Data Management and Public Access to Federally Funded Research Results at NPS

Get Into Calhoun
The NPS Institutional Archive

Irene Berry, Digital Services Librarian
Eleanor Uhlinger, University Librarian
Naval Postgraduate School | Dudley Knox Library
November 2014
Approved for public release; distribution is unlimited
Transparency and Open Government

Memorandum for the Heads of Executive Departments and Agencies
SUBJECT: Transparency and Open Government

My Administration is committed to creating an unprecedented level of openness in Government. We will work together to ensure the public trust and establish a system of transparency, public participation, and collaboration. Openness will strengthen our democracy and promote efficiency and effectiveness in Government.

Government should be transparent. Transparency promotes accountability and provides information for citizens about what their Government is doing. Information maintained by the Federal Government is a national asset. My Administration will take appropriate action, consistent with law and policy, to disclose information rapidly in forms that the public can readily find and use. Executive departments and agencies should harness new technologies to put information about their operations and decisions online and readily available to the public. Executive departments and agencies should also solicit public feedback to identify information of greatest use to the public.
MEMORANDUM FOR: SEE DISTRIBUTION

SUBJECT: Public Access to the Results of Department of Defense-Funded Research


The referenced memorandum directs each Federal agency with over $100 million in annual research and development expenditures to support increased public access to published research and digital scientific data. Data sharing will enhance scientific inquiry, accelerate scientific breakthroughs and innovation, promote entrepreneurship, and strengthen economic growth and job creation. The Department of Defense (DoD) intends, to the fullest extent possible, to make available to the public all unclassified, unlimited peer-reviewed scholarly publications and digitally formatted scientific data arising from research and programs funded wholly or in part by DoD.

To this end, I direct all Components to comply with policies, programs, and procedures that meet the goals set out in the Office of Science and Technology Policy (OSTP) memorandum. This applies to any scientific or technical research effort, regardless of the funding appropriation used to support it.

DoD Public Access Policy applies to any published, peer-reviewed scholarly publication and digital scientific data that is publicly releasable and arises from any direct funding from a DoD grant or cooperative agreement, contract, or DoD intramural program consistent with applicable law, policy, agency mission, and resource constraints.

This policy requires that authors submit final, peer-reviewed journal manuscripts to the Defense Technical Information Center (DTIC) system upon acceptance for publication. This policy further requires that these final peer-reviewed manuscripts be freely available to the public not later than 12 months following publication.

This policy also requires that investigators, at no more than incremental cost and within a reasonable time, ensure public access to unclassified publicly releasable primary data, samples, and other supporting materials created or gathered in the course of work. Each DoD-funded effort must be governed by a Data Management Plan, which either conforms to an established institutional format or formulates a construct that meets local and policy requirements. Digitally formatted scientific data sets should be stored and publicly accessible to search, retrieve, and analyze.
Policy Highlights

- Policy applies to
  - Any published, peer-reviewed scholarly publication*
  - Any digital scientific data*
  - ... that arises from funding from a DoD grant, cooperative agreement or contract

- Policy requires
  - Each research effort must be accompanied by a Data Management Plan
  - Authors must submit final, peer-reviewed journal manuscripts to DTIC upon acceptance for publication
  - Investigators must ensure public access to their primary data, samples and supporting materials
  - Publications will be freely available to the public no later than 12 months post publication
  - DoD requires compliance monitoring and reporting 2x a year

- * Not mentioned
  - What about peer-reviewed book chapters and conference proceedings?
  - Can I deposit “final published versions” instead of manuscripts?
  - How does DoD define “data”?
  - How do I get my scholarly publications and data to DTIC?
What is “Data”?

SOURCE: Open data policy: managing data as an asset (May 13, 2013, Office of the Undersecretary of Defense)

• DATA = all structured information ("unstructured" information examples: press release, fact sheet; however, a fact sheet can be broken down into component parts -- title, body text, images, related links -- thus becoming "structured" information)

• DATASET = a collection of data presented in tabular or non-tabular form

SOURCE: Increasing Access to the Results of Federally Funded Scientific Research (February 22, 2013, Executive Office of the President, Office of Science and Technology Policy)

• "For purposes of this memorandum, data is defined consistent with OMB Circular A-110, as the digital recorded factual material commonly accepted in the scientific community as necessary to validate research findings, including data sets used to support scholarly publications, but does not include: laboratory notebooks, preliminary analyses, drafts of scientific papers, plans for future research, peer review reports, communications with colleagues, or physical objects, such as laboratory specimens."
Why a Data Management Plan (DMP)?

