

Challenging the innovation imperative

Libraries empower a collaborative ecosystem

CBK and the Library of the Future: Anticipating the Second Knowledge Revolution

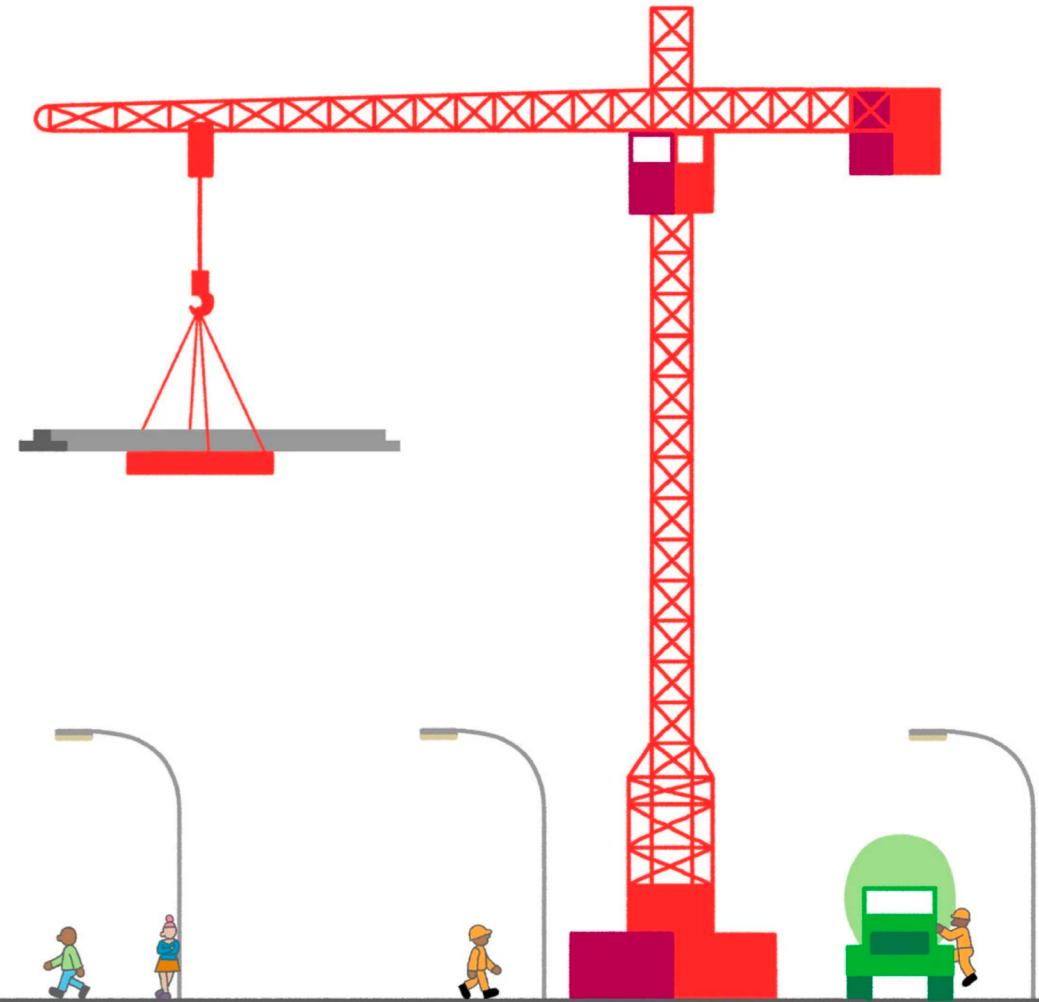
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Northwestern University

@kristiholmes

#MCBK2020

June 30, 2020



Adapted from illustration by Andrew Russell





themaintainers.org

[@The_Maintainers](https://twitter.com/The_Maintainers)



Hail the maintainers

Capitalism excels at innovation but is failing at maintenance, and for most lives it is maintenance that matters more



The Ott Family with T-Ford washing machine. *Photo courtesy Ronald Kline, Cornell University*
"It's not all lightbulbs: most of the time innovators don't move fast and break things" Aeon. Available at <https://aeon.co/essays/most-of-the-time-innovators-don-t-move-fast-and-break-things>

