effects of Covid-19 forced MIT to transition from in-person teaching to a remote experience for the remainder of the semester. Drawing on their expertise, the Digital Learning Lab fellows and scientists worked closely with faculty in their departments to help meet the unprecedented needs during the pandemic—creating tutorials and workshops on how to shift to teaching online as well as hosting open discussion on best practices and tools.

They developed a public website for the MIT community to share resources for teaching remotely, and are also part of the teams facilitating the transition to the new Institute-wide learning management system.

MIT BOOTCAMPS

MIT Bootcamps teach innovators and entrepreneurs worldwide a rigorous and systematic way to identify and solve important problems to create and deliver value. Our curriculum draws on research and expertise across MIT and we connect learners from diverse professional and educational backgrounds globally through a combination of online and in-person programs.



Educational innovation:

A blended-learning program, Bootcampers successfully complete online modules and apply for a selective and immersive program, now online. Program topics include entrepreneurship, healthcare innovation, technology innovation, and venture scaling.



Impact:

More than 4,300 learners from 100+ countries have completed a Bootcamps program. Students have gone on to create more than two hundred ventures that have raised more than \$70 million worldwide. Many Bootcampers continue to remain connected to MIT; 10 have been accepted to degree programs, three have been part of the Martin Trust Center's delta V accelerator, and dozens have participated in the recent COVID-19 Challenges.



Current work:

MIT Bootcamps have successfully transitioned from in-person to virtual Bootcamps, maintaining the immersive and intensive experience in the virtual delivery. In fall of 2020, Bootcamps is offering two programs: Innovation Leadership and Healthcare Innovation in partnership with Harvard Medical School. In 2021, MIT Bootcamps will continue to offer existing and new online Bootcamps.

"If you come into it with a sense of purpose or desire for impact and you know perhaps where you want to channel it the bootcamp will really help you unleash that."

Arthur Nelson



USING HEALTHCARE DATA FOR GOOD

During his E-Seminar, Ricky Sahu (Coder, Data Scientist, Problem Solver) shares his insights on how to wield data to build a successful business. In his case, how he tapped into electronic health data to build the company he co-founded, 1upHealth.

Ricky was the first employee and Director of Engineering at the D.C. based health tech startup CareJourney which analyzes claims data and publishes APIs for Accountable Care Organizations to improve care and reduce costs. In 2017, Ricky co-founded 1upHealth where his company aims to bridge the gap between patient centered data and provider needs. By using patient-generated data, 1upHealth enables applications to improve healthcare outcomes and reduce costs. Ricky's vast experience spans machine learning, building scalable technology, circuit design for IoT Wifi based location sensors, blockchain smart contracts, and healthcare.

[WATCH THE WHOLE SEMINAR](#)





MIT REFUGEE ACTION HUB (ReACT)

ReACT combines MIT's educational strengths — classroom instruction, online learning, and practical experience — to deliver contextualized learning and provide enriching pathways for talented and motivated refugees and internally displaced persons around the world.



Educational innovation:

Designed specifically for the needs of refugees and other displaced persons to continue their education and career pathways, ReACT's blended programs combine online learning with practical employment experience.



Impact:

In the program's inaugural class, 95% of the refugee students in the Computer and Data Science Certificate Program graduated, 75% of newly employed students attributed their new employment opportunity to ReACT, and more than three-fourths of all the students are now considering entrepreneurship or a start-up as a career option.



Current work:

ReACT is running its 3rd cohort of the Certificate in Computer and Data Science, moving the program entirely online to expand ReACT to a global cohort, recruiting students from around the world. ReACT is cultivating relationships with on-the-ground partners in a number of regions (Colombia, Uganda, Jordan, Lebanon and New York City) as the program looks to create refugee learning ecosystems that enable the ReACT education to employment model to scale globally.



THROUGH REACT, REFUGEE LEARNERS BECOME “CEOS OF THEIR OWN LIVES”

For graduates of the MIT Refugee Action Hub’s (ReACT) computer and data science (CDS) certificate program, commencement means more than the completion of courses, workshops, and internships — it establishes the students as pioneers of a new, empowering educational model.

