Northwestern Medicine®







Beyond the manuscript: Using IRs for alternative non-traditional content types

Violeta Ilik Northwestern University Feinberg School of Medicine Galter Health Sciences Library





Feinberg School of Medicine



We want to optimize discoverability and dissemination of content and enhance the impact of FSM, NUCATS, and our Northwestern Medicine community.



Feinberg School of Medicine









Patients and volunteers take part in clinical trials and research studies at Feinberg each year.



386 PhD students

387 Postdoctoral fellows

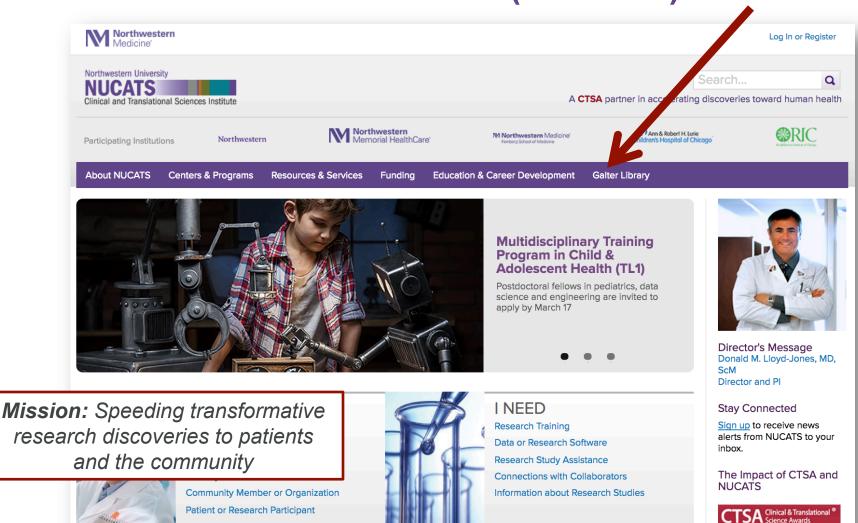
648 Medical students

1,157 Residents/fellows

4,000 Faculty

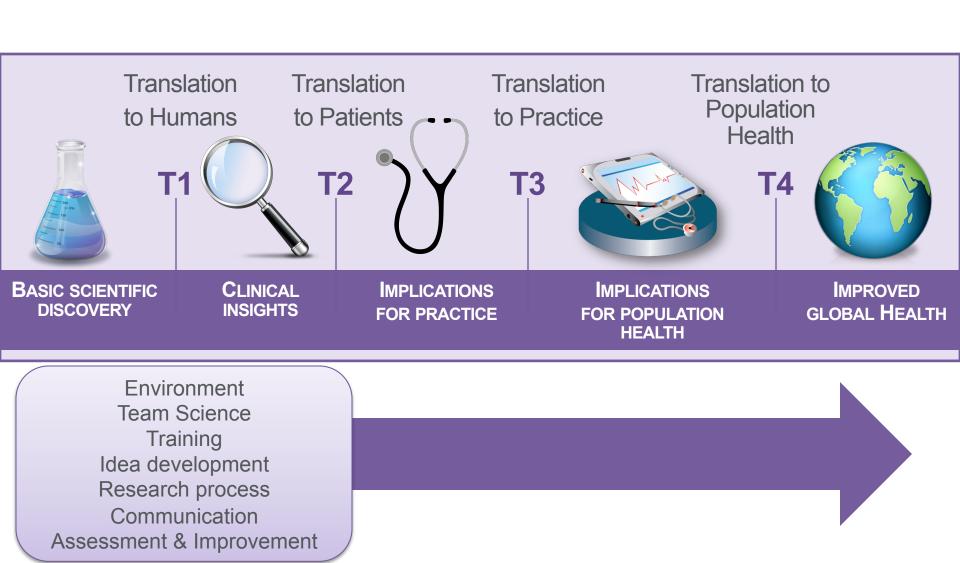


Northwestern University Clinical and Translational Sciences (NUCATS) Institute





Accelerating discovery & implementation





Building an ecosystem

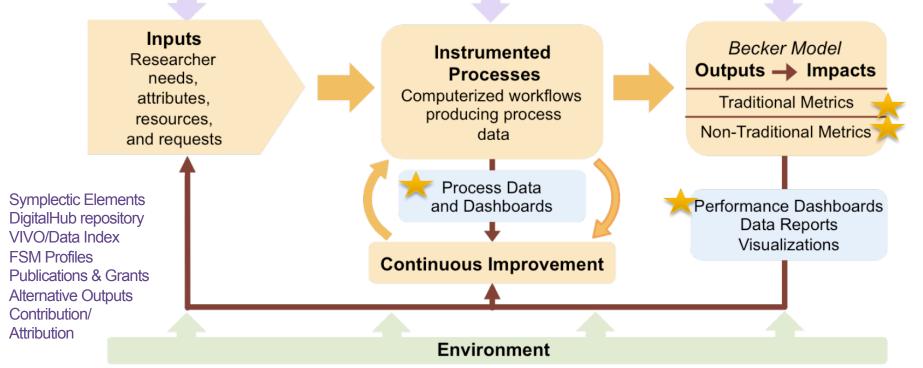
Systems play a huge role in our approach

Data Sources Research Networking Systems (LatticeGrid, NU Scholars, VIVO)

- FSM Profiles
- Survey Data
- Research Navigators
 Galter Digital Repository

- myNUCATS membership database
- Clinical Systems
- nuCORE
- NITRO-Workflow
- NITRO-Study Tracker

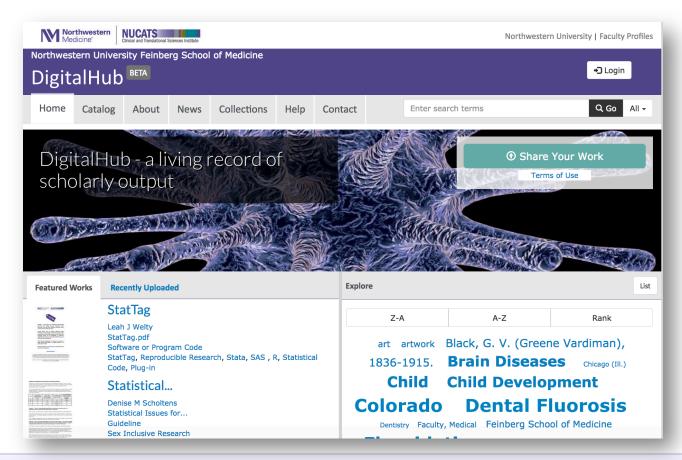
- NITRO-Competitions
 Symplectic Elements
- Web of Science, Scopus
- NITRO-Reporter
- · Institutional Grants Mgmt.
- · Alternative Metrics





Collaborators: NUCATS, NU, Feinberg School of Medicine leadership, departments, centers, institutes, vendors, community partners, communications, Research office, FASIS,

Systems play a huge role



Accommodation of diverse and complex data types
Support needs of different applications, systems, & users
Interoperability with broader data landscape



DigitalHub, born on October 19, 2015 is built on Sufia

Fedora 4.5



Sufia 6.6.0



- Sufia extends Hydra to provide a user interface around common repository and social features.
- Sufia offers self-deposit and proxy deposit workflows.