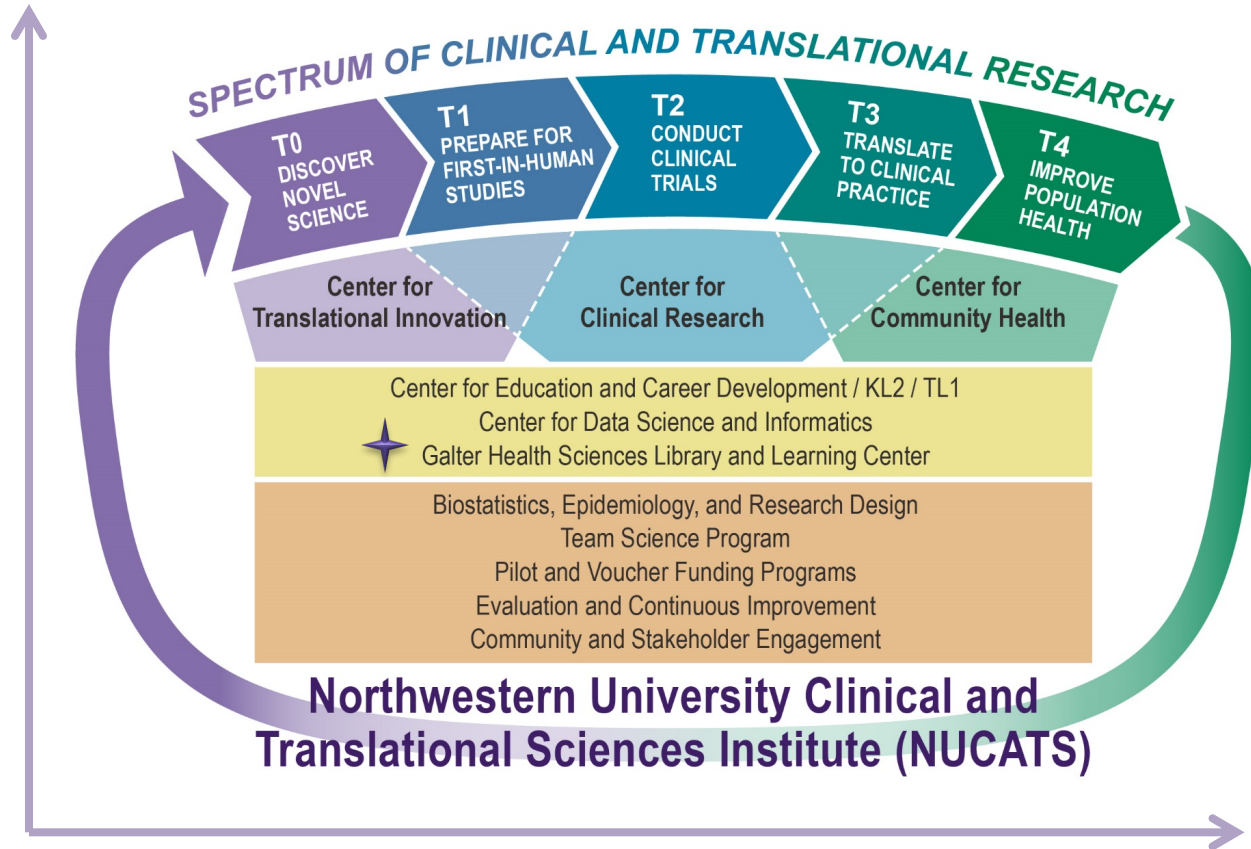
Libraries can empower a collaborative ecosystem

Where are we going?

How do we get there?

Who's along for the ride?

Accelerating discovery through collaboration



INNOVATING MAINTENANCE & MAINTAINING INNOVATION...COLLABORATIVELY

IDENTIFY AND OPTIMIZE DATA, TOOLS, PARTNERS, & PROCESSES



BE INCLUSIVE, TRY TO UNDERSTAND PERSPECTIVES



OPERATIONALIZE PROCESSES

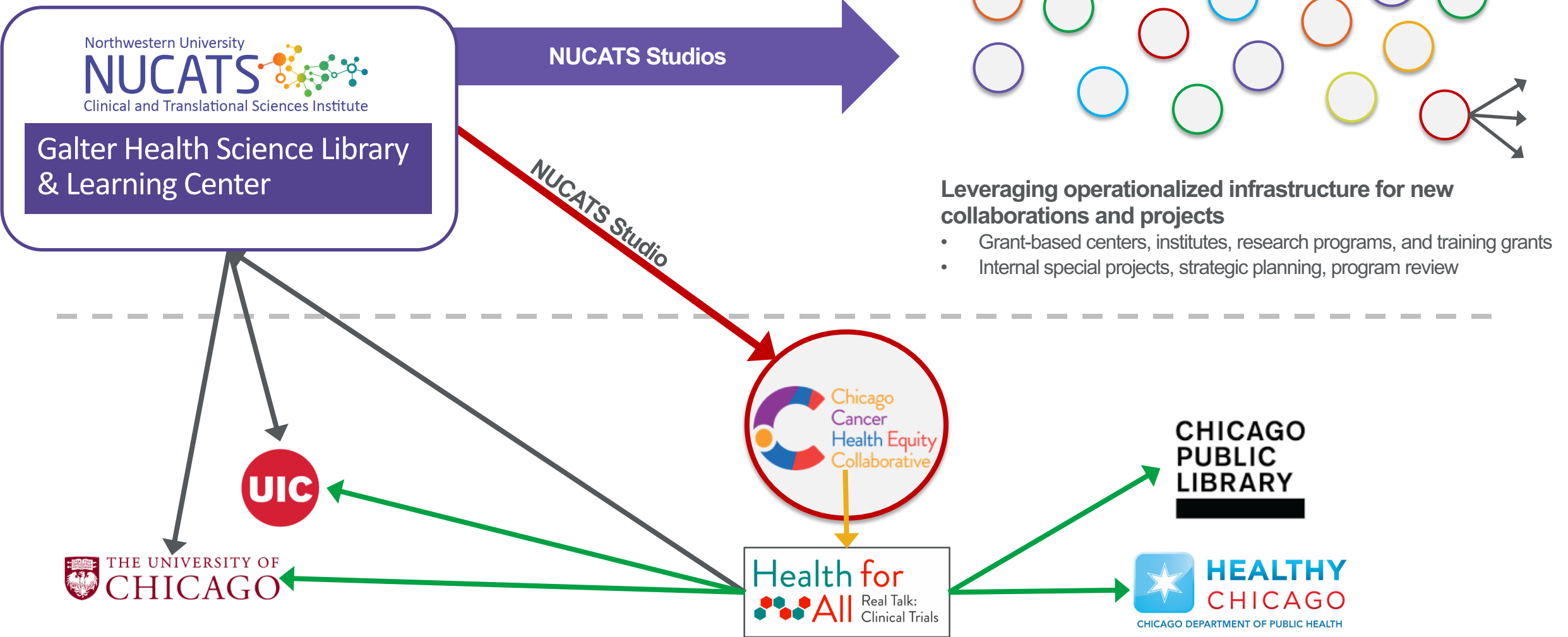


SUPPORT STRATEGIC ACTION, EXPAND TO OTHER PROGRAMS, KEEP AN EYE ON THE HORIZON

- Evaluation & Continuous Improvement – real IMPACT
- Information & evidence support
- Informatics & Data Science
 - Galter DataLab
- Team Science
- Workforce Development
- Training & Mentorship
- Dissemination & Communication
 - Metrics & Impact Core

Technical and social/cultural investments are critical!

