

# Using PIDs at the US Department of Energy

Japan Open Science Summit  
June 15<sup>th</sup>, 2021

Carly Robinson, PhD  
OSTI Assistant Director  
Information Products and Services



U.S. DEPARTMENT OF  
**ENERGY**

Office of  
Science

Office of Scientific and  
Technical Information

# DOE Invests ~ \$12B per year in R&D



## R&D Funding

- Advanced Research Projects Agency – Energy (ARPA-E)
- Office of Electricity Delivery & Energy Reliability
- Office of Energy Efficiency & Renewable Energy
- Office of Environmental Management
- Office of Fossil Energy
- Office of Legacy Management
- Office of Nuclear Energy
- Office of Science
- Office of Environment, Health, Safety & Security

## NATIONAL LABS

Ames  
Argonne  
Brookhaven  
Fermi  
Idaho  
Los Alamos  
Lawrence Berkeley  
Lawrence Livermore  
NETL  
NREL  
Oak Ridge  
Pacific Northwest  
Princeton  
SLAC  
Sandia  
Savannah River  
Thomas Jefferson

## GRANTEES TECHNOLOGY CENTERS SITES

## R&D Results

- Journal articles/accepted manuscripts
- Technical reports
- Conference papers
- Theses/dissertations
- Scientific and technical software
- Data objects
- Patents
- Workshop reports
- Videos

≈ 50,000 R&D findings/results per year

# OSTI Mission and Priorities

**Core Functions:** OSTI collects, preserves, and disseminates DOE-funded research and development results.

**Mission:** Advance science and sustain technological creativity by making DOE-funded research and development findings available and useful to Department of Energy researchers and the public.

**Strategic Priority:** Provide community with persistent identifier (PID) services.



# DOE OSTI PID Services

Service Name	Research Object	Service Partner
<b>PIDs for Research Results</b>		
E-Link (research output ingest system)	Technical/Workshop Reports Conference Posters Presentations	Crossref
DOE Data ID Service	Data	DataCite
Interagency Data ID Service (IAD)	Data/Research Outputs	DataCite
DOE CODE	Software	DataCite
<b>PIDS for Awards</b>		
Award DOI Service	Awards	Crossref Grant ID
<b>PIDs for People</b>		
US Government ORCID Consortium	Researchers	ORCID
<b>PIDs for Organizations</b>		
Organization Authority	Research/Funding Organizations	ROR
Open Funder Registry	Funding Organizations	Crossref/Elsevier

Data ID Services

DOE CODE

E-Link

Award DOI Service

US Government  
ORCID Consortium

# PIDs for Research Results – DOIs

# Data ID Services – Data DOIs

## ***DOE Data ID Service***

- Labs, facilities, and data repositories provide data records (with associated metadata) to OSTI via E-Link.
- E-Link is our custom-developed system for collecting DOE-funded research results, developed and maintained by OSTI.
- When data record is submitted, OSTI automatically assigns a DataCite DOI (unless one is already assigned).

