Research Data Management Planning

Workshop presented on behalf of the Graduate School
Career Pathways Program and the ODU Libraries

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Research Data Management Specialist
February 13, 2024

Happy Love Data Week 2024!

The 2024 theme is:

"My Kind of Data"

"Data is personal. Join ICPSR February 12-16, 2024, to learn about data equity and inclusion, disciplinary communities, and creating a kinder world through data." (ICPSR, 2024)

Schedule of ICPSR events

Schedule of national & international events

Outline

- What is research data management (RDM)?
- Why is RDM important?
- What is a data management plan (DMP)?
- Why should we write a DMP?
- How can a DMP be created?

Research Data Management (RDM)

A "term used to describe the processes researchers and institutions use for organizing, securing, archiving, and sharing research data throughout the research lifecycle."

OCLC Research Position Paper – Research Information Management – Defining RIM and the Library's Role

"Data management practices cover the entire lifecycle of the data from planning the investigation to conducting it, and from backing up data as it is created and used to long term preservation of data deliverables after the research investigation has concluded."

Committee on Data (CODATA) International Science Council Research data management

Why manage research data?

You start helping in or onboarding a new colleague in a lab and are handed notes from a previous colleague. Will you be able to follow and reproduce the expected workflow in its entirety?

Have you ever had to look for a file but not remember where you put it, or what you (or a colleague) named it?

Or have you gone into a folder and see multiple files with similar names? Can you determine which version is the final or authoritative version?

Have you received a spreadsheet or other file but aren't clear about what the header abbreviations mean, or there is missing information?

Have you ever lost data due to corruption, drive failure, or lack of backups?

Why manage research data?

- Find and understand data when needed
- Project continuity through researcher or staff changes
- Organized data saves time
- Reduces risk of lost, stolen, or mis-used data [redundant and reworked data]
- Comply with funder and journal requirements
- Allows for easier validation of results
- Data can be shared, leading to collaboration and greater impact

Princeton Research Data Service Research Lifecycle Guide

Why is RDM important to you, as a graduate student?

Many of you will be conducting original research. You may in the future build off this work.

Many of you will publish your work and publishers may have specific requirements around sharing research data.

You may receive funding or work on a funded research project, which may have specific requirements around RDM.

You likely need to submit a Plan of Study, complete a Research Skills requirement, and/or submit a research proposal. https://catalog.odu.edu/graduate/universityrequirementsforgraduatedegrees/#text

You may want to include your research data as supplementary information to your electronic thesis or dissertation (ETD).

Responsible Conduct of Research Training

> Research & Entrepreneurship > Responsible Conduct of Research Training

Responsible Conduct of Research Training

Old Dominion University has a policy of training all graduate students in the fundamentals of Responsible Conduct of Research (RCR). This policy was adopted with the understanding that the knowledge and philosophy presented in the RCR training can enhance the professional development of all students, regardless of discipline. The following requirement is presented on page 52 of the Graduate Catalog:

"All graduate students who were admitted or readmitted to a degree or graduate licensure program as of fall 2010 must complete the Collaborative Institutional Training Initiative (CITI) basic course. The basic course includes the following modules: Misconduct (falsification, fabrication, and plagiarism); Data acquisition, management, sharing and ownership; Mentor/trainee relationships; Publication practice and responsible authorship; Peer review; Conflicts of interest; and Collaborative research. Completion of the RCR modules will be tracked through the CITI website and is a graduation requirement. The RCR modules must be completed prior to completion of 12 semester hours. Students who fail to complete this requirement will have a registration hold placed on their records. As appropriate to their general field of study, students may complete the Biomedical Social and Behavior Research, Physical Science, or Humanities RCR track offered by CITI to fulfill this requirement."

As noted in this policy, graduate students must complete the CITI training prior to completion of 12 semester hours at ODU. These instructions will guide students through the beginning of this process.

The Social and Behavioral Responsible Conduct of Research course has an updated Data Management module.

https://ww1.odu.edu/impact/responsible-conduct-of-training

Research Data Management

- A "term used to describe the processes researchers and institutions use for organizing, securing, archiving, and sharing research data throughout the research lifecycle."
- OCLC Research Position Paper – Research Information Management – Defining RIM and the Library's Role

Research Data

- "Data management practices cover the entire lifecycle of the data from planning the investigation to conducting it, and from backing up data as it is created and used to long term preservation of data deliverables after the research investigation has concluded."
- Committee on Data (CODATA) International Science Council Research data management

Research (Data) Lifecyle

Data Management Practices

Research Data

- ODU maintains a Research and Scholarly Digital Data Management Policy
- According to this policy, "Research Data" is:

> Digitally recorded information necessary to support or validate a research project's observations, findings, or outputs.