Investing in a sustainable model for collaboration



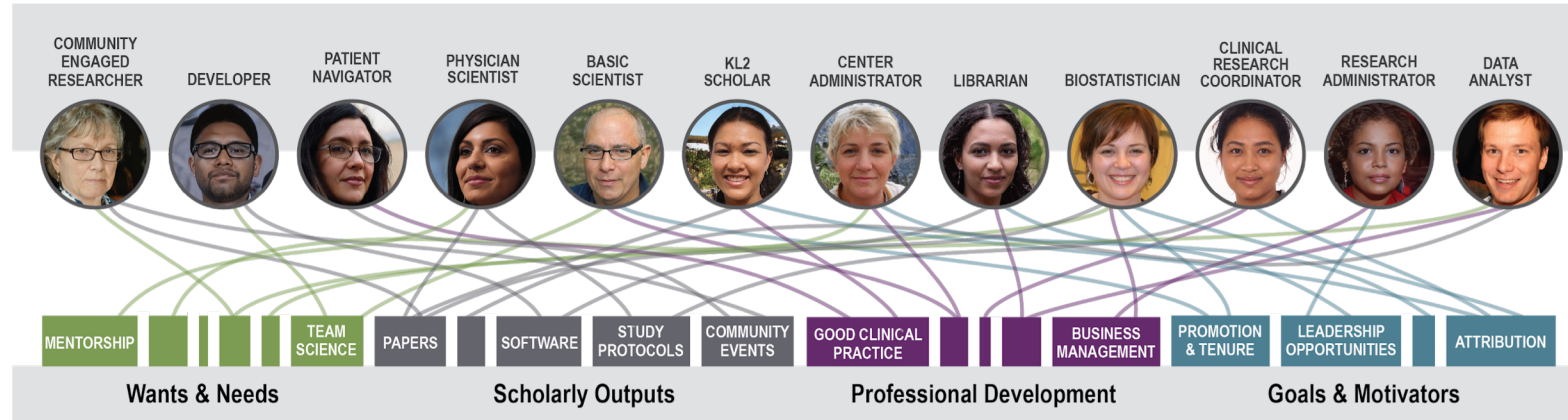
Libraries can empower a collaborative ecosystem

Understanding, recognizing, and incentivizing the translational workforce

A few helpful resources: Is authorship sufficient for today's collaborative research? A call for contributor roles. Available at <https://doi.org/10.1080/08989621.2020.1779591>. Contributor Attribution Model. Available at <https://contributor-attribution-model.readthedocs.io/>. RO Crate. Available at <https://researchobject.github.io/ro-crate/>. Becker Medical Library Model for Assessment of Research Impact. Available at <https://becker.wustl.edu/impact-assessment>. Evaluation of Research Careers... Rewards, incentives and/or recognition for researchers practicing Open Science. Available at https://ec.europa.eu/research/openscience/pdf/os_rewards_wgreport_final.pdf. Final Report of the Open Science Policy Platform. Available at https://ec.europa.eu/research/openscience/pdf/ec_rtd_ospp-final-report.pdf.

Personas

It is critical to understand, support, and recognize the translational workforce



PERSONAS FEATURES

- **14 one-page profiles** of key roles in translational research, including 2 patient profiles
- **Evidence-based** through systematic review of literature, job descriptions, and interviews. Two empathetic patient profiles informed by literature
- **Sample use cases informed by CTSA** project experience
- **Additional resources** and information available via <https://data2health.github.io/CTS-Personas/>

USE PERSONAS NOW

- **Download the Profiles**
- **Download the User Guidebook**
- **Sample Use Cases:** read ours and contribute your own
- **Contribute ideas** for new Personas or improvements to the existing one.
- **Submit feedback** via the Personas Evaluation Form
- **Join us!** Currently expanding Personas project based on feedback.

Clinical Research Coordinator

Lucy Silonga



"I love this job because it combines my passion for science with the ability to work with a wide array of great people."

Bio

For the past three years Lucy has worked as a clinical research coordinator, a demanding but fulfilling job. Working on around 4 investigators' projects, totaling 7-8 studies and clinical trials at any given time, Lucy's main charges are human subject protection and study management. Lucy devotes much of her time to study initiation, working with funders, regulatory agencies, and her institution's oversight committees to prepare regulatory documents, protocols, IRB submissions, and workflow documentation. She recruits and enrolls patients, doing informed consents and documenting this process for compliance with GCP, IRB, HIPAA, and other required funder or institutional policies. Making sure all study procedures are in alignment with protocol, Lucy creates adverse events reports, keeps drug accountability documentation, oversees specimen transfers and processing, and performs continual quality assurance.

Lucy's teammates appreciate her knowledge and her mentoring work. They know she is a vital liaison between key research stakeholders including sponsors, regulatory bodies, PIs, patients, and clinical care organizations.

