



Invest in Open
Infrastructure

AfricaConnect4

Co-designing funding for climate research
data infrastructure in Africa

Kaitlin Thaney, Executive Director

Invest in Open Infrastructure |
investinopen.org | [@investinopen](https://twitter.com/investinopen)

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We're on a mission.



To catalyze investment in and adoption of open, digital infrastructure to further data access & availability in research.

Who we are

We bring deep experience to how we source, assess, and support projects.



Kaitlin Thaney

Executive Director

- Wikimedia Endowment
- Mozilla Foundation
- Digital Science
- Creative Commons



Emma Green

Director, Development

- Delta Think
- Hindawi



Gail Steinhart

Research Data Analyst

- Atmire
- Cornell University Library
- arXiv



Katherine Skinner

Director, Programs

- Educopia Institute
- The Maintainers
- Software Preservation Network
- Library Publishing Coalition



Nicky Wako

Business Development & Partnerships Lead

- GÉANT
- Ministry of Foreign Affairs and International Cooperation, Republic of South Sudan



Lauren Collister

Engagement Coordinator, Infrastructure

- University of Pittsburgh Library System
- Linguistic Society of America



Emmy Tsang

Director, Finance & Operations

- eLife
- TU Delft Library
- European Molecular Biology Laboratory



Chrys Wu

Product Lead

- GitHub Sponsors
- O'Reilly Media
- The New York Times
- Hacks/Hackers



Jerry Sellanga

Engagement Coordinator, Networks

- 2SCALE
- Amani Institute
- OI Pejeta Conservancy

What do we mean by Open Infrastructure?

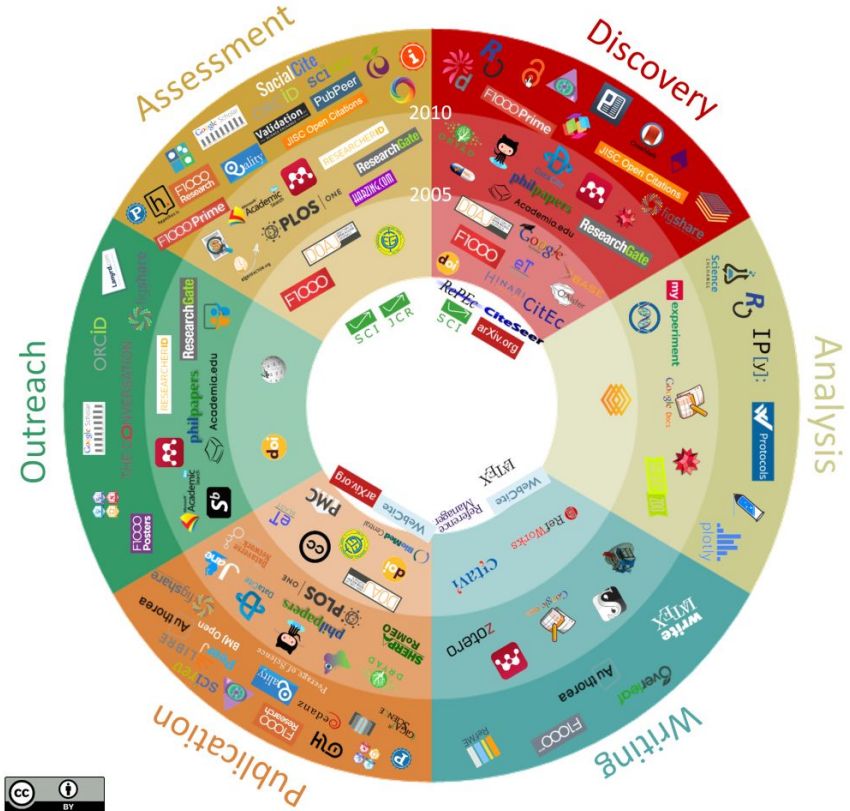
Infrastructure

The services, protocols, standards or softwares that the research ecosystem needs in order to perform its functions throughout the research lifecycle.

