

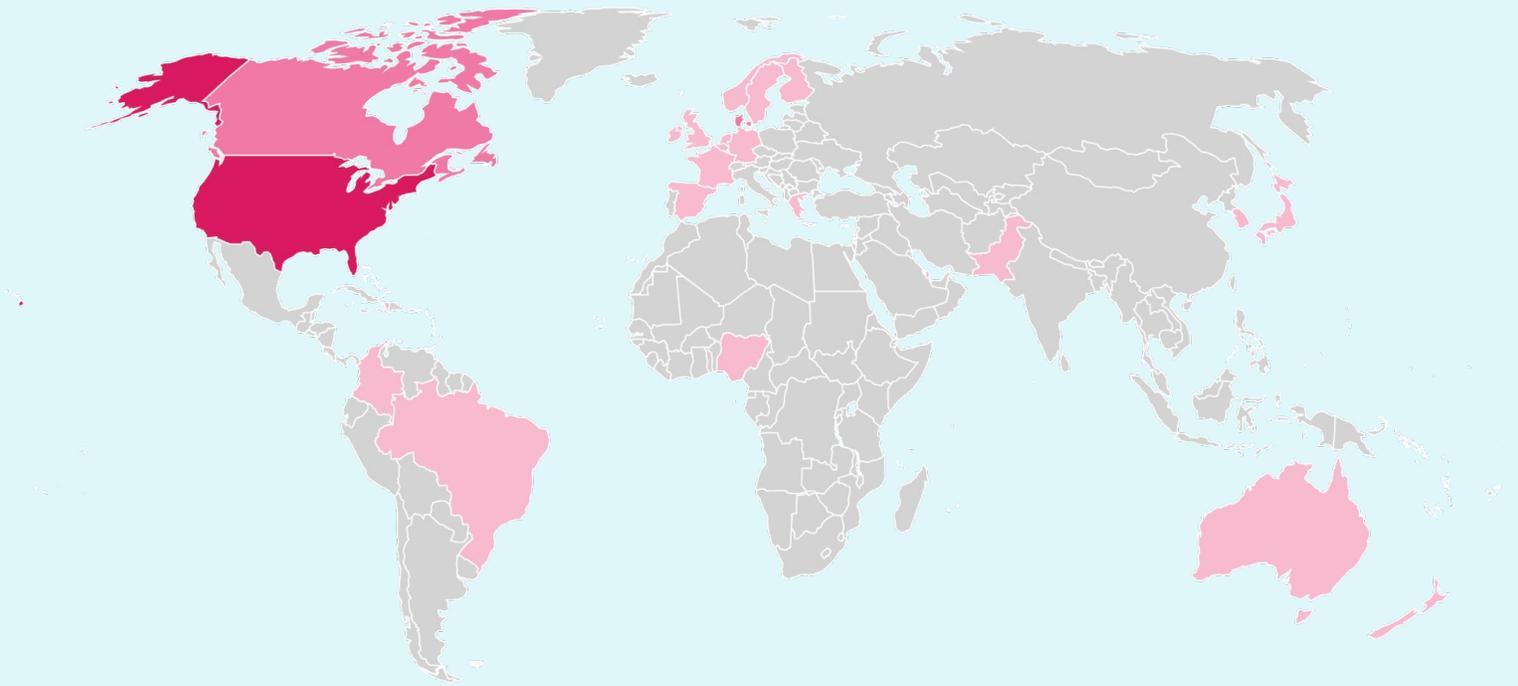
# MIT Public Library Innovation Exchange

Equitable STEAM Access through  
Creative Learning in Public Libraries

**Impact Report**  
**2021-2025**

[plix.mit.edu](https://plix.mit.edu)





## Executive Summary

The MIT Public Library Innovation Exchange (PLIX) fosters a vibrant culture of creative learning and capacity-building by empowering library professionals in over 1,000 institutions around the world to become effective facilitators of science, technology, engineering, arts, and mathematics (STEAM) learning experiences. Through a rich ecosystem of open educational resources, hands-on workshops, and a supportive community of practice, Plix helps library professionals connect

with like-minded peers and gain the confidence to co-design and lead interest-driven programs for young people. Libraries, often overlooked as centers of innovation, are elevated through Plix into dynamic environments where curiosity, collaboration, and STEAM inquiry thrive. By centering equity and creativity, Plix enables youth to see themselves as future scientists, artists, and changemakers, transforming the library into a launchpad for lifelong learning and imagination.