During a virtual commencement ceremony that streamed live on Jan. 28, 2020, Vice President for Open Learning Sanjay Sarma addressed the graduates as “the CEOs of [their] own lives,” highlighting their initiative and determination to overcome the challenges that communities in crisis face in accessing educational and professional opportunities.

[READ THE COMPLETE STORY](#) 

“

AT THE MOMENT, I AM PREPARING MY APPLICATION MATERIALS FOR FACULTY JOBS IN BOTH THE UK AND THE USA. IN MY TEACHING STATEMENT I DESCRIBE MY TEACHING ACTIVITIES AT MIT [...] I PLAN TO HIGHLIGHT THE FACT THAT I CONTRIBUTED TO THE COURSE'S PUBLICATION ON OCW AND ITS INSTRUCTOR INSIGHTS FEATURE AS PARTICULAR EVIDENCE OF MY TEACHING EXPERIENCE, ABILITY AND ENTHUSIASM

MIT Instructor

90 CASES

of innovative teaching practices at MIT

200 VENTURES

created from MIT Bootcamps alumni

7 DIGITAL LEARNING LAB SCIENTISTS AND FELLOWS (DLLS)

presented their work in 5 national and international conferences

DLLs utilized their expertise in digital learning to

RAPIDLY DEVELOP TRAININGS AND RESOURCES

to support faculty and instructors, running dozens of workshops and helping hundreds of faculty and instructors teaching remotely for the first time.

1,251 MIT COURSES

transitioned to remote delivery or hybrid/flex models

54 LEARNERS

have completed the ReACT Certificate in Computer and Data Science

Chalk Radio podcast has been downloaded **OVER 113K TIMES**

on podcast platforms and played **OVER 130K TIMES** on YouTube



RESEARCH AND ENGAGEMENT

A cluster of overlapping squares in various shades of red, grey, and white, arranged in a non-uniform pattern in the top right corner of the page.

Advancing fundamental and evidence-based research on the science of learning and education informs and guides our digital and residential learning efforts on campus and beyond. We translate and incorporate these findings into our teaching and learning tools and practices to ultimately prepare learners of all ages for future-ready skills and share such insights with a global community of educators, researchers, and policy makers.



MIT CENTER FOR ADVANCED VIRTUALITY

The MIT Center for Advanced Virtuality (MIT Virtuality for short) pioneers innovative experiences using technologies of virtuality — computing systems that construct imaginative experiences atop our physical world. Our approach to engineering and creative practices pushes the expressive potential of technologies of virtuality and simulates social and cognitive phenomena, while intrinsically considering their educational, social, and cultural impacts. MIT Virtuality supports both creative projects and research endeavors through its four components — the studio, laboratory, salon, and hub. The Center for Advanced Virtuality is led by Professor D. Fox Harrell, with several affiliate faculty and graduate students.



Educational innovation:

The Center explores the vast potential of virtual and augmented reality and other immersive media technologies to impact teaching, learning, and storytelling.



Impact:

The Center is enhancing our capacity to assess the learning, social, and cognitive impacts of technologies of virtuality. The leadership of the center's director Professor D. Fox Harrell, who brings his cross-disciplinary expertise in computer science, AI, and the arts, is positioning MIT as the premiere academic creator of expressive virtuality experiences for social impact.



Current work:

MIT Virtuality is focused on advancing the state of the art for virtuality research and development with a cutting-edge humanistic ethos that considers the social and ethical impacts of technologies as we invent them.



EXPLORING HIP HOP HISTORY WITH ART AND TECHNOLOGY

The Universal Hip Hop Museum (UHHM), coming to New York City in 2023, is the first of its kind to provide distinctive educational and entertainment experiences to preserve the history of local and global Hip Hop culture. As just one example of their cutting-edge work in learning, computer science, and art, the MIT Center for Advanced Virtuality spearheaded the creation of the “[R] Evolution of Hip Hop Breakbeat Narrative Experience” exhibit, a web application for kiosk deployment that is the centerpiece interactive installation at the UHHM’s current exhibition space.

