

Promoting Open Science Throughout the Research Lifecycle: The Integrative Role of Libraries

Norm Medeiros

Associate Librarian for Collection Management & Metadata Services
Haverford College

Co-Director, Project TIER

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Project TIER is generously supported by the Alfred P. Sloan Foundation



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FOUNDATION



What to expect

- Opportunities in academic libraries and technical services, especially research data management and digital scholarship
- An introduction to open science and prospective library services integration therein



About Me

- [Why librarianship?](#)

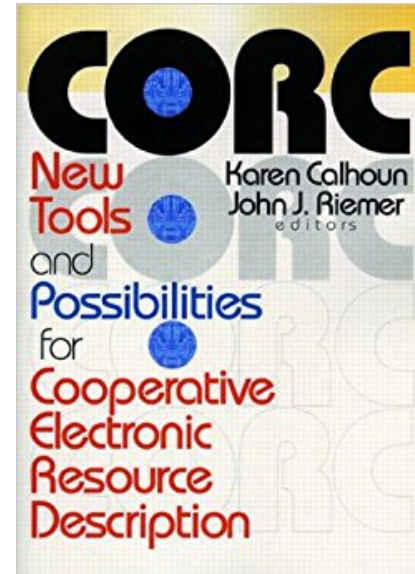
About Me

- University of Rhode Island '95
- Exciting times: online catalog; World Wide Web; improving economy



About Me

- Very traditional opening act
- Followed by “Let’s catalog the Web!”
- Last 16+ years at Haverford trying to provide valuable, cost-effective, and sustainable collection & technical services with a lean staff and modest budget.
- ALCTS: Association for Library Collections & Technical Services



About Me





Expanding Role of Academic Libraries & Technical Services

- What is technical services today? What is cataloging? What is acquisitions?
- Fewer positions, fewer MLIS students, greater inter-divisional cooperation
- More forward-facing work
- More immediate service to users
- From collections- to user-orientation



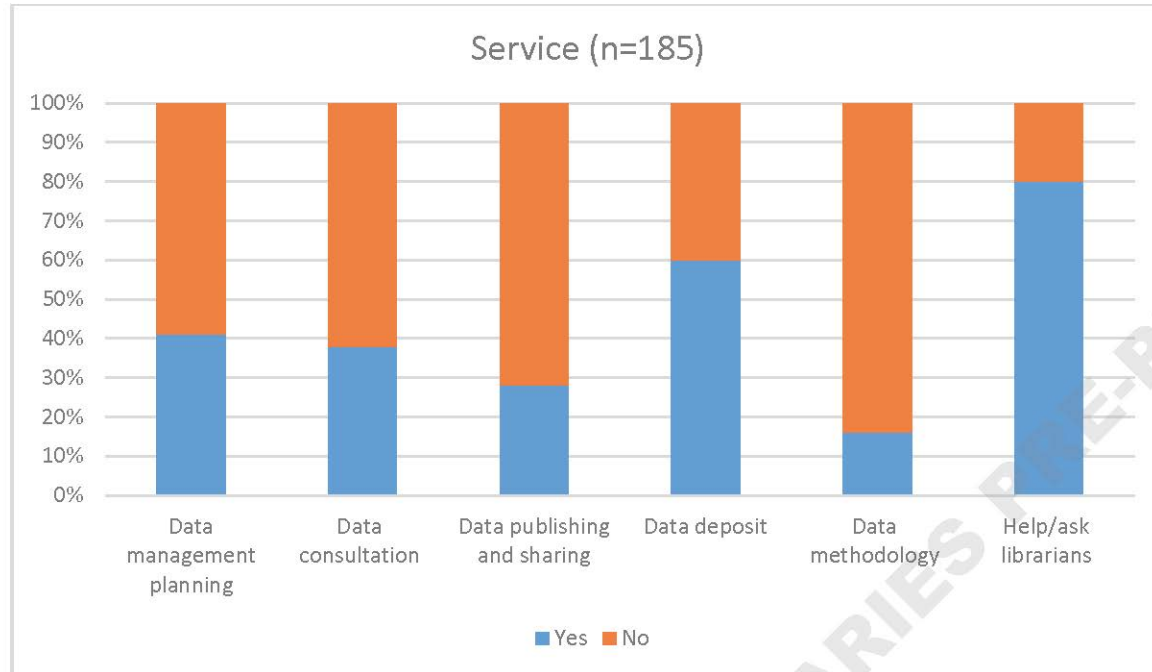
Research Data Management

- Cliff Lynch in theory: “Institutional Repositories: Essential Infrastructure for Scholarship in the Digital Age,” *ARL Bimonthly Report* 226 (February 2003)

Carol Hixson in practice: “Transforming Technical Services Staff and Librarians into Digital Library Specialists: The Continued Evolution of the University of Oregon’s Metadata and Digital Library Services,” AALL presentation (2006).

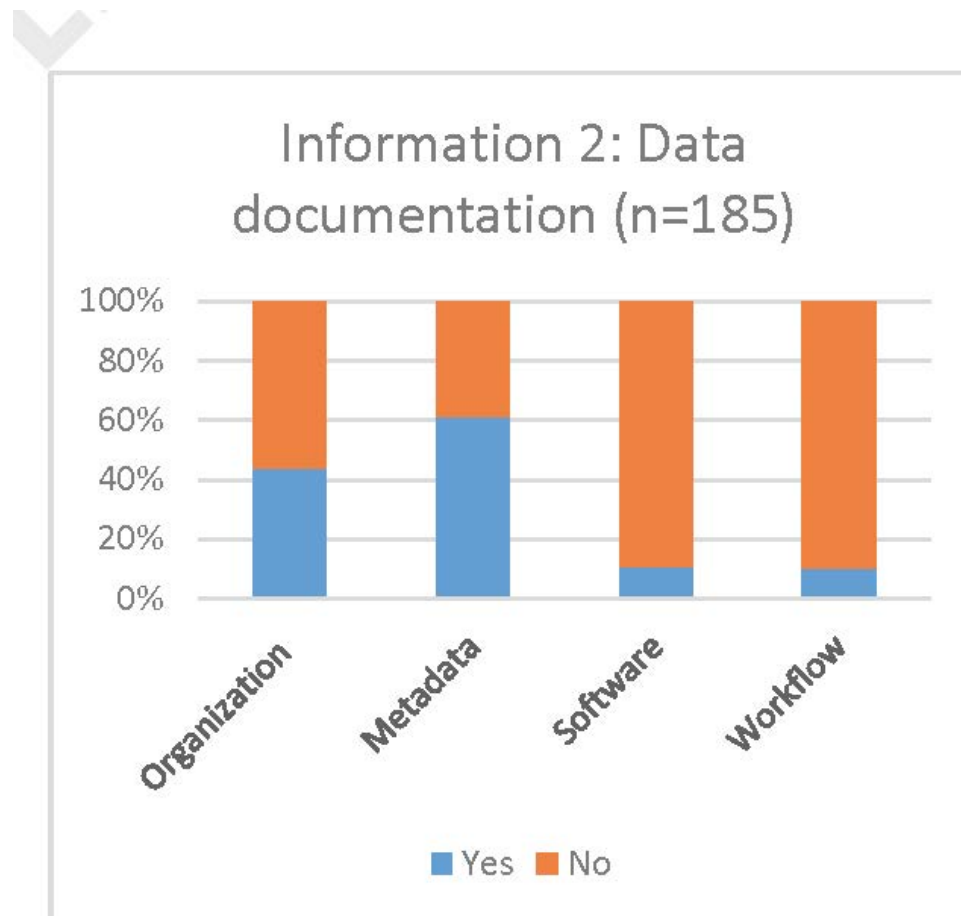
- Strong utilization of metadata & organizational skills
- Consultative role on NSF, NIH, grant funding requirements

Research Data Management



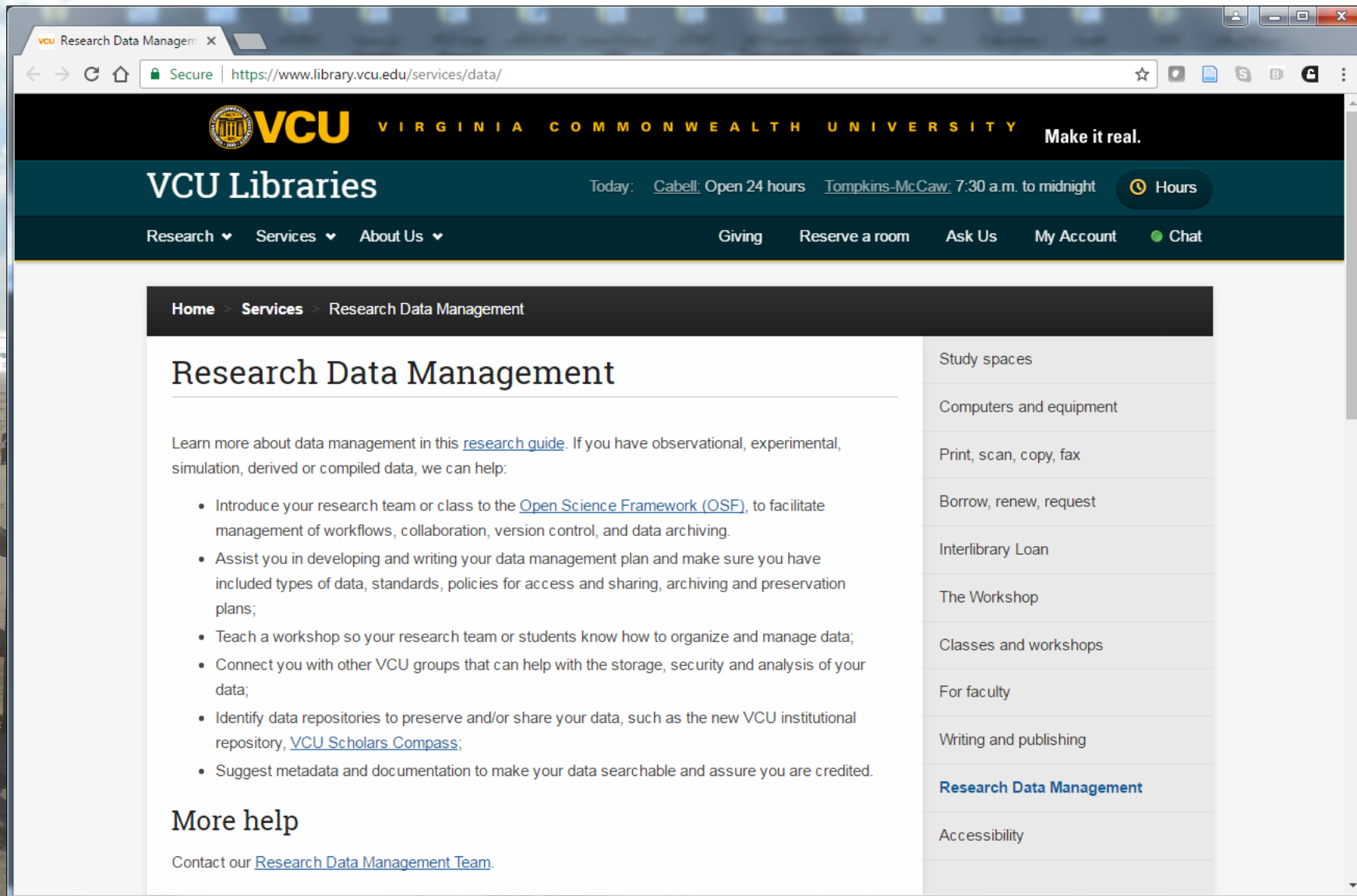
Yoon & Schultz (2016). Research data management services in academic libraries in the U.S. A content analysis of libraries' websites. *College & Research Libraries* (preprint). Available: <http://crl.acrl.org/content/early/2016/11/16/crl16-948.full.pdf>.

Research Data Management



Yoon & Schultz (2016). Research data management services in academic libraries in the U.S. A content analysis of libraries' websites. *College & Research Libraries* (preprint). Available: <http://crl.acrl.org/content/early/2016/11/16/crl16-948.full.pdf>.

Research Data Management



vcu Research Data Management X

Secure | <https://www.library.vcu.edu/services/data/>

VCU VIRGINIA COMMONWEALTH UNIVERSITY Make it real.

