fabfoundation

FAB LAB SOLUTIONS 2025

monoFab
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FAB LAB SANTIAGO

About
The Fab Foundation

Founded in 2009 to provide technical capacity and educational opportunity beyond MITs Center for Bits & Atoms (CBA), the Fab Foundation is a 501(c)(3) non-profit organization dedicated to regional capacity-building and growth of the international Fab Lab Network.

We Believe

in the transformative power of education, technology, and advanced manufacturing to build equitable, inclusive, and sustainable futures for all members of our global society.

We promote radical collaboration in the exploration of digital fabrication solutions, empowering communities to address local needs and shared global challenges.

We work to democratize access to the tools and knowledge that allow anyone, anywhere to make (almost) anything.

We build the infrastructure for grassroots innovation.

Services

DESIGN & CONSULTANCY

PROCUREMENT & SHIPPING

INSTALLATION & TRAINING

WORKSHOPS & EDUCATION

History

2009
Founded as non-profit

2010
Launched Fab Academy

2014
Became host of FabX Event

2018
Launched STEM education program

2023
Deployed 100th Fab Lab

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Fab Foundation **Ecosystem**

As stewards of the worldwide Fab Lab network, we facilitate access to rapid prototyping and grassroots, open-source innovation. We provide hands-on technical and logistical expertise to accelerate the creation of new Fab Labs across the globe. Once your Fab Lab is fully operational, our training services, professional development programs, and other educational offerings can help optimize costs, improve sustainability, and connect your Lab to the global Fab Lab Network for deep engagement opportunities.

For over a decade, we have been pioneering research and dissemination of digital fabrication infrastructure and expertise. In that time, we've seen ~3,000 Fab Labs deployed in over 160 countries around the world. The Fab Lab Network represents a full-fledged, distributed ecosystem for advanced manufacturing, in which Labs are interconnected by design, promoting collaboration and empowering communities to tackle shared challenges using 21st-century technologies. Our community is a global nexus of experts, educators, innovators, and problem-solvers actively addressing the most pressing issues of our age, as articulated in the UN's sustainable development goals– technological, ecological, sociopolitical, fiscal, and (almost) everything in between.

In our commitment to growing and strengthening this network, we actively support the creation of new Fab Labs and welcome the opportunity to build unique multidisciplinary spaces, tailored to the particular regional needs of each community. From compact Micro Labs serving refugee camps to Super Labs that can self-replicate and give rise to new Fab Labs where they are most needed, our solutions are as diverse as the communities they serve. The Fab Lab ecosystem brings knowledge-sharing to schools, universities, libraries, museums, community centers, research institutions, business incubators, and many other spaces for learning and innovation, including some of the most remote and isolated regions of the world.

A key component of our grassroots innovation ecosystem is the array of community engagement and education programs offered. Here are some of our most popular options:

Academany – a globally distributed campus for high-level education, featuring such dynamic programs as **Fab Academy**, **Fabricademy**, **Fab All-In**, and **Fab Learning Academy**

SCOPES-DF – a community of practice designed to help educators develop effective pathways and resources for using digital fabrication in STEM learning

FABx Event – our annual international conference dedicated to knowledge-sharing around the latest trends in digital fabrication

Explore

the far-flung locations of the GLOBAL FAB LAB NETWORK.