- Hydra: a community, a set of design principles, and (Ruby) software for building applications with repository storage and a search index.



Resource types in DigitalHub

- Research papers
- Case reports, technical reports
- Supplemental images
- Datasets
- Open access books
- Conference papers
- White papers
- Presentations and lectures
- Educational materials
- Posters
- Video and audio materials
- ... and much more!



research papers case reports technical reports



figures images guidelines



datasets summary statistics



books newsletters user guides



conference papers abstracts presentations



educational materials workshop resources

and so much more ...



What about copyright over archived content?

Copyright owners retain copyright over their materials. By putting material into DigitalHub, users are granting Galter Library a non-exclusive license to distribute it, which means that they are authorizing Galter Library to make it available but can also distribute it through other mechanisms.



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The MIT License (MIT)

Added the MIT License

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 - The above copyright notice and this permission notice shall be included in all copies or substantial portions of the Software.



Open Source Initiative





RightsStatements.org – under consideration

- RightsStatements.org are developed for the specific needs of cultural heritage institutions and online heritage aggregation platforms.
- There are 12 different rights statements that can be used by cultural heritage institutions to communicate the copyright and re-use status of digital objects to the public.
- They are not intended to be used by individuals to license their own creations.
- They are to be used by libraries and other cultural heritage institutions to clearly communicate the copyright/re-use status of a specific item.