With “The [R]evolution of Hip Hop Breakbeat Narratives,” a team led by D. Fox Harrell, professor of digital media and artificial intelligence and director of the MIT Center for Advanced Virtuality, has created an art installation that takes museum-goers on an interactive, personalized story of Hip Hop history. The exhibit’s narrative system is personalized by categorizing users based on evaluating their input data light of a social psychology-based model based of “musical identity.”

[READ THE COMPLETE STORY](#)





MIT PLAYFUL JOURNEY LAB

The MIT Playful Journey Lab uses emerging technologies and a playful assessment approach to support the development of future-ready skills and explore frontiers in lifelong, lifewide learning.



Educational innovation:

The Lab is at the forefront of design and use of innovative approaches to embedded assessments in learning, developing technologies and tools that validate the skills expressed in playful exploration and creativity that are not captured in standardized tests and traditional forms of assessment.



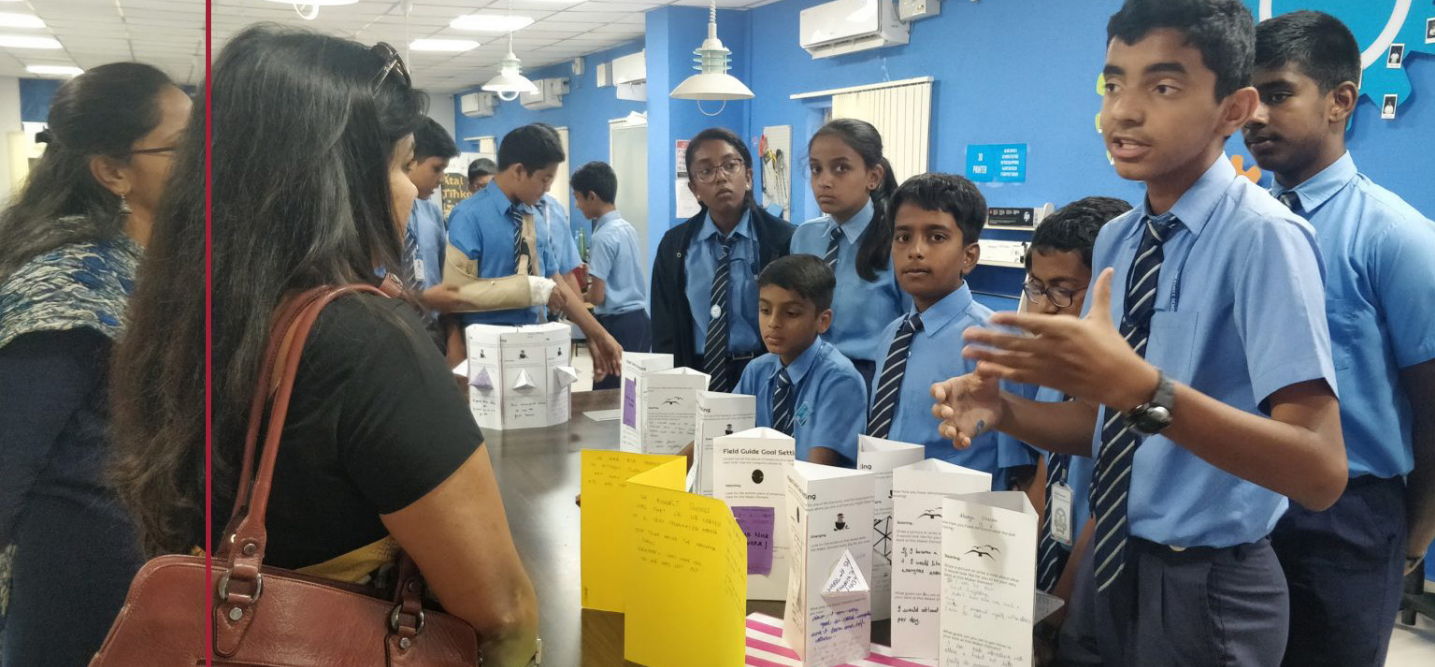
Impact:

By building future-ready skills such as self-reflection, collaboration, and creative problem-solving, the Lab empowers young learners to have increased agency over their own education, and not only cope with the influence of technology-driven change and the impact of globalization, but play an active role in shaping the future of work and life.