VCU Libraries

Today: [Cabell](#): Open 24 hours [Tompkins-McCaw](#): 7:30 a.m. to midnight [Hours](#)

Research ▾ Services ▾ About Us ▾

Giving Reserve a room Ask Us My Account Chat

Home > Services > Research Data Management

Research Data Management

Learn more about data management in this [research guide](#). If you have observational, experimental, simulation, derived or compiled data, we can help:

- Introduce your research team or class to the [Open Science Framework \(OSF\)](#), to facilitate management of workflows, collaboration, version control, and data archiving.
- Assist you in developing and writing your data management plan and make sure you have included types of data, standards, policies for access and sharing, archiving and preservation plans;
- Teach a workshop so your research team or students know how to organize and manage data;
- Connect you with other VCU groups that can help with the storage, security and analysis of your data;
- Identify data repositories to preserve and/or share your data, such as the new VCU institutional repository, [VCU Scholars Compass](#);
- Suggest metadata and documentation to make your data searchable and assure you are credited.

More help

Contact our [Research Data Management Team](#).

Study spaces

Computers and equipment

Print, scan, copy, fax

Borrow, renew, request

Interlibrary Loan

The Workshop

Classes and workshops

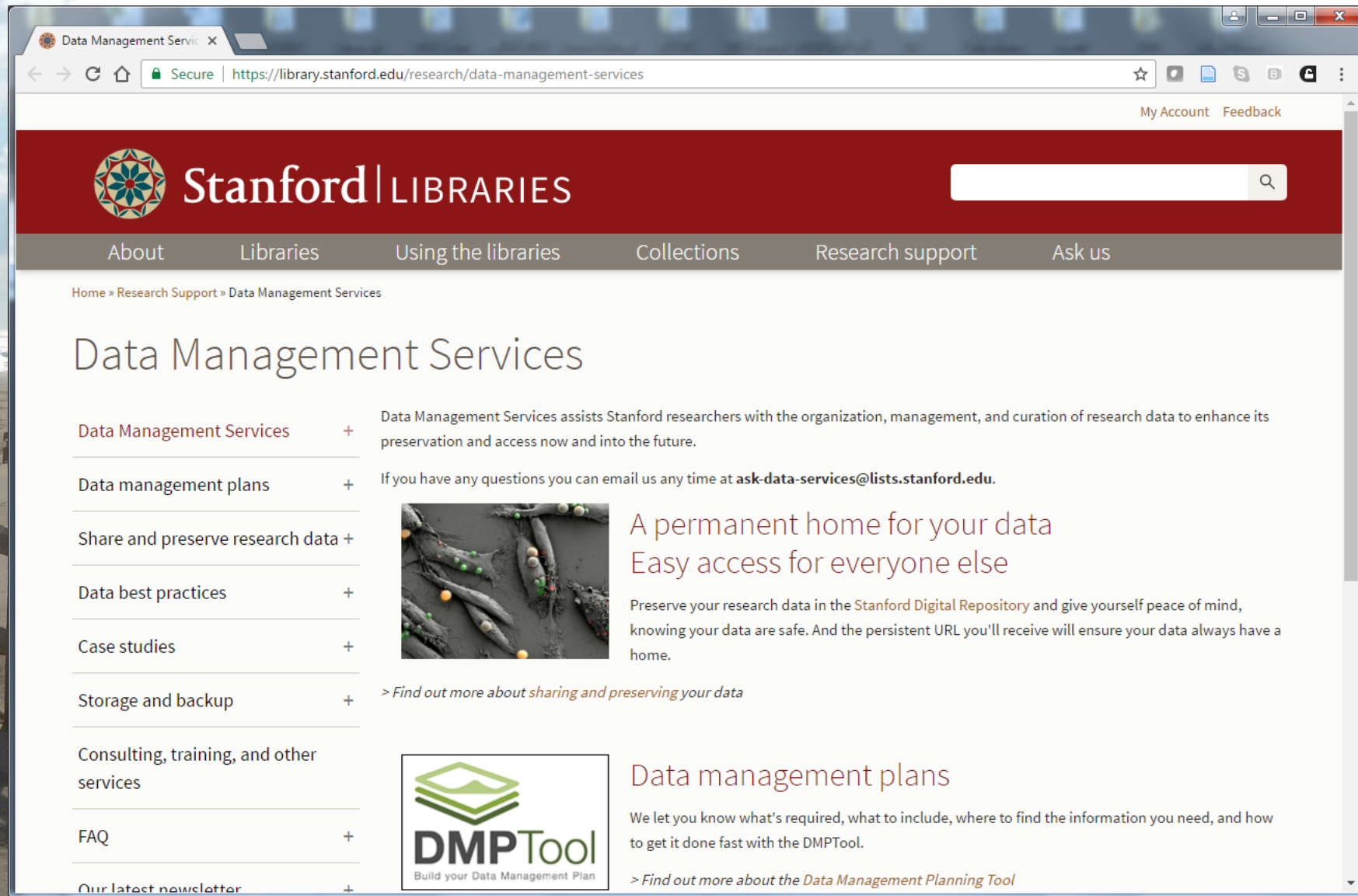
For faculty

Writing and publishing

Research Data Management

Accessibility


Research Data Management



Data Management Service X

Secure | <https://library.stanford.edu/research/data-management-services>

My Account Feedback

 **Stanford** | LIBRARIES

About Libraries Using the libraries Collections Research support Ask us

Home » Research Support » Data Management Services

Data Management Services

Data Management Services + Data Management Services assists Stanford researchers with the organization, management, and curation of research data to enhance its preservation and access now and into the future.

Data management plans + If you have any questions you can email us any time at ask-data-services@lists.stanford.edu.

Share and preserve research data +

Data best practices +

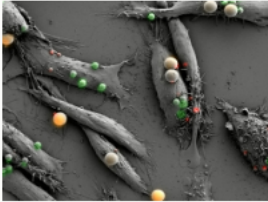
Case studies +

Storage and backup + > Find out more about *sharing and preserving your data*

Consulting, training, and other services


FAQ +

Our latest newsletter +



A permanent home for your data
Easy access for everyone else

Preserve your research data in the [Stanford Digital Repository](#) and give yourself peace of mind, knowing your data are safe. And the persistent URL you'll receive will ensure your data always have a home.

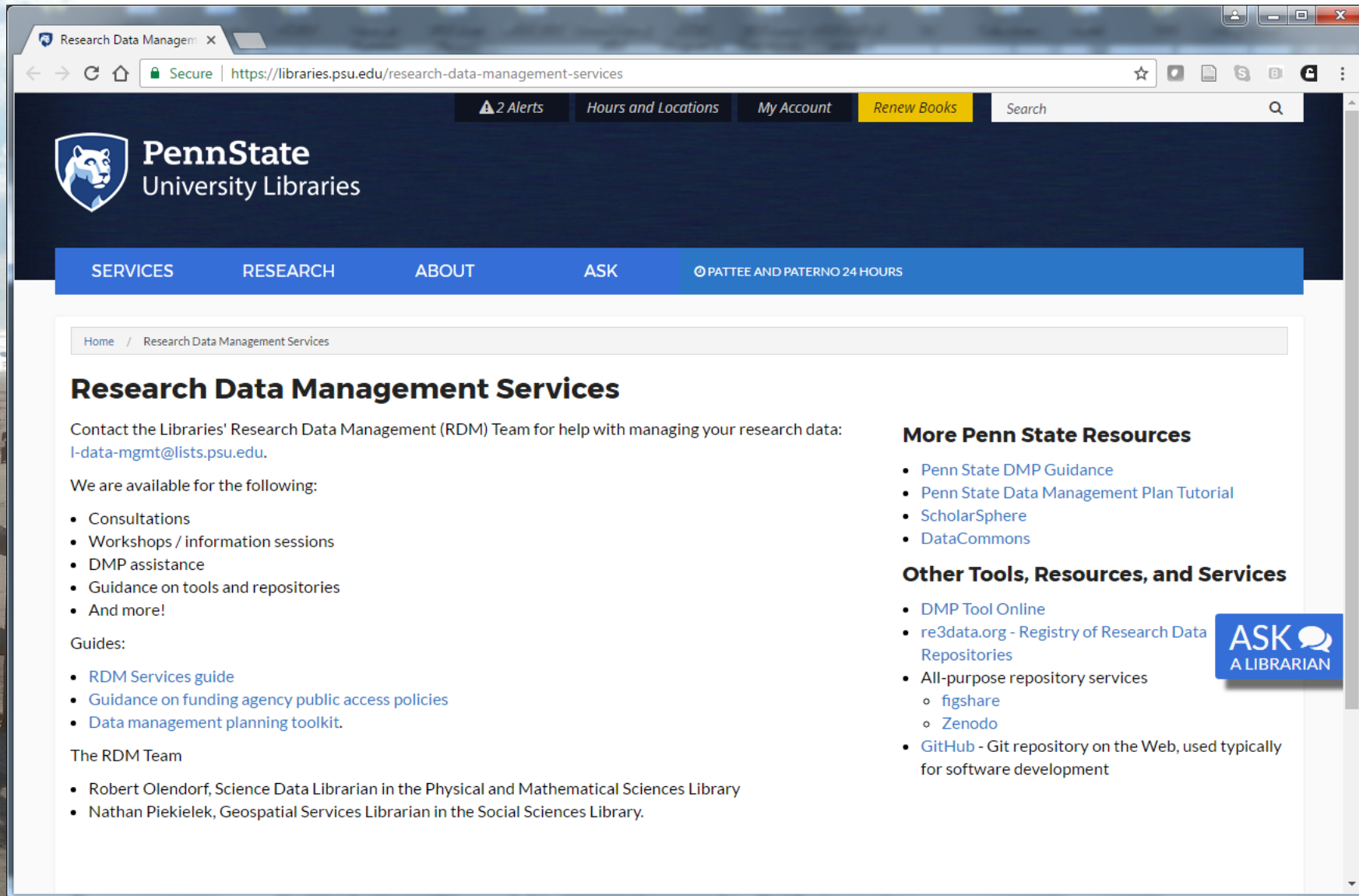


Data management plans

We let you know what's required, what to include, where to find the information you need, and how to get it done fast with the DMPTool.

> Find out more about the *Data Management Planning Tool*

Research Data Management



The screenshot shows a web browser window displaying the Penn State University Libraries Research Data Management Services page. The browser's address bar shows the URL <https://libraries.psu.edu/research-data-management-services>. The page features a dark blue header with the Penn State University Libraries logo and navigation links: 2 Alerts, Hours and Locations, My Account, Renew Books, and a search bar. Below the header is a blue navigation bar with links for SERVICES, RESEARCH, ABOUT, ASK, and a note about Pattee and Paterno 24 hours. The main content area has a breadcrumb trail: Home / Research Data Management Services. The title "Research Data Management Services" is prominently displayed. The text invites users to contact the RDM Team for help with managing research data, providing the email l-data-mgmt@lists.psu.edu. It lists services available: Consultations, Workshops / information sessions, DMP assistance, Guidance on tools and repositories, and more. It also lists guides: RDM Services guide, Guidance on funding agency public access policies, and Data management planning toolkit. The RDM Team members are listed: Robert Olendorf, Science Data Librarian in the Physical and Mathematical Sciences Library, and Nathan Piekielek, Geospatial Services Librarian in the Social Sciences Library. On the right, there are sections for "More Penn State Resources" (Penn State DMP Guidance, Penn State Data Management Plan Tutorial, ScholarSphere, DataCommons) and "Other Tools, Resources, and Services" (DMP Tool Online, re3data.org - Registry of Research Data Repositories, All-purpose repository services including figshare and Zenodo, and GitHub - Git repository on the Web, used typically for software development). A blue "ASK A LIBRARIAN" button is visible on the right side of the page.

Research Data Management Services

Research Data Management Services

Contact the Libraries' Research Data Management (RDM) Team for help with managing your research data:
l-data-mgmt@lists.psu.edu.

We are available for the following:

- Consultations
- Workshops / information sessions
- DMP assistance
- Guidance on tools and repositories
- And more!

Guides:

- [RDM Services guide](#)
- [Guidance on funding agency public access policies](#)
- [Data management planning toolkit](#)

The RDM Team

- Robert Olendorf, Science Data Librarian in the Physical and Mathematical Sciences Library
- Nathan Piekielek, Geospatial Services Librarian in the Social Sciences Library.

