U.S. DEPARTMENT OF ENERGY | Office of Science

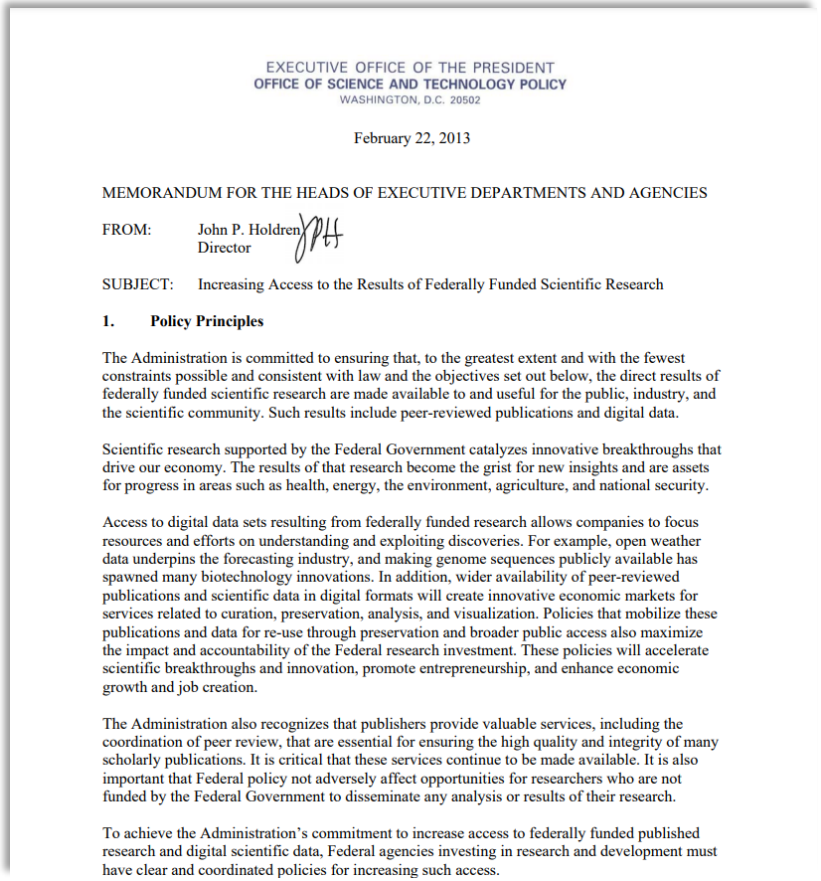
Public Access Policy and Data Management Plans

WANDA 2023

Dr. Michael Cooke
Senior Technical Advisor
Office of the Deputy Director for Science Programs

2013 OSTP Public Access "Holdren" Memo

- "Increasing Access to the Results of Federally Funded Scientific Research"
  - "The Administration is committed to ensuring that, to the greatest extent and with the fewest constraints possible and consistent with law and the objectives set out below, the direct results of federally funded scientific research are made available to and useful for the public, industry, and the scientific community. Such results include peer-reviewed publications and digital data."
- Requirements include:
  - Applied to agencies with over $100M in annual R&D
  - Free public access to federally-funded scholarly publications with a 12-month embargo period
  - Required recipients of federal grants and contracts to develop "data management plans" (DMPs)
  - Implementation required "within the existing agency budget"
- Led to development of [2014 DOE Public Access Plan]



EXECUTIVE OFFICE OF THE PRESIDENT
OFFICE OF SCIENCE AND TECHNOLOGY POLICY
WASHINGTON, D.C. 20502

February 22, 2013

MEMORANDUM FOR THE HEADS OF EXECUTIVE DEPARTMENTS AND AGENCIES

FROM: John P. Holdren
Director

SUBJECT: Increasing Access to the Results of Federally Funded Scientific Research

1. Policy Principles

The Administration is committed to ensuring that, to the greatest extent and with the fewest constraints possible and consistent with law and the objectives set out below, the direct results of federally funded scientific research are made available to and useful for the public, industry, and the scientific community. Such results include peer-reviewed publications and digital data.