**Dr. Claudia Urrea**  
*Executive Director, MIT pK-12*

**“PLIX brings the creative approach to STEM learning, that is “in the air” on the MIT campus, to hundreds of public libraries all around the country and the world.** Plix is not only a collection of free high-quality education materials, but a community of educators that support a different vision of learning, where young people work on projects that inspire them, and build confidence to solve problems that they care about.”

**— Philipp Schmidt, Plix co-founder, and VP of Technology Innovation at Axim Collaborative**

# Open Education Resources

Co-designed with public library professionals and MIT researchers, PLIX activities and resources are free, easily accessible, and licensed under creative commons.

# 12

STEAM activity guides co-designed with library professionals and MIT researchers

# 71

remixes and examples of how activities have been adapted for different contexts

# 30,974

site visitors since Jan 2021

# 132,151

page views since Jan 2021

“I love the activities you have laid out on the website with just, I mean, **everything you need is ... just right there and it's so easy, it gives me confidence.**”

— *Shelly Cook, Delaware County Library, OK*



## Data Gems

Create your own rules for tracking data that is meaningful to you.

🕒 1–1.5hr 👥 <15 Participants  
👤 Age 8+ 🧰 Craft Materials



## Paper Circuits

Learn the basics of circuits while creating beautiful, interactive works of art!

👤 Age 8+ 🕒 1–1.5hr  
👥 <10 Participants  
⚡ Low-tech Electronic



## OctoStudio

Bring the physical world into interactive stories, animations, and games on mobile devices with easy on-the-go creative coding.

👤 Age 8+ 👥 <10 Participants  
🧰 Craft Materials 🕒 1.5–2hr



## Sonic Seasoning

Do you eat with your ears? How can we encourage healthy eating through sound?

👤 All Ages 👥 <15 Participants  
🧰 Craft Materials 🕒 1–1.5hr

# Community of Practice

An open-access online discussion forum supports sharing experiences, ideas, and strategies.

# 478

forum members

# 19,438

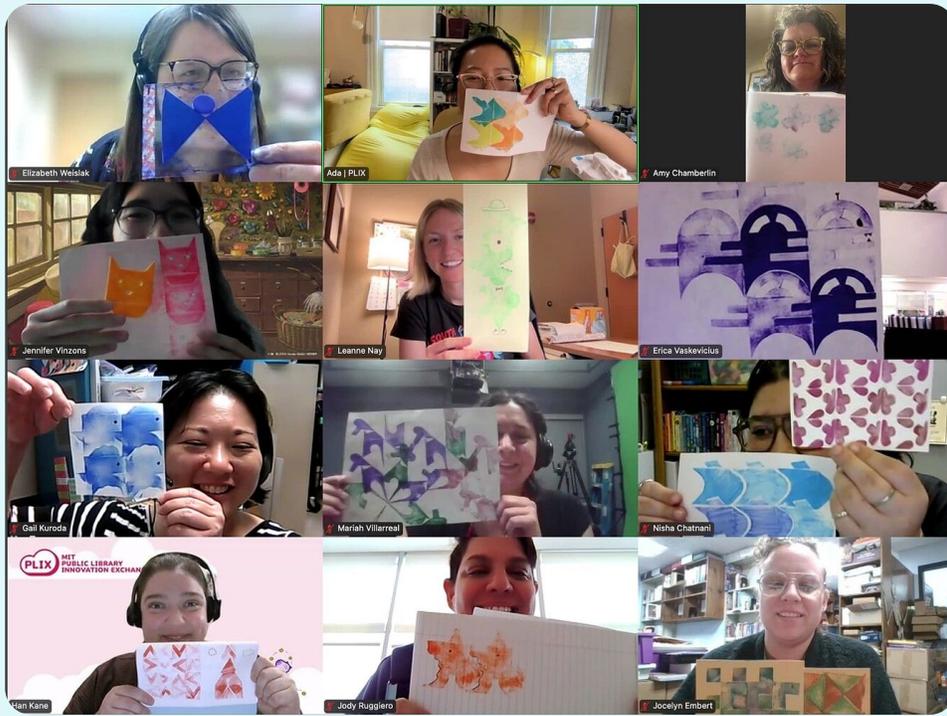
site visitors, with **2,100** returning visitors since May 2023