Current work:

Current projects include creating embedded assessment toolkits for maker educators and teachers, developing and testing game-based assessment models for math classes, and working with the MIT Integrated Learning Initiative to map out the role of assessment within the emerging field of learning engineering.



A SHOWCASE OF THOUGHTS

The playful India team finished piloting the implementation and contextualisation of the embedded assessment toolkit, Beyond Rubrics, in a school-based makerspace in Bangalore. Even after three months of going in circles over our thoughts and meticulously designing each and every session and activity for the learners, when we thought of wrapping up the program for the students through a showcase, I was a little anxious. What we had created through this program was a mindset and NOT a product to display, isn't a showcase supposed to be for tangible items?

There was newness this time, we organized a showcase of thoughts, of reflections, of the spirit of teamwork, of the grit to go ahead despite multiple failures and a celebration of mutually uplifting within teams.

[READ THE COMPLETE STORY](#)



MIT INTEGRATED LEARNING INITIATIVE (MITili)

MITili is an interdisciplinary research initiative that works to fund, connect, and disseminate research on the science of learning, learning best practices, and learning effectiveness.



Educational innovation:

MITili's efforts support scientific, evidence-based research on learning, from the underlying science of neurons to the impact of education policies on nations, to deepen our understanding of how people learn and how they can learn better.



Impact:

MITili has awarded nearly \$1.5M in research grants to MIT faculty over the past three years.



Current work:

Current MITili research projects are examining the impact of integration policies in New York City Public Schools, improving learning effectiveness by understanding instructional differences in learning among VR and traditional instruction, and evaluating the effectiveness of real-time biofeedback to monitor and improve ability to sustain attention. MITili is also part of the collaboration Reach Every Reader with the Harvard Graduate School of Education (HGSE) and Florida State University, which is a literacy project created to build simple, effective solutions to ensure every student can unlock the wonder of words and stories.

"Our research provides the first evidence that family conversation at home is associated with brain development in children. It's almost magical how parental conversation appears to influence the biological growth of the brain."

John Gabrieli, Director of MITili and the Grover M. Hermann Professor in Health Sciences and Technology



TWO STUDIES REVEAL BENEFITS OF MINDFULNESS FOR MIDDLE SCHOOL STUDENTS

Two new studies from MIT suggest that mindfulness — the practice of focusing one’s awareness on the present moment — can enhance academic performance and mental health in middle schoolers. The researchers found that more mindfulness correlates with better academic performance, fewer suspensions from school, and less stress.

“By definition, mindfulness is the ability to focus attention on the present moment, as opposed to being distracted by external things or internal thoughts. If you’re focused on the teacher in front of you, or the homework in front of you, that should be good for learning,” says John Gabrieli, the Grover M. Hermann Professor in Health Sciences and Technology, a professor of brain and cognitive sciences, and a member of MIT’s McGovern Institute for Brain Research.

[READ THE COMPLETE STORY](#) 



ABDUL LATIF JAMEEL WORLD EDUCATION LAB (J-WEL)

An initiative of MIT and Community Jameel, J-WEL works with its global member organizations to promote excellence and transformation in education at MIT and worldwide.



Educational innovation:

J-WEL member organizations work with MIT faculty, students and staff through online and in-person collaborations, workshops, research, and other engagements to address global opportunities for scalable change in education.



Impact:

J-WEL pK-12 is reinventing pre-school, elementary, middle, and high school education to develop communities of the future thinkers and doers of the planet by engaging growing numbers of diverse learners and educators through design, research and implementation of educational innovations.