Education: BS, Biology
Years of experience: 3
Work location: Hospital, clinic sites, offices. Have laptop and tablet, will travel

The CTSA Program National Center for Data to Health (CD2H) is supported by the National Center for Advancing Translational Sciences (NCATS) at the National Institutes of Health (Grant U24TR002306)

Goals

- A promotion to lead CRC
- To complete CRC Certification
- To delegate some tasks and build her skills in others
- To achieve a better work/life balance, reducing late-night and weekend work

Motivators

To solve health problems by working efficiently with key components and stakeholders to complete studies

To be thorough and transparent in her work and to document procedures for training, compliance, and accountability

To do accountable, reproducible science that ensures the safety and security of patient data

Software attitude & use

- Embraces new technologies
- Feels proficient in the tools she uses at work but could grow skills in tools like Excel
- Data security is paramount
- Web portals: institutional IRB, NIH RePORTER, ClinicalTrials.gov, electronic medical record portals, supply and drug ordering websites, specimen processing software
- Research and Collaboration: REDCap, Slack, Acrobat, video conference software
- General: MS Office and Google Suites

Scholarly Outputs

- Is occasionally attributed on investigators' publications for her role in data curation & analysis

Pain Points

- Lucy often feels overworked. Many of her studies require more time than first allotted
- Challenges of harmonizing disparate data
- Long wait times for collaborator responses
- Needs good mobile versions of many software tools

Wants/Needs

- To confirm her level of confidence in her work by knowing when she can suggest changes and improvements in data collection
- A delineation between her responsibilities and those of the investigators
- An understanding of when she can do preliminary data analyses
- To delegate some of her tasks, such as ordering and preparing drugs, supplies, and testing kits for her unit
- A team approach to CRC work rather than single-PI assignment to best employ a CRC team's skills

Professional Development

Lucy wants CRC certification to fill any gaps in her knowledge of budgets, protocols, and working with sponsors

Lucy thrived with the peer mentorship she received when she started as a CRC, and she now mentors junior colleagues

Lucy gets new information for her role by talking to experienced colleagues, attending seminars, and following organizations like ACRP

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*Feinberg Home > Home > For Administrators > **Team Scientists***

Institutional perspectives & new models

Team Scientists

The Team Scientist track is for non-clinical faculty who make substantial contributions to the research and/or educational missions of the medical school. Faculty members whose primary activity is in research will typically engage in team science. Their skills, expertise and/or effort play a vital role in obtaining, sustaining and implementing programmatic research.

Faculty on this track often have expertise in epidemiology, clinical trials, biostatistics, biomedical informatics, outcomes research or other qualitative and quantitative research methodologies and generally contribute to clinical studies, patient-oriented clinical outcomes research, community-engaged research, population-based studies and/or basic science research. Typically, such faculty provide critical expertise to a program or group of research teams as a co-investigator with contributions that do not necessarily require or result in independent grant funding, but some faculty on this track may serve as principal investigator on related research. Faculty on this track do not perform clinical work but do contribute to the education and service missions of the medical school.

While most members of this track make research the major focus of their activity, for some members of this track education may be the major focus of their activity. Faculty focusing on education are typically recognized as outstanding educators and contribute to course development, degree program leadership and other innovative educational products.

Institutional perspectives & new models

Northwestern's Team Scientist Faculty Track

- 2015: a new “Team Scientist” track was established within our regular faculty lines to better value such scientists’ contributions
- Collaborative effort between NUCATS, Vice Dean for Faculty Affairs at Feinberg, and relevant stakeholders
- Collaborative scientists who span content disciplines at NU now have several distinct pathways for promotion with clear metrics through our tenure-eligible, non-tenure-eligible, and research faculty lines
- All faculty identify critical references and roles

