

MIT D-Lab

D-Brief 2024-2025

design for a more equitable world

*“Learning about refugee issues in a classroom is one thing, but actually being there, working side by side with people who live through these challenges every day, and building solutions together – that was something else entirely. It was humbling, inspiring, and incredibly powerful. The conversations weren’t just about the struggles; they were about **resilience, creativity, and the determination of the communities to create a better future for themselves.**”*

- Carolina Orozco Romo



Prototype of a smart irrigation system to evaluate water use to support agricultural productivity and water conservation in the Kandahar region of Afghanistan. Photo: MIT D-Lab



Testing a mobile stretcher from the D-Lab: Design class. Langa, South Africa, June 2025. Photo: MIT D-Lab

Creating technology that matters to people in low-resource communities

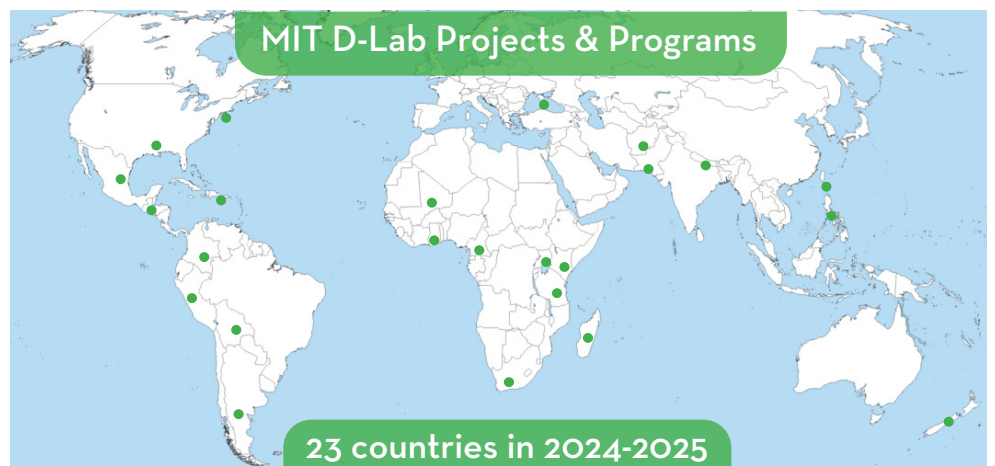
From micro-irrigation systems in Afghanistan, to weatherizing informal dwellings in Argentina, MIT D-Lab students, staff, and local partners around the world continue to practice co-design with creativity, empathy, and rigor. Why co-design? Because D-Lab understands that designing hand-in-hand with community members is critical to developing durable solutions to the complex, interconnected challenges of poverty, climate change, and social inequality.

In Academic Year 2025, across the three pillars of our work – academics, research, and practice – D-Lab pursued work in 23 countries with international collaborators, such as local nongovernmental organizations and social enterprises, to shape student projects, produce research, design technologies, host summits and trainings, and more.

As our students and staff traveled the world, D-Lab moved its MIT home from the Office of the Vice Chancellor to the [MIT Morningside Academy for Design](#) (MAD) within the School of Architecture and Planning. Though not a physical move (D-Lab is still in its iconic and colorful suite of classrooms, workshops, and offices in N51), joining MAD’s ecosystem strengthens our connections to the MIT design and academic communities, setting the stage for productive collaborations on campus and abroad.

While shifts in the global landscape of international development have been less positive, with reductions in vital resources affecting millions of people (including our programs and partners), D-Lab remains a vibrant hub of hands-on experiential learning. Throughout the year, students and staff engaged in dozens of projects with low-resource communities around the world.

We invite you to explore this 2024-2025 D-Brief, to read some highlights and milestones, and to visit the D-Lab [website](#) for more stories that inspire us every day.



Undergraduate & Graduate Classes 2024-2025

D-Lab: Development

11.025/11.472(G)/EC.701/
EC.781(G)

Introduction to Energy in Global Development

2.651/EC.711/EC.791(G)

Applications of Energy in Global Development

2.652/EC.712/EC.782(G)

D-Lab: Water, Sanitation, and Hygiene

11.474(G)/EC.715

D-Lab: Gender and Development

EC.718/EC.798(G)/WGS.277

Climate Change and Planetary Health

EC.719/EC.789(G)

D-Lab: Design

2.722J/EC.720

D-Lab: Leadership in Design

EC.725

Design for Scale

EC.729/2.729/EC.797(G)/2.78(G)

Global Ventures

MAS.665/15.375/EC.731J

Hardware Design for International Development

EC.751/EC.786(G)

Humanitarian Innovation

EC.750/EC.785(G)

Terrascope: Design for Complex Environmental Issues

2.00C/1.016J/EC.746J

Thermal Energy Networks for Rapid, Cost-Effective Campus Decarbonization

EC.S06/EC.S11(G)

Thermal Energy Networks for Rapid Decarbonization of Campus, Neighborhood, and City Buildings

EC.735/EC.795 (IAP)

MIT D-LAB ACADEMICS

Under the leadership of Professor Maria Yang, D-Lab Faculty Academic Director, and D-Lab Associate Director of [Academics](#) Libby Hsu, D-Lab offered 15 subjects this past year. Our classes had 260 students enrolled (an increase of 60 over the prior year) who worked on 52 projects (a number comparable to the prior year) in 18 countries (Afghanistan, Argentina, Bolivia, Cameroon, Colombia, the Dominican Republic, Ghana, Kenya, Madagascar, Mexico, Nepal, Pakistan, South Africa, Taiwan, Tanzania, Uganda, Ukraine, and the United States).

