Exploring the Value of Open (EVO)

An Introduction to Open Research

Kristen Ratan, Stratos
Maryrose Franko, HRA

September 7, 2022
Welcome to the HRA EVO Program

• HRA’s Open Science Community is sponsoring a one-year Exploring the Value of Open (EVO) Program with monthly webinar sessions, discussion groups, and opportunities to explore open science.

• The EVO program will cover not only the why, but also the how, and ways to measure impact of open research policies, practices, and incentives.
Covid-19 has been a forcing function for open science

- Publishers opened access
- Researchers shared data
- Preprints were rapidly posted
- Funders shifted focus
The Nelson Memo (OSTP)

August 25, 2022

Guidance:

• US federal funders to make all tax-payer funded scholarly research freely and publicly available
• Without embargo
• Machine-readable
• Adequate metadata
• Includes underlying data
PREFACE

The Budapest Open Access Initiative celebrated its 20th anniversary on February 14, 2022.

To mark this anniversary, the BOAI steering committee is releasing a new set of recommendations based on its original principles, current circumstances, and input from colleagues in all academic fields and regions of the world.

In September 2021, we sought comments from the global OA community on 12 questions. In addition to gathering the email responses to our questions, we hosted a series of Zoom conversations with stakeholder groups and regional communities. The comments informed our discussions about the new recommendations and we thank all who participated.

This version is consistent with the principles articulated in the original BOAI Statement from 2002 and the 10 Year Anniversary Statement from 2012. But the history of OA has continued to unfold, for example in the growth of the overall volume of OA literature, growth in the percentage of new research that is OA from

UNESCO Recommendation on Open Science
Open research initiatives

- **Impact measures** that are more meaningful than journal impact factor
- **Principles** for the Findability, Accessibility, Interoperability, and Reuse of digital assets
- **Panton Principles**: data statements, licensing, reuse, and restrictions
- **Funder collective initiative** for Open Access Journals

- **Building a body of evidence** on the impact of collaborative open research
- **Community-led initiative** developing of open research data assessment metrics
- **Convening critical stakeholders** from universities (HELIOS), funding agencies, societies, foundations, and industry to discuss the effectiveness of current incentives for adopting Open Scholarship
Opportunities for Change

Research status quo

- Impact metrics
- Funding & orientation
- Protocols & data collection
- Incremental findings recorded
- Team/expert analysis of final results
- Construct narrative & draft manuscript
- Journal submission
- Journal publication

Opportunities for change

- Incentives & rewards
- Policies & agreements
- Metrics that credit all contributions
- Open access publication
- Preprint reviewing & recognition
- Facilitated collaboration & communication
- Incremental sharing & preprinting
- Modeling open IP
- Research output management & tracking
Researcher Perspective

- Accessibility
- Reproducibility
- Transparency

01. Preprint your findings
02. Share your code and data
03. Publish your articles under Open Access licences
04. Upload your papers into Open Access repositories
05. Pre-register your study
06. Publish a Registered Report
07. Participate in open peer-review

7 Steps to enhance Open Science Practices in Animal Science

Rafael Muñoz-Tamayo, Birte L Nielsen, Mohammed Gagaoua, Florence Gondret, E Tobias Krause, Diego P Morgavi, I Anna S Olsson, Matti Pastell, Masoomeh Taghipoor, Luis Tedeschi

PNAS Nexus, Volume 1, Issue 3, July 2022

https://doi.org/10.1093/pnasnexus/pgac106
Published: 11 July 2022
Why open science

• Inclusive and equitable
• Fuels collaboration
• Accelerates discovery and outcomes
• Increases reproducibility
• Enables reuse
• Multiplies impact
• Reduces costs
• Ensures persistence and legacy
“Studies have provided estimates of the prevalence of OA publications ranging from 27.9% to 53.7%, depending on the data source and period of investigation.”

The effect of data sources on the measurement of open access: A comparison of Dimensions and the Web of Science

Isabel Basson, Marc-André Simard, Zoé Aubierge Ouangré, Cassidy R. Sugimoto, Vincent Larivière
Published: March 31, 2022
https://doi.org/10.1371/journal.pone.0265545
There are 1657 data repositories in the life sciences alone.

Re3data is a global registry of research data repositories.

Datasets
The PID Graph

Networking research

- Persistent identifiers for all people and outputs
- Connecting PIDs to provide maps
- Network of outputs that evolves as the work continues

**PID Graph KPI**: Number of resources and links in the PID Graph available via GraphQL API as of May 4, 2020. Generated using (Fenner (2019a)).
Aligning Incentives

We must incentivize the behaviors we want

Policy and monitoring shifting away from final article and JIF

Organizational Activities:

- NASEM Roundtable Toolkit
- NASEM 3 sectors of stakeholders
- Open Research Funders Group (ORFG)
A menu of options

Support

Require

Encourage

ORCIDs
Open Access Articles
Preregistration
Preprints
Datasets
Code
Resources/materials
Protocols

Worksheet
Open by Design

- PlanS, including CC-BY
- Mandatory preprint
- Open outputs
- Focus on collaboration
Testing Open

- PlanS, including CC-BY
- Preprint encouraged
- Open outputs encouraged
- New program will test open research requirements
How are you evolving?

Recommended First Steps:
1. Require ORCIDs
2. Review current polices against the menu
3. Conduct a baseline analysis
What’s coming next in the series

Future topics so far:

- Preprints
- Software and Code sharing
- Protocols and tangible resources
- Data Management Plans and grants management systems
- Career progression (see Value of ORCID)
- Compliance and reporting
- Evidence on the impact of open science
- Research Assessment and how it’s evolving

EVO Program Schedule

Subsequent monthly webinars will be scheduled for **3 pm ET on the second Thursday of every month**. Tentative topics are shown below but will be informed by attendees needs.