“I love the PLIX forum, and I actually kind love that it's open to the public. I think that that's great. **I love public accessibility.**”

— *Coley Mixan, Berkeley Public Library, CA*

“So **I really did like that forum because that's a way that I can go ahead and give my thoughts on things.** If people have a question or they pose a challenge... I'm up for it.”

— *Doria Ramos, Santa Ana Public Library, CA*



# Online Activity Workshops

The PLIX online make-and-meet workshops builds pathways into STEAM activities with pedagogical concepts, and cultivates a community of practice.

**781**

unique workshop participants since Jan 2021

**84**

online workshops since Jan 2021

**50.8%**

average FRMP% of workshop participants

*FRMP refers to the percentage of school-age children in a county who are qualified for free or reduced meals programs. This data is collected to support PLIX's mission of STEAM equity.*



**241**

kits distributed to public libraries since Jan 2021

**5,300**

estimated learners served

## Activity Kits

PLIX disseminates activity kits to lower the barriers of getting started with STEAM activities. Each kit supports 20-24 learners.

“Sending [the] stuff was like, ‘Ooh, they actually want me to try this and they're giving me the supplies to try it.’ So I really liked that...This is one less thing I have to think about”

— Emily Hutchison, Lexington Public Library, KY



# Professional Development

PLIX professional development (PD) workshops introduces Facilitating Creative Learning practices for STEAM learning experiences. They are offered in a variety of formats, including in-person, online, and hybrid.

**406**

participants in PLIX in-person, hybrid, and online workshops since Jan 2021

**316**

participants signed up for the self-guided PD email course

**87.4%**

of participants feel better equipped to facilitate STEAM library programs (n=207)

**86.9%**

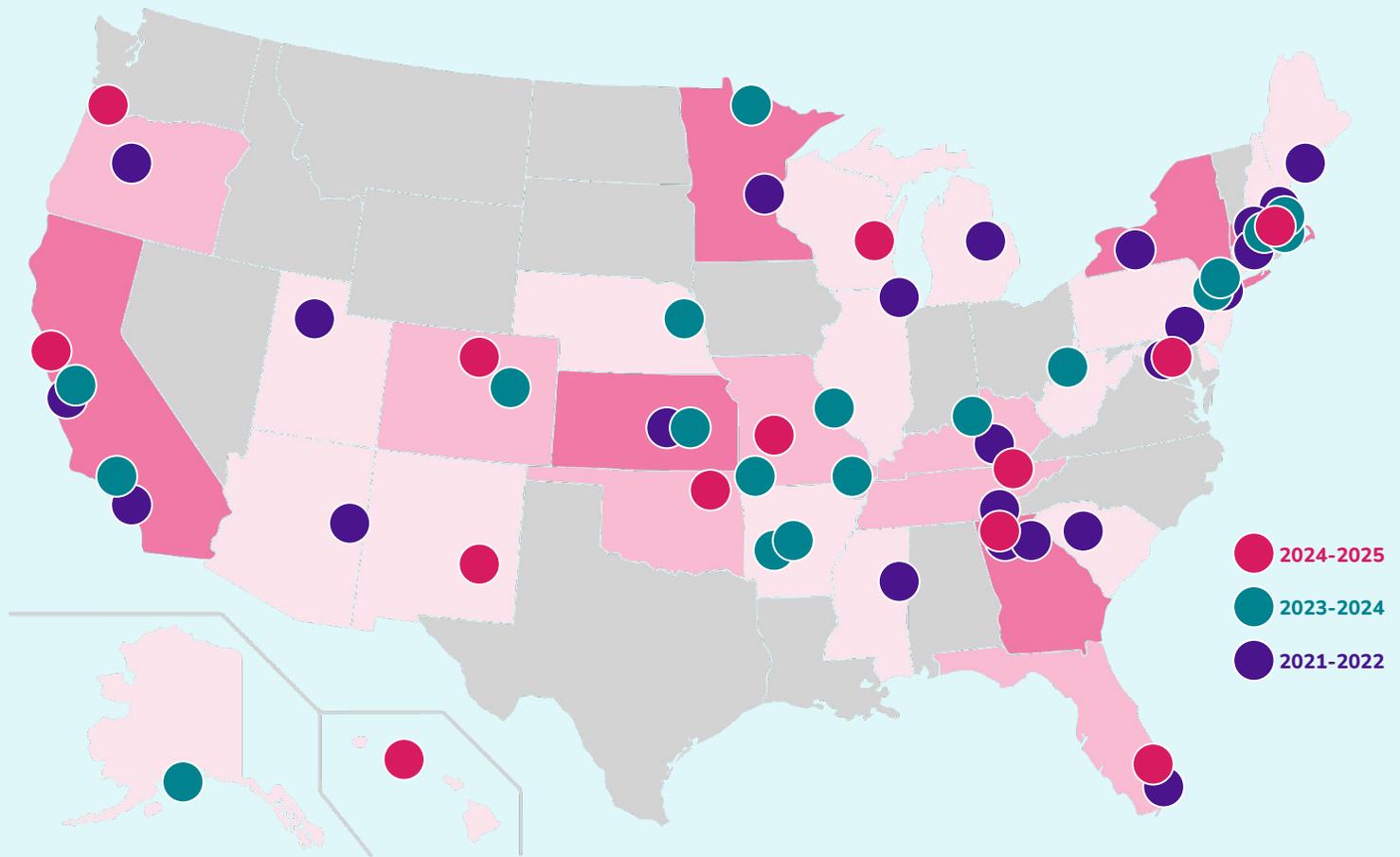
of participants would recommend PLIX PD to colleagues (n=207)