Submitting works in 7 easy steps

- 1. Login to your account on DigitalHub
- 2. Select the "Upload" button
- 3. Agree to the deposit agreement
- 4. Select a file you want to deposit and upload it.
- 5. Apply metadata (5 required fields)
- 6. Set permissions and visibility
- 7. Save your work in DigitalHub!



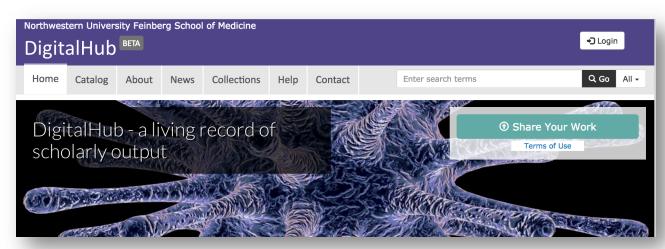
User guide:

https://goo.gl/642uyx



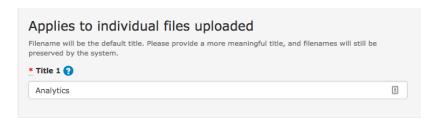
Demo video:

https://goo.gl/9g89v1

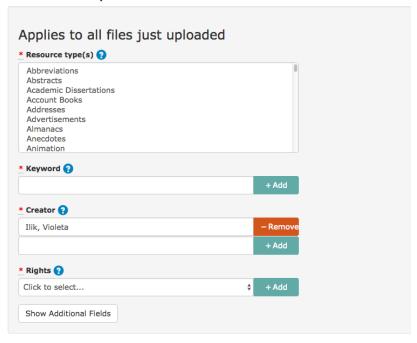




5 required fields



Bulk Descriptions

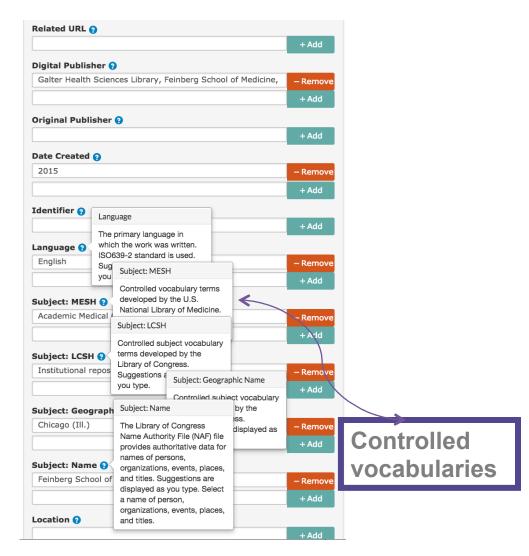


- Title
- Resource type controlled field
 Keyword
- 4. Creator controlled field
- 5. Rights controlled field



Additional metadata for describing your work

- Use of university databases – campus directory (LDAP)
- Use of established standards (date - ISO 8601, language - ISO 639-2)
- Use of established controlled vocabularies (LCSH, MeSH, GeoNames)





Persistent unique identifiers - Digital Object Identifiers (DOIs) and Archival Resource Keys (ARKs)

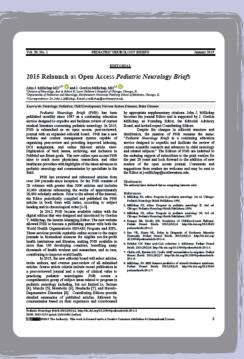
- For all of the scholarly works deposited into DigitalHub.
- Persistent identifiers like DOIs and ARKs can help:
 - Meet funders' sharing requirements
 - Promote scientific re-use of your work
 - Track re-use and discussion of your work
 - Ensure transparency and accountability





You get a DOI, you get a DOI, everyone gets a DOI ... except the works that already have one

Pediatric Neurology Briefs







In 2016 DigitalHub became the open access home for Pediatric Neurology Briefs.