Fall 2022 Webinar schedule at a glance:

1. Sept 8, 3 PM ET – EVO Program Launch: Open Science 101
2. Sept 13, 2 PM ET – The Value of ORCID for funders and career progression analysis
3. Oct 13, 3 PM ET - From policy into practice – initiating an open research program
4. Nov 10, 3 PM ET – Data sharing: why, how, and measuring impact

Suggest a topic!
Thank you!
Open Science Blueprint

Sonya Dumanis, PhD
Deputy Director
September 08, 2022
Our mission

Open science is key to realizing our mission!

To accelerate the pace of discovery and inform the path to a cure for Parkinson’s disease through collaboration, research-enabling resources, and data sharing.
What does Open Science mean?

“A new approach to the scientific process based on **cooperative work** and new ways of diffusing knowledge by **using digital technologies** and new **collaborative tools**”

*European Commission, 2016b:33*
Rationale for Open Science

Facilitating collaborations, research enabling resources and data sharing will accelerate discovery and improve outcomes.

Open science fuels collaboration as research outputs are publicly shared early and often.

Funder investments should establishing a legacy of work for future research endeavors.
Open Science in Practice

- Clear citations
- Ensure accumulation of credit

Re-use

Hypothesis

- Clarify usage rights

Data Collection

- Use open-source software & interfaces

Processing

- Attach a PID
- Include descriptive metadata (using standards for your field)

Publication & Distribution

- Publish article as open access
- Ensure links between publications, data, code, and methods
- Use publicly available repositories
- Publish metadata with an open license

Storing data/results

*adapted from Foster Open Science Handbook*
Key considerations in implementing open science for an initiative
Grantee Selection

- **Messaging**: ASAP announcements and publications described it as a collaborative open research initiative from the onset.

- **Screening**: Grantees were screened during the pre-proposal stage for a history of collaborating.

- **Prior History**: Pre-proposal applications required demonstration of open access publishing and history of sharing datasets, codes, and/or protocols.
Educating Grantees

- **Onboarding process** where team leads were instructed on the open science policies and expectations as part of their welcome to the network.

- **Project managers** received additional training to become ASAP ambassadors, educating their team on policy, the importance of collaborative open research and assist with data curation.

- **Detailed Guidelines** are available and are updated regularly.
Providing support

1. Manuscripts posted in an OA preprint repository upon submission to a journal for review (or sooner).
2. Immediate free online access upon publication with grantees retaining copyright via CC BY 4.0 license (or equivalent) for unrestricted reuse.
3. All research outputs (data, protocols, code) deposited in publicly accessible repositories and cited in the publication with their permanent identifier.
4. Appropriate attributions to ASAP funded work.
5. Utilizing our Research Output Management System (ROMS) to track research outputs within the ASAP virtual grantee platform known as the ASAP Hub.

- OA.Works used to help discover ASAP preprints/publications
- Database.AI used to autogenerate open science assessment reports
  - Invested in automating this process so that the cost goes down for future funders
  - Goal is to create an open source tool chain
- As of 09/2022 – have completed 191 compliance reports.
Providing collaborative tools

ASAP supports digital tools for teams if they would like to take advantage of the service.

- **Protocols.io** for protocols (70% of teams)
- **Zenodo** for datasets and code (40% of teams)
- **Google Drive** private and secure (80% of teams)
- **Slack** for group chat and discussion (40% of teams)
- **Zoom** for video conferencing (49% of teams)
- **Custom platform** to facilitate collaboration and data sharing
Incentivizing open and collaborative research

- **ASAP acknowledges collaboration** throughout the life cycle of a grant with this information formally collated through mid-year and annual progress reports.
  - We ask for names of those outside of the team that have been instrumental as part of the reporting updates

- **Open Science Champions** are called out and recognized through social media & our biweekly newsletters
Lessons learned

● There is a large gap between wanting to do open science and knowing how to do open science.
  ○ Invested in training resources
  ○ Hosting monthly meetings with project managers
  ○ Using preprint as the training step for how the article can be improved

● There are no great compliance tool chains
  ○ Invested in automating compliance checking (scaled from 8 hours per report to 2.5 hours through automation)
  ○ Takes trained staff 20 minutes to generate the email based off report

● The open science ecosystem is rapidly evolving so ASAP must continuously adapt its requirements.
How will ASAP continue to contribute?

- Publishing Blueprint and sharing our templates
- Investing in scalable open-source approaches to enable compliance monitoring
- Further research into the costs of open research
- Partnering with our peers – there is power in numbers!
Any Questions?

sdumanis@parkinsonsroadmap.org
TWCF’s Phased Approach to open research policies
Nudges

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<td><strong>TWCF values the open sharing of research outputs.</strong> If applicable, describe 1) instances where you have engaged in &quot;open&quot; 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.</td>
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<td>Please note, we encourage reviewers to <strong>consider all valuable research outputs</strong> including preregistration documents, peer-reviewed publications and preprints, datasets, code, software, protocols, and research materials.</td>
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# Open Research Policy & Recommendations

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## Experimenting with a Program

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Dipping our toes into monitoring -
Creating a Baseline to Review Changes

- Launch 2017 Fellowships
- $2.4M Initial Publicity Applications
- Media Campaign (Praytell agency)

PRE PLAN S POLICY

PLAN S POLICY

NEW POLICY

OPEN PROGRAM

2019 2020 2021 2022 2023 2024