Overview of NASEM's Roundtable on Aligning Incentives for Open Science

Greg Tananbaum, Head of Open Research Funders Group/Roundtable Secretariat

The National Academies of SCIENCES ENGINEERING MEDICINE

NASEM Roundtable: Participants

Universities

- Arizona State University
- Atlanta University Center
- Benedict College
- Duke University
- Harvard University
- Howard University
- Johns Hopkins University
- Massachusetts Institute of Technology
- Princeton University
- Stanford University
- Trinity University
- University of Arizona
- University of California
- University of California at Los Angeles
- University of Houston
- University of Southern California

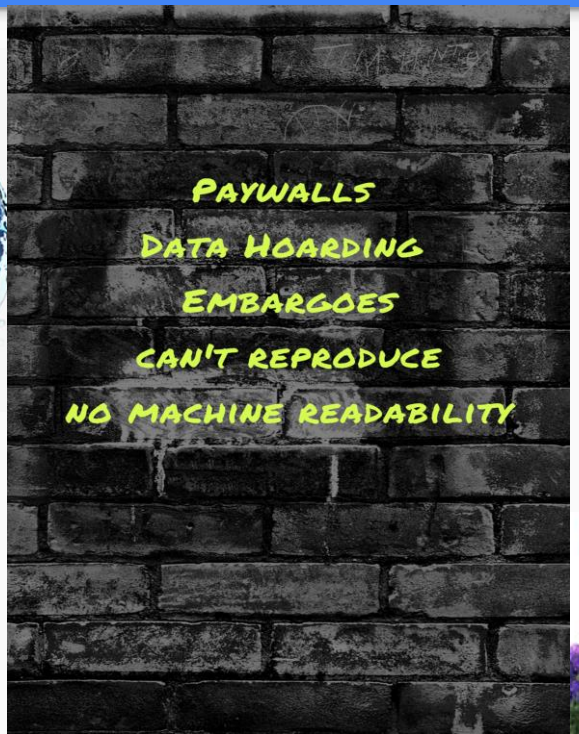
Funders

- Alfred P. Sloan Foundation
- American Heart Association
- Andrew W. Mellon Foundation
- Arcadia
- Arnold Ventures
- Bill & Melinda Gates Foundation
- Coalition for Epidemic Preparedness Innovations
- Gordon and Betty Moore Foundation
- Health Research Alliance
- Howard Hughes Medical Institute
- James S. McDonnell Foundation
- John Templeton Foundation
- Leona M. and Harry B. Helmsley Charitable Trust
- Lumina Foundation
- Robert Wood Johnson Foundation
- Schmidt Futures
- Wellcome Trust

Agencies & Others

- Association of American Medical Colleges
- Association of American Universities
- Association of Public and Land-grant Universities
- European Commission
- National Institute of Standards and Technology
- National Institutes of Health
- Open Research Funders Group
- National Science Foundation
- Office of Science and Technology Policy
- Scholarly Publishing and Academic Resources Coalition
- U.S. Department of Education
- United Kingdom Research and Innovation

Open is Better for Science and Better for Society



- Pedagogy
- Citizen Science
- Research Replication
- Public Policy
- AI/Machine Learning/Big Data
- Pace of Discovery
- Knowledge Equity
- Public Confidence in Science