Scientific research supported by the Federal Government catalyzes innovative breakthroughs that drive our economy. The results of that research become the grist for new insights and are assets for progress in areas such as health, energy, the environment, agriculture, and national security.

Access to digital data sets resulting from federally funded research allows companies to focus resources and efforts on understanding and exploiting discoveries. For example, open weather data underpins the forecasting industry, and making genome sequences publicly available has spawned many biotechnology innovations. In addition, wider availability of peer-reviewed publications and scientific data in digital formats will create innovative economic markets for services related to curation, preservation, analysis, and visualization. Policies that mobilize these publications and data for re-use through preservation and broader public access also maximize the impact and accountability of the Federal research investment. These policies will accelerate scientific breakthroughs and innovation, promote entrepreneurship, and enhance economic growth and job creation.

The Administration also recognizes that publishers provide valuable services, including the coordination of peer review, that are essential for ensuring the high quality and integrity of many scholarly publications. It is critical that these services continue to be made available. It is also important that Federal policy not adversely affect opportunities for researchers who are not funded by the Federal Government to disseminate any analysis or results of their research.

To achieve the Administration's commitment to increase access to federally funded published research and digital scientific data, Federal agencies investing in research and development must have clear and coordinated policies for increasing such access.

DOE Data Management Overview

DOE data management principles		
Enable discovery	Share, preserve, validate	Cost management

DOE Data Management Plan (DMP) requirements			
Share, preserve, validate	Make data associated with publications accessible	Availability of data management resources	Privacy, security, confidentiality

- Office of Science (SC) DMPs are reviewed as part of the proposal merit review process
  - Additional requirements and review criteria for the DMP may be identified in a solicitation
  - Proposals may include requested funding to implement a DMP, which will be considered during merit review

Full DOE policy: ***https://www.energy.gov/datamanagement/doe-policy-digital-research-data-management***
Full SC policy: ***https://science.osti.gov/Funding-Opportunities/Digital-Data-Management***

Updates to Digital Data Management Guidance

- Office of Science updated the **Suggested Elements of a Data Management Plan** (DMP) and added **Guidance for Reviewers of Data Management Plans**
  - Updated guidance became effective for all solicitations issued after **January 1, 2022**
  - There are **no changes to formal DMP requirements** that are part of solicitations

Suggested Elements of a DMP

- Suggested Elements offer guidance to researchers about what to include in a DMP
- Provide a framework for planning a DMP that satisfies requirements
- Tool to aid in aligning with best practices in data management

Guidance for DMP Reviewers

- Reviewers are asked if the DMP is suitable and supports validation of the proposed research
- Reviewer guidance connects suggested elements to DMP requirements
- Encourages constructive feedback to continue improving future DMPs

PAMS Updates for Reviewers

- PAMS emails to reviewers will include a link to the Guidance for Reviewers of DMPs
- Reviewers will need to certify once a year that they have read the Guidance for Reviewers of DMPs

Complete information available at: https://science.osti.gov/Funding-Opportunities/Digital-Data-Management

DMP Suggested Elements

These Suggested Elements are provided to researchers to aid in developing their DMPs:

