

MIT D-Lab

design for a more equitable world

D-Brief 2025-2026

"I just finished taking D-Lab: Development and its associated project trip to Madagascar ... It was a life changing experience for me, and a core part of my educational experience so far at MIT."

- Warren Knowles '29



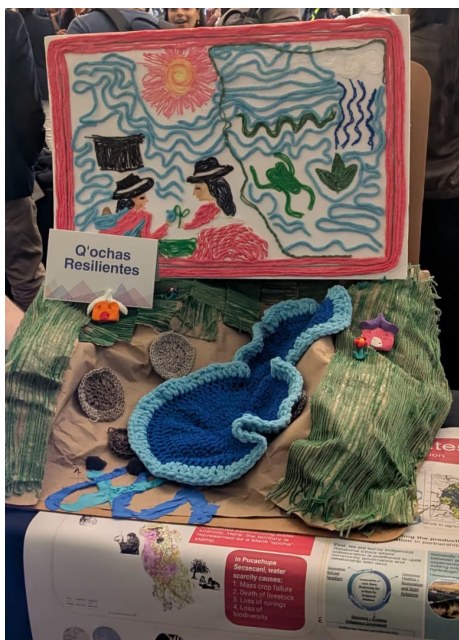
D-Lab: Development students and students from Universidad Autónoma de Yucatán with the augmentative and alternative communication device they developed in collaboration with Perkins International and Proyecto Pixán. January 2026. Photo: Courtesy Centro de Atención Múltiple

MIT students co-designing solutions with communities facing urgent social, economic, and environmental challenges

A dehydrator designed to increase the value of *aguaje* oil production in Peru; a cocoa bean cleaning and drying system to help small-scale farmers in Ghana improve quality and reduce waste; and a rapid, low-cost *E. coli* test to increase access to safer drinking water in Nepal. These are just three of the **more than two dozen projects that D-Lab students, instructors, researchers, and community partners advanced in 23 countries** this past year, all rooted in our commitment to co-design.

And, while technology remains central to D-Lab's work, we also **expanded our use of the Creative Capacity Building methodology to help communities address complex social challenges**, from child marriage in Mali to the economic marginalization of women miners in Colombia.

Read on for more highlights and milestones from the past year. And, for more details, visit the [D-Lab website](#) for more stories that inspire us every day.



A drawing and model (created by members of an indigenous community) of a q'ocha, a type of ancient reservoir. D-Lab: Water, Sanitation, and Hygiene students are working with partners in Peru to revive their use (see next page). Photo: MIT D-Lab

MIT D-Lab Vision and Goals

Vision 2030

By 2030, D-Lab will be a hub for participatory design and project-based learning at MIT, advancing education, research, and practice that bridges rigorous academic work with communities that face urgent social, economic, and environmental challenges. This vision is anchored in three strategic goals.

Goals

1. **Cultivate the next generation of global change-makers** at MIT through world-class experiential learning opportunities in collaboration with low-resource communities around the world.
2. **Advance the frontiers of participatory design and research** through applied, interdisciplinary work that elevates the voices and knowledge of marginalized communities.
3. **Enhance innovation ecosystems** through capacity strengthening, technology development, and facilitating access to resources and networks of innovators and organizations.

Undergraduate & Graduate Classes 2025-2026

Introduction to Engineering Design for International Development
2.S00 / EC.S06

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

D-Lab: Design
2.722J / EC.720

D-Lab: Leadership in Design
EC.725

Design for Scale
2.729 / 2.78 (G) / EC.729 / EC.797 (G)

Terrascope: Design for Complex Environmental Issues
2.00C / 1.016J / EC.746J

Thermal Energy Networks for Decarbonization of Campuses, Neighborhoods, and Cities
EC.716 / EC.786 (G)

Thermal Energy Networks for Decarbonization of Campuses, Neighborhood, and City Buildings
EC.735 / EC.795 (IAP)

D-Lab: Smallholder Agriculture
EC.724 / EC.784 (G)

Starting Fall 2026, D-Lab classes will all carry the new **Making and Design (MAD)** subject designation. We are excited to be part of the MAD family of classes!

MIT D-LAB ACADEMICS

Under the leadership of Faculty Academic Director Maria Yang and D-Lab Associate Director of [Academics](#) Libby Hsu, D-Lab offered 13 subjects this past year. Our classes enrolled 170 students (35% graduate students or fellows and 65% undergraduates). D-Lab students worked on 33 projects with community partners in 21 countries (Argentina, Bolivia, Brazil, Cameroon, Colombia, Dominican Republic, Egypt, Ghana, India, Kenya, Madagascar, Mexico, Nepal, Peru, Rwanda, Saudi Arabia, South Africa, Tanzania, Uganda, Ukraine, and the United States).

