Section 8
Service to Local and World Communities

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Service to Local and World Communities

Founded with the mission of advancing knowledge to serve the nation and the world, MIT has been strongly committed to public service from its start. While MIT faculty, students, and staff regularly engage in conventional projects such as raising money for hurricane victims, renovating old housing, or restoring local nature reserves, MIT’s scientific and technological orientation gives much of its public service outreach a particular emphasis. Many of its public service programs are specifically devoted to inventing new technologies and applying new knowledge that will advance social well-being.

Priscilla King Gray Public Service Center

The Priscilla King Gray Public Service Center (PKG Center) helps MIT achieve its mission of working wisely, creatively, and effectively for the betterment of humankind. PKG Center programs provide encouragement, advice, logistical support, and funding to help students engage in meaningful and effective public service projects, working with communities in the greater Boston area, throughout the United States, and around the world.

The PKG Center goal is to enrich the MIT education for students through hands-on, real-world opportunities that complement the innovative culture of MIT. PKG Center programs (described below) are designed to help students apply classroom learning, develop new skills, and understand the complexities of resolving community challenges.

Public Service Fellowships Program

MIT students tackle a great variety of human and environmental challenges in communities around the world through this program. Participating students build their skills and reflect on their experiences to enhance classroom learning. Students can work individually or as part of a team on projects during IAP, summer, and the academic year. Fellows tackle some of the most pressing issues in the U.S. and abroad, working in sectors such as agriculture, water and sanitation, climate change, community development, assistive technology, education, environmental sustainability, food and agriculture, health and health technology, technology dissemination, and urban planning.

IDEAS Global Challenge

Through this annual innovation and social entrepreneurship competition, students form teams to work with a community partner to design and implement innovative projects that improve the quality of life in communities around the world. Teams work in many sectors, including energy, mobile technology, health and medical devices, water and sanitation, education, and agriculture.

ReachOut Tim Tutors

The ReachOut Tim Tutors program recruits, trains, and matches MIT students, faculty, staff, spouses, and partners with children at a local community center to engage and challenge them with reading and math activities. The program currently partners with three local community centers. In addition, ReachOut Tim Tutors is a Federal Work-Study eligible program. Students who are eligible for Federal Work-Study as part of their financial aid package can be paid for providing this valuable community service.

http://web.mit.edu/mitpsc/
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Community Service Work-Study
This program enables MIT students to give back to the community while earning a paycheck during the semester, summer, or winter break. Students who qualify for Federal Work-Study are able to add to their work experience while assisting nonprofit organizations with finding creative solutions to the problems they face. For instance, Work-Study students might help staff a local homeless shelter, create communication materials for a lead-poisoning prevention program, serve as advocates for low-income clients, or tutor Boston high school athletes. Through a partnership between Community Service Work-Study and the Externship program, four students traveled to Los Angeles this past winter to design material for a STEM program with the i.am.angel Foundation.

CityDays
CityDays is a series of one-day volunteer opportunities for all members of the MIT community. All students, faculty, and staff are encouraged to engage with the Cambridge and greater Boston community by devoting a few hours to volunteer with CityDays throughout the year. In conjunction with MIT’s mission, the CityDays campaign aims to work for the “betterment of humankind” by connecting those who are a part of the MIT community with local organizations who need volunteers.

Four Weeks for America
This program enables MIT students to spend IAP working with Teach for America teachers on science and math projects in classrooms in small rural areas or big inner cities while learning about educational change and policy. Participating students might develop hands-on science curriculum, perform data analysis of classroom performance, or research tools that improve learning.

Alternative Spring Break
ASB enables MIT students to spend spring break participating in service in our local region. The PKG Center typically arranges week-long group experiences with community agencies in Greater Boston and New Jersey. Students combine hands-on service activities with learning about local issues and exploring societal challenges. We also offer grants to service groups who plan their own alternative spring break trips combining service and reflection.

LEAP Grants
Learn, Explore, Act, & Prepare (LEAP) Grants provide MIT students with funding to carry out a service project, volunteer day, or philanthropy event in the United States. LEAP grants also help students learn about service and social responsibility or build their skills to tackle a community challenge.

Freshman Urban Program
Through this week-long freshman pre-orientation program, incoming MIT students can help others while exploring their new neighborhood, learning about community challenges, and making friends. FUP participants volunteer with local agencies such as the Charles River Conservancy and Bridge over Troubled Waters and explore how issues like hunger and homelessness affect our community.