In addition to class offerings, D-Lab staff members and researchers shaped opportunities for undergraduates to make meaningful contributions to D-Lab research. This year, twenty students (double the number from the prior year) worked closely with staff on research projects on the MIT campus and abroad as undergraduate researchers.

D-Lab's classes, educators, and students have been prominently featured in campus news outlets, including a fall 2024 piece in Spectrum Magazine about student innovation; and a May 2025 MIT News piece about D-Lab's two energy classes and instructor/alumnus Joshua Maldonado (see excerpt below). These pieces demonstrate the ways in which D-Lab experiences have shaped our students' careers, values, and personal goals.

Student projects and fieldwork 2024-2025

Over the course of the year, 79 D-Lab students (three more than the prior year) and 19 trip leaders traveled to 13 countries to further work begun in D-Lab classes and research projects. D-Lab was able to expand mentored student travel opportunities to the D-Lab: Design and Leadership in Design classes, thanks to funding from the MIT Office of Experiential Learning and philanthropic gifts. We have also continued to expand our project partnerships and locations in the post-pandemic era, kicking off student trips in Argentina, the Dominican Republic, Ghana, Nepal, and South Africa.

While D-Lab instructors typically choose the projects their students will work on, D-Lab also encourages student-generated projects as a way for students to develop their own social impact interests and explore their cultural heritage. This year, D-Lab supported an indigenous Peruvian student's strategy for stewarding water resources in their ancestral community by incorporating it as a class project in the D-Lab: WASH class. This year, D-Lab instructors provided ongoing technical mentoring to the student, Kathleen Julca '25, and helped her to identify funding opportunities. These efforts were successful, resulting in awards that included a \$25,000 grant from MISTI, supporting three fieldwork trips to Peru.

MIT D-Lab students design global energy solutions through collaboration

MIT News, June 2025 (excerpt)

Each year, two longstanding D-Lab courses make their mark on students and communities around the world.



"I love the process of coming into class with a practical question you need to solve and working closely with community partners," says MIT master's student Khadija Ghanizada, who has served as a teacher's assistant for both the introductory and applications courses. "All of these projects will have a huge impact, but being from Afghanistan, I know

this will make a difference ... We also make sure students are thinking about the scalability of their solutions, whether scaling worldwide or just nationally. Every project has its own impact story."

MIT D-LAB RESEARCH & PRACTICE

The Research and Practice programs at D-Lab continue to give form and substance to our international impact and the D-Lab student experience. These teams, led by Faculty Research Director Professor Kim Vandiver, Associate Director for Research Kendra Leith, and Associate Director for Practice Libby McDonald, work on multiple long-term projects while advancing approaches to research developed at D-Lab, such as Lean Research, and methodologies for community engagement, such as participatory design and Creative Capacity Building (CCB).

This year, the [Research](#) and [Practice](#) teams had almost a dozen multi-year projects in Colombia, Ghana, Guatemala, Kenya, Mali, Nepal, the Philippines, Tanzania, Uganda, and the United States. The projects were funded by government and foundation grants, as well as by philanthropic gifts. USAID funding for two programs (see below) was canceled when the agency was dismantled early in 2025. In some cases, staff affected by cuts were brought onto other programs. Where possible, work continued on these projects through undergraduate research funded by other sources. Below are a few highlights.

Program achievement highlights 2024-2025

Achieving Sustainable Partnerships in Innovation, Research, and Entrepreneurship (ASPIRE): Through this program in collaboration with Universidad del Valle de Guatemala and the Guatemalan Exporters Association, D-Lab continued to contribute training and research with the goal of creating a world-class, replicable model for how Latin American universities respond to local development needs. (This five-year program ended in its fourth year with the shuttering of USAID.)

Biomass Fuels and Cookstoves: Ongoing research in off-grid energy continued this year in Nepal (home energy solutions for mountain communities affected by climate change), in Uganda (charcoal and stove making in Imvepi refugee settlement), and in Ghana as part of the Volta Invasive Species Transformation Alliance (VISTA). VISTA is developing a process to make charcoal from invasive water weeds to address the deterioration of waterways and deforestation caused by using wood and wood charcoal as cooking fuel.

Design for Second Life Innovations: Launched in 2023 with support from the Korea International Cooperation Agency (KOICA), this project brought together MIT students and MIT D-Lab partners in East Africa to upcycle electronic devices donated by Samsung into devices for local use. To date, 398 people have completed D-Lab design workshops in Uganda and Tanzania, with 85 innovations designed.

Green Bonds to Support Environmental Sustainability: D-Lab students conducted initial research with Mujeres Mineras Unidas Por Colombia, followed by a seven-day co-design workshop in Medellín, where 25 women miners from six territories co-created a plan for implementing a green bond project in the Chocó region of Colombia.