Open is Also Better for Philanthropy

Research Funders and Open Policies

- Values Alignment
- Return on Investment

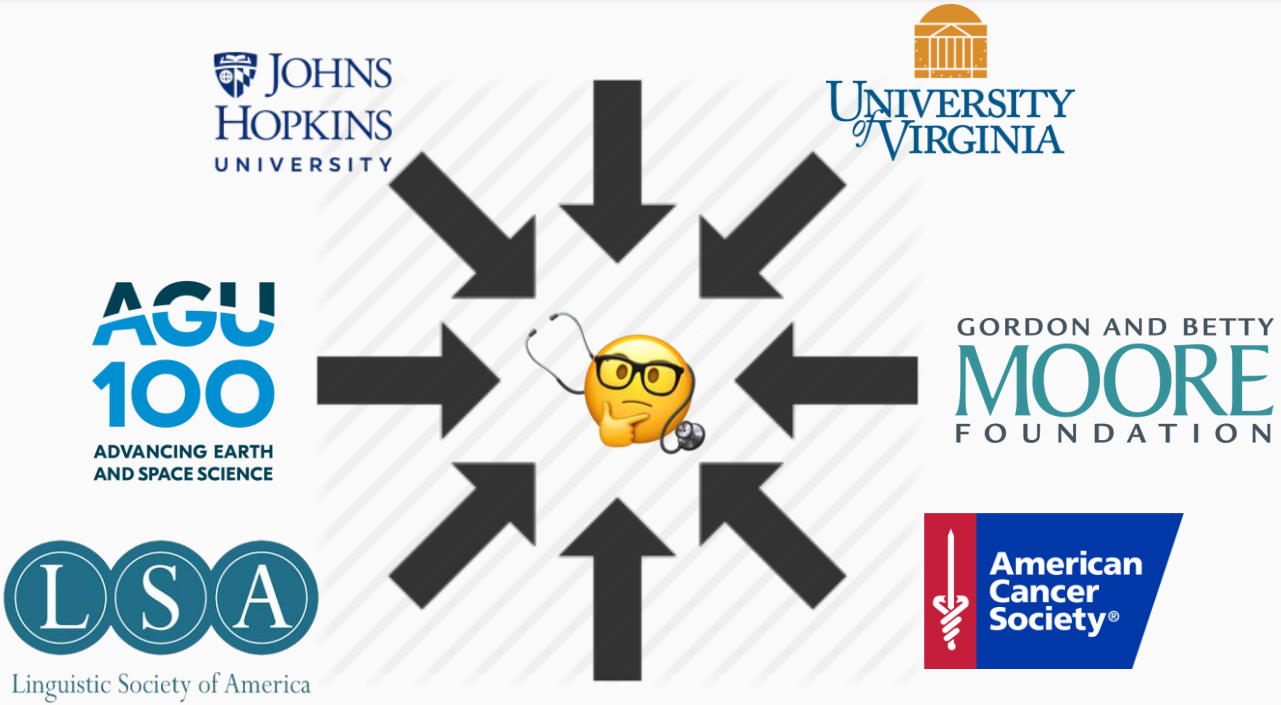
TEMPLETON WORLD
CHARITY FOUNDATION

"We fund innovative projects that push the boundaries of scientific knowledge and help people flourish."