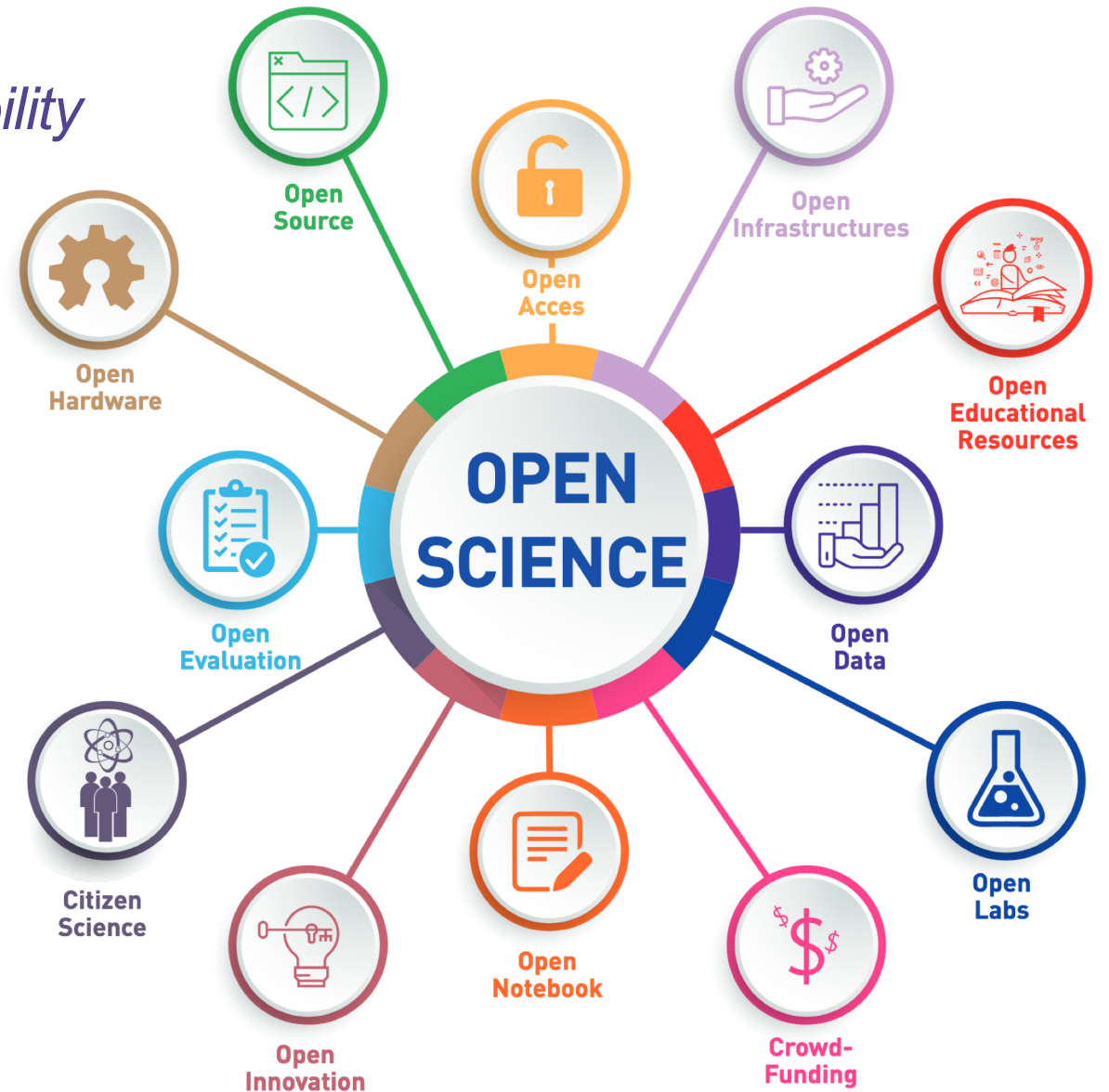
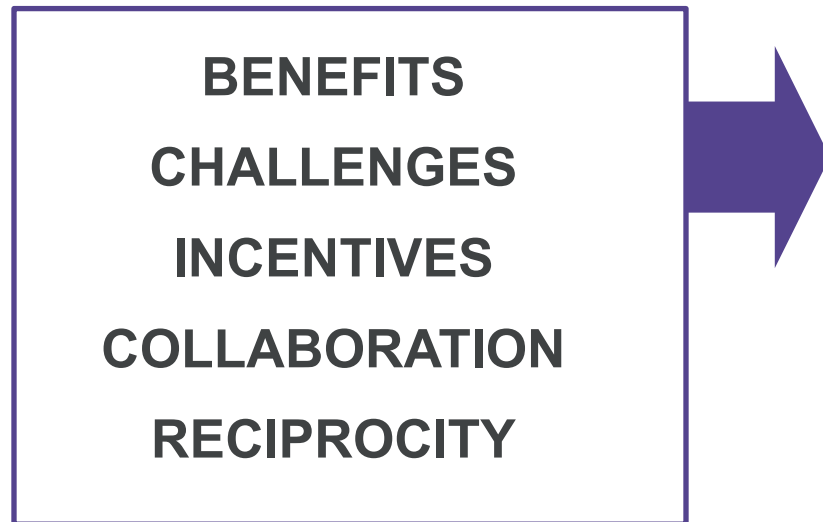
Team Scientist Faculty Track Survey Results	
	SATISFIED
Overall satisfaction with current position	74%
Opportunity to collaborate with other faculty	90%
Sense of contributing to important research	83%
Contributions are acknowledged via co-authorships	80%
Promotion process is clear and transparent	68%
Fall 2017 survey response rate: 81%	
Fall 2020 survey	

Libraries can empower a collaborative ecosystem

Investing in infrastructure, maintenance, & yes, innovation too

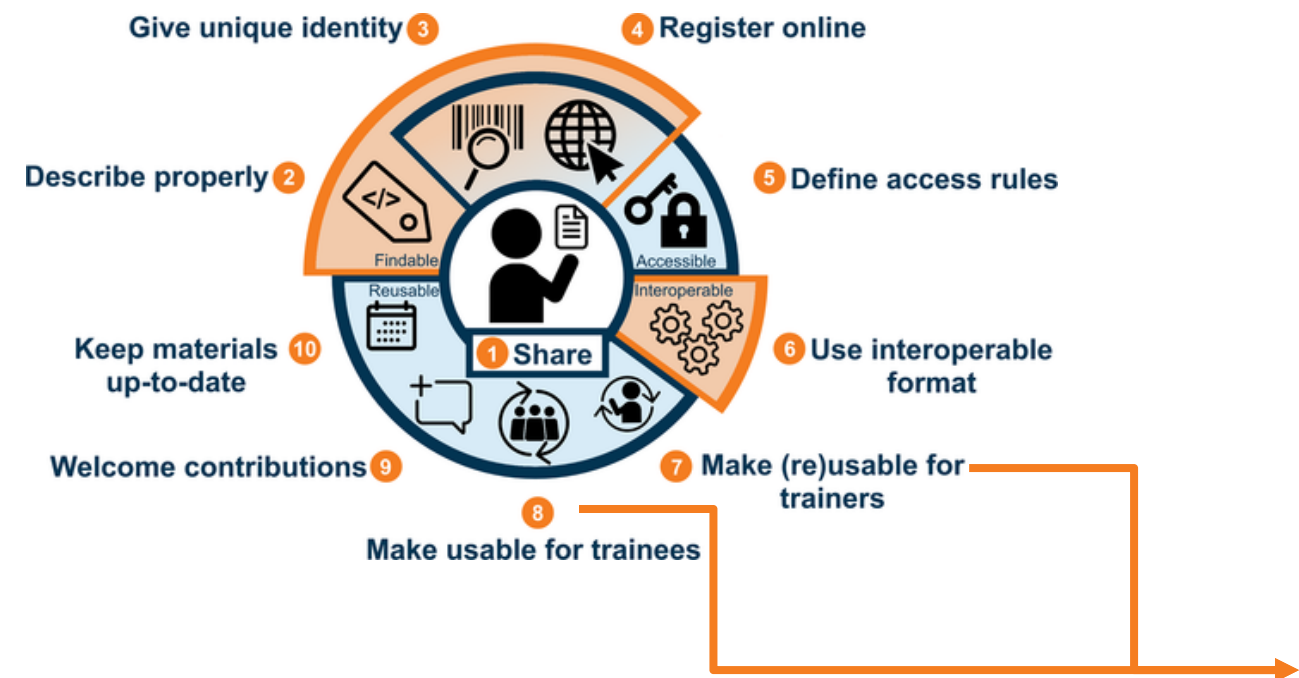
Openness

Critical for access, innovation, and sustainability



Fortifying FAIR

Teaching and support for FAIR practices
Investing in our shared infrastructure



“make it easy to do the right thing”