More Penn State Resources

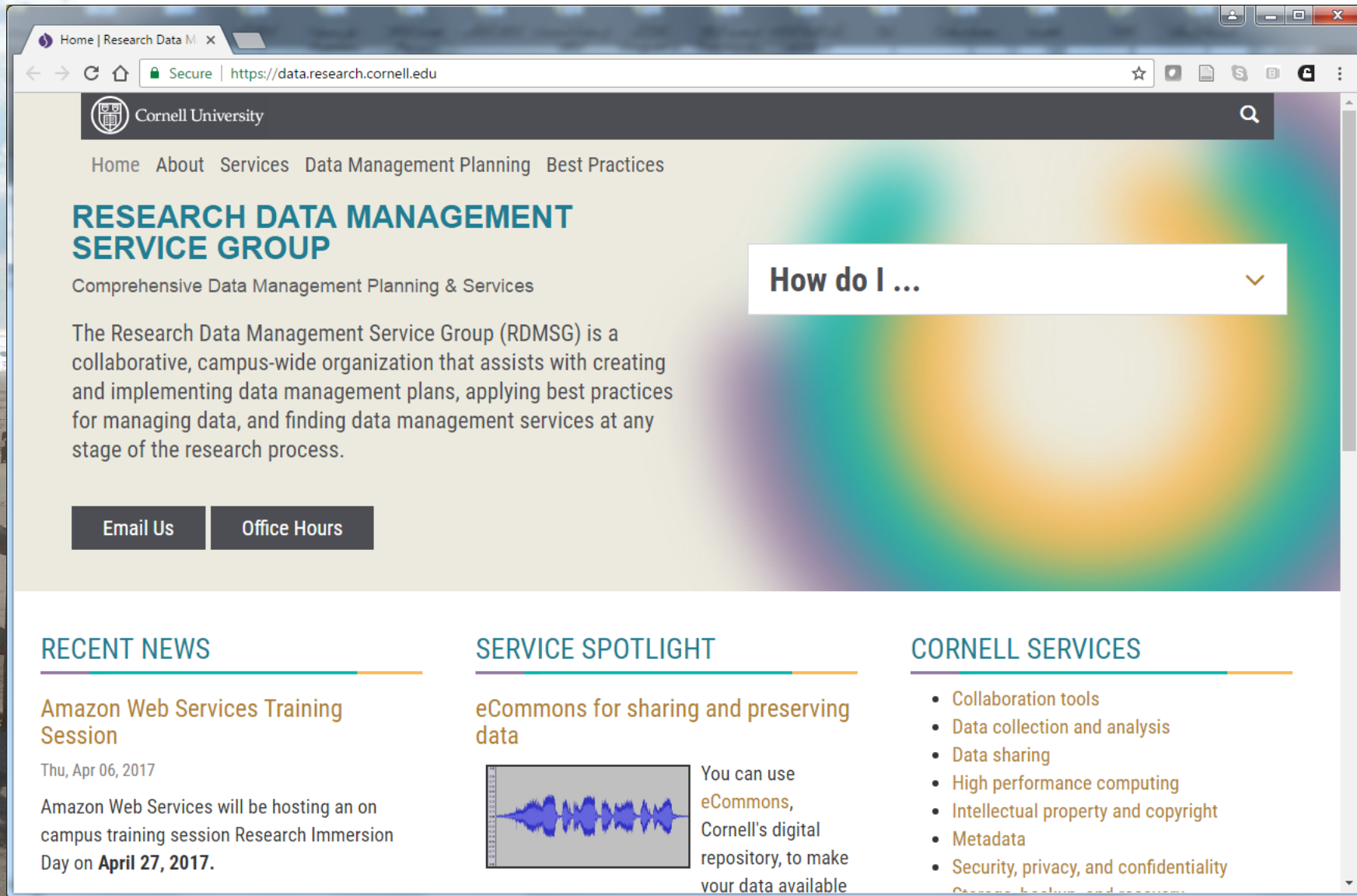
- [Penn State DMP Guidance](#)
- [Penn State Data Management Plan Tutorial](#)
- [ScholarSphere](#)
- [DataCommons](#)

Other Tools, Resources, and Services

- [DMP Tool Online](#)
- [re3data.org - Registry of Research Data Repositories](#)
- All-purpose repository services
 - [figshare](#)
 - [Zenodo](#)
- [GitHub](#) - Git repository on the Web, used typically for software development

ASK
A LIBRARIAN

Research Data Management



The screenshot shows a web browser window with the URL <https://data.research.cornell.edu>. The page features the Cornell University logo and navigation links: Home, About, Services, Data Management Planning, and Best Practices. The main heading is "RESEARCH DATA MANAGEMENT SERVICE GROUP" with the subtitle "Comprehensive Data Management Planning & Services". A paragraph describes the RDMSG as a collaborative, campus-wide organization. A "How do I ..." dropdown menu is visible on the right. Below the main content are three sections: "RECENT NEWS" featuring an Amazon Web Services training session, "SERVICE SPOTLIGHT" featuring eCommons, and "CORNELL SERVICES" listing various data management services.

Home | Research Data M x

Secure | <https://data.research.cornell.edu>

Cornell University

Home About Services Data Management Planning Best Practices

RESEARCH DATA MANAGEMENT SERVICE GROUP

Comprehensive Data Management Planning & Services

The Research Data Management Service Group (RDMSG) is a collaborative, campus-wide organization that assists with creating and implementing data management plans, applying best practices for managing data, and finding data management services at any stage of the research process.

Email Us Office Hours

How do I ...

RECENT NEWS

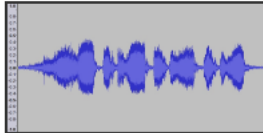
Amazon Web Services Training Session

Thu, Apr 06, 2017

Amazon Web Services will be hosting an on campus training session Research Immersion Day on **April 27, 2017**.

SERVICE SPOTLIGHT

eCommons for sharing and preserving data



You can use eCommons, Cornell's digital repository, to make your data available

CORNELL SERVICES

- Collaboration tools
- Data collection and analysis
- Data sharing
- High performance computing
- Intellectual property and copyright
- Metadata
- Security, privacy, and confidentiality

Research Data Management

Research Data Management

data.library.virginia.edu/data-management/

Research Data Services + Sciences Home U.Va. Home U.Va. Library

University of Virginia Library
Research Data Services + Sciences

Research Data Management

The Research Data Management team is ready to consult on how to collect, document, organize, store, and preserve your research data throughout your research project. We can help you to understand and meet funder requirements, including assistance in drafting and reviewing data management plans, selecting appropriate active data storage, choosing a repository, and preparing research data for end-of-project archiving. Come by or [email us](#) to talk about best practices to insure your research data will continue to be available when you and others need it in the future.

To learn more, check our [Research Data Management Guide](#) with the most current information available, including requirements for NSF, NIH, NEH, DOT, IES, DOE, and NOAA.

Research Data Life Cycle

```
graph LR; A[Proposal Planning Writing] --> B[Project Start Up]; B --> C[Data Collection]; C --> D[Data Analysis]; D --> E[Data Sharing]; E --> F[End of Project]; F --> G[Data Archive]; G --> H[Data Discovery]; H --> C; G -- Re-Use --> H
```

Research Data Management

- [Data Management Planning Support](#)
- [Data Management Components](#)
- [Past Data Management Workshops](#)

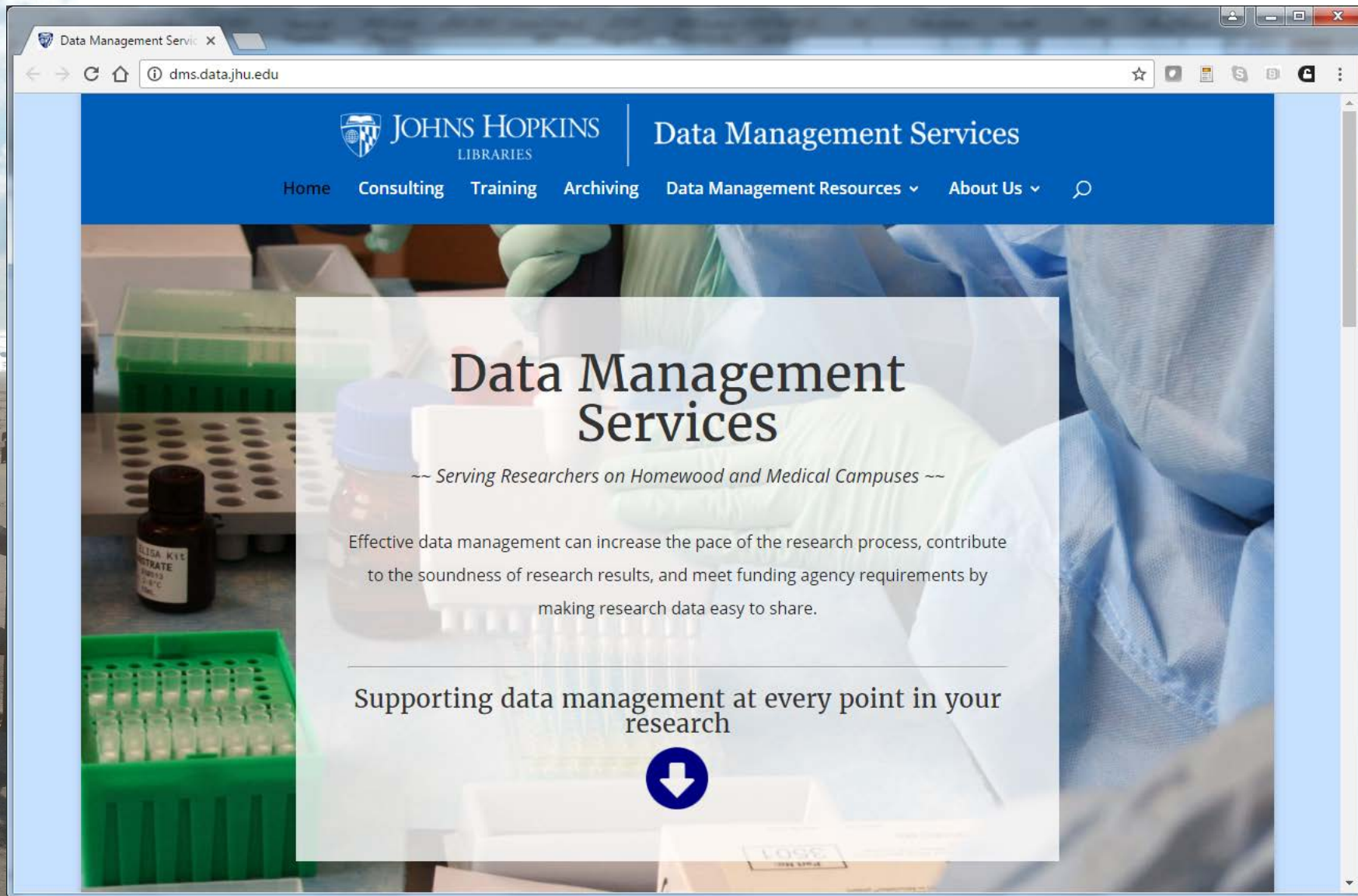
Latest News

- [Endangered Data Week \(April 17-21\)](#)
- [Fall 2017 Data Science Short Courses](#)
- [2017-18 StatLab Fellows](#)

Data Discovery

- Research Data Management
- Research Software
- StatLab: Data Analytics
- Social, Natural, Engineering Sciences
- Workshops

Research Data Management



Data Management Service X

dms.data.jhu.edu

JOHNS HOPKINS LIBRARIES | Data Management Services


Home Consulting Training Archiving Data Management Resources v About Us v

Data Management Services

~~ Serving Researchers on Homewood and Medical Campuses ~~

Effective data management can increase the pace of the research process, contribute to the soundness of research results, and meet funding agency requirements by making research data easy to share.