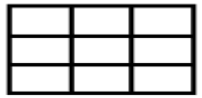
Research Data


Photographs & images


Geospatial


Software & code

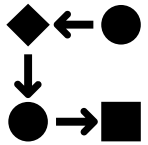

Surveys


Spreadsheets


Audio


Interviews & transcripts


Video


Models

*Not an exhaustive list

**Adapted from [NC State University Libraries Defining Research Data]

Examples from ODU Electronic Thesis & Dissertations (ETDs)

"...this project places various primary sources, including ***organizational records, artwork, and oral history interviews*** in conversation with ***corporate and government sources***," (Moore, 2020, "Abstract", emphasis added).

Moore, B., E (2020). *"In-betweening" Disney: An animated history of Hollywood labor and ideological imagineering, 1935-1947.* [Master's thesis, Old Dominion University]. DOI: 10.25777/wdw1-yk94. https://digitalcommons.odu.edu/history_etds/42/

"The benthic community condition was characterized using the multi-metric Chesapeake Bay Benthic Index of Biotic Integrity (B-IBI), ***abundance of individuals, biomass, species richness, and informational diversity,***" (Martin, 2021, "Abstract", emphasis added).

Martin, C (2021). *Efficacy of Sediment Contaminant Remediation of the Benthos in a Segment of the Southern Branch of the Elizabeth River* [Master's thesis, Old Dominion University]. DOI: 10.25777/td38-y953. https://digitalcommons.odu.edu/biology_etds/123/

"In this study, I examined the lived experiences of 911 dispatchers with CF through an interpretive phenomenology lens. The ***data was gathered from one-on-one interviews***...." (Johnson, 2023, "Abstract", emphasis added).

Johnson, A. (2023). *The lived experiences of 911 dispatchers with compassion fatigue: An interpretive phenomenology* [Doctoral dissertation, Old Dominion University]. DOI: 10.25777/5m83-pm64

https://digitalcommons.odu.edu/chs_etds/146/

Examples from ODU ETDs

GRADUATE PROGRAM IN INTERNATIONAL STUDIES THESES & DISSERTATIONS

Culture and Military Effectiveness: How Societal Traits Influence Battle Outcomes

Eric Stephen Fowler, *Old Dominion University* Follow

Date of Award
Spring 2016

Document Type
Dissertation

Degree Name
Doctor of Philosophy (PhD)

Department
Political Science & Geography

Program/Concentration
Graduate Program in International Studies

Committee Director
Kurt Taylor Gaubatz

Committee Member
David Earnest

Committee Member
Angela O'Mahony

Download

INCLUDED IN

International Relations Commons, Military and Veterans Studies Commons, Social and Cultural Anthropology Commons

SHARE

Abstract
What must states do to ensure victory on the field of battle? Conventional scholarship claims that a number of material and institutional factors significantly affect a nation's ability to generate military power. Recent studies suggest that other factors, including levels of education, civil-military relations, and western culture also play an important role. This new line of logic is important because these factors tend to be glaringly absent from rigorous concepts of military power. The principle finding of this study is that culture matters and that it matters more than originally thought. Culture is admittedly complex, intangible, and difficult to count, but empirical evidence shows that culture manifests concrete effects in combat, at times determining battlefield outcomes. Culture's absence from meaningful definitions of military power results in world leaders, military commanders, and learned scholars making important political, operational, and theoretical decisions with only partial information. Put plainly, decision-makers cannot accurately assess the martial capabilities of themselves or others without accounting for culture. Consequently, national leaders likely perceive threats where none exists; ignore threats that truly matter; place great trust in incapable allies, and turn away competent help. Moreover, this ignorance of what truly matters in combat means that much of a state's potential military capability remains untapped and left to happenstance.

Comments
Additional files include two datasets in Excel spreadsheet format.

DOI
10.25777/fnbr-nx39

ISBN
9781339758343

Recommended Citation
Fowler, Eric S.. "Culture and Military Effectiveness: How Societal Traits Influence Battle Outcomes" (2016). Doctor of Philosophy (PhD), Dissertation, Political Science & Geography, Old Dominion University, DOI: 10.25777/fnbr-nx39
https://digitalcommons.odu.edu/gpis_etds/6

Additional Files

FowlerE-Battle-RelatedDataset-20160302.xlsx (455 kB)
Batle-Related Dataset
FowlerE-Culture-RelatedDataset-20160302.xlsx (338 kB)
Culture-Related Dataset

Fowler, Eric S.. "Culture and Military Effectiveness: How Societal Traits Influence Battle Outcomes" (2016). Doctor of Philosophy (PhD), Dissertation, Political Science & Geography, Old Dominion University, DOI: 10.25777/fnbr-nx39 https://digitalcommons.odu.edu/gpis_etds/6

Research Data

- The ODU policy specifies research data as "digitally recorded material"
- The U.S. Office of Management and Budget definition excludes "physical objects"
  - Office of Management and Budget Circular A-110
- Physical objects (surveys, field notes, etc.) may become digital, and/or may be required as part of a funding package (NOAA, BOEM)

Research Data

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- The U.S. Office of Management and Budget definition excludes "physical objects"
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Regardless of whether research products are digital or not, it is best practice to have robust processes and procedures in place for managing those products.