Suggested metadata for training materials

Type of metadata	What to include
Title	Title of the training material.
Contact details	Author(s) name and contact details.
Licensing and (re)use details	License under which the materials are shared, and rules and conditions for (re)use and contribution.
Preferred citation	Instructions on how to cite your material.
Description	Overview of the subject matter, aims of the training, and language in which the training is delivered.
Learning outcomes	Statements that indicate what trainees should be able to do upon successful completion of the training.
Target audience	The intended audience, their prerequisite knowledge and skills, their general background, and how the training material will help them.
Required resources	Technical resources and related materials (software requirements, datasets, infrastructure requirements, etc.).
Keyword	Keywords or tags identifying the topic of the materials.
Structure and duration	Description of the structure of the materials and setting in which to deliver them, including the time allocated to each part (lectures, exercises, etc.)
Additional information	Items that provide additional information about (re)use and delivery of the materials (e.g., general tips and guidance).
Links and references	Links and references that are relevant to the content but not required for delivery of the materials.
Date of last revision	Date of last update of the materials and the version.

<https://doi.org/10.1371/journal.pcbi.1007854.t002>

Research isn't open for everyone

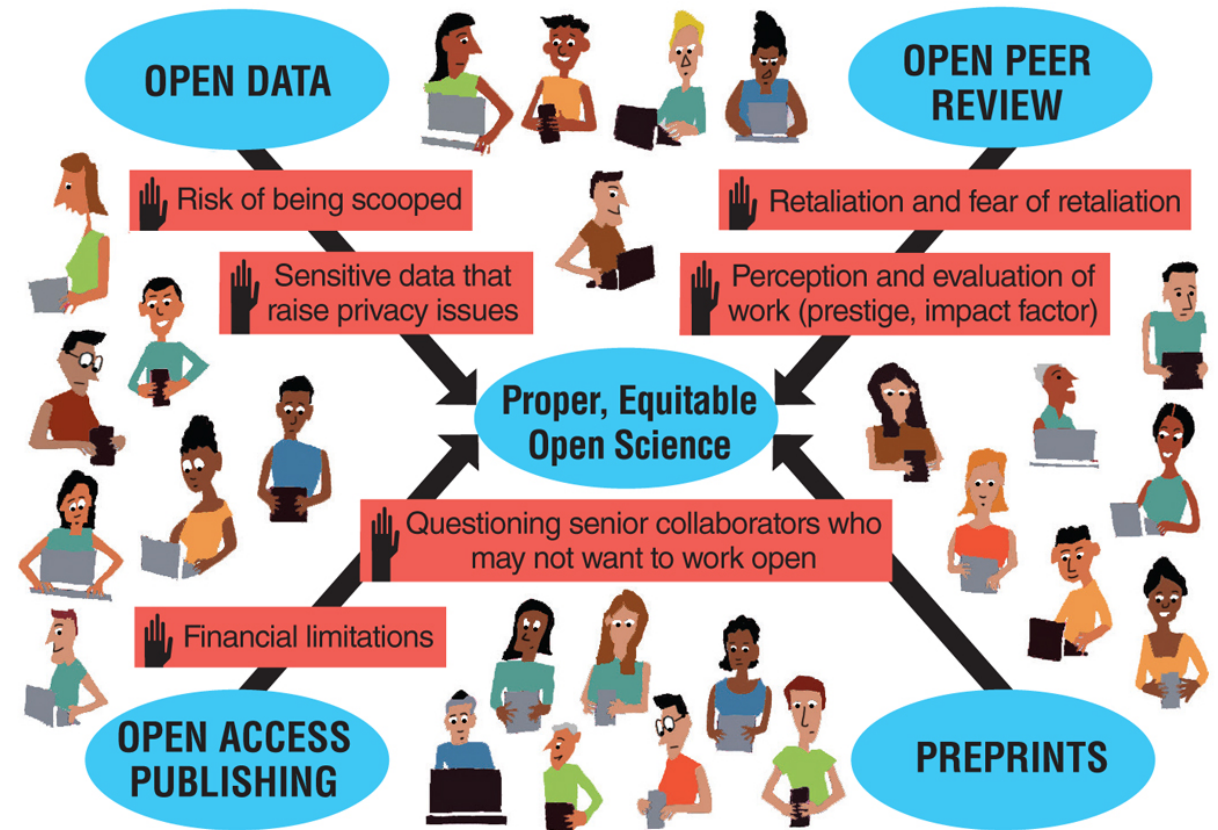
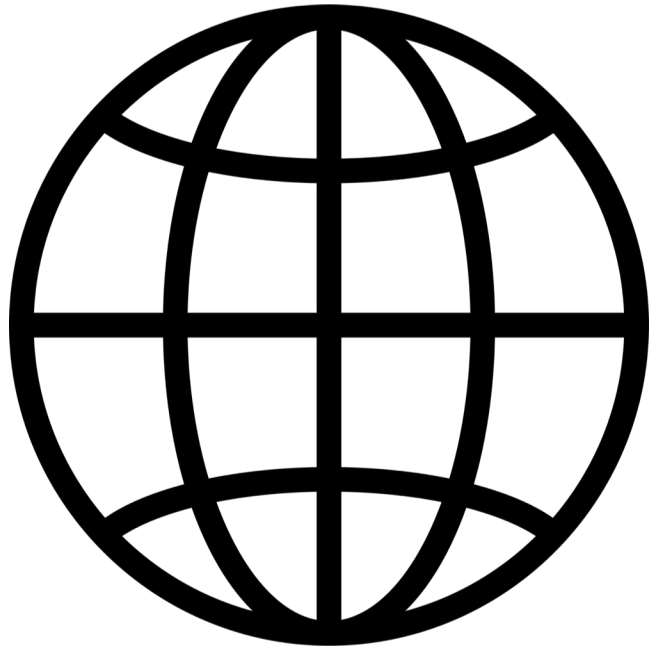