DigitalHub & datasets

The DigitalHub repository at Galter Health Sciences Library accepts deposit of datasets associated with publications to help investigators comply with journal data sharing policies

- DigitalHub supports a variety of file and compression formats to meet your needs.
- The current file size limit is 2 GB and supported compression file extensions include:
 - zip application/zip
 - 7z application/x-7z-compressed
 - bz2 application/x-bzip2
 - tar application/x-tar and application/x-gtar
 - gz application/gzip and application/x-gzip



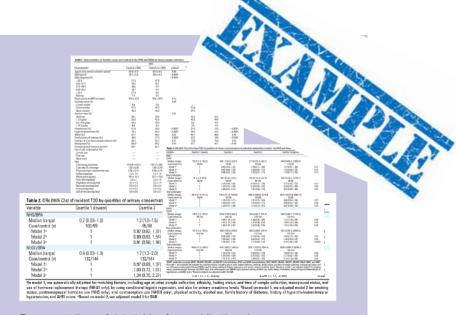


DigitalHub & datasets

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Data from studies on the epidemiology of coffee [summary statistics]

To make her data open to other researchers, Marilyn Cornelis uploaded several data files to DigitalHub.



Representations of data tables from publications by: Sun Q, Cornelis MC, Townsend MK, Tobias DK, Heather Eliassen A, Franke AA, Hauser R, Hu FB. Association of urinary concentrations of bisphenol A and phthalate metabolites with risk of type 2 diabetes: A prospective investigation in the nurses' health study (NHS) and NHSII cohorts. Environ Health Perspect. 2014;122(6):616-23.



DigitalHub & software packages

The DigitalHub repository at Galter Health Sciences Library accepts user guides for software packages such as StatTag – MIT License applied to the user guide and to the software package







StatTag is a free plug-in for conducting reproducible research and creating dynamic documents using Microsoft Word with the Stata and SAS statistical software (future versions will work with R).

StatTag allows users to embed statistical output (estimates, tables, and figures) within Word and provides an interface to edit statistical code directly from Word. Statistical output can be individually or collectively updated from Word in one-click with a behind-the-scenes call to the statistical program.

With StatTag, modification of a dataset or analysis no longer entails transcribing or re-copying results in to a manuscript or table.

The StatTag plug-in, as well as the user's guide and video tutorials, are available at:

www.stattae.ore

StatTog was developed at Northwestern University Feinberg School of Medicine with funding from Northwestern University Chincal and Translational Sciences Institute (UL178004422). Please cite StatTog publications where the software has assisted in the monuscript preparation. Citing the software gives us the tools to measure the impact of the software and track the ways in which it is being used.

Weity, L.J., Rasmussen, L.V., & Baidridge, A.S. (2016). StatTag. Chicago, Minois, United States: Gaite Health Sciences Library. doi:10.18131/G36K76

StatTag [software description]

To more widely disseminate their statistical software package, Leah Welty, Luke Rasmussen and Abigail Baldridge decided to upload a description of their software to DigitalHub. Users who view the description are given a direct link to the software.



Open Source Initiative



DigitalHub & guidelines

Women's Health Research Institute guideline for Statistical considerations in basic science sex inclusive research

Statistical considerations in basic science sex inclusive research [guideline]

To make their research more openly available, Denise Scholtens and Leah Welty uploaded their guidelines for sex inclusive research to DigitalHub. This openly available information is valuable to furthering inclusive research.

Statistical Considerations in

Suppose an investigator wants to ... science setting involving cell lines. The ... Z in the cells. In what follows, 'female' and 'm... chromosomal male (XV), respectively.

Five scenarios pertaining to sex of the cells to be used in the exp. and described below. These scenarios will impact how the investigate, including sample size calculations. These scenarios will also impact statistic once they are collected.

Scenario	is there strong biological justification to study cells of only one sex?	in the control condition, is the mean of Z the same for males and females?	Does treatment affect Z in the same way for females and males?	Is sex a varias should be included experiment planning and statistical analyses?
1	Yes	-	-	No
2	No	Yes	Yes	Possibly
3	No	No	Yes	Yes
4	No	Possibly	No, but not of primary interest	Yes
5	No	Possibly	No, and of primary interest	Yes

Scenario 1: There is strong biological justification to study cells of only one sex. All experiments will be carried out only female cells or male cells.

In this scenario, sex would not be a variable included in experiment planning or statistical analyses

When planning the experiment, sample size calculations can be performed without consideration of the sex variable. The biological justification to study cells of only one sex should be included in grant applications.