The Research (Data) Lifecycle

- According to the Network of the National Library of Medicine (NNLM) - the research lifecycle is "often represented in a wheel to emphasize the continuous nature of research with one project leading into the next."
- Provides a good model for the steps involved in a research project.
- However, keep in mind that a model is a representation of a process (and often a simplification of that process).
- The research process is not always so straightforward and tidy!

Cioffi, M., Goldman, J., & Marchese, S. (2023). Harvard Biomedical Research Data Lifecycle (Version 5). Zenodo. https://doi.org/10.5281/zenodo.8076168

The Research (Data) Lifecycle

Specific activities that fall within research data management:

- Data Organization
- Data Documentation
- Data Storage
- Data Sharing and Preservation

Cioffi, M., Goldman, J., & Marchese, S. (2023). Harvard Biomedical Research Data Lifecycle (Version 5). Zenodo. https://doi.org/10.5281/zenodo.8076168

The Research (Data) Lifecycle

Cioffi, M., Goldman, J., & Marchese, S. (2023). Harvard Biomedical Research Data Lifecycle (Version 5). Zenodo. https://doi.org/10.5281/zenodo.8076168

Data Organization:

- Directory structures
- File naming
- File formats
  - Proprietary or not?
- File versioning
- Roles and responsibilities

Learn more about common (often non-proprietary) file formats:

https://guides.library.stanford.edu/data-best-practices/format-files

The Research (Data) Lifecycle

Data Documentation:

- Metadata
  - Contributors, funders, methods, file formats, sizes, versions, software and versions used, contents, variable names
- Readme files, data dictionaries, codebooks

This is important for understanding the context of your data both for you and your research team, as well as anyone who may want to reuse your data. Keep it up to date throughout the research process.

Learn more about documentation formats:

University of Illinois Library Guide Data Documentation

Cioffi, M., Goldman, J., & Marchese, S. (2023). Harvard Biomedical Research Data Lifecycle (Version 5). Zenodo. https://doi.org/10.5281/zenodo.8076168

The Research (Data) Lifecycle

Data Storage:

- Access
- Privacy
- Confidentiality
- Backups
- Versions
- Retention and destruction

Learn more about Research Computing at ODU, including support, computing, cloud storage, and training.

Be sure you are using the right computing environment. Refer to the Regulated Research Data Storage Matrix guidelines but always contact the Office of Research Compliance and ITS to discuss your specific project needs.

Cioffi, M., Goldman, J., & Marchese, S. (2023). Harvard Biomedical Research Data Lifecycle (Version 5). Zenodo. https://doi.org/10.5281/zenodo.8076168

The Research (Data) Lifecycle

Data Sharing and Preservation

- Sharing and access
  - Restrictions
  - De-identification
- Licensing
  - Creative Commons
- Repositories
- Documentation
- Persistent Identifiers

"Data repositories are a centralized place to hold data, share data publicly, and organize data in a logical manner."
Harvard: Data Repositories

Learn more about Creative Commons licenses:
- https://guides.lib.odu.edu/copyrightauthor/creativecommons
- https://creativecommons.org/share-your-work/cclicenses/

Cioffi, M., Goldman, J., & Marchese, S. (2023). Harvard Biomedical Research Data Lifecycle (Version 5). Zenodo. https://doi.org/10.5281/zenodo.8076168

The Research (Data) Lifecycle

One way to document our data management activities is with a **Data Management Plan**

Cioffi, M., Goldman, J., & Marchese, S. (2023). Harvard Biomedical Research Data Lifecycle (Version 5). Zenodo. https://doi.org/10.5281/zenodo.8076168

Data Management Plan

- A (research) Data Management Plan is a document that describes the types of data that will be collected for a research project and how that data will be organized, maintained, and documented throughout the project lifecycle as well as how that data may be shared.