Illustration by Tom Dunne

Your generalist institutional repository

A powerful tool for open science



The turn-key research data management repository

🚀 Launching in the summer 2020

next-generation!

Roadmap

We intend to be ready by summer 2020.

Talk

Join our project forum and collaborate.

Chat

Find all the partners in our official chatroom.

Code

Have a look at InvenioRDM code evolution.

Events

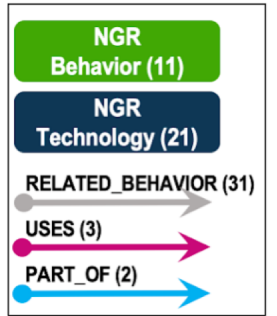
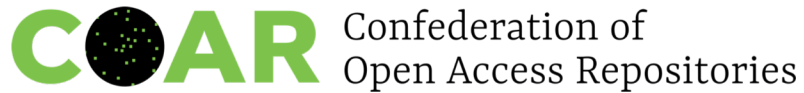
InvenioRDM project events for partners

Features

Sneak peak at the future InvenioRDM.

Collaboration and discovery, globally

Next Generation Repository (NGR) behaviors & technologies

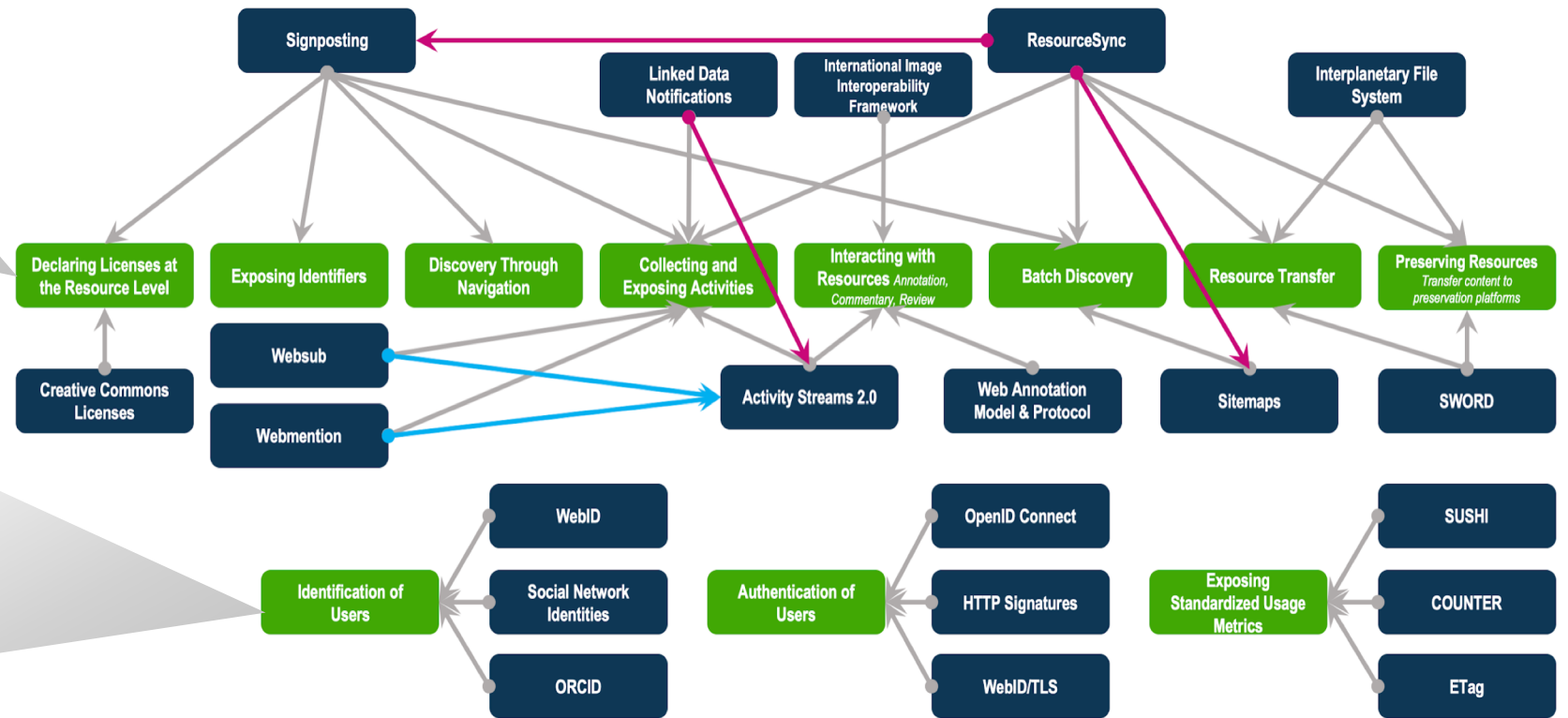


Behavior user stories:

- “As a machine or human user, I need to easily and uniformly identify the licensing and re-use conditions of a scholarly resource, so that I know what I am allowed to do with it.”