Honestly, **the thing that blew my mind was the facilitation techniques**...I still continue to do that till this day. I take a pause and be like, okay, what does this person need from me?"

— Azra Tahirovic, Queens Public Library, NY

**"PLIX, has helped me see, like anybody who's engaging on whatever their level is [that] they're still engaging.** It just might not necessarily look like what I think it looks like."

— Han Kane, Fond du Lac Public Library, WI



# PLIX Ambassador Program

In this program, PLIX builds capacity for library professionals to offer high quality STEAM programs for their communities and advocate for creative learning. These library professionals are trained in pedagogical practices, adapt PLIX activities for their communities, bond as a cohort, and share PLIX resources at local and state library settings.

## 57

ambassadors  
across the US

## 3,680

learners directly served by  
PLIX Ambassadors since  
late 2022. Ages range from  
3 to 92, with focus on  
school-aged youth.

"The support I have received from **PLIX has been instrumental in opening up STEAM concepts for youth services programming**...I wouldn't have been able to offer such thoughtful and novel ideas to stimulate young minds without the resources from the PLIX community."

— *Brook Fischer, Garland County Library, AR*

"Finding this ambassadorship definitely **helped me feel more legit**. And having access to other librarians and seeing what they're doing ... It's just been a great jumping off point,...**a lot of confidence was gained** and definitely improved my skill set."

— *Heba Thiele, Gretna Public Library, NE*



CASE STUDY

AMBASSADOR PROGRAM

## Avian STEAM Escape Room, Hawaii

Co-designed by PLIX Ambassador Jennifer Vinzons, her colleague Keely Iida, and PLIX Intern Jessica Zheng, this STEAM escape room is themed on endemic Hawaiian birds. It combined multiple PLIX activities and engaged local families in Kapolei, HI.