Federal Funder Requirements

- Many federal funding agencies (NIH, NSF, IMLS, etc.) require a DMP to be included with proposals for funding.
- The U.S. government is expecting increased sharing, transparency, and public access to research data
  - Tax-payers should have timely access to the research outputs they fund
- Issuance of two Office of Science and Technology Policy (OSTP) memos
  - 2013 Holdren Memo
    - Instructed a subset of federal agencies to develop public access plans, which outlined how they would provide public access to their research outputs
  - 2022 Nelson Memo
    - Builds upon the 2013 memo

Federal Funder Requirements

Section	2013 Holdren Memo	2022 Nelson Memo
Embargo Period	Embargo period of 1 year allowed for research papers	No embargo
Agencies	Only applicable to agencies with R&D budgets over $100 million	Applicable to all agencies with extramural R&D budgets
Publications	Applied to peer-reviewed manuscripts	Applies to peer-reviewed manuscripts, book chapters, editorials, and conference proceedings
Data	Indicates scientific data resulting from research should be publicly accessible Ensure researchers create data management plans	Create policies for immediate access to research data at the time of publication Applicable to all data, not just those on which publications are based Draft guidance on appropriate repositories
Metadata	Metadata needs to be publicly accessible	Specifically indicates Persistent Identifiers will be used
Reuse	n/a	Plans need to specify reuse rights and restrictions

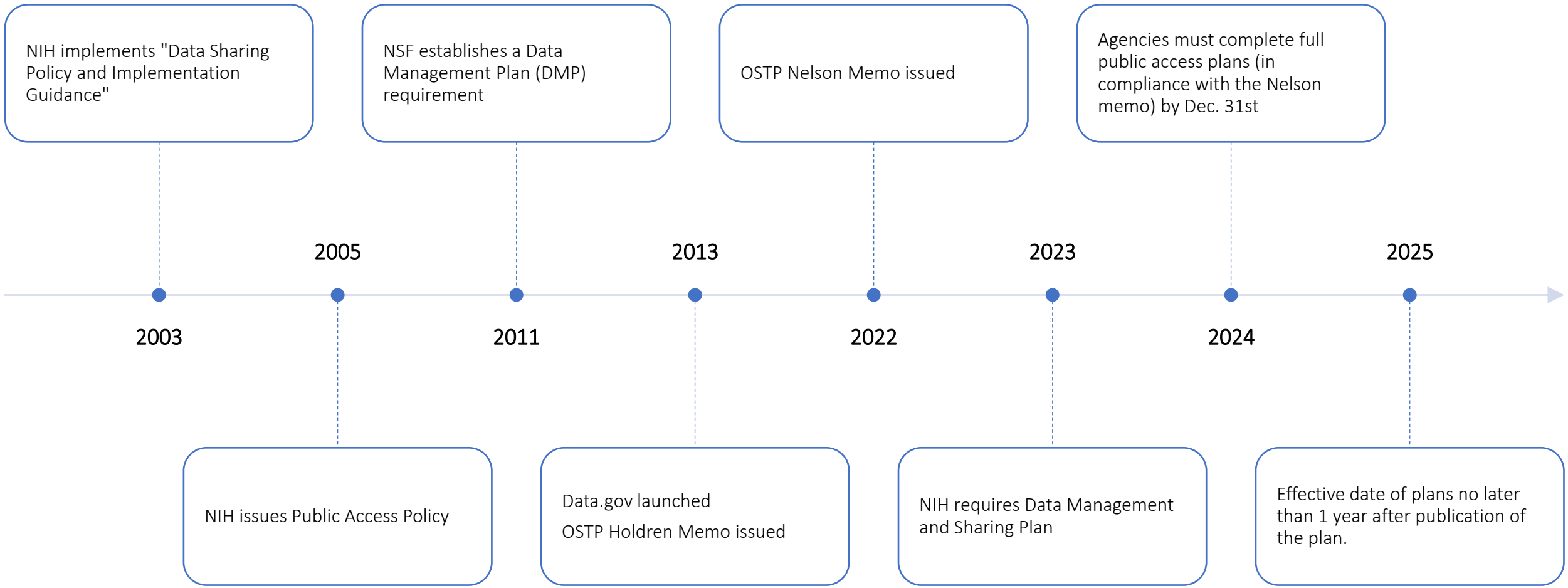
Association of Research Libraries (ACRL) 2013 & 2022 Public Access Memo Comparison

Federal Funder Requirements

- The 2022 Nelson memo indicates:
  - The "public access plans should outline the policies that federal agencies will use to establish researcher responsibilities on how federally funded scientific data will be managed and shared" (p. 5).
- From science.gov Public Access Plans & Guidance:
  - "OSTP expects agency policies for increasing public access to scholarly publications and scientific data to be publicly posted by **December 31, 2024 and go into effect by December 31, 2025**."

Data management plans are one way that agencies can establish and track researcher responsibilities.

Federal Funder Requirements



A couple notes

- Funders other than federal agencies require data management plans and/or have data sharing policies:
  - Alfred P. Sloan Foundation (Empirical Research Methods and Information Products Appendices)
  - Gordon and Betty Moore Foundation Resources – Data Sharing and Intellectual Property Policy
  - Gates Foundation Data Sharing Requirements
  - Wellcome Outputs Management Plan

"Note that properly managing data (and records) does not necessarily equate to sharing or publishing that data."