When analyzing collected data, sex is not a variable that will need to be considered. When reporting results, biological justification to study only one sex should be reported.

Scenario 2: There is biological justification to study cells of both sexes. The outcome variable Z has the same mean level in cells of both sexes in the control condition, and the investigator anticipates that treatment will cause the same change in Z in cells of both sexes.

In this case, sex may be a variable to be included in experiment planning and statistical analyses

When planning the experiment, if it can be reasonably assumed (either based on preliminary data or published illerature or both) that mean levels of Z in the control condition are similar for both seves and that treatment has the same effect in both seves, then sample seze actualisions will be no different than calculations made in Setting 1. If it is possible that mean levels of Z and/or the effect of treatment or Z offer by sex, then Secration 3.4 or Smay be relevant.

When analyzing collected data, the assumption that Z has the same mean in cells of both sexes in the control condition should be examined using descriptive statisties. The similarity of the treatment's effect on Z for cells of both sexes should also be examined using descriptive statistics. If



DigitalHub & videos

Center for Prevention Implementation Methodology Prevention Science Methodology Group



Actions

Download Analytics Citations

Export to: EndNote



Collections

This file is in the following collections:

Center for Prevention Implementation Methodology (Ce-PIM)

Implementation Science Workshop

Open Access (recommended)

Descriptions

Resource type(s): Audio Visual Document

Keyword: Implementation Science

Rights: Public Domain Mark 1.0

C

Creator: Brown, C Hendricks

Contributor: Villamar Ibarra, Juan

Andres

Benbow, Nanette Dior Smith, J.D. Dean

2P30DA027828-07

DOI: 10.18131/G3N60S

Grants and funding:

ARK: ark:/c8131/g3n60s

File Details

File Properties: Mime type: video/mp4

File size: 755241.7 kB



DigitalHub & lecture series

Free introductory lectures on biostatistics in medical research by the Biostatistics Collaboration Center

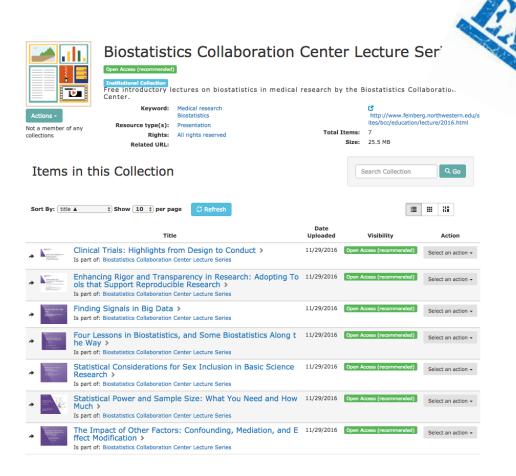




Image collections



Actions -

Member of:

Science in Society Scientific Images Contest 2016 Scientific Images Contest W

Institutional Collection

Scientific research often produces stunning images. The winners Scientific Images Contest, showcase the captivating work being disciplines, from neurobiology to astrophysics. Free, public exhimages across Chicago each year, organized by Northwestern's reseand community engagement, Science in Society.

Multi-page?: true

Keyword: Scientific images contest

Science in Society

Resource type(s): Image

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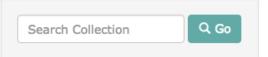
Number of pages: 12

Size: 191 MB

Pages in this Collection

Sort By: page number **A** \$ Show 10 \$ per page





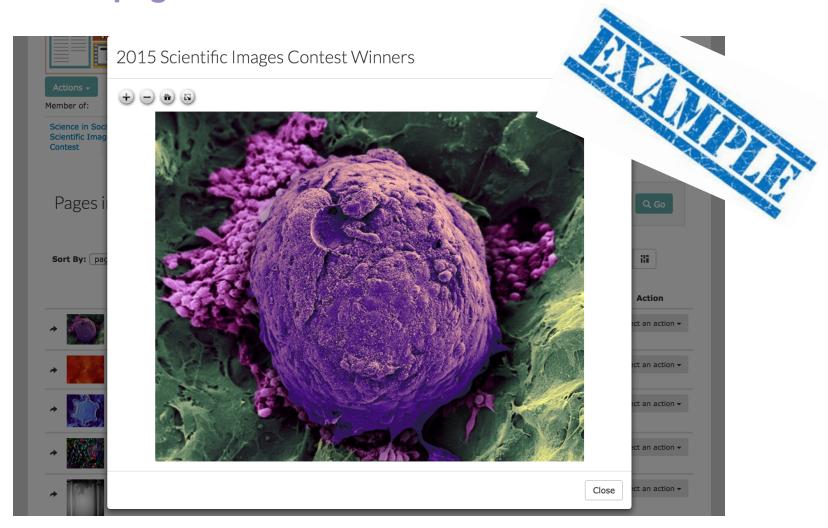


Open Access (recommended)