D-Lab expanded its curricular offering this year, with two new classes responding to student demand and first-year design education priorities:

- » *D-Lab: Smallholder Agriculture*, taught by D-Lab Associate Director for Practice Libby McDonald, MIT Sloan School of Management Professor Karen Zheng, and Greg Sixt, Research Director for Food and Climate Systems at the Abdul Latif Jameel Water and Food Systems Lab.
- » *Introduction to Engineering Design for International Development*, taught by D-Lab Founding Director Amy Smith, Lecturer Martha Thompson, and Instructor Matt McCambridge to first-year mechanical engineering students.

Beyond the Classroom

D-Lab created many pathways for undergraduates to contribute to applied research and practice. This year, 11 students worked closely with staff on research projects on the MIT campus and abroad, two students pursued independent studies, D-Lab Research Scientist Dan Sweeney supervised an undergraduate thesis, and 22 undergraduates participated in Social Impact Experiential Learning Opportunities.

Fieldwork remained central to D-Lab's pedagogy. During the year, 99 D-Lab students and 15 trip leaders made 20 trips to 12 countries (Argentina, Cameroon, Dominican Republic, Ghana, India, Kenya, Madagascar, Mexico, Peru, Rwanda, South Africa, and the US). This allowed more than half of D-Lab students to test ideas, deepen partnerships, and advance work begun in D-Lab classes and research projects.

Q'ochas Resilientes is a great recent example of a student project that evolved from the classroom to the field. Co-mentored by Libby Hsu and Professor Ursula Rodriguez of UTEC in Peru, the project was originally launched in the *D-Lab: WASH* class in 2024 and was awarded \$15,000 at the 2026 MIT IDEAS Competition to advance fieldwork and research on Indigenous-led water resource management in southern Peru.

Designing with, not for: Preserving fresh water in Southern Madagascar

MIT D-Lab Blog, February 2026 (excerpt)

For the third year, D-Lab partnered with NGO Tatirano and the Ecole Supérieure Polytechnique d'Antananarivo to co-design solutions for freshwater access. This year, students and partners prototyped a stand pipe system, drip irrigation, and a greenhouse design to improve freshwater access and support local food production.



"The combination of classroom rigor and immersive fieldwork reshaped how we think about engineering and design. Entering the Malagasy system, and designing around culturally appropriate technologies and crops rather than operating apart from it, allowed us to refine the project in ways that feel more likely to endure."

- D-Lab: Development Madagascar IAP 2026 Student Team

MIT D-LAB RESEARCH & PRACTICE

D-Lab's [Research](#) and [Practice](#) programs advanced long-term projects in collaboration with partners in Colombia, Ghana, India, Mali, Peru, Tanzania, Uganda, and the United States, employing D-Lab methodologies such as Lean Research and Creative Capacity Building (CCB). Led by Faculty Research Director Kim Vandiver, Associate Director for Research Kendra Leith, and Associate Director for Practice Libby McDonald, the teams combined applied research, capacity strengthening, and technology development through projects funded by grants and gifts.

Program Highlights 2025-2026

Business Design to Diversify Economies in Colombian Gold Mining - A two-year project with Mujeres Mineras Unidas Por Colombia that is actively strengthening and growing a network of 11 women-led businesses and supporting the launch of 60 new businesses to diversify livelihoods in mining territories.

Design for Second Life Innovations - Completed a three-year program in refugee settlements in Uganda and two communities in Tanzania, delivering Creative Capacity Building workshops to 503 participants and supporting the development of 100 community-led innovations.

Circular Economy Solutions to Address Waste and Climate Change - Advancing circular economy solutions to waste system challenges in Uttarakhand and Himachal Pradesh through student exchanges, research, and CCB workshops with the University of Petroleum and Energy Studies (UPES) and Waste Warriors in India.

Developing Biobusinesses in the Peruvian Amazon - Identifying market-system bottlenecks in the *aguaje* value chain and co-designing technologies and solutions with the University of Engineering and Technology (UTEC) and the Peruvian NGO Amanatari to strengthen the bioeconomy in Peru.

Harvest Fuel Initiative West Nile - Launched in April 2025 with refugee-led clean energy startups in Imvepi Refugee Settlement, Uganda. By the pilot's conclusion in January 2026, Tongilo Clean Stoves reached financial sustainability.

Mali Adolescent Health - With the Mali Red Cross and the Canadian Red Cross, facilitated 40 participatory design workshops in 20 villages, resulting in more than 25 community-produced solutions to address child marriage.

Green Bonds to Support Environmental Sustainability in Mining Territories - *D-Lab: Gender and Development* students produced research on the use of green bonds in Colombian gold mining regions, exploring ways women miners could generate income while preserving land in some of the planet's most biodiverse regions.

Participatory Design of Solutions to Waste and Energy Challenges in Uganda - With Makerere University and Best of Waste Ltd., upgraded a waste biomass charring technology that is now in use at the commercial partner site in Kampala, advancing local solutions for urban waste management and energy access.

Volta River Invasive Species Transformation Alliance (VISTA) - A multi-stakeholder collaboration addressing the challenge of invasive aquatic weeds in the Lower Volta River of Ghana. The team continued development of a ram press to manufacture industrial fuels from aquatic weeds, and convened an International Development Design Summit with 53 participants from 13 countries.