"...some kinds of data may not be shareable due to the nature of the records themselves or to ethical or privacy concerns."

NC State University Libraries Defining Research Data

A couple notes – Persistent Identifiers

- The Nelson Memo specifically addresses persistent identifiers for researchers
- A persistent identifier is "a long-lasting reference to a digital resource" (ORCID: What are persistent identifiers (PIDs)?)
  - Are unique to a person, place, or thing
  - Serves as a disambiguation tool
- Persistent Identifier types
  - For research outputs – DOI (Digital Object Identifier)
  - For organizations – ROR (Research Organization Registry)
  - For researchers – ORCID (Open Researcher and Contributor Identifier)
    - ORCID: Open Research and Contributor Identifier
    - Enter Once, Reuse Often
    - Integrated with SciENcv/Biosketch
    - PIDs for researchers will be required per the National Security Policy Memorandum 33

For more information about ORCID, refer to the ODU Library Guide:

ORCID: Open Researcher and Contributor Identifier

A couple notes – Journal Requirements

- Many journals support open data initiatives
  - SpringerNature, Wiley, Taylor & Francis, IEEE, and Elsevier
- Publishers requiring ORCIDs include:
  - PLOS, IEEE, ACS, Springer, Wiley, Sage, Taylor & Francis, and Cambridge University Press
- Data Availability Statements:
  - As of March 22, 2023, Springer Nature introduced mandatory data availability statements across its journals portfolio.
  - Please see this press release for additional information

A data availability statement (DAS) provides information on where a user can find the data associated with the research article.

Agreements through ODU and the Virtual Library of Virginia (VIVA) allow ODU corresponding authors to forgo Article Processing Charges (APCs) for open access to their articles.

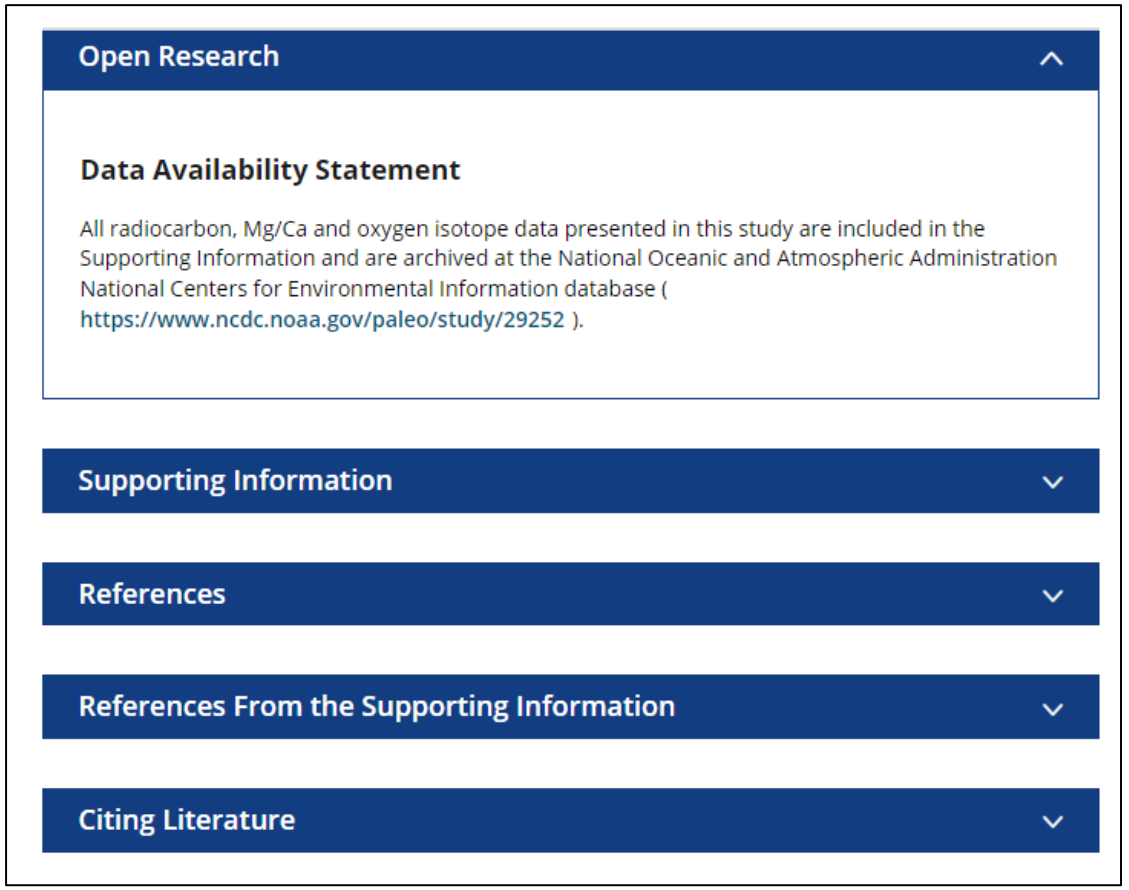
- PLOS
- Wiley
- American Chemical Society (ACS)