2,780 Fab Labs

611 Organizations

70,000 Users

4,860 Fab Lab employees

Fab Academy

14th Edition

184 Students

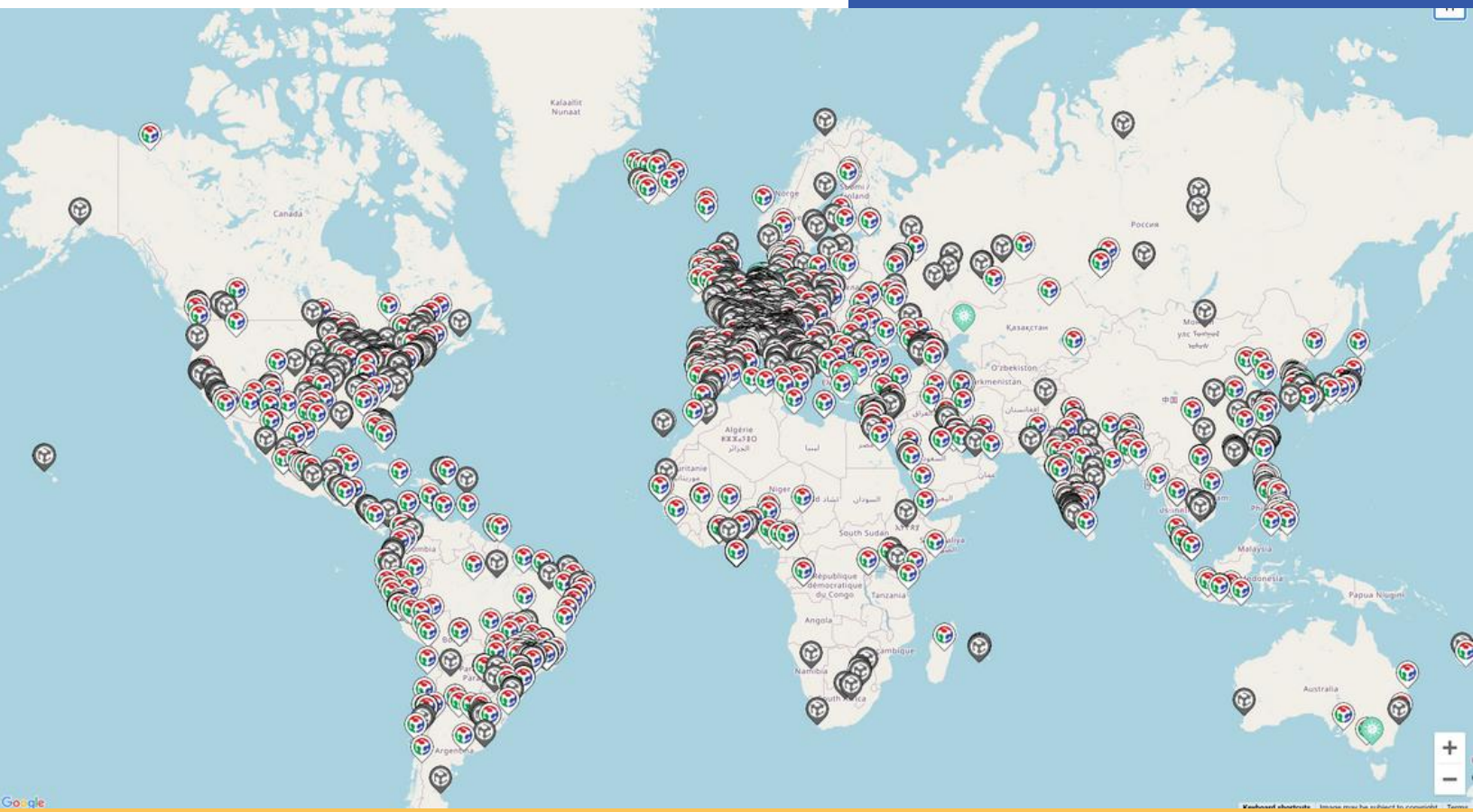
35 Countries

53 Nodes & Orgs

100 Graduates

115 Final Projects

1.3K Historical Graduates



We work in over 20 countries, and counting...