J-WEL Higher Education works with global colleagues in a high-impact, outcome-driven way, towards the three A's of higher education: Access, Affordability, and Achievement.

J-WEL Workforce Learning, its members and other cooperating institutions are rethinking the process of workforce learning to best provide the right skills to the right people at the right time, at scale.



Current work:

J-WEL is working to address today's pressing educational challenges in local contexts through projects like Transforming Refugee Education towards Excellence (TREE) which supports teacher capacity and wellbeing in Jordan, and using MITx online courses to develop data science capacity in Uruguay through a collaboration with the CoLAB Alliance.

“

**WE'RE TRYING TO ADDRESS THE
HARD PROBLEMS OF
EDUCATIONAL TRANSFORMATION
FOR EQUITY AND QUALITY –
HOW YOU INITIATE CHANGE,
SHARE RESOURCES, GENERATE
AND MAINTAIN LEARNING
COMMUNITIES, CREATE
PROCESSES TO SCALE AND
SUSTAIN IMPACT– THROUGH
INNOVATIVE SOLUTIONS
THAT LEVERAGE TECHNOLOGY,
THE SCIENCE OF LEARNING,
PEDAGOGICAL PRACTICE, AND
RESEARCH.**

M. S. Vijay Kumar, Executive Director, J-WEL, MIT Associate Dean for Open Learning



CLOSING THE GAP BETWEEN WORKERS' SKILLS AND EMPLOYERS' NEEDS

In a small conference room, three women sit down to tackle a global problem: the growing gap between the skills that employers say they need and the skills that job candidates actually possess.

The scenario is simulated, part of a hackathon held during the fall convening of MIT's Abdul Latif Jameel World Education Lab (J-WEL), but the problem the women are confronting is real, and one that many of the organization's members are tackling through research and educational reform.

The global skills gap manifests in many ways, from a shortage of workers with specific technical skills, to a lack of candidates with the "soft skills" — what J-WEL refers to as "human skills" — employers are demanding, such as creativity and persistence. The root of the problem, however, is universal: "Workers don't know what skills they need, educators don't know what skills to educate for, and employers don't know what skills workers have," as Bill Bonvillian, director of a research project on workforce education at MIT Open Learning, said at the event.

[READ THE COMPLETE STORY](#) 



MIT pK-12 ACTION GROUP

MIT Open Learning supports a number of pK-12 efforts, as the home of the pK-12 Action Group, whose mission is to bring MIT's unique "mind and hand" learning approach beyond campus to pre-Kindergarten through grade 12 (pK-12) learners and teachers around the world.



Educational innovation:

Extending MIT's educational resources to both pK-12 schools and informal learning environments with a focus on project-based learning, STEAM curriculum, teacher education, and computational thinking.



Impact:

The pK-12 Action Group provides visibility and funding to the larger pK-12 ecosystem across MIT, which comprises over 120 programs that bring learning opportunities to kids, teachers and schools. Members of MIT's pK-12 community helped create MIT Full STEAM Ahead, which is a collection of resources for teaching and learning online. This website was a rapid response to the need for online resources during the COVID-19 pandemic. The site also offers curated resources for K-12, higher education, and workforce learners.



Current work:

Open Learning is embarking on an ambitious new effort to reinvent middle school education through the development of new curriculum, pedagogy, and tools to serve middle school educators and school systems. We are also launching a volunteer and engagement program for alumni to better leverage the passion and energy of MIT alumni to transform pK-12 education in their local and global communities.



MIT FULL STEAM AHEAD OFFERS SCALABLE, HANDS-ON REMOTE LEARNING FOR K-12

When we picture hands-on learning, usually a computer screen is nowhere in sight. But for the team behind MIT Full STEAM Ahead, “hands-on remote learning” may become the great new frontier for delivering quality K-12 online learning at scale.