Image collections

multi-page collections created with an IIIF viewer





How do we get our message across:

- Presentations at department meetings

 (all professional staff is expected to be fluent in the various aspects of scholarly communications)
- Consultations (one on one or group)
- Events (Open Access week)
- Email: <u>DigitalHub@northwestern.edu</u>
- and ...



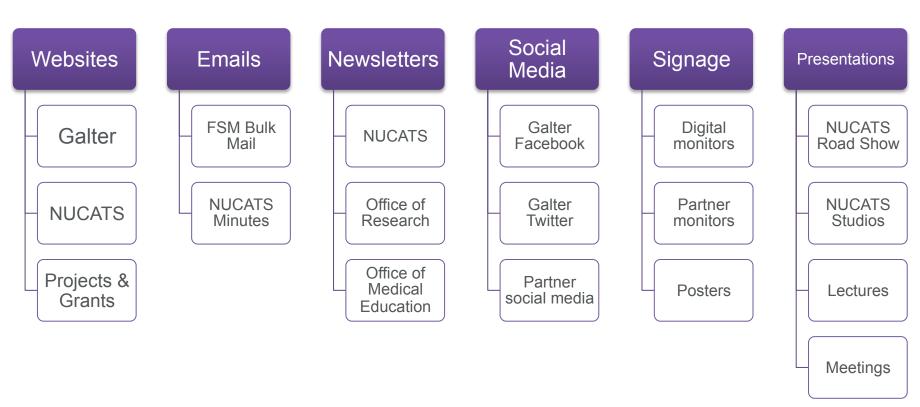
Marketing the library is a team sport







Communication Vehicles



"write and reuse" whenever possible



Office of Research

Galter Library Connections in Breakthroughs newsletter

Galter Connection - Breakthroughs					
October '16	Investigators Find Success with the DigitalHub				
Sept '16	Understanding Citation-Related Metrics				
August '16	Keeping Track of Your Work				
June '16	NIH Biosketch: Contributions and Capabilities				
May '16	Dissemination of Research in the Wild World Wide Web				
April '16	Galter Library Connection: Liaison Librarians				
March '16	FAQs About NIH Public Access Compliance and PMCIDs				
Dec '16	A New Metric from the NIH Office of Portfolio Analysis				
Nov '15	Informatics Support and Software at Galter Health Sciences Library				
October '15	Galter Health Sciences Library Launches Digital Repository for Scholarly Outputs				
Sept '15	Choosing a Journal and Making a Match				
August '15	Writing About Your Impact in the New NIH Biosketch				



Feinberg School of Medicine Research Office Breakthroughs

October 20

Galter Library Connection

Galter Health Sciences Library Launches Digital Repository for Scholarly Outputs

Do you have research that you'd like to easily share with others and make more discoverable? Would you like to track views and downloads of your research? <u>DigitalHub</u>, developed by Galter Health Sciences Library, is a place to deposit your research outputs and make them widely available. This institutional repository will provide open access to the scholarly outputs of Northwestern Medicine.

More about DigitalHub

DigitalHub is an institutional repository for the research and scholarly output of Northwestern Medicine. The goals of the repository are to preserve intellectual works created by the Northwestern Medicine community, to enhance the visibility of scholarship and to promote its authors by enabling discovery and accessibility of these works by the international scientific community.

The repository provides stable, long-term storage and ongoing maintenance. Materials are submitted directly by authors with an active Northwestern University network account (NetID).

Examples of items that the repository can accommodate at this time include:

- Research papers published or unpublished
- · Conference papers and presentations, including lectures
- Educational materials
- Case reports
- Technical reports
- Supporting multimedia images
- Posters
- Open access books

Get your materials into the repository

We want to make it as easy as possible for you to submit your content. Departmental representatives can be authorized to directly deposit materials and if you have an existing database of scholarly digital resources, we may be able to assist you with a one-time bulk import.