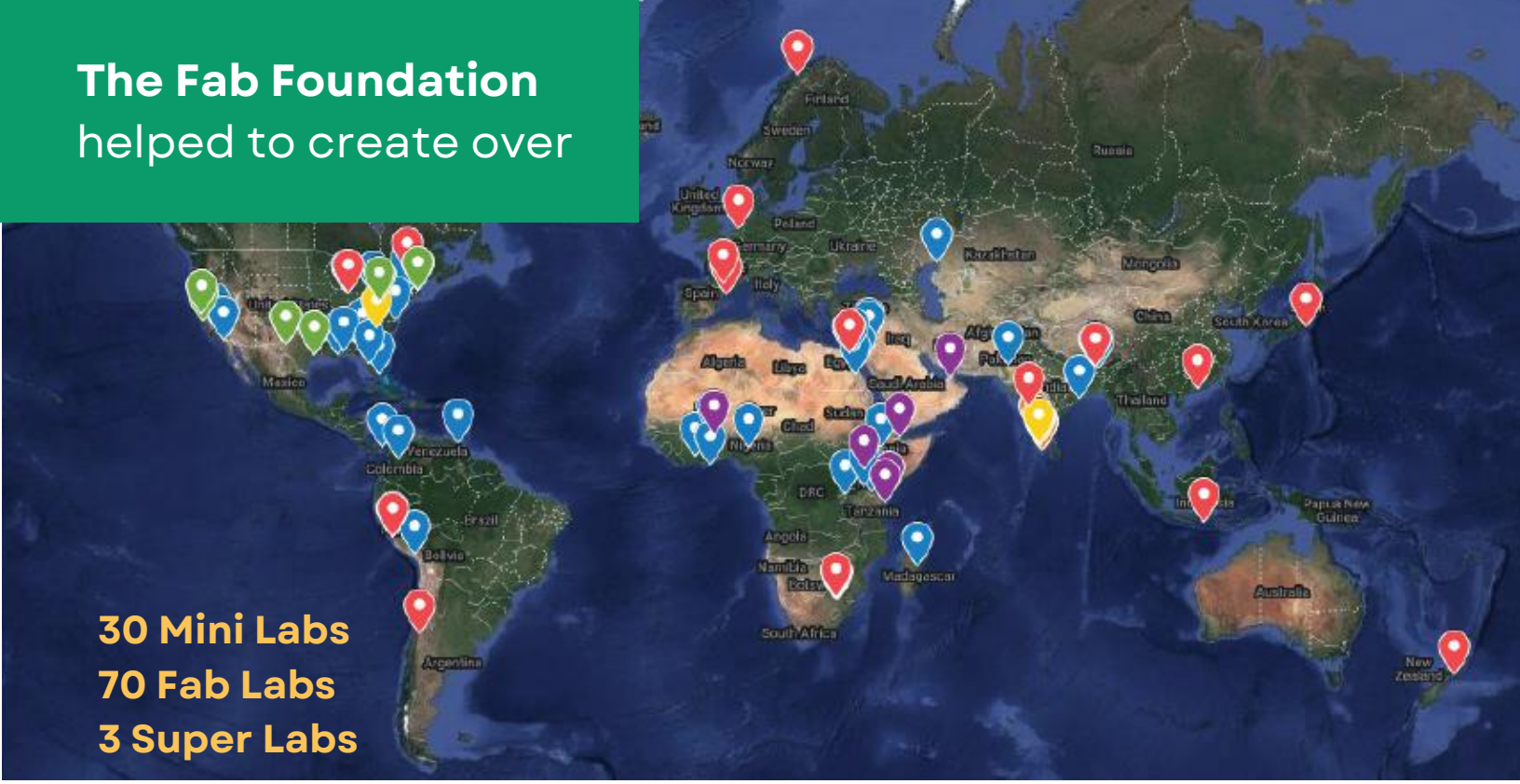
Turnkey Fab Lab Deployment

The Fab Foundation offers a broad portfolio of services, which can be combined to create a complete turnkey solution, allowing potential host organizations to rapidly deploy their Fab Lab(s) anywhere in the world. From a single Mini Fab Lab to entire regional networks, we can support clients and projects of any scale while ensuring that each Fab Lab we deploy reflects the community in which it is embedded and maintains plug-and-play compatibility with the broader Fab Lab Network, including our education programs.

Working in close proximity with host organizations, funders, and stakeholders, the Fab Foundation can assist in all stages of deployment. We offer support from the initial conception and design of new or existing spaces to curating, procuring, and shipping a tailored inventory of equipment and materials that meets the needs of local communities and budgetary constraints.

Through our distributed network of digital fabrication experts, we are also able to provide onsite services in (almost) any location, including installation, customized training.

The Fab Foundation
helped to create over



Some of Our Previous Collaborators

Procurement Solutions

As each community's needs are unique, we offer a variety of off-the-shelf and custom Fab Lab models that can be combined and augmented to suit any organization, community, region, or nation.

