summary

There is evidence that **scholarly communications have biases** and the processes of science and scholarly communication **create barriers to inclusion**.

More openness and inclusion in scholarship is needed.

Progress requires **reliable measurement over time**.

This project will produce **standardized indicators** that describe **who contributes to open science** and scholarship outputs over time.
disclaimer

These opinions are my own, they are not the opinions of my employers, collaborators, or project funders.

Secondary disclaimer:

“It's tough to make predictions, especially about the future!”

- Attributed to Woody Allen, Yogi Berra, Niels Bohr, Vint Cerf, Winston Churchill, Confucius, Disreali [sic], Freeman Dyson, Cecil B. DeMille, Albert Einstein, Enrico Fermi, Edgar R. Fiedler, Bob Fourer, Sam Goldwyn, Allan Lamport, Groucho Marx, Dan Quayle, George Bernard Shaw, Casey Stengel, Will Rogers, M. Taub, Mark Twain, Kerr L. White, etc.
attributions

- Project Supported by IMLS Award: LG-250130-OLLS-21
- Project in collaboration with Chris Bourg, CREOS Director
- Pilot research and writing in collaboration with Philip Cohen
References

'open' is growing

- Increasing volume of open access (OA)
- Increasing percentage of publications
- Increasing use of open science
open metadata is growing

Directory of Open Access Books (DOAB), metadata on tens of thousands of monographs

OpenAPC title-level metadata on processing charges

I40C initiative. Provides citation data for works with DOIs
growing recognition of social values in scholarship

Recognition of open access and open science norms

Calls for values-aware science

Declarations of codes of ethics

Awareness of inequity in science participation & impact
inclusion is lacking...

Geographic concentration

Gender balance and bias in science

English language dominance in scholarly publications

Inaccessible formats

Fees and charges are barriers to access or publication

Most evidence comes through one-shot reports and publications. Difficult to compare results because sources, statistics and coverage varies across reports. Publications may lag years behind the data.
Community Tracking Indicators for Open and Inclusive Scholarship

● **What** is the prevalence of members of different groups in open-scholarship and open-science initiatives, and outputs?

● **Where** are open-scholarship and open-science outputs used in the scholarly ecosystem?

● **How** does group prevalence in open scholarship and science vary within the scholarly ecosystem?
Standardized Open Indicators of Participation

Comparability
- compare over: time, measure, population
- established: methods & taxonomies
- baselines: COS, NCSES

Temporal Regularity
- detect trends and cycles
- scalability

Honest Accuracy
- design for error
- reveal uncertainty

Reproducibility
- measures: trace to the source
- process: open and repeatable
- records managed: provenance, fixity, revision control
- reports: analysis is executable
Project Runway ...

- **Sponsor**: IMLS
  (Institute for Museum and Library Services)
- **Funding**: ~ $320K
- **Duration**: 3 years
- **Expected outputs** by that time:
  - data
  - reports
  - community-requested indicators
  - publications
<table>
<thead>
<tr>
<th>ORCID</th>
<th>DOAJ</th>
<th>DOAB</th>
<th>I40C</th>
<th>ROAR MAP</th>
<th>PLOS Articles</th>
<th>Open Editors</th>
<th>OSF.io</th>
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Open licensed information
Maintained and updated at least annually
Spans authors, editors, & presses
Contains signals of contributions, impact, & policies
Work Streams

Open Data Integration Pipeline

Summarize evidence of participation from open sources.

- open source automated data science pipeline
- retrieve, clean, link, and normalize data
- measure and summarizes evidence

Targeted Data Mining

Track issue salience & fill gaps in open sources

- web & social media sources
- selects specific institutional stakeholders
- panel-based design

Community-based indicators

Tailor measures and reports by community request

- pilot project
- builds on data collections and analysis infrastructure
- community consultation process
Early Results: OA Monographs

much growth.

lower fees.

Altman 2021
Early Evidence: Journal Board Diversity

Altman & Cohen, 2021
Early Evidence: Is Open Access More Inclusive?

No Policy

Diversity

Closed Access

Open Access

Altman & Cohen, 2021
• Altman, M., "Designing Community Tracking Indicators for Open and Inclusive Scholarship". 2022. MetaArXiv. (Forthcoming Proceedings of ASIST)


• Altman, M., "Designing Community Tracking Indicators for Open and Inclusive Scholarship". 2021. Dspace@MIT. (CREOS White Paper)
Learn More

• Meet the team
• News & calls for participation
• Project publications & reports, data, code

<https://libraries.mit.edu/creos/research/>