Others! Refer to our library guide:

https://guides.lib.odu.edu/openaccess/apc

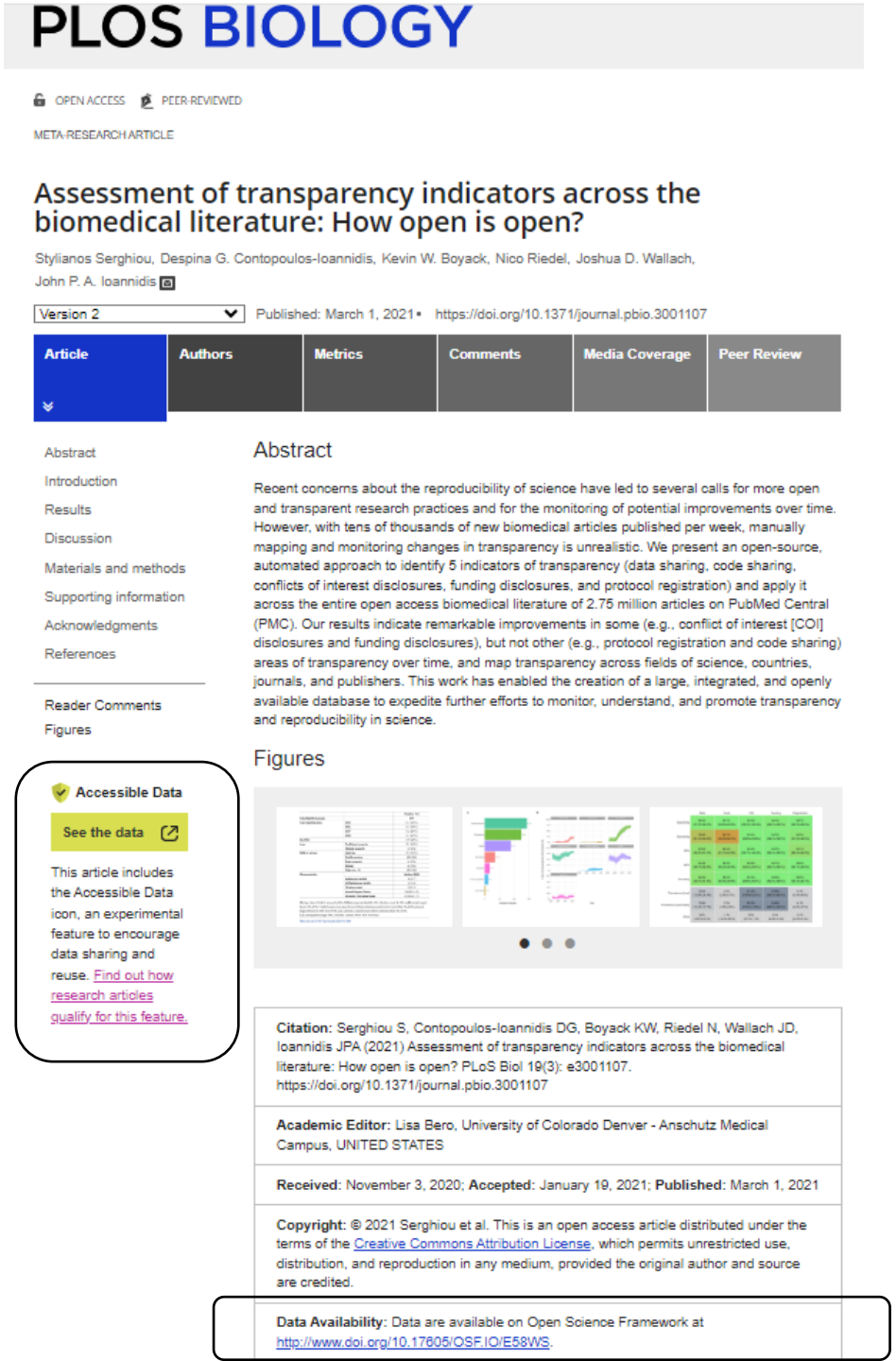
A couple notes – Journal Requirements

Monteagudo, M. M., Lynch-Stieglitz, J., Marchitto, T. M., & Schmidt, M. W. (2021). Central equatorial Pacific cooling during the last glacial maximum. *Geophysical Research Letters, 48*(3), 1-10, Article e2020GL088592. https://doi.org/10.1029/2020GL088592



A couple notes – Journal Requirements

- The publisher PLOS has been experimenting with not only a data availability statement, but an Accessible Data badge.
- The user is linked to the data from both locations.
- See the PLOS Blog: [Spend less time looking for articles with accessible datasets]



PLOS BIOLOGY

OPEN ACCESS PEER REVIEWED

META-RESEARCH ARTICLE

Assessment of transparency indicators across the biomedical literature: How open is open?