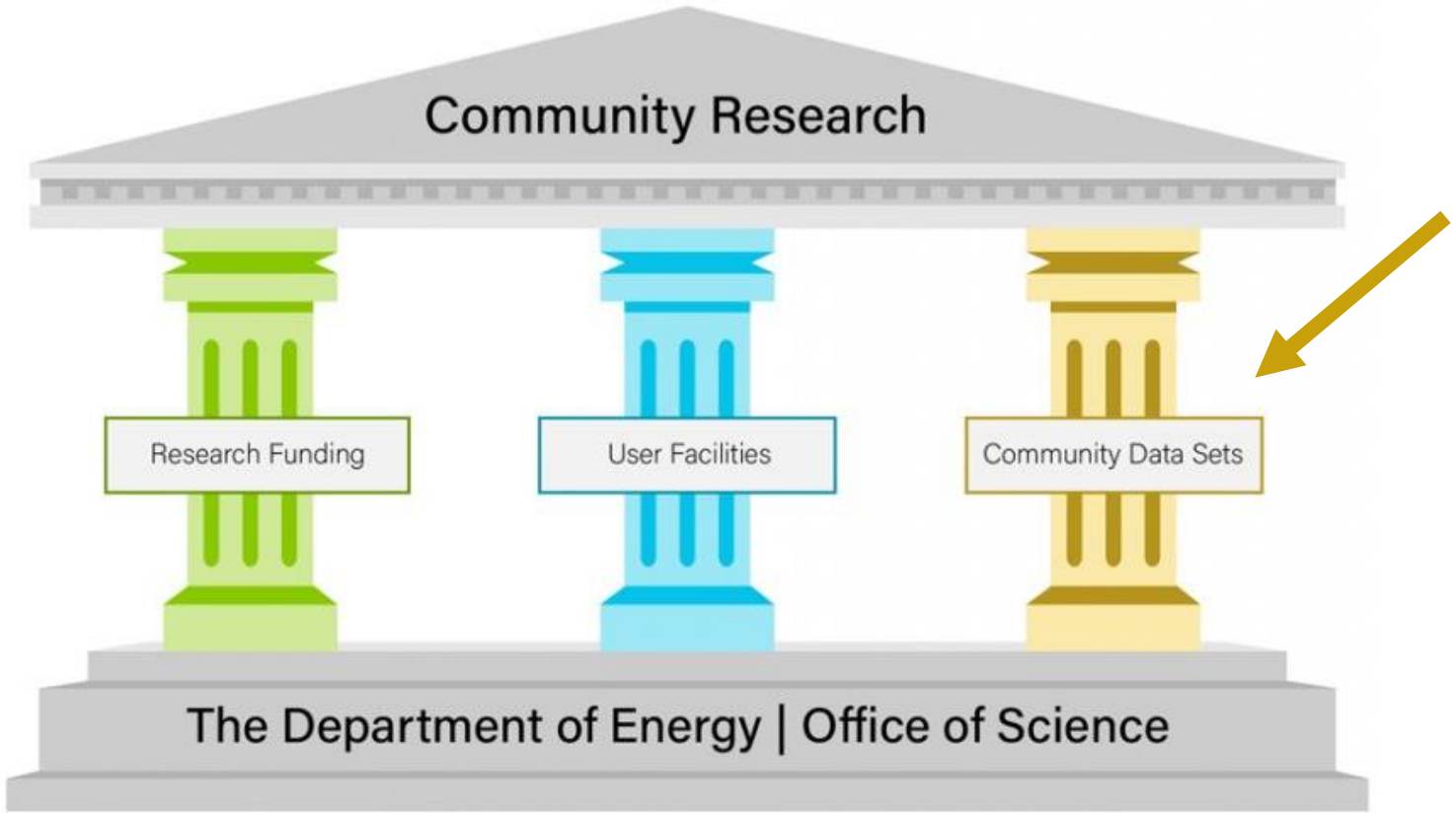
- **Data Used and/or Generated**
  - A brief description of data that will be collected, generated, or used during the course of the proposed research
- **Standards**
  - A description of any standards or formats to be used or considered
- **Related Tools, Software and/or Code**
  - A description of any code or specialized tools that are needed to make use of the data
- **Data Sharing**
  - A description of how data will be accessed and shared
- **Data Preservation**
  - A description of plans for preserving data
- **Data Protection: Security and Integrity**
  - A description of measures to ensure data security and integrity
- **Oversight of Data Management**
  - How alignment with this DMP will be monitored and managed, and by whom
- **Rationale**
  - A brief justification of the proposed data management plan or any associated costs

Guidance for Reviewers of Data Management Plans

- Guidance for DMP reviewers is provided online with the rest of the SC data management policy information
  - Enables applicants to see exactly what reviewers are being asked to consider
- Describes connections between the Suggested Elements and the DMP requirements
- Encourages reviewers to provide useful feedback regarding whether the provided DMP adequately addresses the DMP requirements
  - Examples framed as constructive feedback to better aid applicants in improving their DMP in future submissions

Better reviews ⇨ Better DMPs ⇨ Better science

Data: The Third Pillar of the Office of Science Enterprise



https://www.energy.gov/science/office-science-pure-data-resources

Public Reusable Research (PuRe) Data Resources are:

- data repositories,
- knowledge bases,
- analysis platforms,
- and other activities

that aim to make data **publicly available** in order to advance scientific or technical knowledge.