Supporting data management at every point in your research

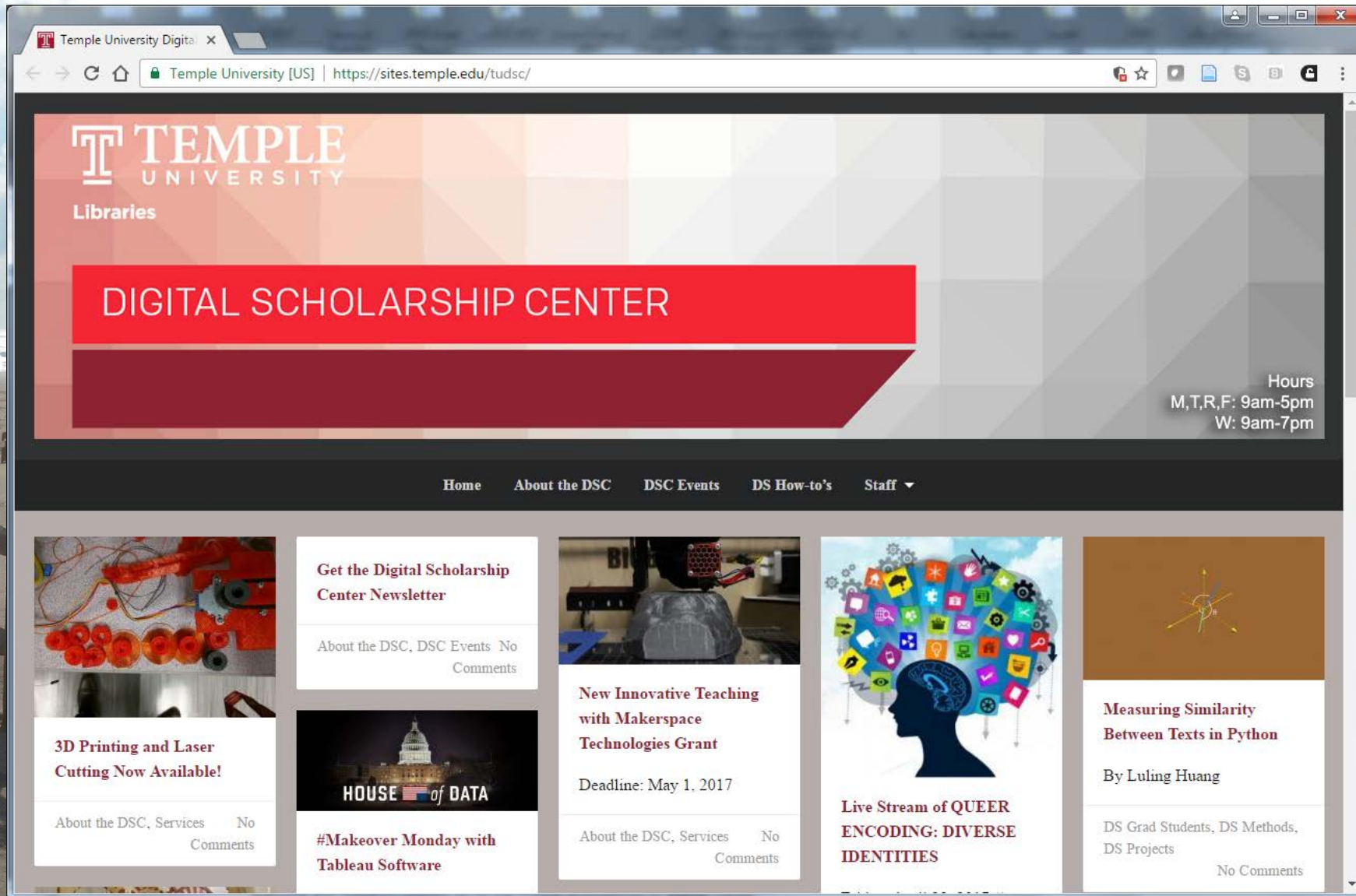




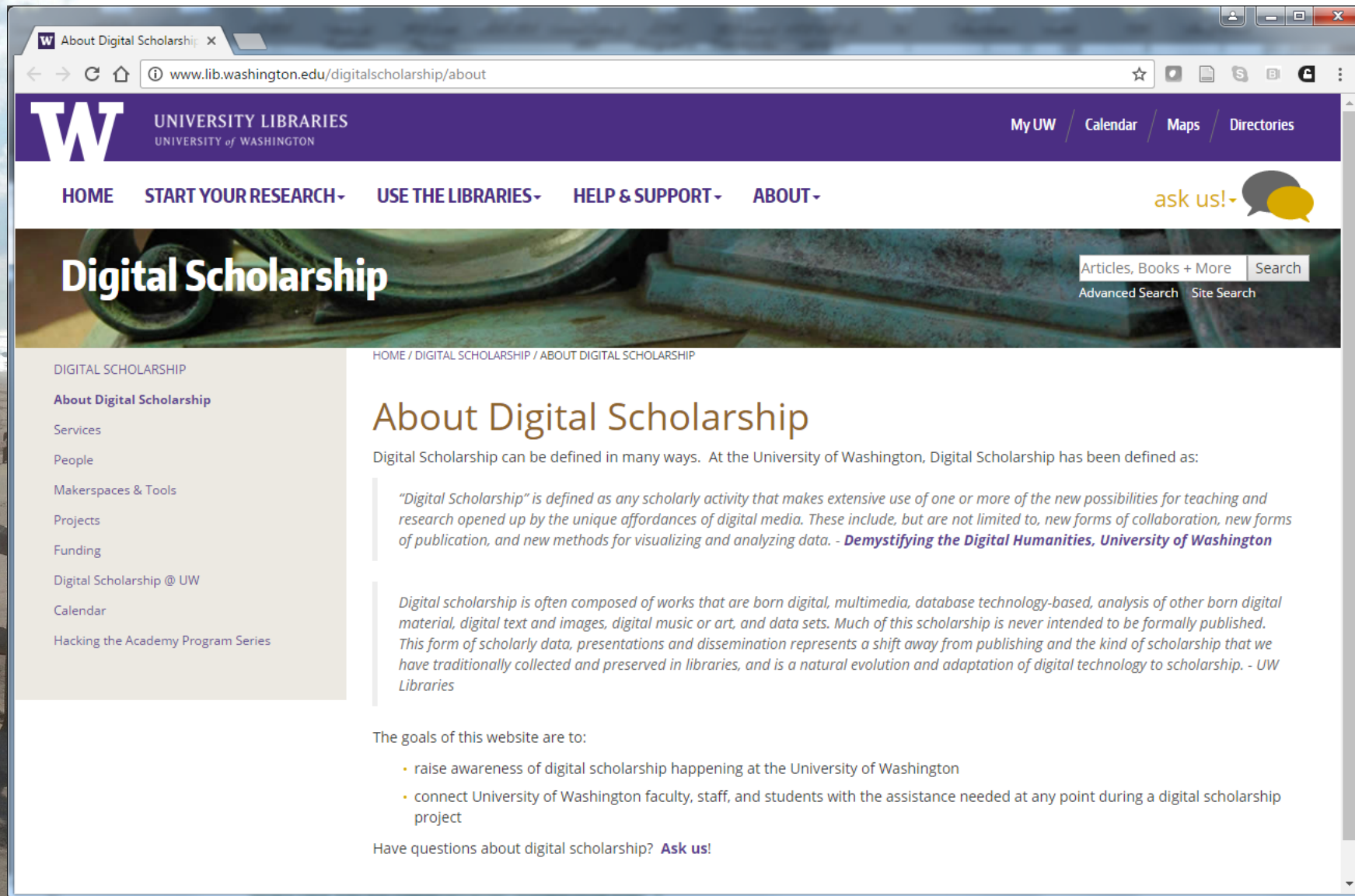
Digital Scholarship

- A thousand points of light
- High profile
- Active role in generation of scholarship
- Working without a net
- ALCTS program, “Creating the Future of Digital Scholarship Together: Collaboration from Within Your Library” (Saturday, 6/24, 8:30-10:00am, MCP, W185a)

Digital Scholarship



Digital Scholarship



W About Digital Scholarship x

www.lib.washington.edu/digitalscholarship/about

UNIVERSITY LIBRARIES
UNIVERSITY of WASHINGTON

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ask us!

Digital Scholarship

Articles, Books + More Search
Advanced Search Site Search

HOME / DIGITAL SCHOLARSHIP / ABOUT DIGITAL SCHOLARSHIP

About Digital Scholarship

Digital Scholarship can be defined in many ways. At the University of Washington, Digital Scholarship has been defined as:

"Digital Scholarship" is defined as any scholarly activity that makes extensive use of one or more of the new possibilities for teaching and research opened up by the unique affordances of digital media. These include, but are not limited to, new forms of collaboration, new forms of publication, and new methods for visualizing and analyzing data. - Demystifying the Digital Humanities, University of Washington

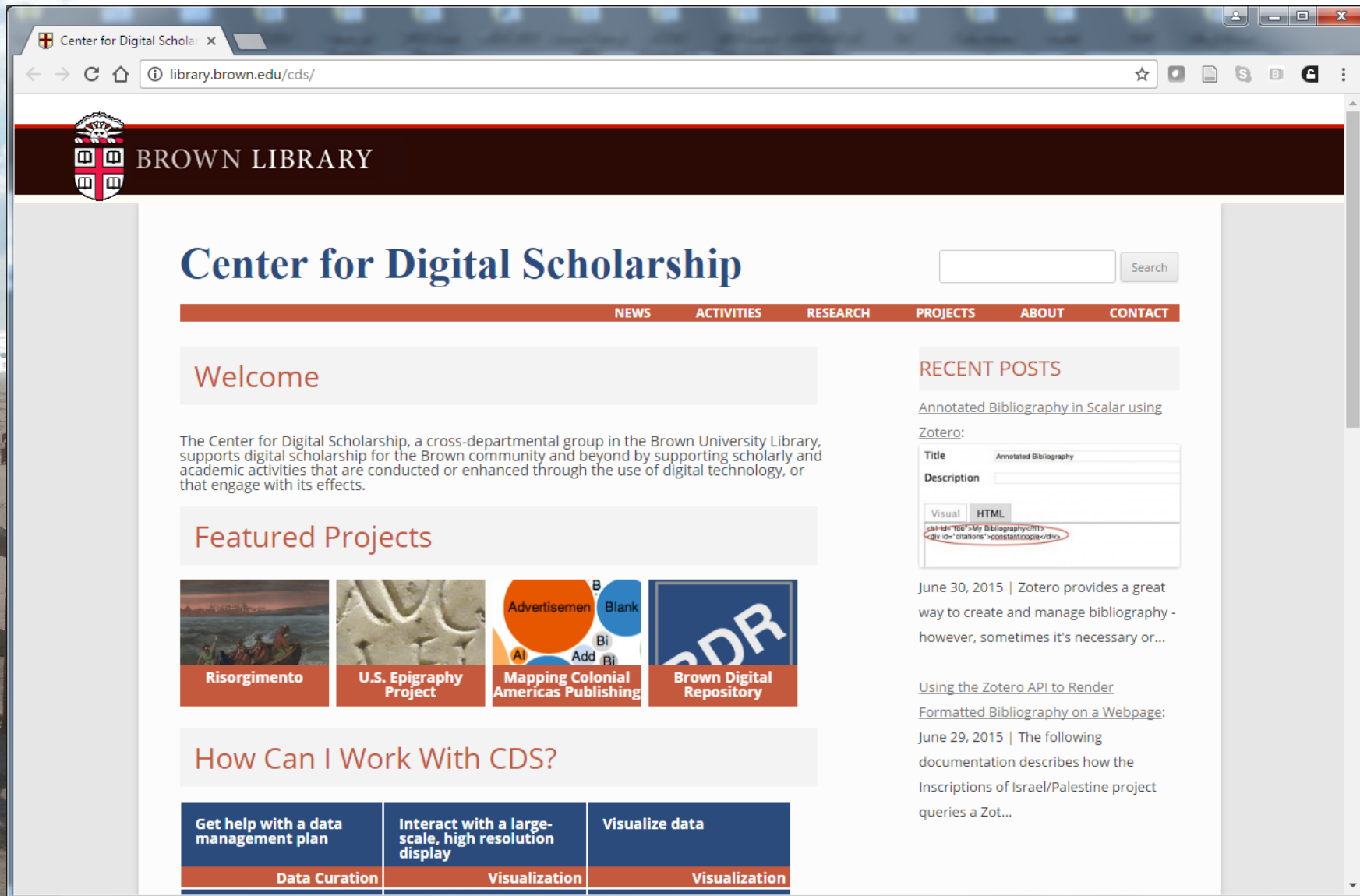
Digital scholarship is often composed of works that are born digital, multimedia, database technology-based, analysis of other born digital material, digital text and images, digital music or art, and data sets. Much of this scholarship is never intended to be formally published. This form of scholarly data, presentations and dissemination represents a shift away from publishing and the kind of scholarship that we have traditionally collected and preserved in libraries, and is a natural evolution and adaptation of digital technology to scholarship. - UW Libraries

The goals of this website are to:

- raise awareness of digital scholarship happening at the University of Washington
- connect University of Washington faculty, staff, and students with the assistance needed at any point during a digital scholarship project

Have questions about digital scholarship? [Ask us!](#)

Digital Scholarship



The screenshot shows a web browser window with the URL `library.brown.edu/cds/`. The page features the Brown University Library logo and the title "Center for Digital Scholarship". A navigation bar includes links for NEWS, ACTIVITIES, RESEARCH, PROJECTS, ABOUT, and CONTACT. The main content area is divided into three sections: Welcome, Featured Projects, and How Can I Work With CDS?. The Welcome section describes the center's mission. The Featured Projects section displays four project tiles: Risorgimento, U.S. Epigraphy Project, Mapping Colonial Americas Publishing, and Brown Digital Repository. The How Can I Work With CDS? section offers three options: Data Curation, Visualization, and another Visualization option. On the right, a RECENT POSTS section highlights two articles about Zotero, one of which includes a code snippet for rendering bibliography.

Center for Digital Scholarship

BROWN LIBRARY

Center for Digital Scholarship

NEWS ACTIVITIES RESEARCH PROJECTS ABOUT CONTACT

Welcome

The Center for Digital Scholarship, a cross-departmental group in the Brown University Library, supports digital scholarship for the Brown community and beyond by supporting scholarly and academic activities that are conducted or enhanced through the use of digital technology, or that engage with its effects.