Stylianos Serghiou, Despina G. Contopoulos-Ioannidis, Kevin W. Boyack, Nico Riedel, Joshua D. Wallach, John P. A. Ioannidis

Version 2 Published: March 1, 2021 • https://doi.org/10.1371/journal.pbio.3001107

Article | Authors | Metrics | Comments | Media Coverage | Peer Review

Abstract
Introduction
Results
Discussion
Materials and methods
Supporting information
Acknowledgments
References

Reader Comments
Figures

Accessible Data
See the data
This article includes the Accessible Data icon, an experimental feature to encourage data sharing and reuse. Find out how research articles qualify for this feature.

Abstract

Recent concerns about the reproducibility of science have led to several calls for more open and transparent research practices and for the monitoring of potential improvements over time. However, with tens of thousands of new biomedical articles published per week, manually mapping and monitoring changes in transparency is unrealistic. We present an open-source, automated approach to identify 5 indicators of transparency (data sharing, code sharing, conflicts of interest disclosures, funding disclosures, and protocol registration) and apply it across the entire open access biomedical literature of 2.75 million articles on PubMed Central (PMC). Our results indicate remarkable improvements in some (e.g., conflict of interest [COI] disclosures and funding disclosures), but not other (e.g., protocol registration and code sharing) areas of transparency over time, and map transparency across fields of science, countries, journals, and publishers. This work has enabled the creation of a large, integrated, and openly available database to expedite further efforts to monitor, understand, and promote transparency and reproducibility in science.

Figures

Citation: Serghiou S, Contopoulos-Ioannidis DG, Boyack KW, Riedel N, Wallach JD, Ioannidis JPA (2021) Assessment of transparency indicators across the biomedical literature: How open is open? PLoS Biol 19(3): e3001107. https://doi.org/10.1371/journal.pbio.3001107

Academic Editor: Lisa Bero, University of Colorado Denver - Anschutz Medical Campus, UNITED STATES

Received: November 3, 2020; **Accepted:** January 19, 2021; **Published:** March 1, 2021

Data Availability: Data are available on Open Science Framework at http://www.doi.org/10.17605/OSF.IO/E58WS.

Why (document how we) manage research data?

- Data management plans can assist:
  - Researchers who need to comply with journal or funder requirements
  - Agencies that need to establish and track researcher responsibilities
- Even if it is not required a data management plan can help you...

Save time

Organize your data

Clarify who will have access to the data, how, and when

OSF Support – Creating a data management plan (DMP) document

Provide a record of what you intended to do

Identify weaknesses early on

Encourage transparency

ICPSR Guidelines for Effective Data Management Plans Intro to Data Management Plans video

What to include in a DM(S)P

- NSF Guidance
- (Effective 2011)
  - Data Type
  - Standards to be used for data and metadata
  - Policies for data access and sharing
  - Policies and provisions for data reuse
  - Plans for archiving and preservation

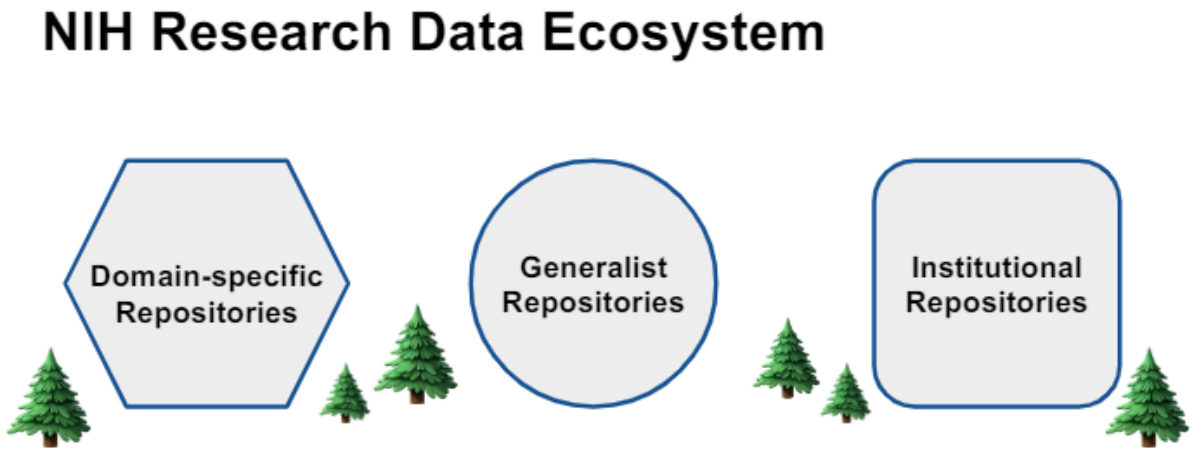
- NIH Guidance
- (Effective January 25, 2023)
  - Data type
  - Related tools, software, and/or code
  - Standards
  - Data preservation, access, and associated timelines
  - Access, distribution, or reuse considerations
  - Oversight of data management and sharing