Open

The sets of services, protocols, standards and software that can empower communities to collectively build the systems and infrastructures that deliver new improved collective benefits without restrictions, and for a healthy global interrelated infrastructure system.

Focus on services that are open-source, distribute open access content, are free to use, are community-governed, and/or are non-commercial.



Problem

Open data is critical to address global health challenges, climate change, economic development and more.

Open solutions have risen in popularity and use to further open access to research, but many struggle to be viable.

Funding from philanthropy, government, & institutions empowers services to be mission-oriented.



Services are vulnerable to changes in leadership and funding and often struggle with funding long-term operations and maintenance.

Community-development and governance center researchers' needs.



Communities are straddled with the cost of development without additional funding, leading to reliance on unpaid labor.

Open source solutions are customizable, and able to be built on or adapted as needs grow.



Implementation and maintenance of open solutions can be costly and time-consuming due to resource constraints.

Many alternatives and initiatives exist to serve specific communities and advocate for change.



Scarcity of funding and lack of investment in coordination can lead to unhealthy and unnecessary costs, competition, and duplication of effort.



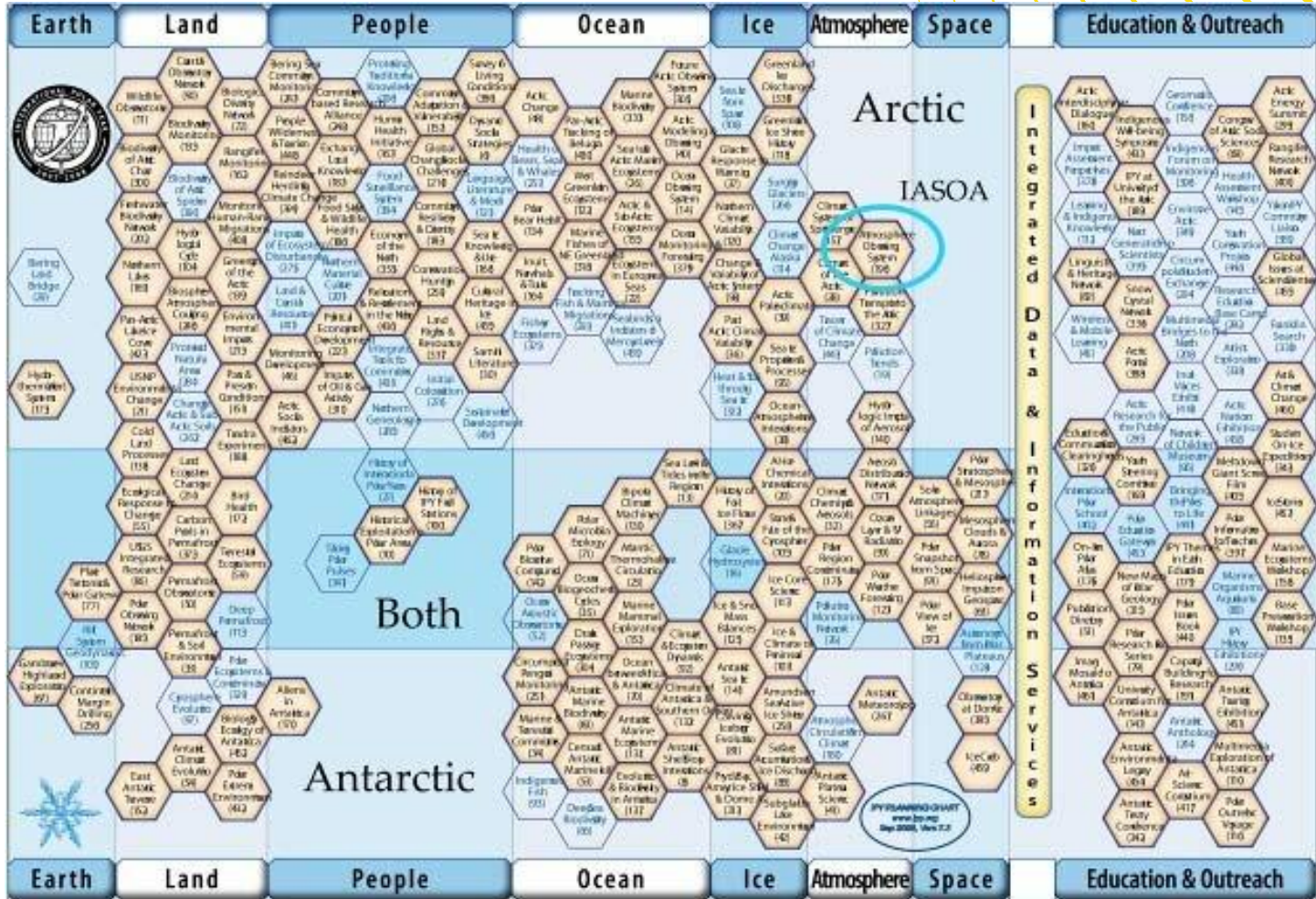
Workshop aims

Approaches and models that center African needs and excellence

- Building a landscape view of **climate data + infrastructure needs in Africa**
- Exploring a potential **collective funding model**, focussing on types of contributing funders
- What **organizations** are needed to move this conversation forward?



Data infrastructure needs & solutions





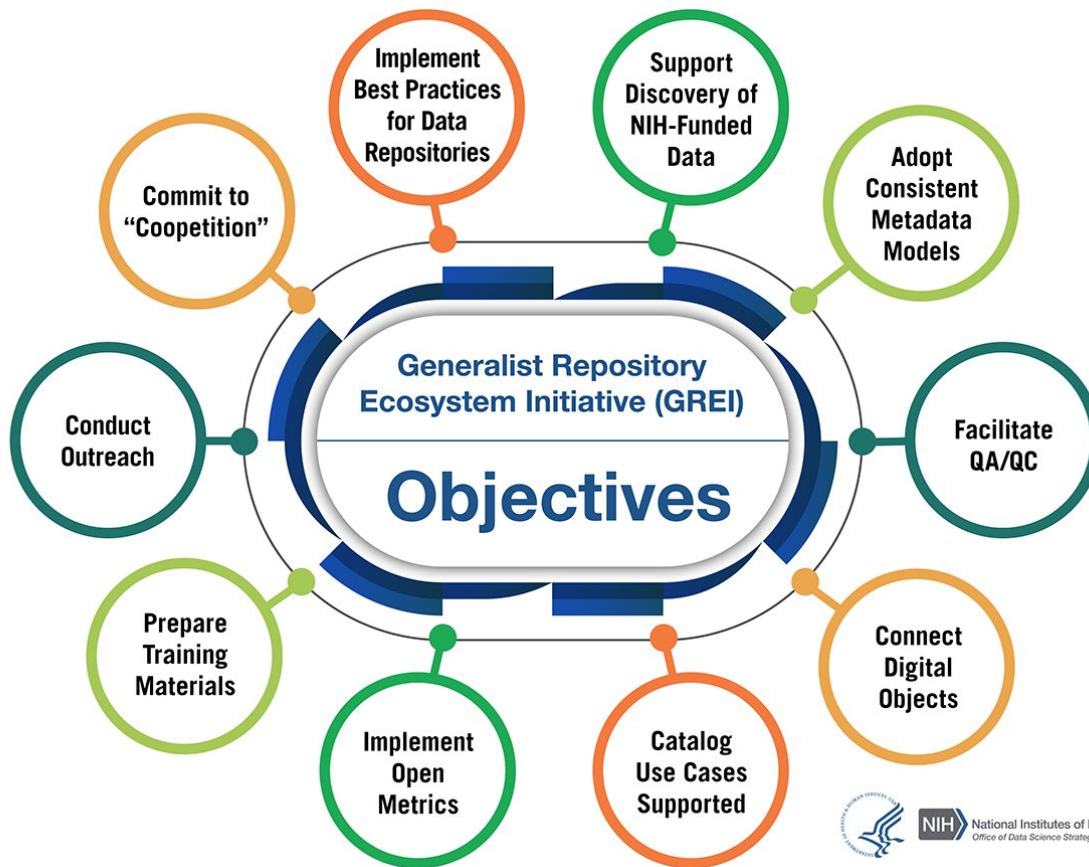
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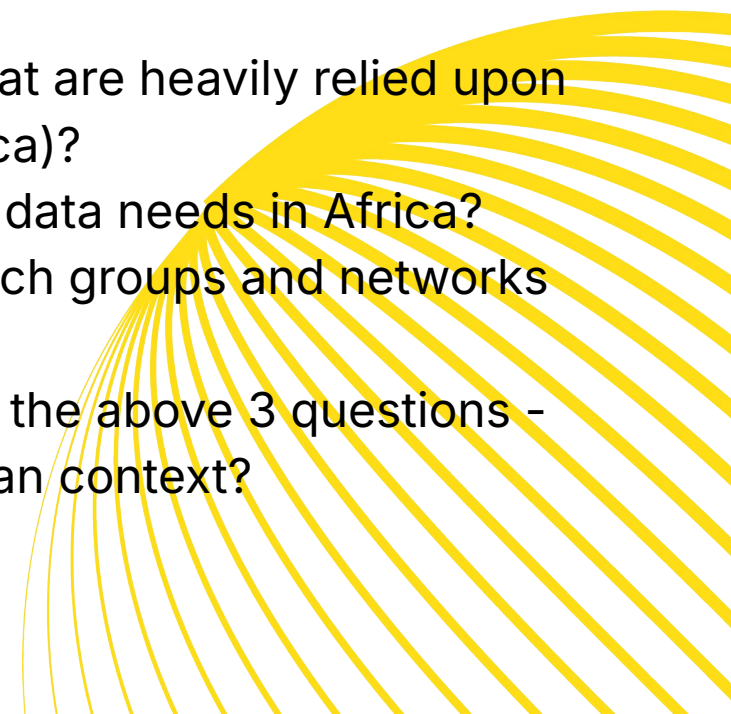
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Compare Solutions