PuRe Data Resource designations **highlight** and **improve stewardship** of Office of Science supported community data efforts with strategic impact on the Office of Science mission.

PuRe Data Resources at a Glance

PuRe Data Resources

https://science.osti.gov/Initiatives/PuRe-Data/Resources-at-a-Glance

- Current designated resources:
  - Atmospheric Radiation Measurement Data Center
  - Joint Genome Institute
  - Materials Project
  - National Nuclear Data Center
  - Particle Data Group
  - Systems Biology Knowledgebase (KBase)

JGI JOINT GENOME INSTITUTE

NNDC

PDG particle data group

The Materials Project

ARM

KBase PREDICTIVE BIOLOGY DOE Systems Biology Knowledgebase

PuRe Data Resources: Community Benefits

Advancing Your Science

Highlights authoritative providers of data or capabilities in their respective subject area.

Makes data easier to find, access, and reuse across the broader scientific community.

Publicly available data and tools help to accelerate your research efforts!

Supporting Your Data

Enables better sharing and preservation of digital research data.

Supports high standards in data management, operations, and scientific impact.

Provides options for responsive Data Management Plan for research funding proposals.

Recognizing Your Impact

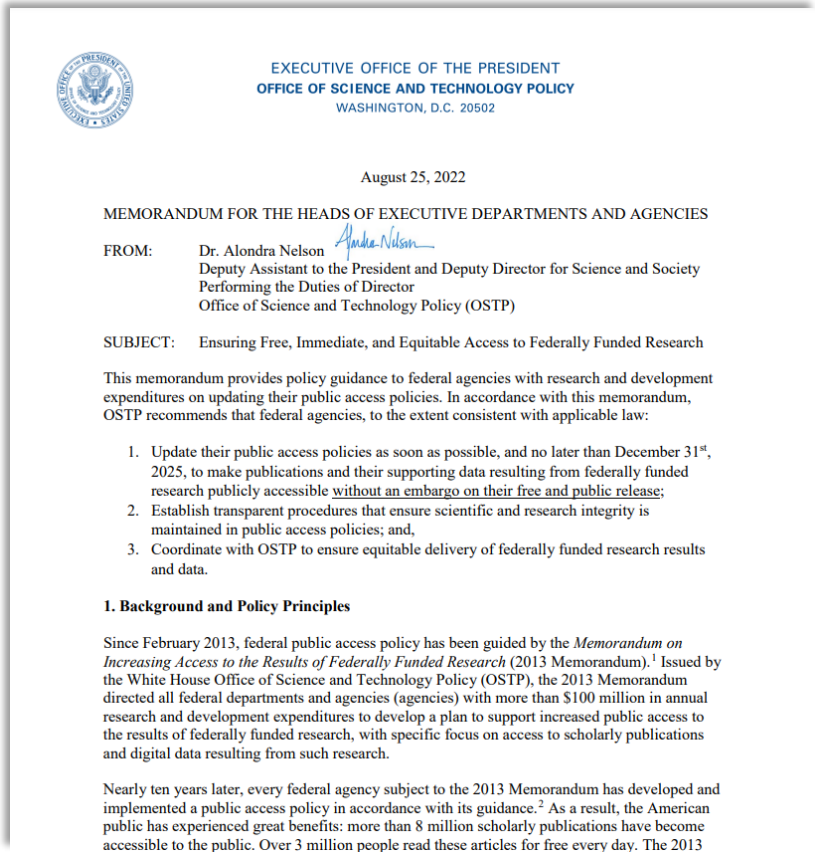
Streamlines your participation in the open science ecosystem.

Enables making your data more Findable, Accessible, Interoperable, and Reusable to the scientific community.

Resources use persistent identifiers to enable linking data to connected scientific results.