Office of Government and Community Relations
Since its founding, MIT has maintained a commitment to serving the local community as both a resource for education and technology and as a good neighbor. Through the Office of Government and Community Relations (OGCR), MIT works collaboratively with dozens of Cambridge nonprofits that address local challenges and opportunities such as meeting the needs of underserved populations, youth programs, and environmental sustainability. The Institute supports these organizations by providing direct financial support as well as in-kind resources including facility use, faculty and staff expertise, and volunteer engagement. In addition, OGCR collaborates with the MIT Priscilla King Gray Public Service Center and MIT Community Giving to oversee the MIT Community Service Fund (CSF). The CSF provides support for nonprofits where MIT volunteers are at work and encourages the creation of new community service projects by providing grants to MIT affiliates.

Service to the community is not just centralized in one office at MIT—the Institute’s various Departments, Labs and Centers have a diverse array of programs that support our host community.
Abdul Latif Jameel Poverty Action Lab

The Abdul Latif Jameel Poverty Action Lab (J-PAL) is a global network of over 142 researchers from leading universities who use randomized evaluations to answer critical questions in the fight against poverty. J-PAL was founded on the belief that development programs can be made more effective, creating positive change in the lives of the poor, if policymakers have access to rigorous scientific evidence of what works.

J-PAL’s mission is to reduce poverty by ensuring that policy is informed by scientific evidence. We do this through three main activities: (1) increase scientific evidence on poverty reduction through randomized evaluations, (2) promote a culture of evaluations through training and facilitating the use of evidence in the policymaking process, and (3) encourage the use of rigorous research findings in the design and scale-up of poverty alleviation programs through outreach, promotion, and technical advising.

J-PAL was founded at MIT in 2003 as a research institute in the Department of Economics. In addition to its headquarters at MIT, J-PAL has expanded to six regional offices hosted by local universities in Africa (University of Cape Town), Europe (Paris School of Economics), Latin America (Pontificia Universidad Católica de Chile), North America (MIT), South Asia (Institute for Financial Management & Research), and Southeast Asia (University of Indonesia). Within each region, J-PAL works across eight sector areas, including Agriculture, Crime & Criminal Justice, Education, Environment & Energy, Finance & Microfinance, Health, Labor Markets, and Political Economy & Governance.

Research

J-PAL affiliates have conducted more than 775 randomized evaluations in over 60 countries. Recent research by J-PAL affiliates includes: an evaluation by Banerjee (MIT), Duflo (MIT), Glennerster (J-PAL), and Kinnan (Northwestern) on the impact of increased access to microcredit on the economic and social well-being of women and their families in India; a six-country study by Banerjee (MIT), Duflo (MIT), Goldberg (IPA), Karlan (Yale), Osei (University of Ghana), Pariente (Princeton), Shapiro (Princeton), Thuysbaert (Ghent University), and Udry (Yale) that found that a comprehensive livelihood program for the poor was a cost-effective and lasting way to boost livelihoods, income, and health; and an evaluation by Olken (MIT), Onishi (World Bank), and Wong (World Bank) that found that community block grants improved health and education in Indonesian villages, and adding performance incentives sped up improvements in health.

Capacity Building

J-PAL also aims to increase the capacity of governments, NGOs, and other organizations to produce their own evidence to inform effective development policy. J-PAL has equipped more than 7,630 practitioners with the expertise to conduct their own rigorous evaluations through training courses and joint research projects.

Policy Outreach

J-PAL affiliates and staff analyze and disseminate research results and build partnerships with policymakers to ensure that policy is informed by evidence and to scale up programs that are found to be highly effective. Such programs have included environmental audit reforms, school-based deworming, remedial education, free insecticidal bed nets, chlorine dispensers for safe water, skills training for police officers, conditional community block grants, building stable livelihoods for the ultra-poor, and improved distribution of subsidized rice. Programs that were found to be successful by J-PAL affiliates and then scaled up in different parts of the world have reached over 300 million people.

https://www.povertyactionlab.org/
J-PAL North America
J-PAL North America (NA), one of J-PAL’s six regional offices, is also based at MIT. J-PAL NA collaborates with decision-makers in local, state, and federal government, and with social organizations, to inform policy with scientific evidence, conduct trainings, and institutionalize impact evaluation. J-PAL NA’s work spans several areas including: Crime Prevention, Education, Energy Conservation, Financial Literacy, Health Care Delivery, Housing Mobility, Labor Markets, and Political Participation. Recently, J-PAL NA launched its new State and Local Innovation Initiative and Health Care Delivery Innovation Competition, which each award selected agencies or organizations with connections to researchers, ongoing technical assistance, and funding to implement randomized evaluations concerning critical policy issues. J-PAL affiliates are conducting or have completed 149 randomized evaluations in the region. J-PAL NA is led by two Co-Scientific Directors: Amy Finkelstein (MIT) and Lawrence Katz (Harvard University).