NIH Guidance – Data Preservation, Access, and Associated Timelines

- Researchers need to specifically address the repository(ies) where data will be archived
  - A data repository holds data and makes that data available for future use by the broader research community Research at Brown Data Sharing with Data Repositories
- How the data will be discoverable (unique identifier)
- When the data will be available
  - No later than the time of an associated publication OR the end of the performance period, whichever comes first

NIH Guidance – Selecting a Data Repository

Select a repository that is specified by the funder, or appropriate for the data collected.



Staller, A., Van Gulick, A., Pfeiffer, N. (2022). *GREI collaborative webinar series on data Sharing in generalist repositories* [Slides]. Generalist Repository Ecosystem Initiative. https://doi.org/10.17605/OSF.IO/JZU37 CC-By Attribution 4.0 International.

For some types of data, you may be able to use ODU's institutional repository, ODU Digital Commons, which preserves, promotes, and shares the scholarly, creative, and institutional work of Old Dominion University.

Use a generalist repository - Generalist Repository Ecosystem initiative (GREI)

Dataverse Dryad Figshare Mendeley Data
OSF Vivli Zenodo

Desirable Characteristics of Data Repositories for Federally Funded Research
Generalist Repository Comparison Chart

Open Access Plans

- Science.gov provides an "Open Science & Public Access" section
  - Announcements
  - Public Access Plans and Guidance

Provides a list and links/information to public access plans and responses to the 2022 memo, if available.

Additional Repository Information

- ICPSR – the Inter-university Consortium for Political and Social Research, part of the Institute for Social Research at the University of Michigan
  - ODU is member of ICPSR which provides benefits such as full access to the data archive, technical help, and curation services.

- The Qualitative Data Repository (QDR) - hosted by the Center for Qualitative and Multi-Method Inquiry at Syracuse University
  - "QDR is a dedicated archive for storing and sharing digital data (and accompanying documentation) generated or collected through qualitative and multi-method research in the social sciences and related disciplines" (About the Qualitative Data Repository)

Why (document how we) manage research data?

- Find and understand data when needed
- Project continuity through researcher or staff changes
- Organized data saves time
- Reduces risk of lost, stolen, or mis-used data
- Comply with funder and journal requirements
- Allows for easier validation of results
- Data can be shared, leading to collaboration and greater impact

Princeton Research Data Service Research Lifecycle Guide

Creating a Data Management Plan

- Use a template or framework provided by the funder or other agency
  - Template on NIH page
  - ICPSR Framework for Creating a Data Management Plan
- Use DMPTool
  - Templates specific to a funder and guidance are provided

Additional Resources

- ODU Library Guides
  - Data Management @ ODU
  - Institutional Repository: ODU Digital Commons
  - Data Management Funder Policies
  - ORCID: Open Researcher and Contributor Identifier
- Additional Information
  - ASU Libraries Using the DMPTool Tutorial
  - University of Illinois Urbana-Champaign Library Research Data Services Self-Guided Workshop
    - Caldrone, S., & Phegly, L. (2022). Self-guided research data lifecycle workshop [Prezi]. University of Illinois at Urbana Champaign.

    https://researchdataservice.illinois.edu/self-guided-workshop/

Campus Resources

https://www.odu.edu/library

Libraries

- Research assistance
- Subject databases & journals
- Research data management
- Copyright & publishing support

Office of Research

- Research development
- Grant & funding development
- Compliance (IRB, RCR, etc.)
- Innovations & commercialization

https://ww1.odu.edu/research

Research Foundation

Sponsored research support from pre-award through post-award

https://researchfoundation.odu.edu/

Information Technology Services (ITS)

- Research computing support
- Data storage
- Sensitive & regulated data
- GIS & spatial data

https://www.odu.edu/information-technology-services

Thank you!

- Questions?

- Contact information:
  - Nikki Galloway, Research Data Management Specialist (ngallowa@odu.edu)
  - Karen Vaughan, Head, Scholarly Communication & Publishing (kvaughan@odu.edu)