Micro Fab Labs

An off-the-shelf solution that includes low-cost versions of the tools and materials required to introduce anyone to digital fabrication: laser cutter, 3D printer, vinyl cutter, and beginner electronics. Our most compact option, they easily facilitate STEAM education, ideation, and small-scale prototyping. Micro Fab Labs are a great choice for smaller spaces that may be located within other sites, such as museums, libraries, and community outreach centers. They're also a great starting point for newcomers to digital fabrication who plan to expand down the road.

Mini Fab Labs

Expand the possibilities of prototyping with precision computer numerical control (CNC) milling for machining of a wide array of materials, including the fabrication of printed circuit boards (PCBs), as well as molding and casting capabilities. Unlike Micro Labs, Mini Labs can be customized and are composed of industrial-grade equipment, designed for high throughput settings and ensuring longer in-service time.

Standard Fab Labs

Our flagship offering, boasting an expansive array of digital tools, from laser cutters and advanced stereolithography (SLA) 3D printers to both large-scale and precision CNC mills, comprehensive electronics workstations, and specialized equipment for molding, casting, and composites. These are the original Fab Labs and remain the top choice for education institutions, science centers, larger community hubs, and boutique prototyping centers. Crucially, Fab Labs at this scale and above can support Fab Academy and our other educational programs.

Super Fab Labs

Our most comprehensive option. They are a true make (almost) anything solution, customized to each client's focus and context. Outfitted with cutting-edge metrology, rapid prototyping, and CNC metalworking equipment, they enable research and advanced education in manufacturing and digitally controlled tools. Labs at this scale require the most advanced support infrastructure and expertise to manage and operate, but they introduce a completely different set of possibilities. Super Fab Labs have the technical capacity to produce digital fabrication equipment, enabling the independent deployment of Micro and Mini Fab Labs and the establishment of homegrown hub-and-spoke networks throughout a regional footprint.

Mobile Fab Labs

Provide the full potential of a Standard Fab Lab–including compatibility with Fab Academy–in a mobile package, which may be ideal for educational outreach across communities, especially in remote or rural areas with lower population density. Featuring our most popular machine modules, these cart-based systems are optimized to fit through standard doorways and roll easily onto vans or large custom trailers. Mobile Fab Labs can be deployed within a single space or between locations.

Our Standard Offerings

MICRO LAB

- Laser cutting
- 3D printing
- CNC milling
- Vinyl cutting
- Beginner electronics

MINI LAB

- Laser cutting
- 3D printing
- CNC milling
- Vinyl cutting
- Beginner electronics
- Precision CNC milling
- Molding and casting

FAB LAB

- Laser cutting
- 3D printing
- CNC milling
- Vinyl cutting
- Beginner electronics
- Precision CNC milling
- Molding and casting
- Large format CNC milling
- Composites workbench
- Electronics test bench
- 3D scanning

SUPER LAB

- Laser cutting
- 3D printing
- CNC milling
- Vinyl cutting
- Advanced electronics
- Precision CNC milling
- Molding and casting
- Large format CNC milling
- Composites workbench
- Electronics test bench
- 3D scanning
- Metal machining
- Advanced 3D printing
- Welding
- Waterjet cutting
- High precision metal cutting
- Advanced 3D scanning
- And more...

Fab Lab Equipment

The Fab Lab inventory is carefully curated by CBA, in conjunction with the Fab Foundation, reflecting years of extensive testing at the MIT Lab and in the field. It provides options from multiple manufacturers at varied price points, catering to a wide range of applications and technical requirements. Primarily, we focus on cost-benefit analysis, ease of maintenance in the field, and quality of customer support. The inventory is constantly updated to reflect the latest available technologies and best practices in digital fabrication.

Given our historic volume of business, we've fostered close relationships with key vendors and manufacturers, enabling us to secure discounts on the vast majority of equipment procured.