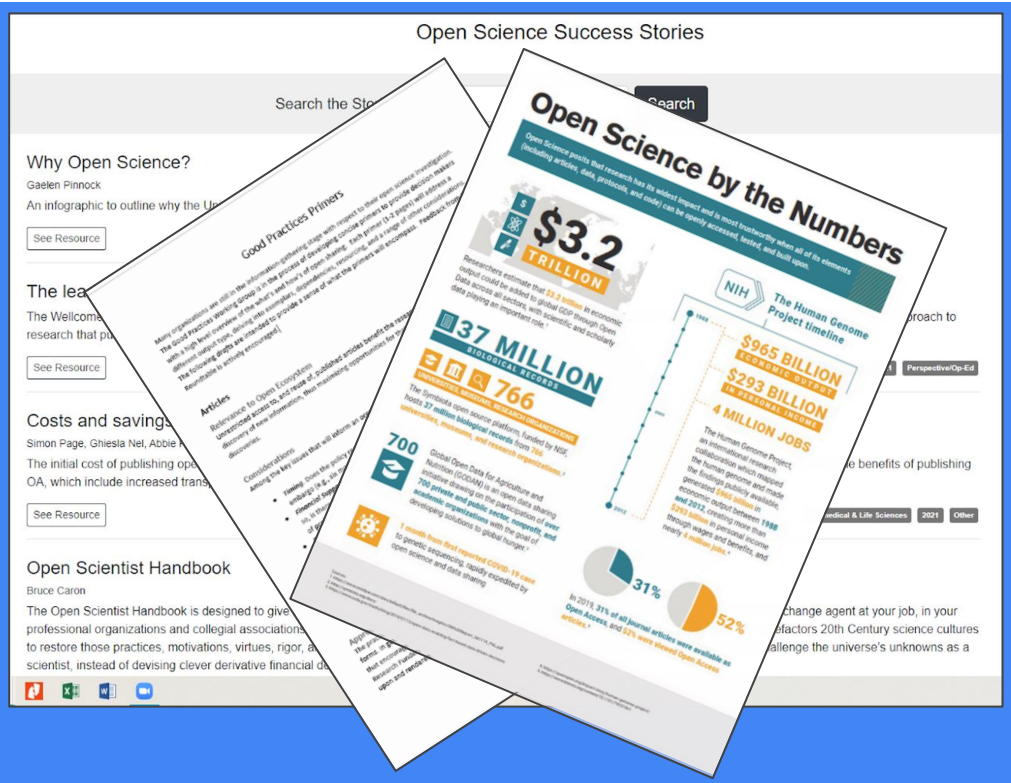
American Heart Association®

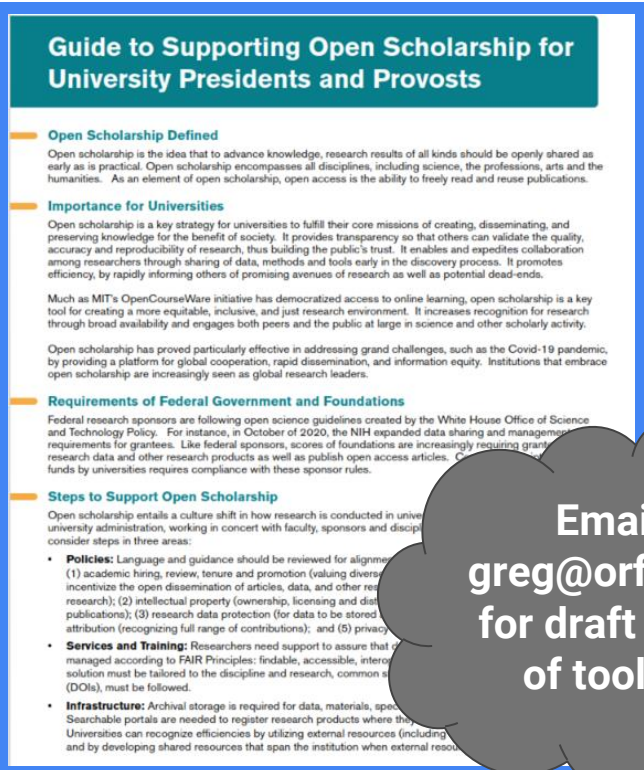
"The American Heart Association's mission is to be a relentless force for a world of longer, healthier lives."

Mutually Reinforcing Vectors



NASEM Roundtable Toolkit





Guide to Supporting Open Scholarship for University Presidents and Provosts

Open Scholarship Defined

Open scholarship is the idea that to advance knowledge, research results of all kinds should be openly shared as early as is practical. Open scholarship encompasses all disciplines, including science, the professions, arts and the humanities. As an element of open scholarship, open access is the ability to freely read and reuse publications.

Importance for Universities

Open scholarship is a key strategy for universities to fulfill their core missions of creating, disseminating, and preserving knowledge for the benefit of society. It provides transparency so that others can validate the quality, accuracy and reproducibility of research, thus building the public's trust. It enables and expedites collaboration among researchers through sharing of data, methods and tools early in the discovery process. It promotes efficiency, by rapidly informing others of promising avenues of research as well as potential dead-ends.

Much as MIT's OpenCourseWare initiative has democratized access to online learning, open scholarship is a key tool for creating a more equitable, inclusive, and just research environment. It increases recognition for research through broad availability and engages both peers and the public at large in science and other scholarly activity.

Open scholarship has proved particularly effective in addressing grand challenges, such as the Covid-19 pandemic, by providing a platform for global cooperation, rapid dissemination, and information equity. Institutions that embrace open scholarship are increasingly seen as global research leaders.

Requirements of Federal Government and Foundations

Federal research sponsors are following open science guidelines created by the White House Office of Science and Technology Policy. For instance, in October of 2020, the NIH expanded data sharing and management requirements for grantees. Like federal sponsors, scores of foundations are increasingly requiring grant research data and other research products as well as publish open access articles. C funds by universities requires compliance with these sponsor rules.

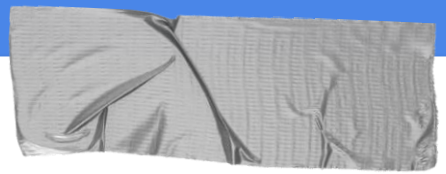
Steps to Support Open Scholarship

Open scholarship entails a culture shift in how research is conducted in unive university administration, working in concert with faculty, sponsors and discip consider steps in three areas:

- **Policies:** Language and guidance should be reviewed for alignme (1) academic hiring, review, tenure and promotion (valuing divers incentivize the open dissemination of articles, data, and other re research); (2) intellectual property (ownership, licensing and dist publications); (3) research data protection (for data to be stored attribution (recognizing full range of contributions); and (5) privacy
- **Services and Training:** Researchers need support to assure that managed according to FAIR Principles: findable, accessible, intero solution must be tailored to the discipline and research, common s (DOIs), must be followed.
- **Infrastructure:** Archival storage is required for data, materials, spec Searchable portals are needed to register research products where the Universities can recognize efficiencies by utilizing external resources (including and by developing shared resources that span the institution when external resou

Email greg@orfg.org for draft copy of toolkit

More than a **dozen philanthropies**, including a number of **HRA members**, are **signalling** their interest in open activities, independent of any formal policies.