Featured Projects

- Risorgimento
- U.S. Epigraphy Project
- Mapping Colonial Americas Publishing
- Brown Digital Repository

How Can I Work With CDS?

- Get help with a data management plan
Data Curation
- Interact with a large-scale, high resolution display
Visualization
- Visualize data
Visualization

RECENT POSTS

[Annotated Bibliography in Scalar using Zotero:](#)

Title: Annotated Bibliography

Description:

Visual HTML

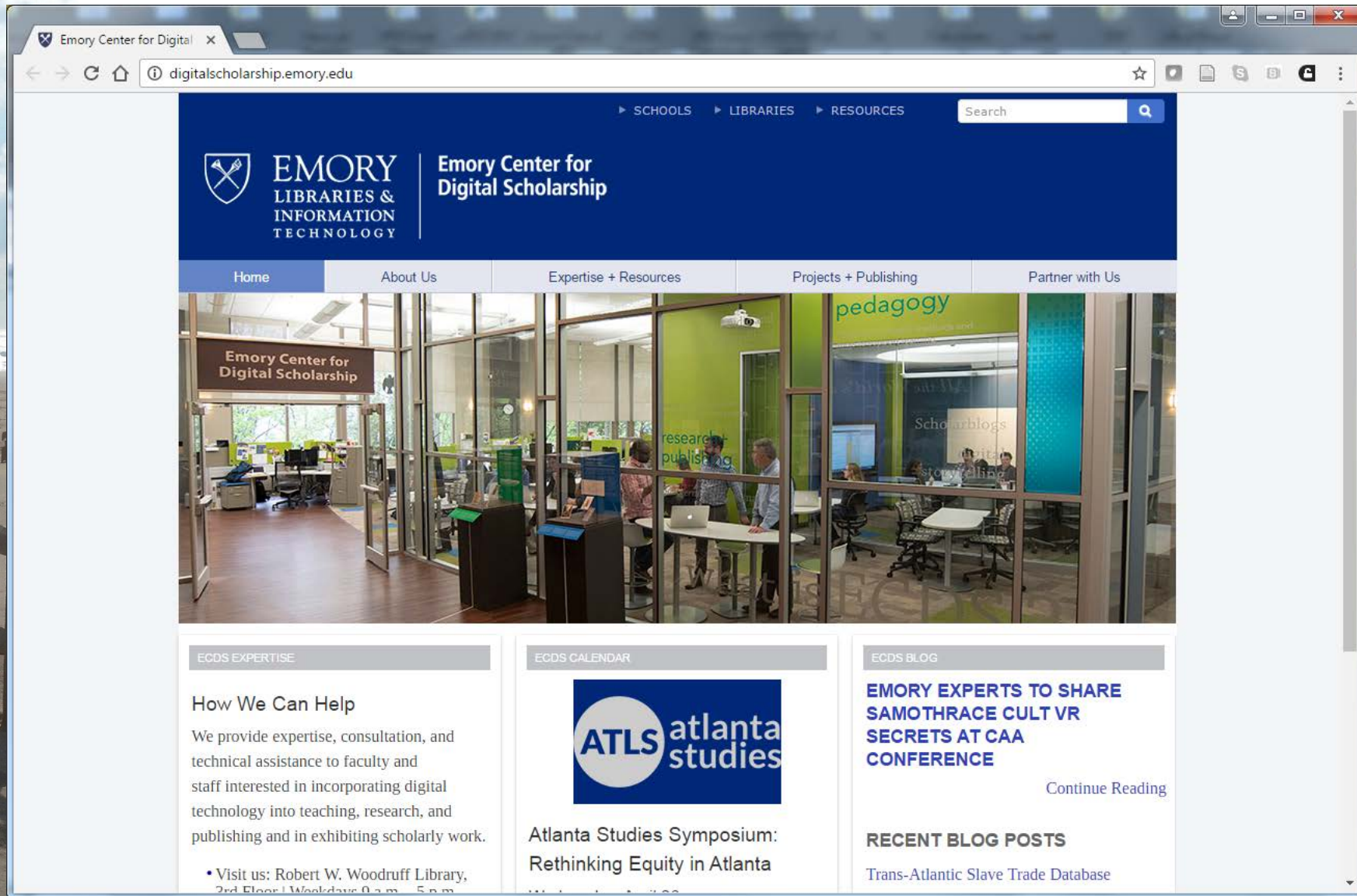
```
<div id="150">My Bibliography</div>  
<div id="citations">constantinoble</div>
```

June 30, 2015 | Zotero provides a great way to create and manage bibliography - however, sometimes it's necessary or...

[Using the Zotero API to Render Formatted Bibliography on a Webpage:](#)

June 29, 2015 | The following documentation describes how the Inscriptions of Israel/Palestine project queries a Zot...

Digital Scholarship



The screenshot shows a web browser window displaying the Emory Center for Digital Scholarship website. The browser's address bar shows the URL digitalscholarship.emory.edu. The website has a dark blue header with the Emory Libraries & Information Technology logo and the text "Emory Center for Digital Scholarship". Navigation links include "SCHOOLS", "LIBRARIES", "RESOURCES", and a search bar. Below the header is a horizontal menu with "Home", "About Us", "Expertise + Resources", "Projects + Publishing", and "Partner with Us". The main content area features a large photograph of the center's interior, which is a modern, open-plan space with glass walls and green accents. Below the photo are three columns of content: "ECDS EXPERTISE" with the heading "How We Can Help" and a description of services; "ECDS CALENDAR" featuring the "ATLS atlanta studies" logo and a link to the "Atlanta Studies Symposium: Rethinking Equity in Atlanta"; and "ECDS BLOG" with a link to "EMORY EXPERTS TO SHARE SAMOTHRACE CULT VR SECRETS AT CAA CONFERENCE" and a "Continue Reading" link. At the bottom right, there is a section for "RECENT BLOG POSTS" with a link to "Trans-Atlantic Slave Trade Database".

Emory Center for Digital

← → ↻ ↵ ⓘ digitalscholarship.emory.edu ☆ 📄 📁 📧 📧 📧 ⋮

► SCHOOLS ► LIBRARIES ► RESOURCES Search 🔍

EMORY
LIBRARIES &
INFORMATION
TECHNOLOGY

**Emory Center for
Digital Scholarship**

Home About Us Expertise + Resources Projects + Publishing Partner with Us

**Emory Center for
Digital Scholarship**

pedagogy

research publishing

Scholarblogs

ECDS EXPERTISE

How We Can Help

We provide expertise, consultation, and technical assistance to faculty and staff interested in incorporating digital technology into teaching, research, and publishing and in exhibiting scholarly work.

- Visit us: Robert W. Woodruff Library, 2nd Floor | Weekdays 9 a.m. – 5 p.m.

ECDS CALENDAR

ATLS atlanta studies

**Atlanta Studies Symposium:
Rethinking Equity in Atlanta**

ECDS BLOG

**EMORY EXPERTS TO SHARE
SAMOTHRACE CULT VR
SECRETS AT CAA
CONFERENCE**

[Continue Reading](#)

RECENT BLOG POSTS

[Trans-Atlantic Slave Trade Database](#)

Digital Scholarship

Haverford College Libraries

MY LIBRARY ACCOUNT MOODLE RESERVES BORROWING BEYOND TRI-CO QUICK ACCESS

TUESDAY, APRIL 18TH, 2017

Magill Library	8:00am - 2:00am
Quaker & Special Collections	9:00am - 5:00pm
Union Music Library	9:00am - 11:00pm
White Science Library	9:00am - 1:00am
Astronomy Library	9:00am - 5:00pm

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HOME > SERVICES > DIGITAL SCHOLARSHIP

Digital Scholarship

Haverford Libraries supports digital projects that complement traditional scholarly research, while opening new opportunities for the creation of knowledge.

We support the teaching of digital scholarship in the classroom, including support for assignments, course design and digital pedagogy.

Use the filters below to explore current projects, student work and opportunities:

All Faculty Projects Quaker & Special Collections Student Work and Opportunities Course Support People

TICHA
A DIGITAL TEXT EXPLORER FOR COLONIAL ZAPOTEC



#OpenScience

- Transparency of method, data, and analysis to facilitate verification, replication, and extension of scientific findings
- Relationship of Open Science to Open Access & Open Source

“Making reproducibility of your work by peers a realistic possibility sends a strong signal of quality, trustworthiness, and transparency.”

Sandve, et al. (2013). “Ten Simple Rules for Reproducible Computational Research.” *PLOS Computational Biology*, 9(10).



BERKELEY INITIATIVE FOR TRANSPARENCY
IN THE SOCIAL SCIENCES



What problem is open science trying to solve?

→ CREDIBILITY CRISIS IN SCIENCE

How do we solve science's 'credibility problem'?

April 7, 2015 9:42am EDT

Tackling the 'credibility crisis' in science

January 4, 2014

Cancer Research Is Broken

There's a replication crisis in biomedicine—and no one even knows how deep it runs.

Psychology's Ongoing Credibility

How the Reproducibility Crisis in A
Affecting Scientific Research

About 40% of economics experiments fail replication survey

By John Bohannon | Mar. 3, 2015, 2:00 PM

The Credibility Crisis in
Computational Science: An
Information Issue

Science, Now Under Scrutiny Itself

By BENEDICT CAREY | JUNE 15, 2015

Steering clear of the iceberg: three ways we can fix the data-credibility crisis in science



JN Retraction Watch - Track x

retractionwatch.com

☆

Retraction Watch


Tracking retractions as a window into the scientific process

Could bogus scientific results be considered false advertising?

with 2 comments

Could a scientific paper ever be considered an advertisement?

That was the question posed to a Tokyo court, in a criminal case where prosecutors argued — at the behest of Japan's ministry of health — that a peer-reviewed paper containing faked data should be considered "fraudulent or exaggerated advertising" under that country's laws.



In that case, however, the argument didn't work. In March, the court decided that a fraudulent paper was not false advertising, allowing a pharmaceutical researcher at a Novartis subsidiary to escape jail time. The decision also cleared Novartis of charges and helped the company avoid a ¥4 million (\$35,373 USD) fine.

According to an [article in The Japan Times](#), the presiding judge Yasuo Tsujikawa said:

[Read the rest of this entry »](#)

Share this:

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Facebook 37

Twitter

Written by Andrew P. Han
May 17th, 2017 at 11:40 am


Posted in [japan retractions](#), [Legal Threats](#)

Gender-based violence researcher now up to 10 retractions for plagiarism

with 7 comments

A publisher has retracted all of the papers it published by a researcher in Nigeria, citing plagiarism.

The papers, all about terrorism and gender-based violence, were written by Oluwaseun Bamidele. The journal editors and the publisher, Taylor & Francis, decided to retract nine papers by Bamidele because of the overlap to other works — which he also failed to reference.



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[The Center For Scientific Integrity](#)

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Search for:



Reproducibility Project: Psychology

- 100 articles published in *Psychological Science*, *Journal of Personality and Social Psychology*, *Journal of Experimental Psychology: Learning, Memory, and Cognition* in 2008

- 39% found to replicate

“A large portion of replications produced weaker evidence for the original findings despite using materials provided by the original authors, review in advance for methodological fidelity, and high statistical power to detect the original effect sizes.”

-Open Science Collaboration (2015). Estimating the reproducibility of psychological science. *Science*, 349, aac4716-1-8.