DOE **Data ID** Service

Interagency  
**Data ID Service**

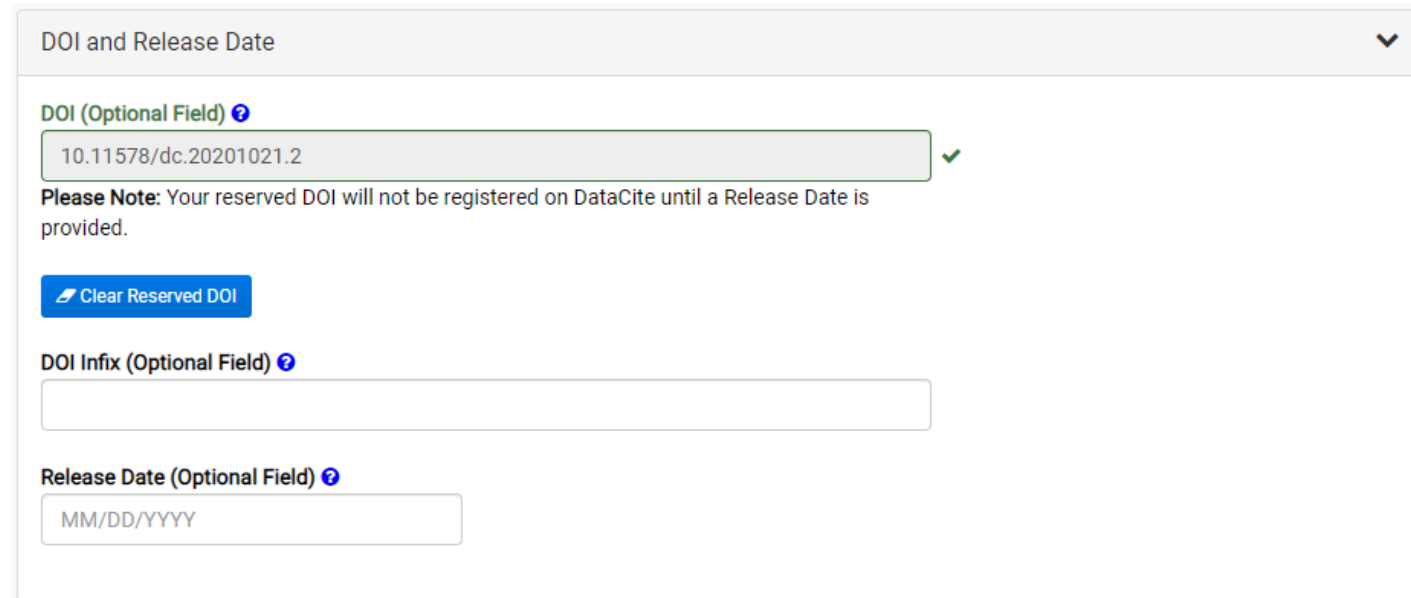
## ***Interagency Data ID Service (IAD)***

- DataCite Consortium – US agencies are consortium organizations
- Assign DOIs to other agencies' research outputs, based on metadata passed from OSTI to DataCite.
- Work with 5 government agencies – National Institutes of Health, NASA, Dept. of Transportation, Environmental Protection Agency, US Dept. of Agriculture.

# DOE CODE – Software DOIs

DOE CODE is the software services platform and search tool for DOE-funded code.

- When early development code/software records submitted to DOE CODE, can optionally assign DataCite DOIs. Typically for DOI citation purposes.
- DataCite DOIs are automatically assigned to software formally submitted to DOE OSTI (if one has not already been assigned).



The screenshot shows a form titled "DOI and Release Date" with a dropdown arrow in the top right corner. It contains three main sections:

- DOI (Optional Field) ?**: A text input field containing "10.11578/dc.20201021.2" with a green checkmark to its right.
- Please Note:** Your reserved DOI will not be registered on DataCite until a Release Date is provided.
- Clear Reserved DOI**: A blue button with a trash icon.
- DOI Infix (Optional Field) ?**: An empty text input field.
- Release Date (Optional Field) ?**: A text input field with the placeholder "MM/DD/YYYY".