46

participants:  
16 children,  
15 teens, and  
15 adults

42%

of participants  
haven't been to a  
library program in  
over a year, or at all



“By centering the activity on endemic Hawaiian birds and a fictional local researcher (Auntie Iwalani), **the escape room connected meaningfully to place and community.**”

— Jessica Zheng, PLIX Intern, MIT undergraduate

“I kept overhearing this precocious-ly smart but socially awkward teen and his family doing the escape room. I loved when the sister connected and solved the Data Gems puzzle and also when they were all solving the puzzles together. **I heard him enthusiastically proclaiming to staff at the end that it was, “The best escape room he had ever done, 11 out of 10!”**”

— Jennifer Vinzons, PLIX Ambassador



CASE STUDY

AMBASSADOR PROGRAM

## Suburban Ecology in Tualatin,

**Oregon** During Tualatin Public Library's citizen science month, PLIX Ambassador Kit Lorelied invited young children to explore their local Ice Age Trail and learn about the ecosystem. Young learners gather and sort abiotic and biotic materials, take rubbings, and draw artifacts from the local ecology.

**4** participants, ages 5-11



"I forget how literal kids are. When I explained that our ecology is made up of everything around us, **the kids loved that idea ... they interpreted that as "gather everything."** I had to redefine what they gathered by stating that it can not be moving or bigger than your collection box. If it fell into those categories, then they could write it in their notebooks. [Here] is a picture of a girl using her box to scoop up water!"

— Kit Lorelied, PLIX Ambassador



CASE STUDY

AMBASSADOR PROGRAM

## Family STEAM Night, Georgia

A winter-break STEAM event supported by community partners, including the county farm bureau, local girl scouts, an astronomy club, and a field ranger, the Family STEAM Night coordinated by Vidhya Jagannathan and her colleagues at North Cobb Regional Library in Georgia had an incredible turnout.

**743** participants,  
all ages

Library programs often struggle with outreach. Building up the excitement across multiple community partners and outreach channels helped make this a successful learning experience for families across Cobb County.



“All stations were popular and the circuit table was ‘buzzing’ with activity. The plan of **having a combination of some pre-made circuits and just the raw materials** worked in supporting a wide age range of ages.”

— Vidhya Jagannathan, PLIX Ambassador



## CASE STUDY

## RURAL & TRIBAL LIBRARY TOOLKIT

# Native-flatables, Arkansas

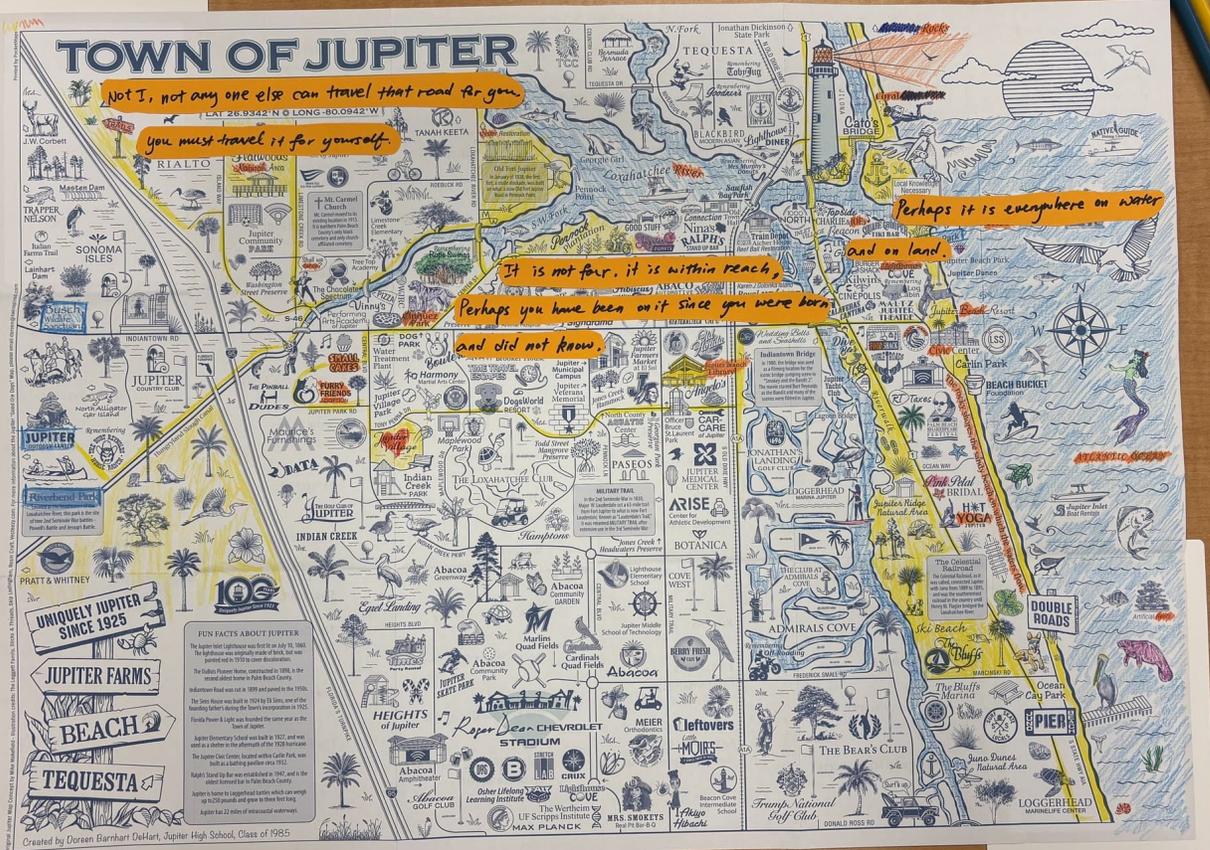
A participant in the PLIX Rural and Tribal Library Toolkit Project, April Griffith, Library Director at Eureka Springs Carnegie Library, AR, remixed PLIX Inflatables to engage youth with native flora and fauna of the local Ozark area.