2022 OSTP Public Access Memo

- "Ensuring Free, Immediate, and Equitable Access to Federally Funded Research"
  - Builds on the 2013 OSTP "Holdren" memo
  - "A federal public access policy consistent with our values of equal opportunity must allow for broad and expeditious sharing of federally funded research—and must allow all Americans to benefit from the returns on our research and development investments without delay."
- Requirements include:
  - Removes 12-month embargo on access to scholarly publications – immediate access upon publication
  - Requires immediate access to data underlying publications and increased access to other data
  - Requires the use of persistent identifiers (PIDs) for research outputs (e.g., publications, data, software), researchers, and awards
  - Submission of most agencies' new public access plans to OSTP by Feb. 21, 2023



EXECUTIVE OFFICE OF THE PRESIDENT
OFFICE OF SCIENCE AND TECHNOLOGY POLICY
WASHINGTON, D.C. 20502

August 25, 2022

MEMORANDUM FOR THE HEADS OF EXECUTIVE DEPARTMENTS AND AGENCIES

FROM: Dr. Alondra Nelson
Deputy Assistant to the President and Deputy Director for Science and Society
Performing the Duties of Director
Office of Science and Technology Policy (OSTP)

SUBJECT: Ensuring Free, Immediate, and Equitable Access to Federally Funded Research

This memorandum provides policy guidance to federal agencies with research and development expenditures on updating their public access policies. In accordance with this memorandum, OSTP recommends that federal agencies, to the extent consistent with applicable law:

1. Update their public access policies as soon as possible, and no later than December 31st, 2025, to make publications and their supporting data resulting from federally funded research publicly accessible without an embargo on their free and public release;
2. Establish transparent procedures that ensure scientific and research integrity is maintained in public access policies; and,
3. Coordinate with OSTP to ensure equitable delivery of federally funded research results and data.

1. Background and Policy Principles

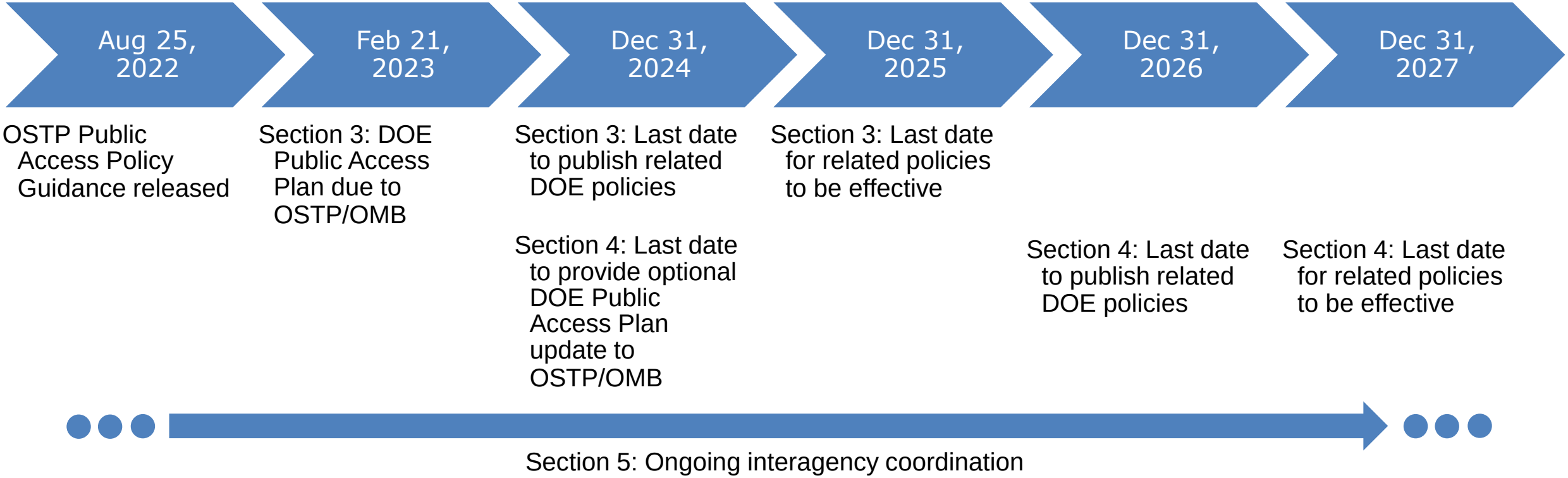
Since February 2013, federal public access policy has been guided by the *Memorandum on Increasing Access to the Results of Federally Funded Research* (2013 Memorandum).[1] Issued by the White House Office of Science and Technology Policy (OSTP), the 2013 Memorandum directed all federal departments and agencies (agencies) with more than $100 million in annual research and development expenditures to develop a plan to support increased public access to the results of federally funded research, with specific focus on access to scholarly publications and digital data resulting from such research.