Hyku ×	InvenioRDM ×	Dataverse ×	DSpace ×
<p>Samvera</p> <p> United States of America</p> <p>Hyku is a feature-rich, robust, flexible digital repository that can be customized by and for institutions large and small. Hyku works well...</p> <p>Digital preservation system</p> <p>Repository software</p> <p>Learn More →</p>	<p>CERN</p> <p>The InvenioRDM project is an open source collaboration with two main goals: build a turn-key research data management (RDM)...</p> <p>Repository software</p> <p>Learn More →</p>	<p>Harvard University Institute for Quantitative Social Science (IQSS)</p> <p> United States of America</p> <p>The Dataverse Project is an open-source web application to share, preserve, cite, explore, and analyze research data. It facilitates maki...</p> <p>Repository software</p> <p>Learn More →</p>	<p>Lyrisis</p> <p> United States of America</p> <p>DSpace is a web application, allowing researchers and scholars to publish documents and data. While DSpace shares some feature...</p> <p>Repository software</p> <p>Learn More →</p>



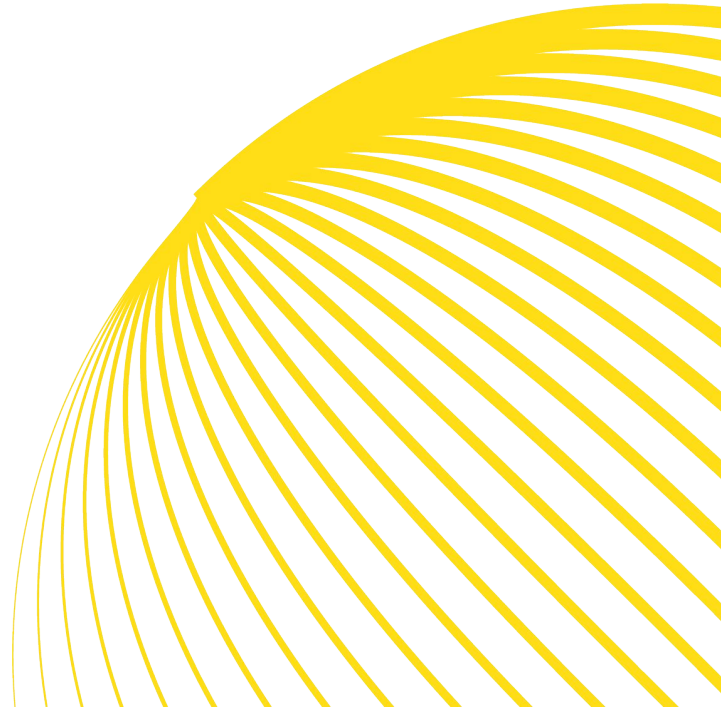
Discussion: climate data infrastructure needs in Africa