• Mandated by DoD, NSF, and other funding agencies

• DMPs now included as part of grant-review process

• Data may be included as part of the peer-review scholarly journal process

• Helps you document the lifecycle management plan for your data ... from conception, through data collection, through analysis and presentation

• Documents your plans for providing access to and preservation of your data
What’s in a DMP?

KEEP IT SIMPLE – 2 pages

• **Point of contact**: PI, Institution

• **Description**: types and sources of data, samples, software; granularity of metadata; data dictionaries; readme.txt files, etc.

• **Management**: data standards for file formats and metadata; where/how is data stored

• **Access**: data access and sharing (how will you protect confidentiality, PII, etc.), emphasis on modifiable digital formats that can be retrieved, downloaded, indexed and searched

• **Intellectual property**: no restrictions may be placed on use; how will others cite you when they re-use, re-distribute, and create derivative works?

• **Archiving & stewardship**: lifecycle management; how long will data be archived (temporal or permanent?); where is data deposited
How can DKL Help Me?

• Sample DMPs
  [http://libguides.nps.edu/datamanagement/dmp](http://libguides.nps.edu/datamanagement/dmp)

• Data Archives and Repositories
  [http://libguides.nps.edu/datamanagement/archive](http://libguides.nps.edu/datamanagement/archive)

• Calhoun, the NPS institutional archive – provides permanent URL
  [http://calhoun.nps.edu/](http://calhoun.nps.edu/)

• Getting into DTIC – deposit locally and DKL will take care of the rest
  – NPS is already the single largest contributor to DTIC (theses, dissertations, tech reports)
  – DKL librarian on DTIC User Council
  – Discussions underway with DTIC about harvesting Calhoun records
  – How will we measure “compliance” – Calhoun reports, annual Faculty Activity Reports?
We Have That!

Calhoun: The NPS Institutional Archive
What is Calhoun?

Calhoun is the digital archive for the Naval Postgraduate School. Calhoun is built for the purpose of making NPS-created scholarly content visible, searchable and freely available to the public.

Find out more about Calhoun.

What can I find in Calhoun?

Your work:

NPS Theses
Faculty Publications
Technical Reports
NPS Publications

Why preserve your research in Calhoun?

Material contained herein is made available for the purpose of peer review and discussion and does not necessarily reflect the views of the Department of the Navy or the Department of Defense. The content of some of the historical material reflects the culture and practices of a particular time period or place.
http://calhoun.nps.edu

• Our own Public Access Digital Archive:
  – Offers one central, stable location
  – Offers partnership, backup for DTIC

• Works great as a Discovery Tool:
  – Google “sees” NPS content in Calhoun
  – Interoperable: other repositories can harvest
  – Puts NPS front and center
  – Better visibility, citation impact
We can link publications to your data!

**The traditional online journal model**

1) Author prepares the paper using word processing software.
2) Author submits the paper as a PDF/Word file.
3) Reviewer reviews the PDF file against the journal's acceptance criteria.

**Overlay journal model for publishing data**

1) Author prepares the data paper using word processing software and the dataset using appropriate tools.
2a) Author submits the data paper to the journal.
2b) Author submits the dataset to a repository.
3) Reviewer reviews the data paper and the dataset it points to against the journals acceptance criteria.

*SOURCE: Bloom et al. 2014. Research Data Alliance webinar.*
Calhoun in Context

DSpace@MIT

DukeSpace

Digital Access to Scholarship at Harvard

ScholarsArchive@OSU
“...Do I need to do anything?”

• We do the Archiving
  – Your work, organized, preserved for the record
• We do the Cataloging
  – Appropriate metadata, descriptions
• We do the Collecting
  – We need YOU: what should we be capturing?

Librarians are good at this stuff
Why we did this
2014: What’s in Calhoun Now?

- Technical Reports
- Videos
- Audio Files
- Articles
- Images
- Software
- Conference papers

- Theses and Dissertations
  - “Project Reports”
  - “Capstones”
- Departmental publications
- NPS Promotional Publications
- Presentations
- Relevant supporting data

Public Access for more than 42,000 NPS documents
Data Can Live There, Too

• Attached immediately to a related document
  – Common when author provides supplement that goes with one item
  – Included as a supplemental item at time of cataloging

• Posted first, awaiting an item to come
  – Common when authors want a URL to quote in text
  – Becomes a supplemental item when relevant item is added

• As its own entity, stable
  – Common when more than one document will be related
  – Common when the filetype really matters: hi-definition photos; software
  – Receives its own metadata; authors refer to it in text
Some examples

• Attached to related document:
  – Projects, reports, theses with related software, spreadsheets, video. Usually one-time relationship between items

• Posted first:
  – Compressed tar files for use by authors about to publish or present in a public venue and in need of a quick URL

• As own entity:
  – SAR HF Wind Satellite Images
  – Video

• “Published twice”:
  – Author wanted to use same data in a later document ...and just asked
Where is Content From?