Reproducibility Project: Cancer Biology

- 50 articles published in *Nature*, *Science*, and *Cell* published between 2010 and 2012
- Early returns: 2 replicated, 1 failed, 2 inconclusive



Social Sciences Replication Project

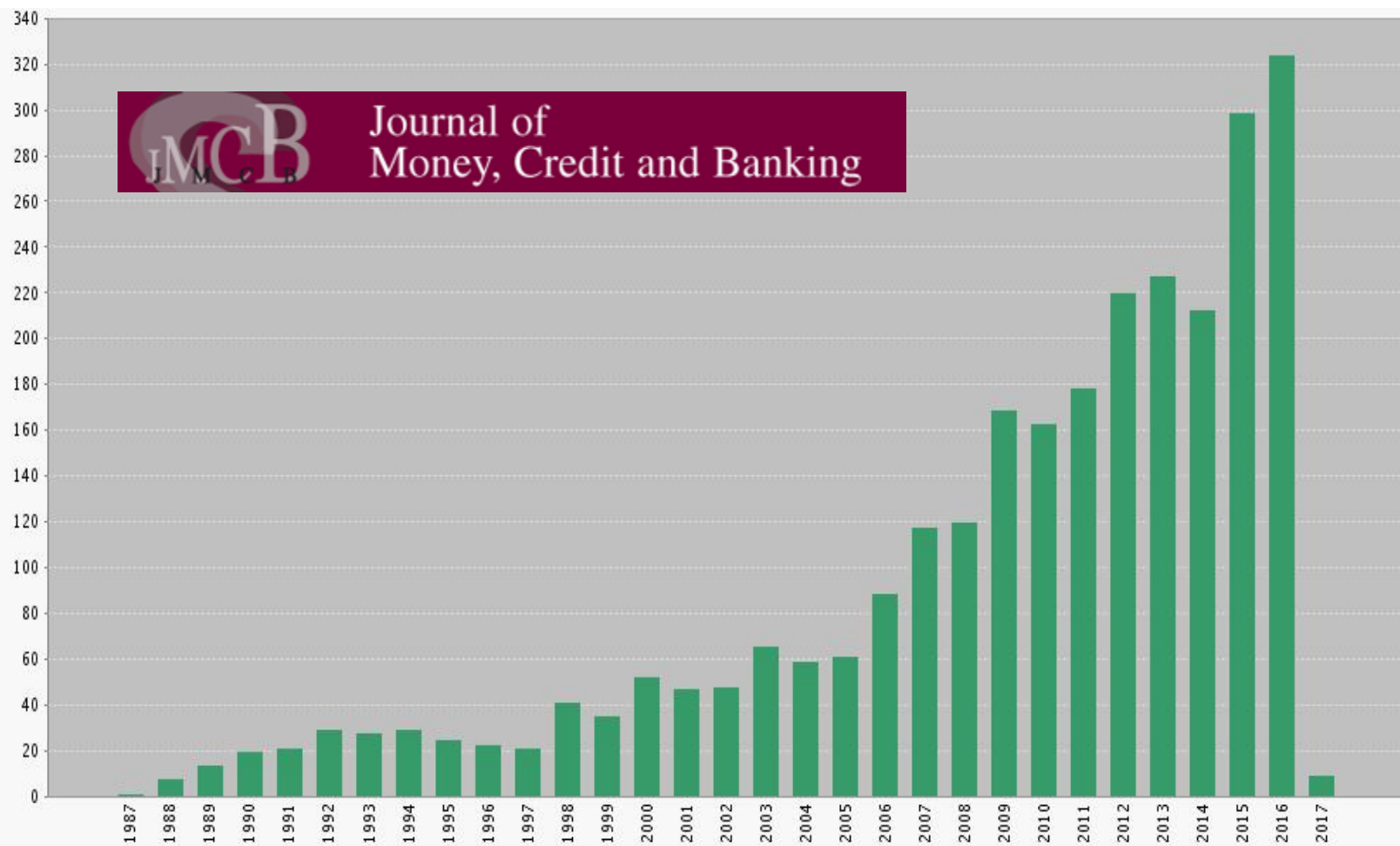
- 21 experimental studies published in *Nature* and *Science* in 2010-2015; have clear hypotheses, statistically significant results, and convenient samples (frequently students)
- Replication criteria: Effect in the same direction and $p\text{-value} < 0.05$
- To be completed in September 2017
- Replication reports will be posted on the SSRP web site: www.socialsciencesreplicationproject.com



Is Economics Research Replicable?

- 59 articles from 13 leading journals
- same data and code (!)
- 49% found to replicate, *even after author assistance*; worse rate (33%) without author assistance

-Chang A.C., Li, P. (2015). Is Economics Research Replicable? Retrieved from <https://www.federalreserve.gov/econresdata/feds/2015/files/2015083pap.pdf>



Replication in Empirical Economics: The Journal of Money, Credit and Banking Project / William G. Dewald, Jerry G. Thursby and Richard G. Anderson. *The American Economic Review*, Vol. 76, No. 4 (Sep., 1986), pp. 587-603



Reproducibility vs. Replication

- **Reproducibility**

Verification that identical inputs (data & method of analysis) yield identical results; commonly referred to as “computational reproducibility”


- **Replication**

Testing effect using same methodology on a different sample



A Frequent Scenario

“everything you need to know is in the article”



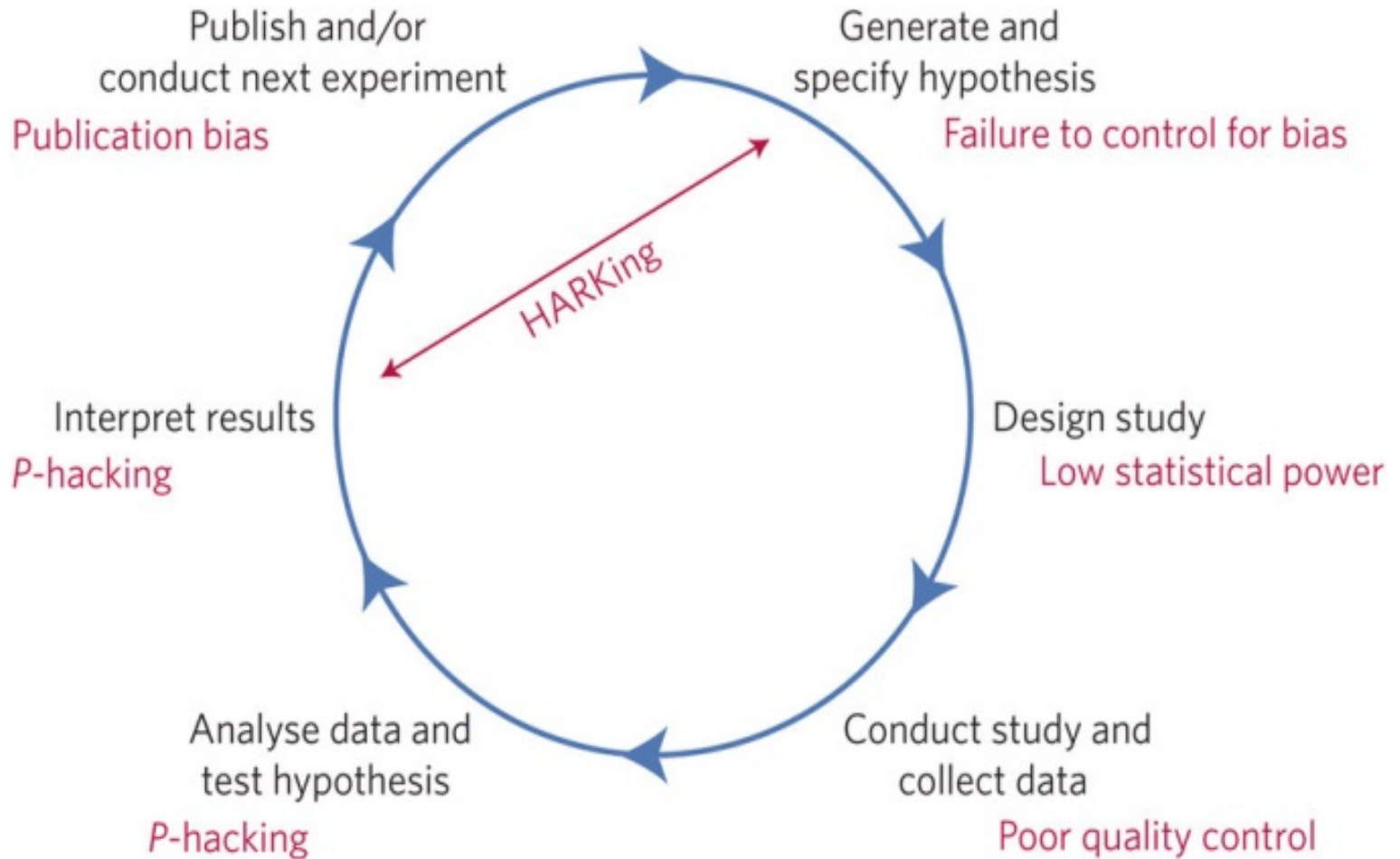
Scientific Value vs. Scientific Reward

(truth seeking) (funding, tenure)

→ INCENTIVE TO PUBLISH IS POWERFUL

- Drive funding, promotion, acclaim
- The need for significant results ($p < .05$)
- Most prestigious journals will not publish insignificant results

Threats to reproducible science



A Manifesto for Reproducible Science / Munafo, et al. *Nature Human Behaviour*, 1 (2017)



P-hacking

→ MANIPULATING DATA TO ACHIEVE A POSITIVE EFFECT

- Confirmatory (Hypothesis testing) vs. Exploratory (HARKing; data dredging)
- Results in false positives (type I error)
- Contributes to “file drawer” problem
- *Researcher degrees of freedom*: Dropping observations/variables; cutting short data collection; testing different analytical techniques



Let's learn more about P-hacking from [John Oliver](#)



(Pre-)Registration/Pre-Analysis

- Making available hypotheses, study design, materials, and methodological plan before data collection begins
- Decreases HARKing and dredging for significance
- Also decreases file drawer problem

“The strongest form of pre-registration involves both registering the study ... and closely pre-specifying the study design, primary outcome and analysis plan in advance of conducting the study or knowing the outcomes of the research.”

-- A Manifesto for Reproducible Science



A New Publishing Paradigm?

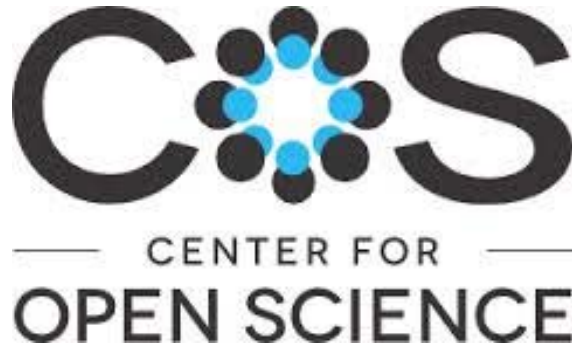
- Publication agreements based on hypothesis and planned analysis, not results -- similar to grant awards
- Removes motivation to manipulate significance tests
- Transparency and Openness Promotion ([TOP](#)) Guidelines (over 3,000 journals & organizations)

“Transparency, open sharing, and reproducibility are core values of science, but not always part of daily practice. Journals, funders, and scholarly societies can increase reproducibility of research by adopting the Transparency and Openness Promotion (TOP) Guidelines and helping them evolve to meet the needs of researchers and publishers while pursuing the most transparent practices.”



Pre-Registration Challenge

- \$1,000 to 1,000 researchers who agree to submit a registration on OSF and subsequently publish their findings in a participating journal (780 registered thus far)
- Sponsored by Center for Open Science
- A [registration](#) on OSF



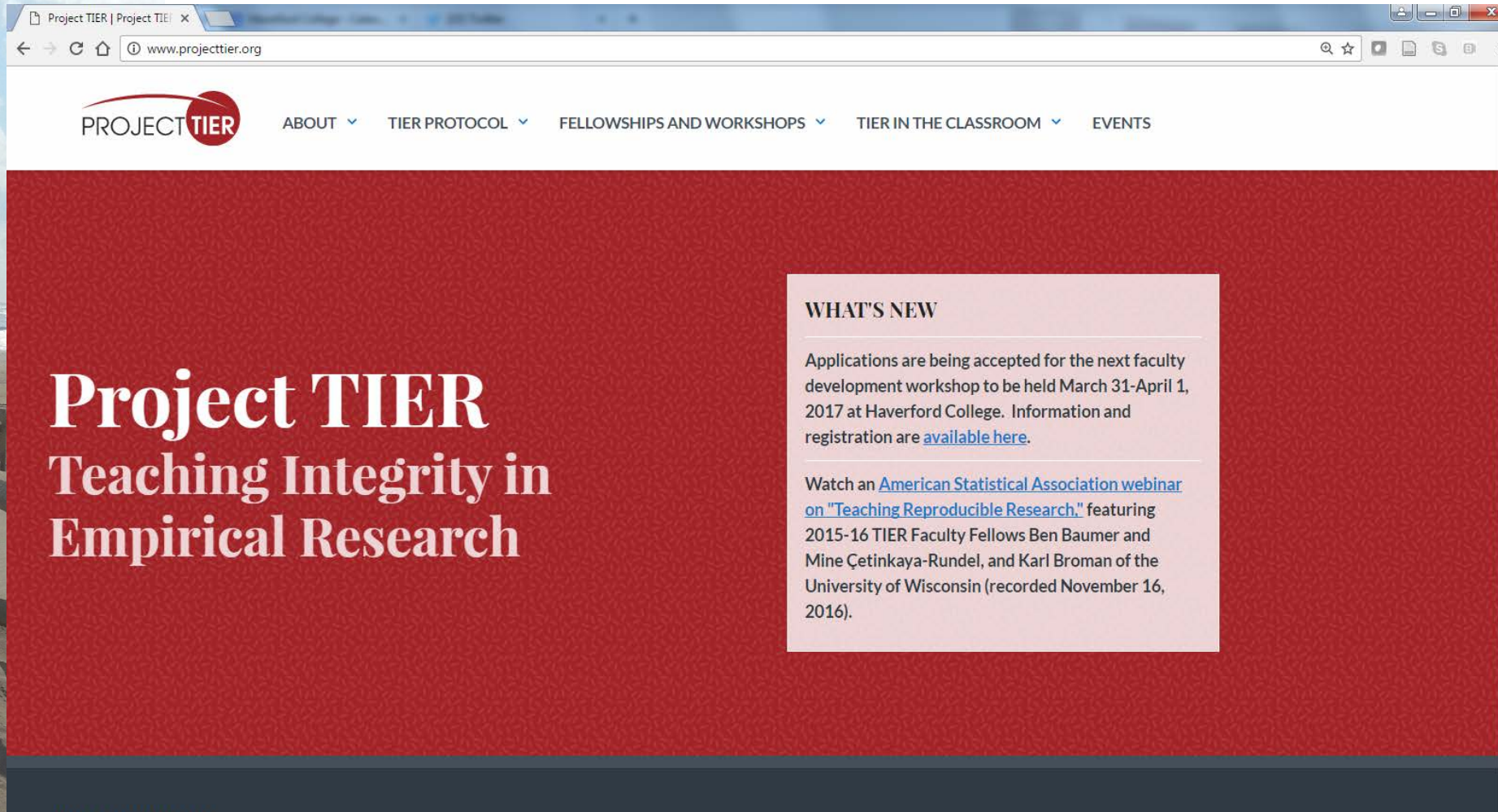
- **Mission:** increase openness, integrity, and reproducibility of research
- **Product:** OSF (Open Science Framework)
Platform for pre-registration/pre-analysis, data management, collaboration, and publication