- What are some of the data infrastructures that are heavily relied upon in climate research (Africa or outside of Africa)?
 - What are some of the most pressing climate data needs in Africa?
 - What are some of the key individuals, research groups and networks doing climate research in Africa?
 - What questions arise we have as we answer the above 3 questions - what do we not know, especially in the African context?
- 

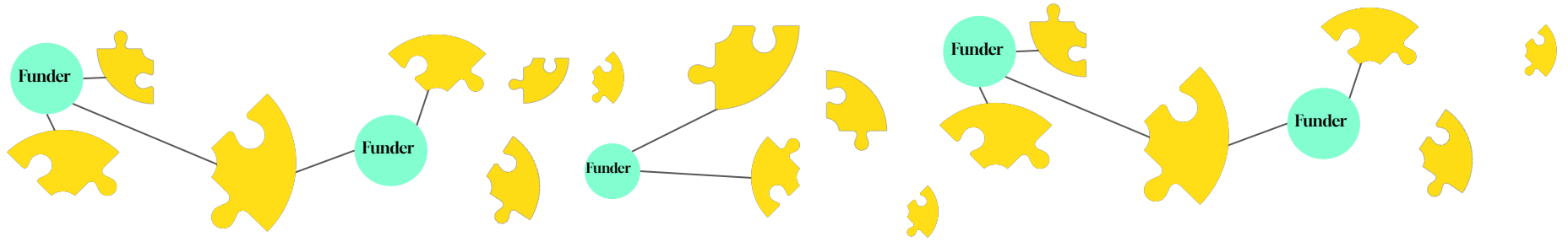


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Exploring funding models and sources



Coordinating investment for impact at scale



Funders with specific priorities – global health research, digital infrastructure, digital transformation, open access – all fund different components of open research.



IOI Fund: Network Adoption

A \$6-8M USD fund to provide flexible, catalytic investment to support research communities at scale.

- **Partner with at least (3) networks**, focusing on networks with a strong existing service relationship to a set of communities or institutions, a public commitment to open science principles, and a specific opportunity for using funds to advance the adoption and implementation of open data infrastructure.
- **Raise \$6-8M USD** to support these partnerships for up to 3 years, providing flexible funding and strategic support to enable the implementation of open data infrastructure for those networks and their members.
- **Create a mechanism to expand the pool of funders for open infrastructure**, including calling for commercial service providers and others who derive significant value from the open ecosystem to reinvest in the open systems from which they profit.

A focus on networks

- **Impact at scale:** Working with networks serves as a multiplication lever, leveraging the existing infrastructure and influence of networks to multiply the impact of funding, and mitigating risk by coordinating action over a large number of institutions
- **Centering community:** Enables a participatory funding process that centers the needs of network communities
- **New models for change:** Strengthens the infrastructure of the participating networks and pilots new models for coordinated adoption and shared investment in open infrastructure, with impacts beyond the timeline of the fund

Target Impacts

Increase access to open data and content for researchers and institutions represented by participating networks

Advance research related to critical global issues including climate change, agriculture, and health through the improvement of open science infrastructure

Increase sustainability for open infrastructure providers and services through increased adoption and contributions by participating networks and institutions