Nearly ten years later, every federal agency subject to the 2013 Memorandum has developed and implemented a public access policy in accordance with its guidance.[2] As a result, the American public has experienced great benefits: more than 8 million scholarly publications have become accessible to the public. Over 3 million people read these articles for free every day. The 2013

2022 OSTP Public Access Memo Timeline

2022 OSTP Public Access Memo Section Descriptions

Section 3: Publications & Data | Section 4: PIDs – Research & Scientific Integrity | Section 5: Interagency Coordination



Timeline is an interpretation of the OSTP memo – refer to memo for exact guidance!

2023: THE YEAR OF **OPEN SCIENCE**

“The principle and practice of making research products and processes available to all, while respecting diverse cultures, maintaining security and privacy, and fostering collaborations, reproducibility, and equity.”

https://open.science.gov/

PIDs@ OSTI.GOV

https://www.osti.gov/pids/

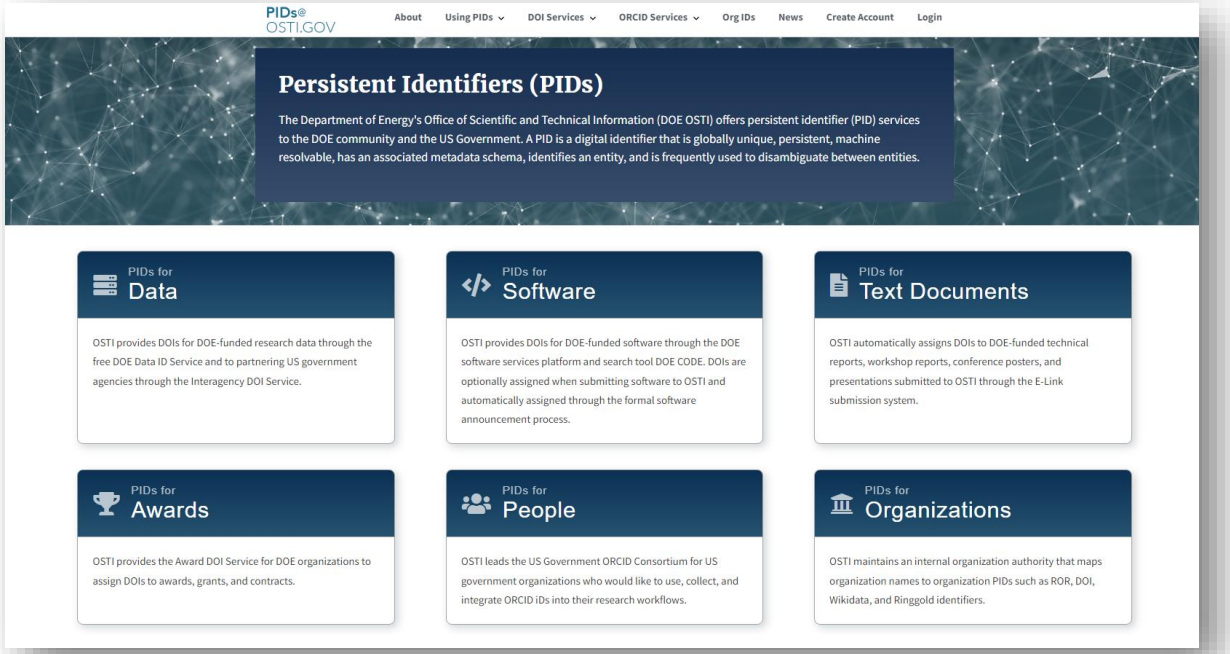
PuRe Data Resources

https://science.osti.gov/Initiatives/PuRe-Data

PIDs@OSTI.GOV

PIDs@OSTI.GOV brings together information about persistent identifiers (PIDs) and the services DOE's Office of Scientific and Technical Information (OSTI) provides for the DOE community and more broadly for U.S. government agencies