Women & Democracy: The Next Wave - Launched in 2025 to co-create a bipartisan network of grassroots women's organizations and coalitions focused on increasing women's political empowerment and self-determination.

West Nile Refugee Market Research - Trained and collaborated with a refugee settlement research team to collect market and livelihood data that will inform D-Lab business training and incubation activities in Northern Uganda.

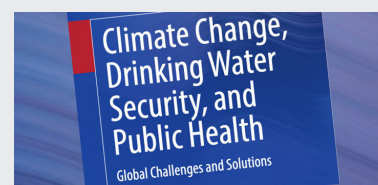
Design for Our Lives: MIT D-Lab x Uganda x Tanzania



A documentary film by MIT alum Lulu Tian '22 premiered at MIT in September of 2025.

The film follows five East African innovators trained in D-Lab's Creative Capacity Building workshops, who are shaping the future of their communities through their teaching, invention, and enterprises.

Featuring Bernard Kiwia, of Twende in Arusha, Tanzania; Emily Namwaya, of Kulika Uganda in Kampala; Harrison Asega, a South Sudanese resident of Rhino Refugee Settlement and founder of Smart Nuti Alarm; and Eric Kuley and Johnson Jacka of Greenfoot Africa in Tanzania.



D-Lab celebrated the publication of a new textbook, *Climate Change, Drinking Water Security, and Public Health*, featuring two chapters by Libby Hsu, D-Lab Lecturer and Associate Director of Academics:

- » *Drinking Water Status Around the World and Its Effect on Health*
- » *Waterless and Low-Water Sanitation Technologies that Improve Quality of Life and Conserve Water Resources*

D-Lab Lecturer Susan Murcott contributed to a third chapter, *Impact of Climate Change and War on Water, the Environment, and Health in Ukraine*.



2.8 BILLION IN HOUSING POVERTY EXHIBIT FEATURED AT MIT MUSEUM DAY OF CLIMATE

In April, a project developed through MIT D-Lab's two energy-focused classes was featured at the MIT Museum for their Day of Climate program. Developed in Argentina with Nicolás Maggio of FOVISEE, Weatherizers Without Borders, and multiple D-Lab student teams overseen by instructor Joshua Paul Maldonado MIT '23, the exhibit will next be displayed at FAB26 at MIT and at the Inter-American Development Bank in Washington, DC. Photo: Courtesy MIT D-Lab

D-Lab student reports and reflections

D-Lab students document the progress of their projects, reflect on the intercultural collaboration, and share their insights through blog posts that capture how fieldwork shapes their understanding of engineering, design, and social impact. Many students also find that their fieldwork transforms how they think of themselves, their studies, and the world. See below for a selection of student blog posts from the past year and visit d-lab.mit.edu/blog for more!



SOUTH AFRICA: Building community in a Co-Creation Summit experience
Feb 2026 | D-Lab: Development students



MADAGASCAR: Designing with, not for: Preserving fresh water in Southern Madagascar
March 2026 | D-Lab: Development students



GHANA: Addressing the impacts of invasive aquatic weeds in the Lake Volta region
Feb 2026 | D-Lab: Development & Applications of Energy in Global Development students



INDIA: Building habitat banks and exploring new paths for gender equality and ecological sustainability
Feb 2026 | D-Lab: Gender and Development students



RWANDA: Supporting women's entrepreneurship and teacher training in Rwanda
April 2026 | D-Lab: Gender and Development students



PERU: Bio-business, livelihoods, and co-design in the Peruvian Amazon
Feb 2026 | D-Lab: Gender and Development students

D-Lab staff, students, and alumni in the news

D-Lab staff, students, community partners, and alumni continue to earn recognition for their work that began in classes, research projects, and community collaborations. Many extend D-Lab projects into academic research, ventures, public service, and award-winning social enterprises. See below for just a few news articles featuring our community over the past year and visit d-lab.mit.edu/news for more!



Kathleen Julca MIT '25 Q'ochas Resilientes wins \$15K MIT Climate Project Student Innovator Award
April 16, 2026 | MIT D-Lab



Kiyoko "Kik" Hayano MIT '28 Exploring the promise of regenerative aquaculture at an Arkansas fish farm
Feb 17, 2026 | MIT News



Community Partner Thabiso Mashaba Slash for Cash - Sustainable Business Network Award
Nov 20, 2025 | Sustainable Business Network



Research Scientist Dan Sweeney SA+P celebrates its 2026 Infinite Mile Awardees
June 23, 2026 | MIT SA+P



Kwami Williams MIT '12 & Emily Cunningham (Harvard '13) Why building a true social innovation continuum of capital is essential
Nov 22, 2025 | Echoing Green



Founding Director Amy Smith Is human-centered design becoming less human? (iCERi conference keynote)
Nov 10, 2025 | MIT D-Lab



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