Project TIER: Teaching Integrity in Empirical Research

- Promote a systemic change in professional norms related to transparency and reproducibility of empirical research in the social sciences
- Providing comprehensive replication documentation for research involving statistical data should be as ubiquitous and routine as providing a list of references
- Authors should view this documentation as an essential component of how they communicate their research to other scholars
- Readers should not consider a study to be credible unless such documentation is available

Project TIER: Teaching Integrity in Empirical Research



Project TIER: Teaching Integrity in Empirical Research

Specifications | Project TIER

www.projecttier.org/tier-protocol/specifications/

PROJECT TIER ABOUT TIER PROTOCOL FELLOWSHIPS AND WORKSHOPS TIER IN THE CLASSROOM EVENTS

PROJECT TIER / TIER PROTOCOL / SPECIFICATIONS

Specifications

IN THIS SECTION

- > SPECIFICATIONS
- > PROCESS
- > DEMO PROJECT
- > OPEN SCIENCE FRAMEWORK
- > TIER PROTOCOL VERSION HISTORY
- > THE DRESS PROTOCOL

ON THIS PAGE

> OVERVIEW OF THE

TIER Protocol Documentation

Original Data

- Original data files
- Importable data files (if necessary)

Metadata

- The Metadata Guide
- Supplementary metadata documents (if necessary)

Documents

- The final paper
- The Data Appendix
- The Read Me file

Analysis Data

- Analysis data files

Command Files

- Command files

Project TIER: Teaching Integrity in Empirical Research

The image shows a screenshot of the Open Science Framework (OSF) website. The main header features the OSF logo and navigation links: "Browse", "Support", "Sign Up", and "Sign In". The central banner displays the text "Open Science Framework" and "A scholarly commons to connect the entire research cycle", accompanied by a network diagram of white and blue nodes. Below this, a white box contains the text "FREE AND OPEN SOURCE. START NOW." followed by a registration form with fields for "Full Name", "Contact Email", "Confirm Email", and "Password (Must be 8 to 255 characters)". At the bottom of the page, a line of text states: "By clicking 'Sign up free' you agree to our [Terms](#) and that you have read our [Privacy Policy](#), including our information on [Cookie Use](#)."

An inset window in the bottom-left corner shows a user's dashboard. It includes a "Projects" section with a table listing projects, a "Go to my project" button, and a "Create a project" button. A large orange play button icon is overlaid on the dashboard inset.

Project TIER: Teaching Integrity in Empirical Research

OSF | 2017 Haverford College Senior Theses in Economics | <https://osf.io/jeY6j/>

Open Science Framework

2017 Haverford College Senior Theses in Economics | Files | Wiki | Analytics | Registrations | Forks | Co

2017 Haverford College Senior Theses in Economics

Contributors: [Norm Medeiros](#), Richard Ball, Carola Binder, Saleha Jilani, Kim Minor
Date created: 2016-10-17 09:43 AM | Last Updated: 2016-11-21 07:40 PM
Category: Project
Description: No description
License: No license

Wiki

No wiki content

Files

Click on a storage provider or drag and drop to upload

Name ^ v	Modified ^ v
2017 Haverford College Senior Theses in Economics	
- OSF Storage	
- Bassinder Thesis	
- OSF Storage	
+ Replication Documentation	

"Replication Documentation"

OSF | Bassinder Thesis | <https://osf.io/zeemn/files/>

Open Science Framework

Bassinder Thesis | Files | Wiki | Anal

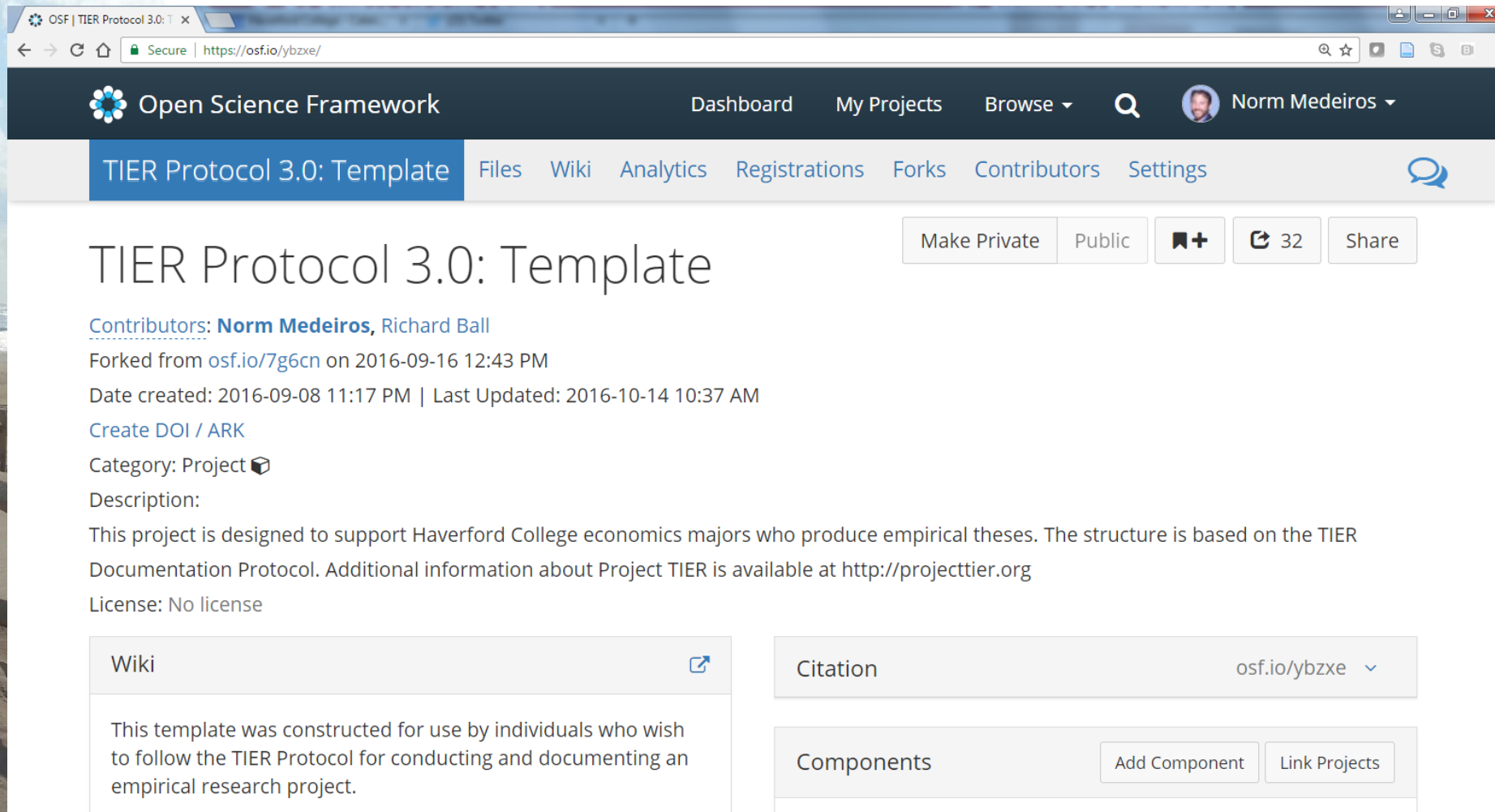
Click on a storage provider or drag and drop to upload

Name ^ v
Bassinder Thesis
- OSF Storage
- Replication Documentation
+ Analysis Data
+ Command Files
+ Documents
+ Original Data
+ Storage

Project TIER: Teaching Integrity in Empirical Research

Name ^ v
- Replication Documentation for Midlife Crisis Paper
- Analysis Data
country-analysis.dta
individual-analysis.dta
- Command Files
1-import-wdi.do
2-import-pew.do
3-processing.do
4-data-appendix.do
5-analysis.do
- Documents
1-ReadMe.pdf
2-Midlife-Crisis-paper.pdf
3-data-appendix.pdf
- Original Data
importable-pew.dta
original-pew.sav
original-wdi.xlsx

Project TIER: Teaching Integrity in Empirical Research



The screenshot shows the OSF interface for the 'TIER Protocol 3.0: Template' project. The browser address bar shows 'https://osf.io/ybzx/'. The OSF logo and 'Open Science Framework' text are in the top left. Navigation links include 'Dashboard', 'My Projects', 'Browse', and a search icon. The user 'Norm Medeiros' is logged in. The project title 'TIER Protocol 3.0: Template' is highlighted in blue. Below the title are buttons for 'Make Private', 'Public', a bookmark icon, '32' forks, and a 'Share' button. The contributors are listed as 'Norm Medeiros, Richard Ball'. It shows the project was forked from 'osf.io/7g6cn' on 2016-09-16. The creation date is 2016-09-08 and the last update is 2016-10-14. There is a link to 'Create DOI / ARK'. The category is 'Project'. The description states the project is for Haverford College economics majors. The license is 'No license'. At the bottom, there are sections for 'Wiki' (containing a paragraph about the template's purpose) and 'Citation' (showing the URL 'osf.io/ybzx'). A 'Components' section has buttons for 'Add Component' and 'Link Projects'.

OSF | TIER Protocol 3.0: T X

Secure | <https://osf.io/ybzx/>

Open Science Framework

Dashboard My Projects Browse Q Norm Medeiros

TIER Protocol 3.0: Template Files Wiki Analytics Registrations Forks Contributors Settings

TIER Protocol 3.0: Template

Make Private Public + 32 Share

Contributors: **Norm Medeiros**, Richard Ball

Forked from osf.io/7g6cn on 2016-09-16 12:43 PM

Date created: 2016-09-08 11:17 PM | Last Updated: 2016-10-14 10:37 AM

[Create DOI / ARK](#)

Category: Project

Description:

This project is designed to support Haverford College economics majors who produce empirical theses. The structure is based on the TIER Documentation Protocol. Additional information about Project TIER is available at <http://projecttier.org>