PUBLICLY AVAILABLE CONTENT

• Contributed articles, preprints, book chapters, images, etc. from authors, departments, project reps
• Free Web: DTIC, ArXiv, SSRI, other IRs, co-authors’ sites, etc.
• Vita-provided leads for NPS work

NOT FOR CALHOUN:

• Calhoun hosts no content that is “non-public release approved”
• No Intranet content
• No “controlled” content, (CUI and beyond)
• No non-NPS content (with a few exceptions)
Identifying Governance Best Practices in Systems-of-Systems Acquisition
Berteau, David J.; Ben-Ari, Guy; Archer, Joshua; Raghavan, Sneha

URI: http://hdl.handle.net/10945/34596

Abstract:
The research presented in this report was supported by the Acquisition Research Business & Public Policy at the Naval Postgraduate School. To request defense acquisition research, to become a research sponsor, or to print additional copies of reports, please contact any of the staff listed on the Acquisition Research Program website (www.acquisitionresearch.net).

Description:
Disclaimer: The views represented in this report are those of the authors and do not reflect the official policy position of the Navy, the Department of Defense, or the federal government.

Excerpt from the Proceedings of the Tenth Annual Acquisition Research Management
How Does it All Get in There?

Submit a new item to this collection

A Cascade Approach for Staircase Linear Programs
We develop a method to approximately solve a large staircase linear program that optimizes decisions over multiple time periods. A bound on the approximation error is also developed. The approximation is derived by a ...
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Metadata reuse and Documentation

• How many theses advised? List? Links?
• Which projects?
• How many articles published? Where?
• How many downloads? How many hits?
• “Enter it once...”: reuse
• Data calls, Accreditation / AACSB, NASPAA
• Statistics on activity available down to the item level
Calhoun links on NPS pages

Energy research at the Naval Postgraduate School in the area of Science and Technology (S&T) is most often found in the Graduate School of Engineering and Applied Science (GSEAS), although the Graduate School of Operational and Information Sciences (GSOIS) also makes a significant contribution. Energy research in GSEAS can be found in several different departments, including Applied Mathematics, Electrical & Computer Engineering, Mechanical & Aerospace Engineering, Oceanography, Physics, and Systems Engineering. Energy S&T research in GSOIS can be found in the departments of Computer Science and also Operations Research. The S&T research projects highlighted on this website illustrate the wide expertise of GSEAS and GSOIS faculty.

Examples of NPS S&T Research Relevant to Energy

- Nanostructured and Multifunctional Materials for Energy Storage
  Prof C. Luhrs – Dept. of Mechanical & Aerospace Engineering

- Novel Metal Oxide Aerogel/Graphitic Hybrids for Supercapacitive Energy Storage
  Prof C. Luhrs - Dept. of Mechanical & Aerospace Engineering

- Multi-Material Dielectrics: A New Paradigm for Achieving High Energy Density Capacitors
  Prof J. Phillips – Dept. of Physics

- Optimization of Vertical Axis Wind Turbine Arrays
  Prof G. Hobson, Prof A. Gannon, & Lt. J. Ponder

- Transport Imaging in Solar Cells
  Dr. N. Haegel – Dept. of Physics

- Efficiency Improvements of Navy Gas Turbines
PUBLICATIONS:


REFERRED CHAPTERS IN BOOKS:

Thank you for your inquiry. Here is a list of relevant documents...

Links to sets of documents

Hybrid Microgrids Containing Renewable Energy Sources (flyer)
Craparo, Emily; Singham, Dashi (2014-06-04)
Professor of Operations Research Naval Postgraduate School Abstract: Hybrid microgrids containing renewable energy sources represent a promising option for organizations wishing to reduce costs while increasing energy security and islanding time. A prime...
In Summary – Calhoun Contains

- NPS Faculty publications, including articles
- NPS Technical Reports
- NPS Theses and Dissertations
- Video, Audio, Software, Spreadsheets, Presentations
- Data, too: attached to relevant documents or on its own

Visibility, Stability and Public Access for NPS Research
Services DKL Provides

• We can do everything from locating, to digitizing to cataloging your NPS work for preservation.

• Contact us at the library to learn more about getting your work into Calhoun for visibility, stability and public access.

Irene Berry
Digital Services Librarian
Dudley Knox Library
icberry@nps.edu
More Information

• Calhoun processes
  https://wiki.nps.edu/display/CIR/Calhoun+Wiki+Home

• Calhoun policies
  http://libguides.nps.edu/calhoun

• Copyright at NPS
  http://libguides.nps.edu/copyright
Questions?