# PIDs for Awards – DOIs

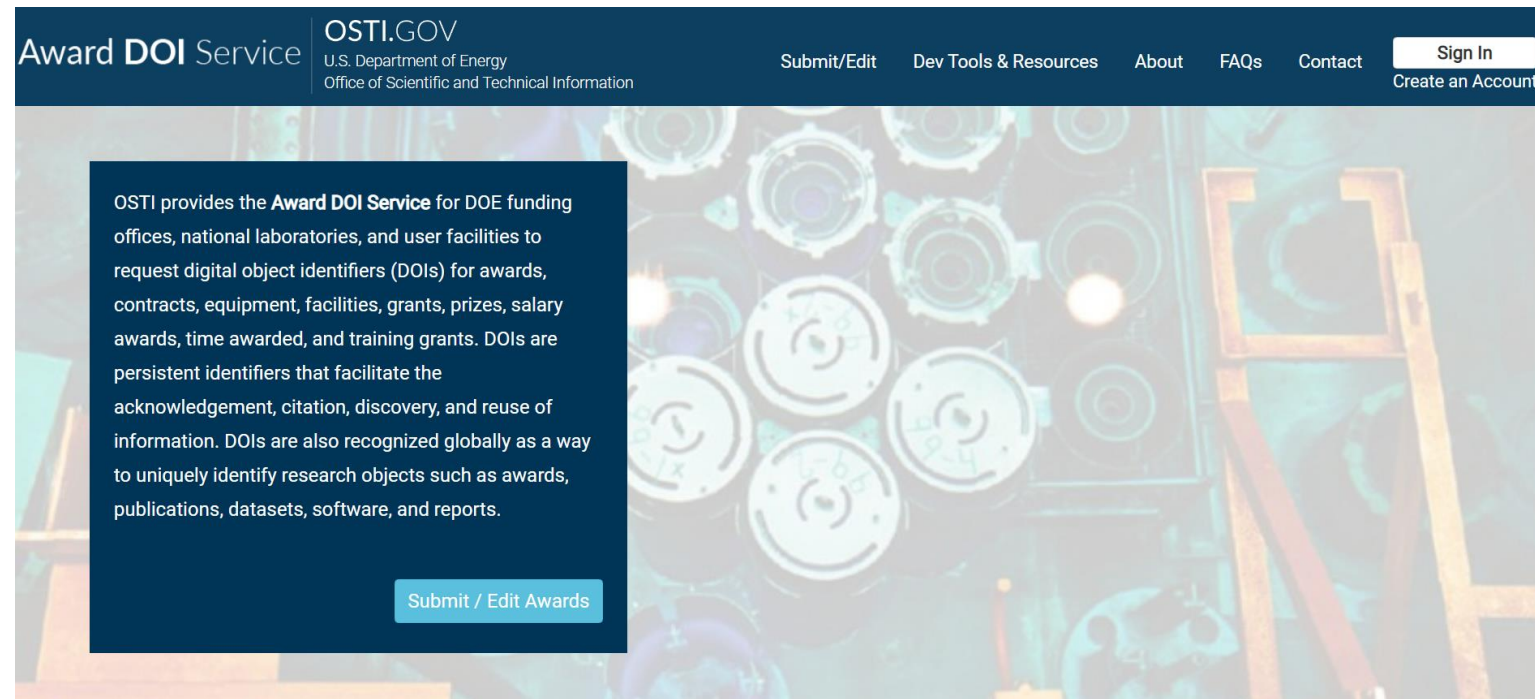


# Award DOI Service

## Service Development and Launch

<https://www.osti.gov/award-doi-service/>

- Crossref members can use award/grant DOI service.
- Worked with DOE user facilities to gather requirements.
- Launched the Award DOI Service pilot project September 2020.
- Piloting with facilities to assign award DOIs to the awards provided by the facility (use of the facility).
- The service can scale to support DOE funding offices and other government awards.



The screenshot shows the OSTI.gov website interface. The header includes the text "Award DOI Service" and "OSTI.GOV U.S. Department of Energy Office of Scientific and Technical Information". Navigation links include "Submit/Edit", "Dev Tools & Resources", "About", "FAQs", "Contact", "Sign In", and "Create an Account". A central text box explains the service: "OSTI provides the Award DOI Service for DOE funding offices, national laboratories, and user facilities to request digital object identifiers (DOIs) for awards, contracts, equipment, facilities, grants, prizes, salary awards, time awarded, and training grants. DOIs are persistent identifiers that facilitate the acknowledgement, citation, discovery, and reuse of information. DOIs are also recognized globally as a way to uniquely identify research objects such as awards, publications, datasets, software, and reports." A "Submit / Edit Awards" button is located at the bottom of the text box.

# PIDs for People – ORCID iDs

# US Government ORCID Consortium

## Consortium Development and Launch

- Many DOE and US government organizations joining ORCID as direct members.
- Interest from those organizations to be an ORCID member through a consortium.
- Developed to create community, decrease costs, and providing increased services.
- **US Government ORCID Consortium launched April 1<sup>st</sup>, 2020. Led by DOE OSTI.**

## Consortium Benefits

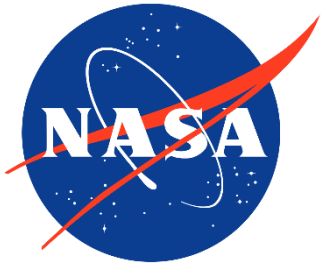
- Consortium members are premium ORCID members – 5 API credentials, increased API functionality, custom analytics, etc.
- Consortium provides more individualized support – both administrative and technical.
- Consortium members are part of the US government community of practice – information sharing with organizations with similar needs and use cases.