Do I retain copyright over archived content?

Yes, copyright owners retain copyright over their materials. By putting material into DigitalHub, you are granting Galter Library a non-exclusive license to distribute it, which means that you are authorizing Galter Library to make it available but you can also

distribute it through other mechanisms. You will be able to consult the distribution license for more information.

It is preferred but not required that materials be made available with a Creative Commons license. Many researchers and educational institutions are adopting Creative Commons licenses to provide wider access to their work.

There are few different types of CC licenses that you can choose from and you also have an option to mark your item with the "All rights reserved" license. Through the Creative Commons attribution license, the copyright owner retains copyright, but the materials are open to others for use and make modifications as long as attribution to the original is made.

DigitalHub Quick Facts

- Anyone can search DigitalHub. In order to deposit files into DigitalHub, you must be a Northwestern Medicine faculty, student, or staff, with a current NetID and password.
- You must either be the author of the material or have the rights to let Galter distribute it.
- The content must be scholarly, educational, or related to the university's mission.
- The content must be permanent. DigitalHub is intended to be an archive, not a storehouse for ephemeral content or multiple versions of documents.
- · The content must be in a digital format.

Galter Library's Digital Initiatives Working Group will continue testing and standardizing the repository through the fall of 2015, with the official repository debut planned for Open Access Week, Oct. 19 to 23

Open Access Week is a global event to promote open access in scholarship and research. SPARC, the Scholarly Publishing and Academic Resources Coalition, has developed some great resources in support of Open Access.

Click here to learn about Open Access Week, the benefits of Open Access to scholarship and see examples of how you can get involved!

For questions or assistance with putting your work into the repository or to discuss other options, please contact the DigitalHub
DIWG team at DigitalHub@northwestern.edu.

How do we know that it is working?

Track metrics across different vehicles

Analytics for emails and newsletters from various sources are available.

Some specific "webometrics" tracked include: the open rate and click thru rate for each mailing, the number of clicks on each article that is in the email/newsletter, geography/domain of access, downloads.



How do we know that it is working?

Track metrics across different vehicles

NUCATS "Minutes" emails...

DigitalHub Accepts Datasets

The DigitalHub repository now supports deposit of datasets associated with publications to help investigators comply with journal data sharing policies. DigitalHub supports a variety of compression formats and rights statements to meet your needs. Learn more at digitalHub.northwestern.edu/news or contact DigitalHub@northwestern.edu.

Date	Topic	Center	Open Rate
7-Sep-16	responsible conduct of research	cecd	41.53%
19-Oct-16	gcp course	admin	40.66%
5-Oct-16	bcc lecture series	bcc	39.19%
8-Jun-16	i2b2	cdsi	39.00%
31-Aug-16	pcori funding	cch	38.48%
14-Sep-16	practice based research	cch	38.07%
27-Jul-16	Budget workshops	ccr	37.60%
12-Oct-16	venture capital workshop	invo	37.36%
10-Aug-16	digital hub accepts datasets	galter	36.97%
3-Aug-16	ARCC dissemination resources	cch	36.69%
17-Aug-16	id community partners	cch	36.56%
28-Sep-16	onboarding	admin	36.05%
24-Aug-16	research impact	galter	35.53%
21-Sep-16	msrc program	cecd	34.80%
13-Jul-16	cancer studies src	admin	33.50%
20-Jul-16	CCH consultations	cch	33.30%
2-Mar-16	tl1	cecd	31.20%
6-Apr-16	ramp challenge	cdsi	30.60%
13-Apr-16	n.xt fund	invo	30.60%
24-Feb-16	CCH Workshop	cch	29.50%



Statistics

After one year in production:

- 6013 works5935 OA
- 537 active users
- Top File Formats

pdf (Portable Document Format) (7864) tiff (Tagged Image File Format) (1759) pdf (PDF/A) (125)

jpeg (JPEG File Interchange Format) (108)

Digital Hub An institutional repository for the research and scholarly output of Northwestern Medicine



Acknowledgments:
Digital Initiatives Working Group, NUCATS, and FSM Office of Communication