Full STEAM Ahead began as an online resource hub to provide robust curated content to K-12 students, teachers, and parents during the first surge of the Covid-19 pandemic, when schools around the world started to shut down in rapid succession. With support from the Abdul Latif Jameel World Education Lab (J-WEL) and a monumental effort of coordination, the hub has grown into a vibrant learning community. Six months, 10 custom-created interactive learning packages, and two highly successful online summer programs later, the Full STEAM team has a lot to share about what makes engaging, effective remote learning experiences. Spoiler alert: it’s not high-tech gadgetry.

[READ THE COMPLETE STORY](#)





MIT VIDEO PRODUCTIONS (MVP)

MIT Video Productions offers Emmy® Award-winning media production and publication services to the MIT community in support of education, research, and outreach.



Educational innovation:

As a supporting unit of the Office of Digital Learning, MVP's experienced team works with academic programs, departments, and Institute initiatives to communicate and share our collective work to reach desired audiences—including alumni, students and faculty, and the greater global community—in a way that is accessible and shareable.



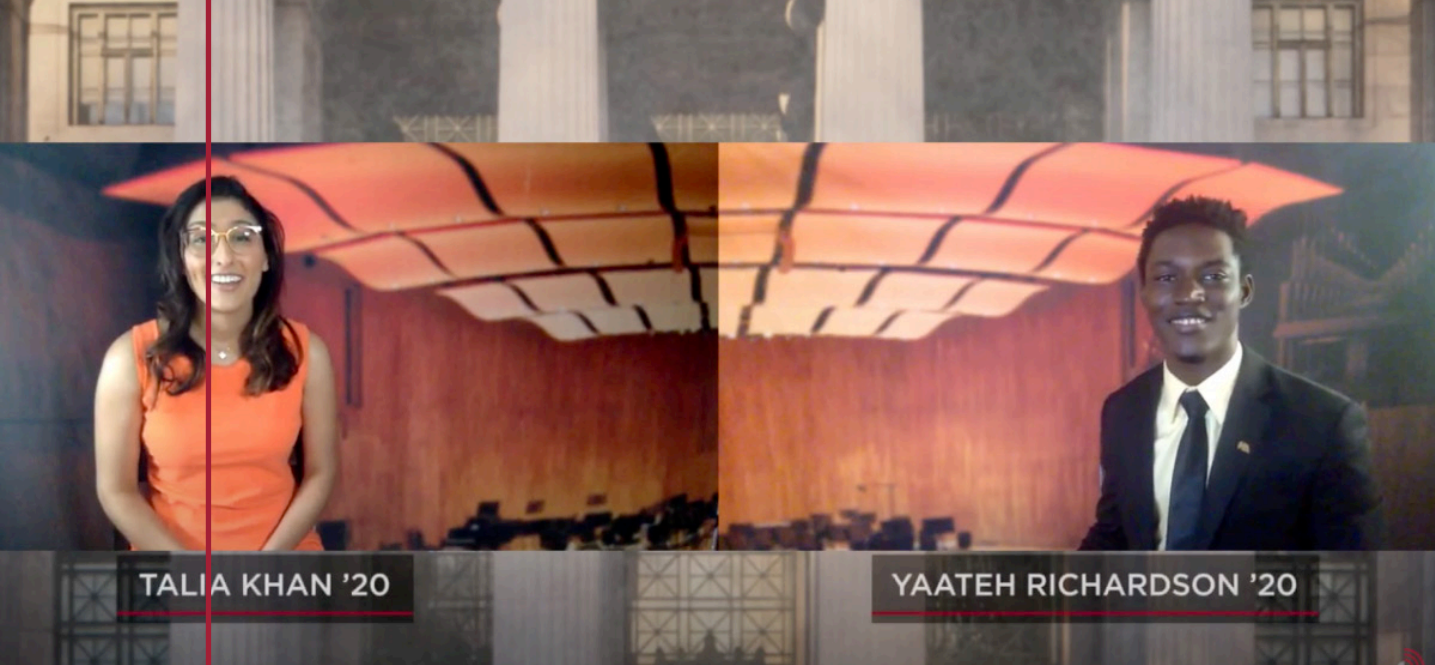
Impact:

MVP provides video production, post-production, and streaming services to over 120 Departments, Labs, and Centers across the MIT community every year. Providing support to teaching and learning, marketing, and the stories that make MIT a dynamic and exciting place of discovery. Through these services MVP provides a window into the MIT campus with over 212 livestreams with 674,000 views each year, with much of this content being seen through various MIT websites and MIT's social media feeds.