Improving Adolescent Health: A four-year partnership between MIT D-Lab and the Canadian Red Cross, implemented by the Malian Red Cross and two consultants from D-Lab's network in Morocco. To date, the program has delivered 40 Creative Capacity Building workshops and three co-creation workshops to reduce early marriage.

Women & Democracy Project: A new program launched at the end of the year using design thinking to co-create a bipartisan network of grassroots women's organizations to promote equity, political empowerment, and self-determination.

U.S.-Philippines Partnership for Skills, Innovation, and Lifelong Learning (UPSKILL): A collaboration among U.S. universities, the Philippine government, private sector partners, and young Filipinos to help local colleges and universities become more globally competitive and improve the qualifications and career prospects of Filipino graduates. This past year, D-Lab conducted an inclusive innovation ecosystem study, followed by an Innovation Ecosystem co-design workshop attended by 35 stakeholders. (This five-year program ended after one year with the shuttering of USAID.)

"Mens et manus" in

Guatemala MIT News, September 2024 (excerpt)



"‘We want to thrive and lead the country in research and teaching, and to accomplish this, we are creating an innovation and entrepreneurship ecosystem, based on best practices drawn from D-Lab and other MIT groups,’ says Mónica Stein, vice-rector for research and outreach at UVG [Universidad del Valle de Guatemala], who holds a doctorate from Stanford University in plant biology. ‘ASPIRE can really change the way that development work and local research is done so that it has more impact,’ says Stein. ‘And in theory, if you have more impact, then you improve environmental outcomes, health outcomes, educational outcomes, and economic outcomes.’"



For five years, D-Lab worked with Faros, a refugee services NGO in Athens, Greece, to build a design program and school for unaccompanied refugee minors. More than 800 youths participated in one or more of the six D-Lab design courses, gaining skills, confidence, and hope for the future. In addition to D-Lab staff, students from the D-Lab class *Humanitarian Innovation* traveled to Athens each year to serve as trainers and mentors. This year, we developed a detailed report with analysis and lessons learned.

[Full report](#)



D-LAB JOINS THE MIT MORNINGSID ACADEMY FOR DESIGN (MAD)

This year, D-Lab transitioned to the Morningside Academy for Design (MAD), bringing its portfolio of classes, research, and practice focused on co-design with low-resource communities around the world, to advance MAD's commitment to connecting design and real-world impact. The synergy between MAD and D-Lab is so clear that John Ochsendorf, MAD's founding director, has commented, "If D-Lab didn't exist, we'd have to invent it." Photos: Courtesy MIT MAD

D-Lab student reports and reflections

An element of every D-Lab student field experience is reporting and reflecting on the specific project as well as the full intercultural experience. Students who travel submit blog posts, published on the D-Lab website. Many of our students find that their fieldwork transforms how they think of themselves, their studies, and their world. See below for a selection of student blog posts from the past year and visit d-lab.mit.edu/blog for more!

D-Lab students and alumni in the news

D-Lab students and alumni are compelling subjects for writers, and their work frequently appears in stories on websites, in publications, and on the radio. Many of our students continue the work they started in a D-Lab class for years to come. Some pursue academic research, while others develop products and services and start businesses. See below for just a few news articles about our alumni and visit d-lab.mit.edu/news for more!



UGANDA: Building community in a Co-Creation Summit experience April 2025 | Humanitarian Innovation students



BOLIVIA: Designing a recycling center and restoring furniture with the Ecorecolectoras of Cochabamba Jan 2025 | D-Lab: Development students



GHANA: Developing a shea nut mill with Ayirkasa, a women's collective Feb 2025 | D-Lab: Development students



COLOMBIA: Building habitat banks and exploring new paths for gender equality and ecological sustainability Feb 2025 | D-Lab: Gender and Development students



DOMINICAN REPUBLIC: Co-designing protection for the Ridgway's Hawk Feb 2025 | D-Lab: Development students



MEXICO: Developing electronic communication devices for students with autism, cerebral palsy, and other disabilities March 2025 | D-Lab: Development students



Emily Young MIT '18
How tricycle ambulances are saving lives in rural Ghana
May 12, 2025 | The World - NPR



Kristin Kagetsu MIT '12, Jackie Stenson Harvard '08
Two MIT D-Lab alums win Cartier Women's Initiative \$100K awards April 28, 2025 | Cartier Women's Initiative



Sonia Patel, PhD candidate
"I think that D-Lab is a gem and I hope MIT recognizes its value."
May 8, 2025 | SHASS



D-Lab: Development students
Real People, Real Solutions at D-Lab November 20, 2024 | Spectrum



MIT and Universidad del Valle de Guatemala students
Aspiring to sustainable development
October 23, 2024 | MIT News



Ahmad Zakka MIT SM'23
D-Lab off-grid brooder saves chicks and money using locally manufactured thermal batteries
August 12, 2024 | MIT News



MIT D-Lab designing for a more equitable world

MIT MORNINGSID ACADEMY FOR DESIGN

MIT Massachusetts Institute of Technology