Local Programs
Amphibious Achievement
Amphibious Achievement is an MIT student group that mentors high school students in the Boston-Cambridge area in both athletics and academics. Under the guidance of MIT student coaches/tutors, Amphibious Achievers train to row and swim competitively while also working on critical reading techniques, math problem solving, and grammar comprehension in an SAT-based curriculum.

Cambridge Science Festival
The annual Cambridge Science Festival, the first of its kind in the United States, is a celebration showcasing Cambridge as an internationally recognized leader in science, technology, engineering, and math. The festival is presented by the MIT Museum in collaboration with the City of Cambridge, community organizations, schools, universities, and businesses. A multifaceted, multicultural event held every spring, the festival makes science accessible, interactive, and fun, while highlighting the impact of science on all our lives.

Edgerton Center—K–12 Programs
The Edgerton Center continues the learning-by-doing legacy of “Doc” Edgerton. The Center’s K–12 programs educate, inspire, and motivate kindergarten through 12th grade students through hands-on science and engineering challenges with the aim of increasing students’ curiosity and desire to pursue these fields in their future. Concentrating in the Greater Boston area, with selected out-of-state and foreign endeavors, the Edgerton Center’s multifaceted approach supports over 150 on-campus classroom workshops annually, intensive summer programs, innovative curriculum and professional development workshops for teachers. The Edgerton Center instructors mentor faculty and students in local public schools as well. In all aspects of these programs, MIT students are closely involved. All of the programs are provided at no or minimal cost.

Educational Studies Program
Founded by students in 1957, the MIT Educational Studies Program (ESP) shares knowledge and creativity with local high school students in the Boston, Cambridge, and MIT communities. Through an extensive offering of academic and non-academic classes, ESP is dedicated to providing a unique, affordable educational experience for motivated middle school and high school students. ESP courses are developed and taught by MIT students, alumni, faculty, and members of the community.

http://esp.mit.edu/
Fly-by-Wire Project with Quinsigamond Community College
The Office of Digital Learning, through its Strategic Educational Initiatives unit, is taking the lead in developing collaborations with community colleges. These projects include curriculum development in areas such as advanced manufacturing and online learning using edX and other MIT technologies. The design of these projects reflects the MIT mens et manus philosophy of blending online/virtual instruction with hands-on learning. The Fly-by-Wire project is a collaboration between MIT, Quinsigamond Community College (MA), and Arapahoe Community College (CO). Adaptive assessments will be provided to students in college algebra, CAD (computer aided drafting), and accounting, where students will be given supplemental questions depending on their responses to previous questions. All questions will be linked to a learning outcome map, which provides the pathways for student knowledge.

Giving Tree
The MIT Giving Tree allows students, alumni, faculty, staff, and friends to provide gifts to local children and families each holiday season. The MIT Priscilla King Gray Public Service Center works with several campus groups, along with hundreds of individuals across campus to collect gifts for 12 local agencies serving low-income children. This program provides MIT a means to expand our ethic of caring to local children and families.

Massachusetts Community College Project
The Office of Digital Learning, through its Strategic Educational Initiatives unit, is taking the lead in developing collaborations with community colleges. These projects include curriculum development in areas such as advanced manufacturing and entrepreneurship, and online learning using edX and other MIT technologies. The design of these projects reflects the MIT mens et manus philosophy of blending online/virtual instruction with hands-on learning. With funding from the federal Trade Adjustment Assistance Community College and Career Training (TAACCCT) Grant Program, ODL is working with 15 Massachusetts community colleges to develop blended courses in advanced manufacturing. Other collaborations are in the proposal or design stages.