License: No license

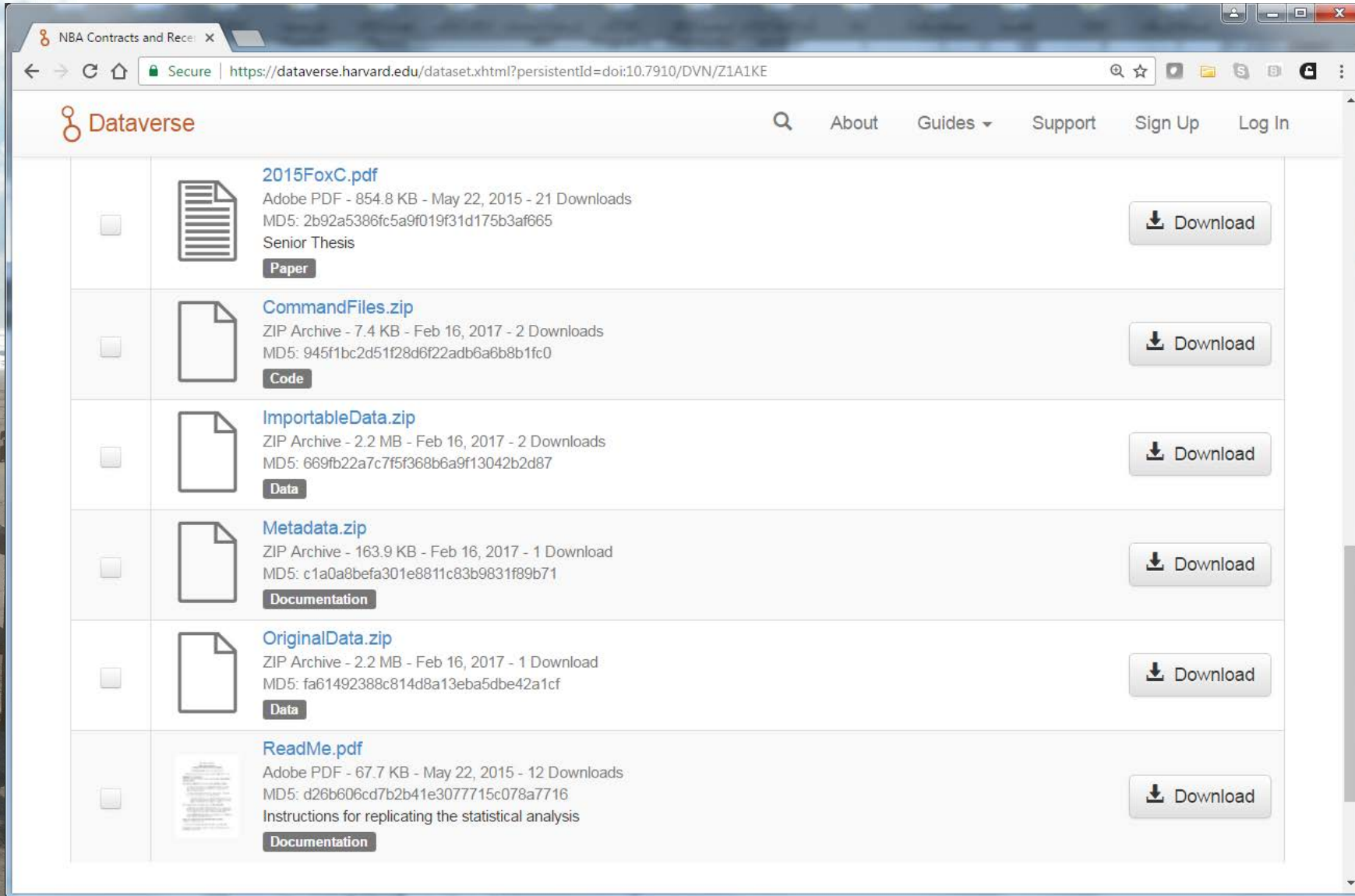
Wiki

This template was constructed for use by individuals who wish to follow the TIER Protocol for conducting and documenting an empirical research project.







Citation osf.io/ybzx/

Components Add Component Link Projects

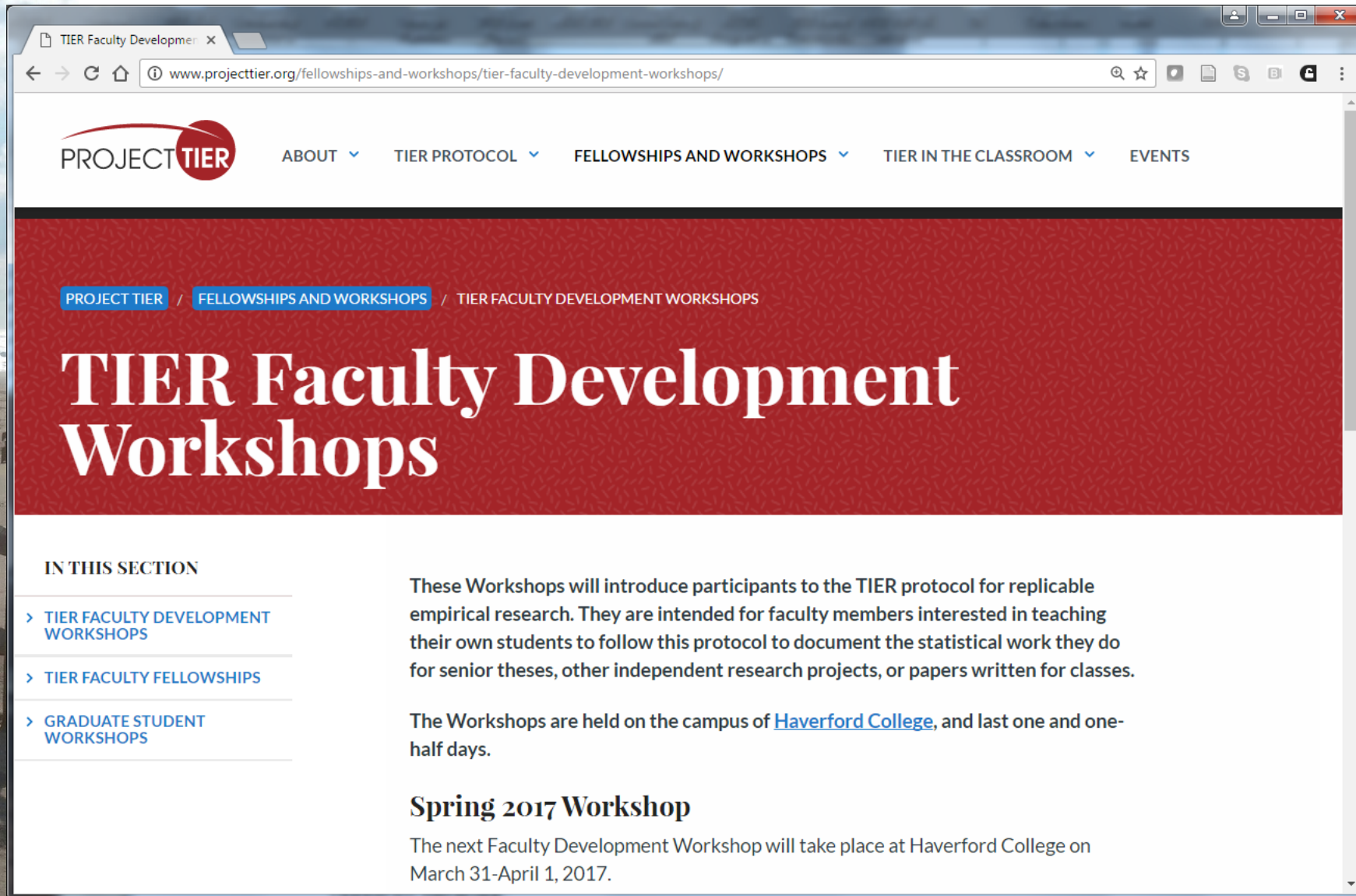
Project TIER: Teaching Integrity in Empirical Research



The screenshot shows a web browser window displaying the Dataverse website. The URL in the address bar is <https://dataverse.harvard.edu/dataset.xhtml?persistentId=doi:10.7910/DVN/Z1A1KE>. The page features a navigation bar with the Dataverse logo, a search icon, and links for About, Guides, Support, Sign Up, and Log In. The main content area displays a list of six datasets, each with a file icon, a title, file type, size, date, download count, MD5 hash, a category label, and a Download button.

File Icon	Title	File Type	Size	Date	Downloads	MD5	Category	Action
	2015FoxC.pdf	Adobe PDF	854.8 KB	May 22, 2015	21	2b92a5386fc5a9f019f31d175b3af665	Senior Thesis Paper	Download
	CommandFiles.zip	ZIP Archive	7.4 KB	Feb 16, 2017	2	945f1bc2d51f28d6f22adb6a6b8b1fc0	Code	Download
	ImportableData.zip	ZIP Archive	2.2 MB	Feb 16, 2017	2	669fb22a7c7f5f368b6a9f13042b2d87	Data	Download
	Metadata.zip	ZIP Archive	163.9 KB	Feb 16, 2017	1	c1a0a8befa301e8811c83b9831f89b71	Documentation	Download
	OriginalData.zip	ZIP Archive	2.2 MB	Feb 16, 2017	1	fa61492388c814d8a13eba5dbe42a1cf	Data	Download
	ReadMe.pdf	Adobe PDF	67.7 KB	May 22, 2015	12	d26b606cd7b2b41e3077715c078a7716	Instructions for replicating the statistical analysis Documentation	Download

Project TIER: Teaching Integrity in Empirical Research



The screenshot shows a web browser window with the URL www.projecttier.org/fellowships-and-workshops/tier-faculty-development-workshops/. The Project TIER logo is in the top left, and navigation links for ABOUT, TIER PROTOCOL, FELLOWSHIPS AND WORKSHOPS, TIER IN THE CLASSROOM, and EVENTS are in the top right. The main heading is "TIER Faculty Development Workshops". A sidebar on the left lists "IN THIS SECTION" with links to "TIER FACULTY DEVELOPMENT WORKSHOPS", "TIER FACULTY FELLOWSHIPS", and "GRADUATE STUDENT WORKSHOPS". The main content area describes the workshops and mentions the Spring 2017 Workshop at Haverford College.

TIER Faculty Development Workshops

PROJECT TIER / FELLOWSHIPS AND WORKSHOPS / TIER FACULTY DEVELOPMENT WORKSHOPS

TIER Faculty Development Workshops

IN THIS SECTION

- > [TIER FACULTY DEVELOPMENT WORKSHOPS](#)
- > [TIER FACULTY FELLOWSHIPS](#)
- > [GRADUATE STUDENT WORKSHOPS](#)

These Workshops will introduce participants to the TIER protocol for replicable empirical research. They are intended for faculty members interested in teaching their own students to follow this protocol to document the statistical work they do for senior theses, other independent research projects, or papers written for classes.

The Workshops are held on the campus of [Haverford College](#), and last one and one-half days.

Spring 2017 Workshop

The next Faculty Development Workshop will take place at Haverford College on March 31-April 1, 2017.

Project TIER: Teaching Integrity in Empirical Research

The screenshot shows a web browser window displaying the eScholarship website. The browser's address bar shows the URL escholarship.org/uc/item/8qb2q8fk. The website header includes the eScholarship logo (University of California) and navigation links: About eScholarship, Publish/Deposit, Browse Content, Help, My Account, and My Saved Items (0). A search bar is located on the right. Below the header, there are social media links for Facebook and Twitter, and a section for 'Previously Published Works' by UC Berkeley. The main content area is divided into two columns. The left column, titled 'Document Info', contains the following details: Title: Technical Data Skills for Reproducible Research; Book Title: Databrarianship: The Academic Data Librarian in Theory and Practice; ISBN: 978-0-8389-8799-5; Author: Dekker, Harrison, UC Berkeley; Lackie, Paula, Carleton College; Publication Date: June 1, 2016; Series: UC Berkeley Previously Published Works; Also Available: LAUC-B and Library Staff Research; Permalink: <http://escholarship.org/uc/item/8qb2q8fk>; Published Web Location: <http://www.alastore.ala.org/detail.aspx?ID=11774>; Keywords: (none listed). The right column displays the document's cover image, which features a hexagonal pattern and the title 'Technical Data Skills for Reproducible Research' by Harrison Dekker and Paula Lackie. The cover also indicates it is 'CHAPTER 7' and is licensed under 'CC BY 4.0'. Below the title, a quote is visible: 'The fact that raw data is rarely usable for analysis without significant work is a point I try hard to make with my students. I told them "do not underestimate the difficulty of data preparation." When they turned in their projects, many of them reported that they had underestimated the difficulty of data preparation.'

Technical Data Skills for i X

escholarship.org/uc/item/8qb2q8fk

eScholarship
University of California

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Document Info

Title:
Technical Data Skills for Reproducible Research

Book Title:
Databrarianship: The Academic Data Librarian in Theory and Practice.

ISBN:
978-0-8389-8799-5

Author:
Dekker, Harrison, UC Berkeley;
Lackie, Paula, Carleton College

Publication Date:
June 1, 2016

Series:
UC Berkeley Previously Published Works

Also Available:
LAUC-B and Library Staff Research

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<http://escholarship.org/uc/item/8qb2q8fk>

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CHAPTER 7
CC BY 4.0

Technical Data Skills
for Reproducible
Research

Harrison Dekker and Paula Lackie

The fact that raw data is rarely usable for analysis without significant work is a point I try hard to make with my students. I told them "do not underestimate the difficulty of data preparation." When they turned in their projects, many of them reported that they had underestimated the difficulty of data preparation.

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Promoting Open Science Throughout the Research Lifecycle: The Integrative Role of Libraries

Norm Medeiros

Associate Librarian for Collection Management & Metadata Services
Haverford College

Co-Director, Project TIER

16 June 2017



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FOUNDATION