US Government  
**ORCID Consortium**

<https://www.osti.gov/orcid-consortium/>

# Consortium Members

12 current consortium members



The Advanced Photon Source

Argonne Leadership Computing Facility

Argonne Research Library

Center for Nanoscale Materials CNM



# Using and Connecting PIDs

# Connecting PIDs in Metadata

**OSTI.GOV** U.S. Department of Energy  
Office of Scientific and Technical Information

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OSTI.GOV / Search for association mapping of aerial drone (filtered) / Journal Article: Association mapping by aerial drone reveals 213 genetic associations for Sorghum bicolor bi...

## Association mapping by aerial drone reveals 213 genetic associations for Sorghum bicolor biomass traits under drought

Full Record References (43) Other Related Research

**JOURNAL ARTICLE:**  
Free Publicly Available Full Text  
Publisher's Version of Record at 10.1186/s12864-018-5055-5  
Copyright Statement

**OTHER AVAILABILITY**  
Search WorldCat to find libraries that may hold this journal

**CITATION METRICS:**  
Cited by: 2 works  
Citation information provided by Web of Science

**Authors:** Spindel, Jennifer E.; Dahlberg, Jeffery; Colgan, Matthew; Hollingsworth, Joy; Sievert, Julie; Staggenborg, Scott H.; Hutmacher, Robert; Jansson, Christer; Vogel, John P. 

**Publication Date:** 2018-09-17

**Research Org.:** Pacific Northwest National Lab. (PNNL), Richland, WA (United States); Lawrence Berkeley National Lab. (LBNL), Berkeley, CA (United States)

**Sponsoring Org.:** USDOE Advanced Research Projects Agency - Energy (ARPA-E); USDOE Office of Science (SC), Biological and Environmental Research (BER) (SC-23)

**OSTI Identifier:** 1618569

**Alternate Identifier(s):** OSTI ID: 1489292; OSTI ID: 1559146

**Report Number(s):** PNNL-SA-131382  
Journal ID: ISSN 1471-2164; 679; PII: 5055

**Grant/Contract Number:** 14/CJ000/09/02; AC02-05CH1123; AC05-76RL01830; AC02-05CH11231

At DOE OSTI, we're working to create connections using PIDs throughout the research lifecycle in connected metadata to show the impact of DOE funding and tell DOE's story.

# Connecting PIDs in Metadata

Crossref DOIs for Publications

ROR IDs & Open Funder Registry DOIs for Funding Organizations

ORCID iDs for Researchers/Authors

ROR IDs for Research Organizations

Crossref DOIs for awards, grants, and contracts

DataCite DOIs for Dataset

DataCite DOIs for Software

OSTI.GOV

U.S. Department of Energy Office of Biological and Technical Information

Search 3+ million Department of Energy records

Submit Publications

Access Policy

Data

Full Record | References (43) | Other Related Research

JOURNAL ARTICLE:

Publisher's Version of Record at 10.1186/s12864-018-5055-5

Copyright Statement

OTHER AVAILABILITY  
Search WorldCat to find libraries that may hold this journal

CITATION METRICS:  
Cited by: 2 works  
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Full Record | References (1) | Other Related Research

Similar Records

Related Works

- Collection (2)
- Dataset (26)
- Figure (2)

Authors: Spindel, Jennifer E.; Dahlberg, Jeffery; Colgan, Matthew; Hwangsworn, Joy; Sievers, Julie; Staggenborg, Scott H.; Hutmacher, Robert; Jansson, Christa; Vogel, John P.

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Create Account

Association mapping by aerial drone reveals 213 genetic associations for Sorghum bicolor biomass traits under drought

JOURNAL ARTICLE  
Spindel, Jennifer E.; Dahlberg, Jeffery; Colgan, Matthew; ... - BMC Genomics

BACKGROUND: Sorghum bicolor is the fifth most commonly grown cereal worldwide and is remarkable for its drought and abiotic stress tolerance. For these reasons and the large size of biomass varieties, it has been proposed as a bioenergy crop. However, little is known about the genes underlying sorghum's abiotic stress tolerance and biomass yield. RESULTS: To uncover the genetic basis of drought tolerance in sorghum at a genome-wide level, we undertook a high-density phenomics genome wide association study (GWAS) in which 648 diverse sorghum lines were phenotyped at two locations in California once per week by drone over the course of more »