NASEM "Nudge" Language

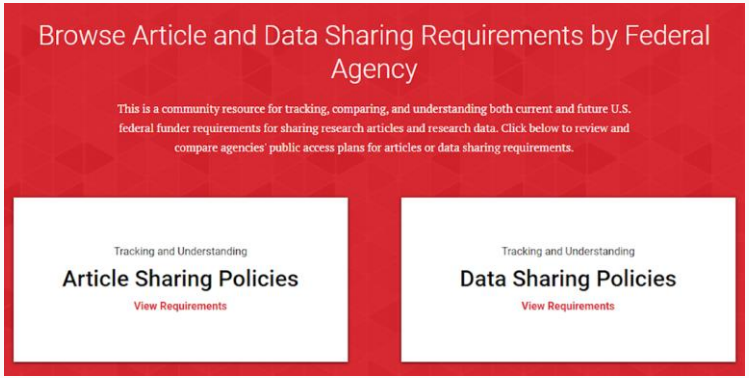
Foundation XYZ values the open sharing of research outputs. If applicable, describe 1) instances where you have engaged in "open" activities (such as making articles open access and sharing data/code according to FAIR principles), 2) examples of how your open research outputs have been used by others in your discipline, in other disciplines, and/or outside of academia (include DOIs if possible), and 3) plans to engage in open activities in the future.

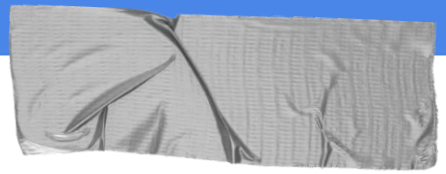
Please provide representative examples demonstrating how you have made research outputs resulting from other projects openly accessible. If possible, please provide the DOI and license terms under which the materials are available.

Signalling Language Rubric

Application Stage (e.g., jobs, grants)	Beginning 1	Developing 2	Accomplished 3	Exemplary 4
Describe instances where you have engaged in "open" activities (such as making articles open access and sharing data/code according to FAIR principles), including representative examples	The researcher has not, in their recent research (<5 years), demonstrably engaged in open science practices such as making articles, data, and other research outputs openly available for access and reuse.	The researcher has sometimes engaged in open science practices. This is defined as occasionally making recent research (<5 years) available openly for access and reuse. Specific activities include (a) making at least one of their articles available in open access journals or repositories; (b) to the extent that the researcher has generated research data, making at least one of these datasets available in accessible repositories under adherence to the FAIR principles; and (c) to the extent that the researcher has generated research outputs beyond articles and data, making at least one of these materials openly available for access and reuse. Additionally, the researcher demonstrates at least some open science hygiene (e.g., use of DOIs, ORCIDs, Creative Commons licenses).	The researcher has frequently engaged in open science practices. This is defined as often making recent research (<5 years) available openly for access and reuse. Specific activities include (a) making some (more than one, but less than most) of their articles available in open access journals or repositories; (b) to the extent that the researcher has generated research data, making some (more than one dataset, but less than most) of these data available in accessible repositories under adherence to the FAIR principles; and (c) to the extent that the researcher has generated research outputs beyond articles and data, making some (more than one, but less than most) of these materials openly available for access and reuse. Additionally, the researcher frequently demonstrates good open science hygiene (e.g., use of DOIs, ORCIDs, Creative Commons licenses).	The researcher has consistently engaged in open science practices. This is defined as making the majority of recent research (<5 years) available openly for access and reuse. Specific activities include (a) making the majority of their articles available in open access journals or repositories; (b) to the extent that the researcher has generated research data, making the majority of these data available in accessible repositories under adherence to the FAIR principles; and (c) to the extent that the researcher has generated research outputs beyond articles and data, making the majority of these materials openly available for access and reuse. Additionally, the researcher consistently demonstrates good open science hygiene (e.g., use of DOIs, ORCIDs, Creative Commons licenses).
Provide examples of how your open research outputs have been used by others in your discipline, in other disciplines, and/or outside of academia (include DOIs if possible)	The researcher cannot provide qualitative and/or quantitative evidence that any of their recent (<5 years) open research outputs have been used by others.	The researcher can provide qualitative and/or quantitative evidence that at least one of their recent (<5 years) open research outputs has been used by others.	The researcher can provide qualitative and/or quantitative evidence that (a) some of their recent (<5 years) open research outputs have been used by others; and/or (b) a narrower range of their recent (<5 years) open research outputs have been used deeply within a specific community.	The researcher can provide qualitative and/or quantitative evidence that (a) a wide range of their recent (<5 years) open research outputs have been used by others; and/or (b) a narrower range of their recent (<5 years) open research outputs have been used deeply within a specific community.
		The researcher has articulated a clear plan to make at least some research outputs (including, but not limited to, articles and data) available openly for	The researcher has articulated a clear plan to make most research outputs (including, but not limited to, articles and	The researcher has articulated a clear plan to make all appropriate research

What Other Resources Are Available to Funders?





Ways to Engage

- Raise your hand!
- Join signalling language cohort
- Host ORFG/HRA webinar for your team to discuss what open could look like for you and your grantees

"Solving the world's most pressing problems requires a vast ecosystem of sources and knowledge, built on equal access to information that is vital to the public good."

Janet Napolitano, Former President of the University of California System & Former US Secretary of Homeland Security


Want to explore this further?
Let’s talk!
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