In her activity design, Griffith highlighted the beautiful dogwoods, redbuds, morel mushrooms, and other native local flora in the Ozarks. She took the opportunity to talk about why native flowers are important in supporting the ecosystem, including insects, birds, critters, and large mammals.

Tweens and teens were encouraged to recreate upcycled materials into inflatable toys and wearables. Because the materials "were all headed for the trash anyways," it quelled their hesitancy and opened them to exploration.

"We didn't have many attendees, but those who came were excited and tried several iterations of their creations. Ultimately, no one was able to make a correctly 'blooming' flower, but everyone had fun making other inflatables. We loved making the figures ... **one of the examples looks kind of like a caterpillar, which was an opportunity to discuss the connection between native flora and fauna.** Even though our flowers didn't bloom, our caterpillars still crawled!"

— April Griffith, Eureka Springs Carnegie Library, AR



**CASE STUDY** **PLIX COMMUNITY**

# Spatial Poetry in Jupiter, Florida

For the centennial celebrations of Jupiter, FL, Stephanie Skaryd, adapted PLIX Spatial Poetry for her library branch, fostering creativity, geospatial inquiry, and community connection.

**21** participants:  
15 library patrons, and  
6 librarians at staff training

Using commemorative and historic maps of the Town of Jupiter, many local citizens highlighted the library as one of their favorite places; one called it “the true civic center” of the town.

Each person viewed the city differently. Everyone, from adults to kindergarteners, created their own personal Jupiter. For example, one kid annotated “good” and “bad” places for his cat. “Bad” places included a place that sold chocolate and the iconic lighthouse: “millions of people visit there every day, and she’d get scared.” He also added a legend and expanded the map to include his hometown.

“This was a very successful program. Both staff and patrons loved it and everyone created beautiful works of art. I loved how so many people approached Jupiter with different sets of eyes and feelings, and how that translated into ‘their’ personal Jupiter... I definitely will run this again as part of our systemwide Storytellers Collective series of programs in October and November 2025.”

— Stephanie Skaryd, Palm Beach County Library Jupiter Branch, FL



# Conclusion

Through a rich and varied ecosystem of resources and programs, MIT PLIX has empowered library professionals to offer STEAM activities that resonate with the interests of their local communities. These experiences, centered on equitable access to quality education, compound toward a larger vision of cultivating creative and curious future scientists, artists, and changemakers.

Looking ahead, PLIX remains dedicated to supporting library professionals to engage youth in playful learning, and continuing to co-design transformative MIT research into highly adaptable open education resources.

**Ada Ren-Mitchell**

*Learning Programs Designer, MIT PLIX*



# Gratitude

Our supporters have sustained the joy, connection, and innovation of the PLIX community, and we are forever grateful.



Anne & Paul Marcus  
Family Foundation