Laser Cutting

3D Printing

CNC Milling

Vinyl Cutting

Electronics

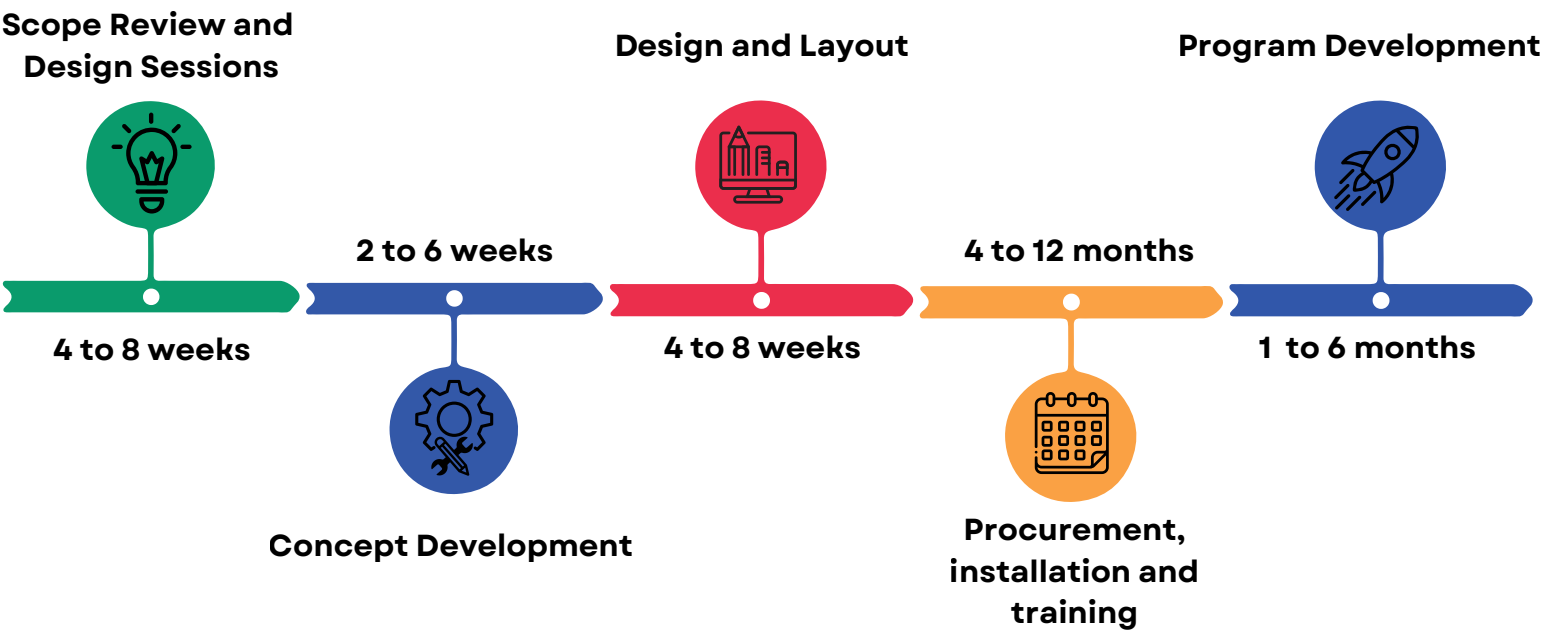
Molding, Casting, Composites

Textiles

Advanced Machining

Fab Lab

Example Schedule



Scope Review and Design Sessions

- Initial stakeholder meetings
- Understanding local needs and context
- Identifying key objectives, target users, and desired outcomes
- Defining high-level scope and budget framework

Concept Development

- Creating detailed spatial layouts and equipment lists
- Designing the interior (workstations, safety considerations, accessibility)
- Infrastructure planning (power, ventilation, network)
- Obtaining necessary permits and approvals

Design and Layout

- Refining the vision and mission for the Fab Lab
- Identifying core equipment, tools, and services
- Drafting the operational model (staffing, programming, sustainability)
- Securing partnerships and initial funding sources

Procurement, installation and training

- Purchasing of all major equipment, tools and consumables
- Transport to the final location
- Installation and safety training
- Lab management training for the local team
- Commisioning of the lab

Program Development

- Developing educational programs and workshop offerings
- Training staff and building a local network
- Creating policies for equipment use, memberships, and safety
- Establishing a launch plan and outreach strategy

Our expertise and an organization is contained in these 5 workpackages, which together assure the best start of a Fab Lab in your organization. We can offer each of these packages individually, or in a combination which best fits your needs.