MIT-Woodrow Wilson Academy of Teaching and Learning
The MIT pK-12 Action Group in ODL, with collaborators across MIT, is designed to combine MIT’s mens et manus approach to learning with recent breakthroughs in cognitive science and digital learning to help develop and support excellent STEM (Science, Technology, Engineering, Math) teachers and school leaders. The pK-12 Action Group was launched through the work of a faculty group, facilitated by ODL, which articulated the foundational principles for this effort: To change the world through learning with access to quality STEM education for all, and to change the world of learning through rigorous research. The pK-12 Action Group has been bootstrapped by $9.9 million in seed funding from the Woodrow Wilson National Fellowship Foundation for collaboration aimed at supporting teachers in their efforts to use emerging digital learning tools and environments, especially in STEM areas. The effort will promote new ideas, technologies, and curricula along with research related to educator preparation with a focus on STEM subjects for students from pre-kindergarten through the senior year of high school. The Woodrow Wilson Academy will open its doors in June 2017 to its first matriculating class of 25 students.

World Programs
Comprehensive Initiative on Technology Evaluation
The Comprehensive Initiative on Technology Evaluation (CITE) at MIT is the first-ever program dedicated to developing methods for product evaluation in global development. CITE evaluates products’ suitability, scalability, and sustainability, and seeks to integrate these criteria to develop a deep understanding of what makes products successful in emerging markets. CITE’s evaluations provide evidence for data-driven decision-making by development workers, donors, manufacturers, suppliers, and consumers themselves. CITE is a five-year program funded by USAID’s Global Development Lab and led by the Department of Urban Studies and Planning.

http://cite.mit.edu/
Connected Learning Initiative
Connected Learning Initiative (CLIx) is a bold and innovative collaboration between the Tata Groups (Tata Trusts, Tata Institute of Social Sciences Center for Education Innovation and Action Research) and MIT. Its goal is to improve the professional and academic prospects of high school students in underserved communities in India. CLIx aims to impact approximately 1,000 schools, 165,000 students, and 4,400 teachers in four states during 2015–2017. The expected outcomes are to raise social capital and expand educational opportunities for India’s youth substantially and positively and to arrive at a model that can have global relevance.

D-Lab
MIT D-Lab is building a global network of innovators to design and disseminate technologies that meaningfully improve the lives of people living in poverty. The program’s mission is pursued through interdisciplinary courses (2,019 developed to date, about a dozen offered each year), technology development, and community initiatives, all of which emphasize experiential learning, real-world projects, community-led development, scalability, and impact assessment. Founded by Amy Smith, Senior Lecturer in Mechanical Engineering, D-Lab has developed a range of technologies and processes including community water testing and treatment systems, human powered agricultural processing machines, medical and assistive devices for global health, and clean-burning cooking fuels made from waste. All D-Lab classes and projects are connected to communities around the world in countries including Brazil, Nicaragua, Honduras, Guatemala, El Salvador, Haiti, Ghana, Lesotho, Nigeria, Tanzania, Uganda, Zambia, Cambodia, Nepal, India, and the Philippines. In addition to its course offerings and fieldwork, D-Lab is home to research groups including the Biomass Fuel and Cookstoves Group, the Mobile Technology Group, and the Off-Grid Energy Group. D-Lab has also spearheaded an initiative called Lean Research, promoting principles for human-centered research.

D-Lab Scale-Ups
D-Lab Scale-Ups was established in 2011 to identify and support technologies with potential for wide-scale poverty alleviation. The program includes an accelerator for MIT social entrepreneurs, a technical assistance program, research and development, and collaboration with industry. As of 2014, the Scale-Ups Fellowship program has supported 2,316 social entrepreneurs working in sectors including health care, waste recycling, water sanitation, solar energy, and agriculture. The Scale-Ups fellows have launched ventures in less-industrialized markets in Africa, Central and South America, and Asia. Scale-Ups’ technical assistance program for agricultural waste charcoal briquette enterprises in East Africa is facilitated by the Harvest Fuel Initiative, a collaborative effort by D-Lab and New York-based nonprofit The Charcoal Project. Research and development work focuses on solar lighting, biomass fuel and cookstoves, water transportation and storage, and agriculture. In the fall of 2014, D-Lab Scale-Ups launched the Practical Impact Alliance at MIT to promote collaborative action and shared learning among corporations, academic institutions, social ventures, and nongovernmental organizations in order to scale market-driven poverty solutions worldwide. Each year since 2012, Scale-Ups has lead the organization of the MIT Scaling Development Ventures conference.