Current work:

The team pivoted to provide virtualized and online services including capture for remote instruction, support ongoing Institute wide town halls, and services for virtualized events, conferences, and symposia. MVP partnered across various Open Learning units particularly OCW, MITx, MIT xPRO, and MIT Bootcamps. They also created and produced the Emmy nominated documentary "The Great Clarinet Summit" and the long form documentary on the rise of Kendall Square biotech industry "From Controversy to Cure: Inside the Cambridge Biotech Boom."



HACKING COMMENCEMENT

In the finest MIT tradition of community-driven innovation, the Commencement Committee and a core group of engineers, technologists, and artists across campus are putting minds and hands to work to create a meaningful, engaging online Commencement experience for the Class of 2020.

Moving the tradition-rich celebration online without diminishing its significance, and with less than two months to plan, is a complex problem. The organizing team knew from the outset that the challenge would be to achieve the key moments of the Commencement ceremony in an online environment, without trying to recreate the in-person experience. Professor Eric Grimson, chancellor for academic advancement and chair of the Commencement Committee, says, “We are in a fortunate position to adapt to this year’s circumstances. Running Commencement the normal way is a logistical tour de force, involving hundreds of people, many of whom work all year to make it happen. Moving it online was a different kind of coordination, but thanks to the knowledge embedded in the team, it didn’t feel like starting from scratch.”

[READ THE COMPLETE STORY](#) 



ENGINEERING AND TECHNICAL OPERATIONS

The Engineering and Technical Operations provides sustainable and scalable technology solutions that create the highest impact on Open Learning's core mission.



Educational innovation:

We partner with Open Learning Teams like OCW, MicroMasters and xPRO. Recent innovations include supporting the pivot to remote learning undertaken by Residential MITx and Bootcamps.



Impact:

With the move to remote learning, 100% of MIT students (and more!) use the Residential MITx platform that Engineering supports and maintains. Our systems and web sites deliver learning that lead to thousands of certificates from MicroMasters and MIT xPRO. And we have maintained and streamlined the MIT OpenCourseWare web site, while starting work on it's next generation successor.



Current work:

Launch new Bootcamps application site and online bootcamp experience. Partnering with OCW on designing and developing the next generation web site. Expanding MIT Digital Certificates Project to global scale with the MITx MicroMasters Program.

108K SUBSCRIBERS

to the Teach Remote channel on MIT Open

Open Learning Engineering developed a new marketing and admissions platform to support this transition to

FULLY VIRTUAL BOOTCAMPS

29 MEMBER ORGANIZATIONS

to the Abdul Latif Jameel World Education Lab

1M PEOPLE have watched the Center for Advanced Virtuality's film, "In Event of Moon Disaster"