Create new models for coordinated adoption and shared investment in open infrastructure by developing capacity of participating networks to serve as shared infrastructure providers

Drive investment towards a more representative and equitable ecosystem and enable collaboration and exchange of learnings across geographic and cultural contexts

Case study: Africa

Project aim	Implement data sharing infrastructure, connectivity & training for use by postgraduate researchers in Africa to advance agricultural research
Communities served	163 universities across 40 countries in Africa
Infrastructure needs	Bandwidth/connectivity, data repository implementation, training & capacity building support for postgraduate researchers, integration with persistent identifiers for discoverability of research data
Services anticipated	Technical assessment (connectivity, system parameters), data repository due diligence, technical implementation support, design of training materials & workshops, translation of key materials into local languages
Ongoing sustainability	Shared support and service model to be examined via NREN/RREN nodes in the region (WACREN, UbuntuNet Alliance, ASREN); government support/subsidy
Target impact(s)	<ul style="list-style-type: none">• Increase access to open data and content• Increase use/expansion of open infrastructure providers and services• Create new models for coordinated adoption and shared investment in open infrastructure• Advance research related to critical global issues

Case study: Latin America

Project aim	Upgrade, expand, and connect existing repository infrastructure in Latin America with an additional focus on increasing data sharing capacity
Communities served	National research systems in Argentina, Brazil, Chile, Columbia, Costa Rica, Ecuador, El Salvador, Spain, Mexico, Panama, Peru and Uruguay. Expansion expected into 2-3 additional countries
Infrastructure status	DSpace v4.0 installations at the national level (current version of software is v7.0)
Services anticipated	Technical developer support to upgrade national systems, implementation support for new communities, assessment of data needs/feasibility using existing system, training + capacity support, translation of materials into Spanish + Portuguese
Ongoing sustainability	Shared support and service model to be examined via NREN/RREN nodes in the region (RedCLARA) and national government support/subsidy
Target impact	<ul style="list-style-type: none">● Increase access to open data and content● Increase use/expansion of open infrastructure providers and services● Create new models for coordinated adoption and shared investment in open infrastructure



Discussion: Let's explore different types of potential funders

Examples: foundations/philanthropy, regional bodies, governments, corporate/CSR, private investors...

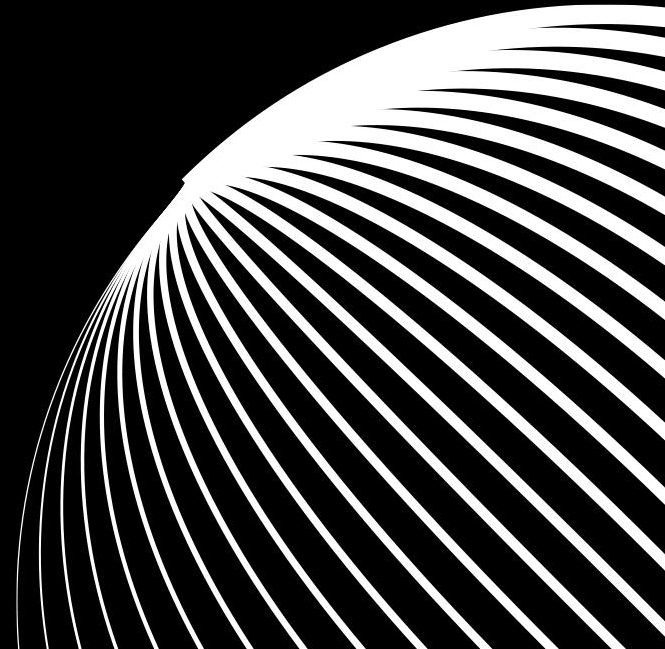
- Fill in the square brackets: As a [funder], I would like to see [outcome], but my concerns/challenges are [challenges].
- What are some examples of funders (of each type) that may want to be part of a collective funding effort for African climate research data infrastructure?



We're here to support building this work with and for your communities.

Join us in continuing this conversation.

[Sign up for our mailing list](#) or reach out!





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Thank you

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