http://d-lab.mit.edu/scale-ups/overview/

http://d-lab.mit.edu/
**International Development Innovation Network**
The International Development Innovation Network (IDIN) is building a diverse, international network of innovators to define development problems, prototype solutions to these challenges, perform comparative evaluations, move the most promising solutions forward, and incubate ventures to disseminate the solutions. At the core of IDIN is a network of approximately 54,200 inventors, technologists, and social entrepreneurs from almost 530 countries around the world. IDIN is supporting and building this network through hands-on design summits, focused entrepreneurship training modules, micro-grants, and networking within and outside the network. IDIN also includes research, monitoring, and evaluation functions to document and assess its work to ensure that best practices are identified and supported. In addition to MIT, IDIN consortium institutions include Olin College of Engineering, Colorado State University, University of California-Davis, Kwame Nkrumah University of Science and Technology (Ghana), Singapore Polytechnic, the ECHO East Africa Impact Center (Tanzania), and the National Technology Business Center (Zambia), as well as three IDIN innovation centers in Brazil, Uganda, and Tanzania.

http://d-lab.mit.edu/idin/

**Legatum Center for Development and Entrepreneurship**
The Legatum Center for Development and Entrepreneurship at MIT was founded on the belief that economic progress and good governance in low-income countries emerge from entrepreneurship and innovations that empower ordinary citizens. The center administers a highly competitive fellowship program for MIT graduate students who intend to launch innovative and inclusive for-profit enterprises in developing countries. In addition to supporting the Legatum Fellows, the Legatum Center aims to catalyze entrepreneurship for broad-based prosperity by administering programs including case writing, research, articles, lectures, conferences, and seed grants.

http://legatum.mit.edu/
Selected Projects

MIT-USAID program releases technology evaluation of water test kits

How do you know your water is clean and safe to drink? Whether you live in Flint, Michigan, or a half a world away in northwest India, many families don’t have a good answer to this question.

MIT researchers have launched a report evaluating water test kits in Ahmedabad, India, where water-testing technologies are widely used by local governments and nonprofits, but are not yet available at the household level. The report, Streamlining a Methodology for Product Evaluation: Water Test Kits in India, details the study design and findings of the latest experimental evaluation implemented by the Comprehensive Initiative on Technology Evaluation (CITE), a program supported by the U.S. Agency for International Development (USAID) and led by a multidisciplinary team of faculty, staff, and students at MIT.

Launched in 2012, CITE is a pioneering program dedicated to developing methods for product evaluation in global development. CITE researchers evaluate products from three perspectives, including suitability, scalability, and sustainability.

In India, 91 million people lack access to an improved drinking water source, putting them at risk for waterborne diseases. Without access to reliable, low-cost water testing labs, many development organizations and governments have turned to portable water test kits as a stopgap solution for testing community water quality, said CITE Water Test Kit Evaluation lead Jennifer Green.

In addition to Green, co-authors on the report include Innocent Tumwebaze, Jonars Spielberg, Linda Annala, Madhi Zarghami, Sara Lynn Pesek, Sydney Beasley, and Vihar Parikh. CITE conducted its research in partnership with local Indian universities including the Indian Institute of Management, Ahmedabad and TERI University, New Delhi.

Art and science merge in a disaster readiness haven

People walking by MIT’s Building 9 pause to contemplate the white plastic structure that appears to be part bench and part tower. This unit, a PREPHub, contains amenities for short-term responses to emergencies.

The PREPHub, a project of MIT’s Urban Risk Lab, seeks to increase preparedness for crises that disrupt a city’s functioning. Led by Miho Mazereeuw, the project is the demonstration of a completely off-grid facility that could help a city provide post-emergency services to citizens.

In the current PREPHub model, a pedaled generator will enable people to recharge batteries or cellphones; an embedded webcam will let people take “selfies” and send those snapshots to relatives and social media services as evidence of their well-being; and an annunciation system can alert people to dangers or direct them to a shelter. “The ultimate goal is to have a network of PREPHubs in any disaster-vulnerable city that wants one, with hubs close enough together for anyone to be able to walk to one within 10 minutes,” says Mazereeuw.

The PREPHubs are envisioned as community resources during ordinary times. “As PREPHubs will be deployed in communities before a disaster, it is imperative that each important post-disaster function be useful in everyday scenarios. This everyday use will communicate the post-disaster functionality, making sure that the hubs are well known, well used, and well maintained landmarks all the time, allowing them to perform when needed the most after a disaster strikes,” says Mazereeuw.

The next steps in realizing the PREPHub vision are to extend the services provided by the units and to interest urban communities in the concept of a web of hubs useful for citizens both before and after a disaster. To that end, Lincoln Laboratory is researching how technologies in which it has deep experience can be utilized aboard a hub, and the Urban Risk Lab is connecting with San Francisco to install a prototype there.


http://bit.ly/2dfsRMt