2,400 VIDEOS UPLOADED

to the Open Learning Video service web site this spring, a

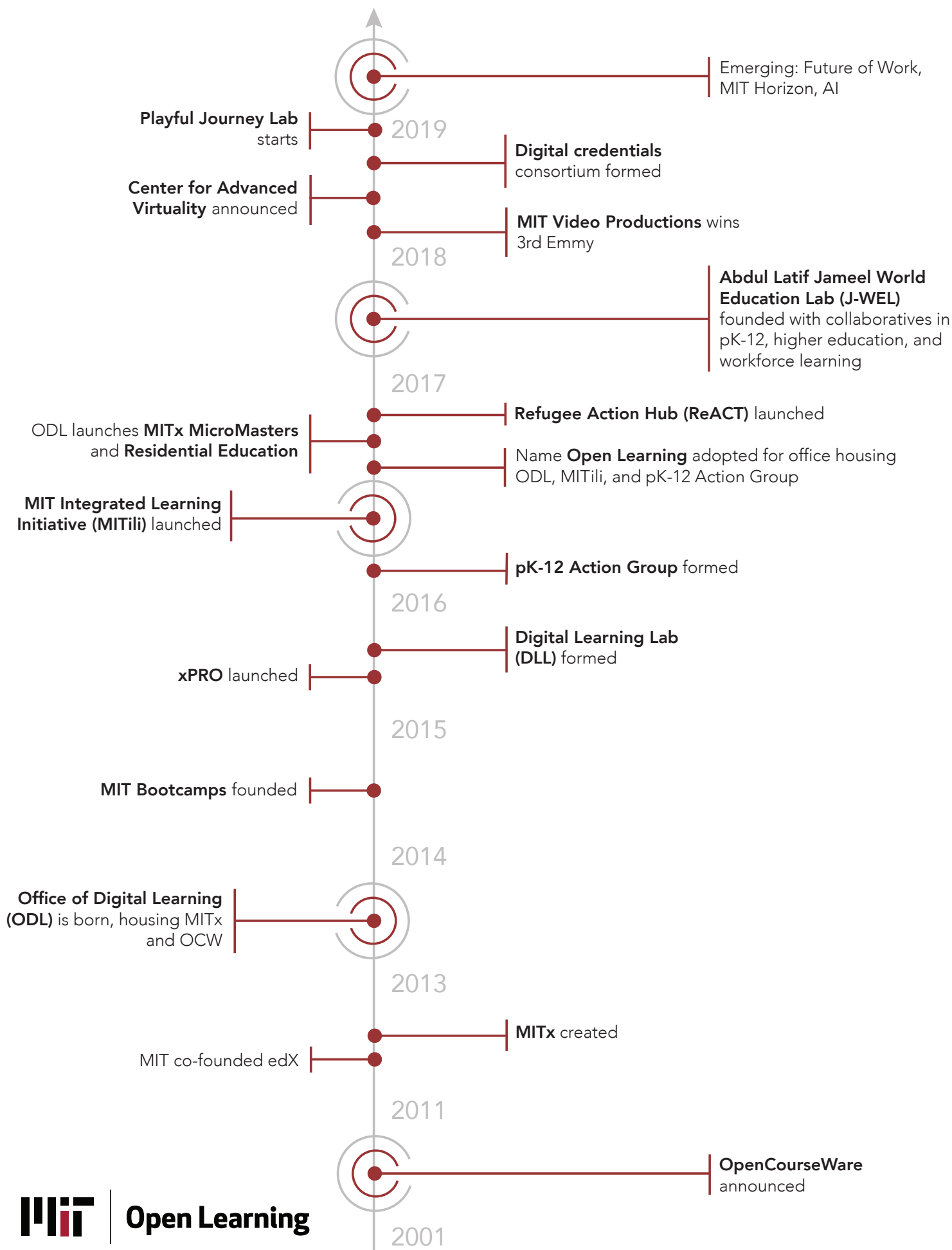
40% INCREASE
over Fall 2019

10K EXHIBIT VISITORS

to the Hip Hop Museum

1,000 UNIQUE DOWNLOADS

of the Playful Journey Lab's assessment tools



Open Learning leads MIT's
commitment to reimagine education
in a changing world and equip
learners and educators with the
skills and knowledge to create a
better future.

MIT Open Learning is....

...MIT Abdul Latif Jameel World Education Lab (J-WEL)

...MIT Center for Advanced Virtuality

...MIT Bootcamps

...MIT Horizon

...MIT Integrated Learning Initiative (MITili)

...MIT OpenCourseWare (OCW)

...MIT Open Learning Engineering and Technical Operations

...MIT pK-12 Action Group

...MIT Playful Journey Lab

...MIT Refugee Action Hub (ReACT)

...MIT Video Productions (MVP)

...MITx

...MITx MicroMasters Programs

...MIT xPRO

...MITx Digital Learning Lab

...Residential Education

...the future of teaching and learning.