- PIDs deliver value to the broader research community by **enabling greater discovery and reuse** of research components through unique identification and **providing appropriate credit** through citation and identification of contributors
- PIDs@OSTI.GOV provides general information about PIDs, details about the OSTI provided PID services, community resources, and through visualizations, demonstrates the power of PIDs
- OSTI offers services and support for assigning and using PIDs for research components:
  - DOIs assignment for research outputs – software, text documents, and data (through the DOE Data ID Service and Interagency DOI Service)
  - Support of ORCID iDs through the US Government ORCID Consortium
  - Assignment of DOIs for awards through the Award DOI Service

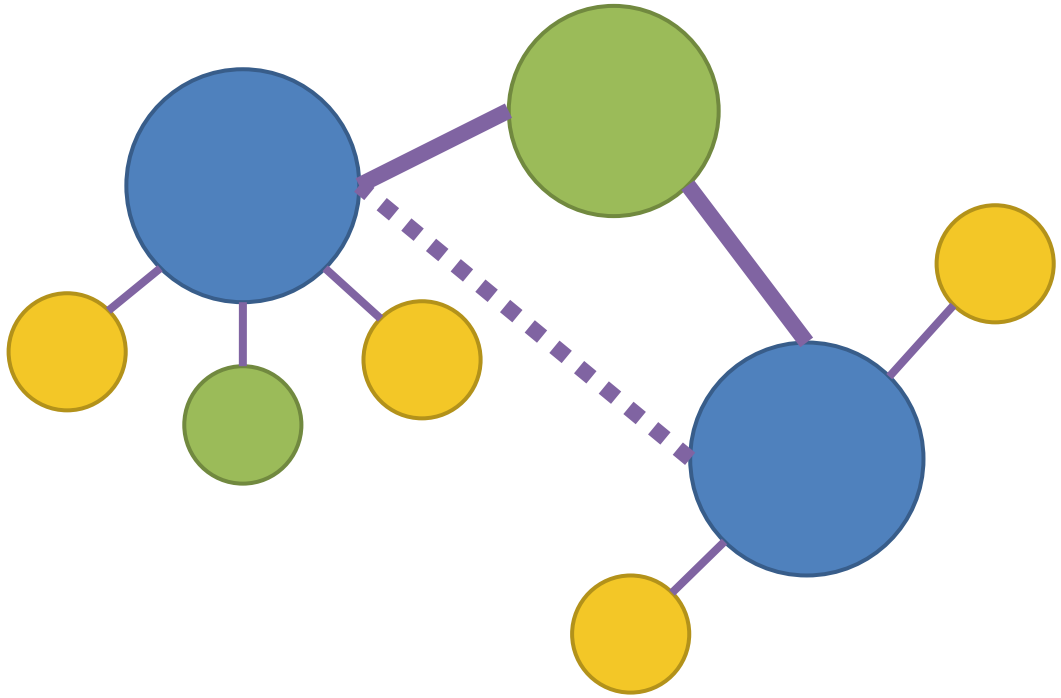


https://www.osti.gov/pids/

Watch for this and more YOS news at:
https://open.science.gov/

What does the future of open science look like?

- How do you and your community see this picture?
  - Integrated data, networking, computing infrastructure
  - FAIR data connected within a domain to rapidly advance science
  - Open data shared across domains enabling new science
  - PIDs connecting data, code, and models to publications
  - PIDs enabling recognition for the impact of open data sharing



What is needed to enable this picture?

U.S. DEPARTMENT OF
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