DOI: 10.1186/s12864-018-5055-5 Full Text Available

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1	Significantly enriched protein domains. Protein domains were scraped from PhytoMine for all genes found in the region of each GWAS peak (as defined by the wide range, i.e. the range of the union of all SNP
2	Domain name
3	Alpha/Beta hydrolase fold
4	F-box domain
5	Protein of unknown function DUF1677, Oryza sativa
6	Alpha/beta hydrolase fold-3
7	Timeless protein
8	Timeless C-terminal
9	TMP21-related
10	Domain of unknown function DUF4378
11	GOLD domain
12	Phloem protein 2-like
13	Membrane insertase YidC/Oxa1, C-terminal
14	Myb-like domain

Significantly\_enriched\_domains  
12864\_2018\_5055\_M... MD5: 923d18f4940f6a176d01921fb283e48

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docs	Edited doc/fipctext to remove PNNL-specific references. Deleted pdf.	2 years ago
scripts	added playback with no looping	3 years ago
src	Need to keep highgui openCV module in CMakeLists.txt for viewer.cpp: ...	2 years ago
test	eval_detections initial revision	3 years ago
vendorsrc	added blueview libs	3 years ago
webapp	latest from Ross	3 years ago
.gitignore	Need to keep highgui openCV module in CMakeLists.txt for viewer.cpp: ...	2 years ago
DISCLAIMER.md	Added LICENSE and DISCLAIMER	2 years ago
LICENSE.md	Added LICENSE and DISCLAIMER	2 years ago

# Visualizing PIDs

An official website of the United States government [Here's how you know](#)

PIDs@  
OSTI.GOV

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$B \rightarrow \pi l \bar{\nu}$  and  $B_s \rightarrow K l \bar{\nu}$  form factors and  $|V_{ub}|$  from 2+1-flavor lattice QCD with domain-wall light quarks and relativistic heavy quarks

Persistent / Related Identifier Connections

OSTI ID: 1180799

PUBLICATION YEAR  
2015

ABSTRACT

We calculate the form factors for  $B \rightarrow \pi l \bar{\nu}$  and  $B_s \rightarrow K l \bar{\nu}$  decay in dynamical lattice quantum chromodynamics (QCD) using domain-wall light quarks and relativistic b-quarks. We use the (2+1)-flavor gauge-field ensembles generated by the RBC and UKQCD collaborations with the domain-wall fermion action and Iwasaki gauge action.

[\[see more\]](#)

PUBLISHER'S VERSION OF RECORD

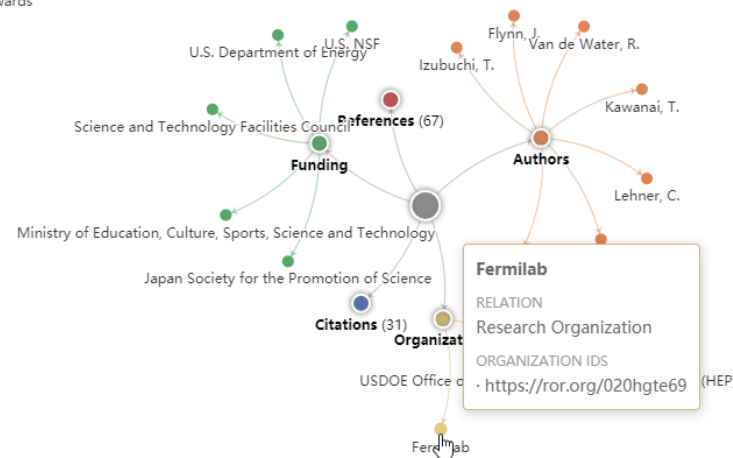
<https://doi.org/10.1103/PhysRevD.91.074510>

CITATION METRICS

Cited by:	31
Impact Factor:	4.833
Citation Impact by Journal:	2.64
Citation Impact by Field:	2.9717
% Rank by Field / Year:	5.5053

Citation information provided by  
Web of Science

- OSTI ID 1180799
- Authors
- Organizations
- References
- Citations
- Awards



NODE DETAILS

FERMILAB

RELATION

Research Organization

<http://www.fnal.gov/>

Batavia, Illinois  
United States

41.8319435, -88.257225



ROR

<https://ror.org/020hgte69>

GRID

grid.417851.e

Funder Registry

100006230

ISNI

0000 0001 0675 0679

ORGRef

53301

Wikidata

Q337641



# Thank you!

**Carly Robinson**

[Carly.Robinson@science.doe.gov](mailto:Carly.Robinson@science.doe.gov)



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