Behavior user stories:

- “As a user, I want to know when one of my social media contacts added a document, someone commented on a paper in a feed I was subscribed to, an open review has been provided on a paper I have read, a new dataset has been attached to a paper I am watching, a paper has been published based on a dataset I have used, etc.”
- “As a user, I want to be able to discover and identify important people, relevant scientific methods, conference/journal/meetup venues, funding opportunities, etc. in my research field.”



Generalist repositories

An important institutional asset and translational science tool



Basic Science: *I lead a large basic science research group. We use the repository to support reproducible science by packaging our data and methods in a combined way. Everything gets a unique identifier and versioning is supported. Our lab prioritizes science communication, so the lab graduate students set up a collection of lay summaries of their research projects to enhance engagement and dissemination, tweeting back to the summaries.*

Translation to Practice: *My team wants to find out about clinical trial opportunities to better offer patients all options for treatment. It is important to us to openly share the latest research with patients. The InvenioRDM communities give us a way to make these materials openly, packaged in a cohesive and attractive manner. As resources are updated, we can upload the new versions and track access.*

Population Health and Health Equity: *Our multi-institution health equity project uses InvenioRDM to collaborate with our community-based partners and credit these partnerships. We can share materials from community health events, project materials, training materials, annual reports, and lay summaries of research. InvenioRDM helps us to be better partners, accountable to collaborators and the community. (ChicagoCHEC)*

Early-Stage Investigators: *I'm an early career researcher just getting started on my research career. I want to "put my best foot forward" to showcase my work and demonstrate my expertise and collaborations. Our repository gives me a way to make all of my research efforts findable and the metrics are helpful for reporting to leadership.*

Pre-Clinical: *We're managing a large multi-site project, harmonizing data from numerous sources and managing research projects. We want to create communities of practice to integrate theories, data, techniques, and tools.*

Clinical Trials: *I am a clinical researcher. I need a way to pre-register protocols or research proposals, search on demographics of participants in similar studies, get insights into recruitment, and share portions of study for compliance. I also want an easy way to share materials such as recruitment protocols, and lay summaries of the trials with the community in an organized way.*

Dissemination: *Our institute wants a way to publish and disseminate content like handbooks, lay summaries, and more. We want to credit all contributors and produce an attractive and interactive resource that can be easily updated.*

Libraries empower a collaborative ecosystem

An Opportunity to Do Better, Together



UC Curation Center

Follow

May 27 · 7 min read



By: Daniella Lowenberg

I am often questioned about my perspective on how data sharing has changed because of the pandemic. I argue that data sharing has not changed, but the pandemic highlights not only how important data sharing is (like other crises have, for instance, the climate crisis) but how it spotlights larger issues in our data sharing social and technical infrastructure. I want to take a moment to parse out how we have an opportunity to do better as we re-build.

Research processes at the start and end of the 20th century have evolved in terms of our abilities to experiment with and understand pathogens and human immunology, but much of Dr. Salk's below quote reflecting on his work with the polio vaccine stands to illustrate how complex the scientific process is and how reliant it is on fine tuned *responsiveness*.

- ✓ **Realigning priorities, focusing on what matters most**
- ✓ **Acting ethically**
- ✓ **Building together, building for the future**

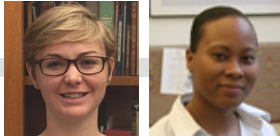
Thank you!



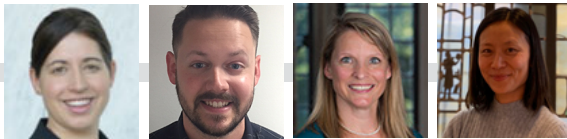
User Services



Special Collections



Research Assessment & Communications



Research & Information Services



Digital Systems



Collection Management & Metadata Services



Administration



With special thanks to the Galter Health Sciences Library & Learning Center team



Support

- Northwestern University Clinical and Translational Sciences Institute (NUCATS) UL1TR001422 (NCATS)
- Chicago Cancer Health Equity Collaborative U54CA202995, U54CA202997, U54CA203000 (NCI)
- National Center for Data to Health U24TR002306 (NCATS)
- Enhancing clinical trials participation through library partnerships G08LM012688 (NLM)
- Health For All: Advancing Library-Academic Medical Center Partnerships to Navigate Wellness and Scale Preventive Services Access G08LM013188 (NLM)
- Fostering Innovative Rheumatic Disease Team-Based Research to Improve Daily Life (FIRST-DailyLife) P30AR072579 (NIAMS)

Partnerships & Collaborations

- Northwestern University Feinberg School of Medicine faculty, staff, and students for ongoing collaborations
- NUCATS: Don Lloyd-Jones/Rich D'Aquila, Justin Starren, Keith Herzog, & team
- Institute for Innovations in Developmental Sciences (DevSci)
- Institute for Public Health and Medicine (IPHAM)
 - Center for Health Equity Transformation
 - Center for Health Information Partnerships
- Kate Carpenter (UIC) & Barb Kern (U of Chicago) and teams
- The Data Discovery Collaboration
- Coronary Artery Risk Development in Young Adults (CARDIA) Study
- Chicago COVID Coalition
- Force11 & Force11 Attribution Working Group

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- Andrew Russell and Lee Vinsel. [Let's Get Excited about Maintenance](#). NYTimes
- The Noun Project and [Pixabay](#)