

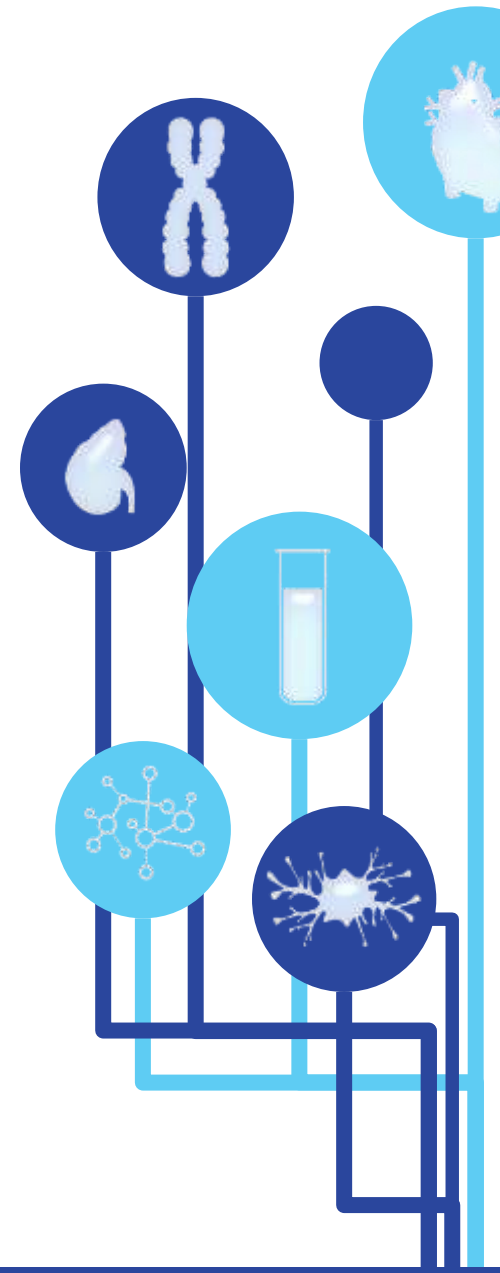
Spotlight on R³ Resources



www.hsls.pitt.edu/bringing-rigor-and-reproducibility-research

Protocol Search

MELISSA RATAJESKI, MLIS, RLAT, AHIP
COORDINATOR OF DATA MANAGEMENT SERVICES
IACUC LIAISON



Methodology = Robust & Transparent

Scientific rigor is the strict application of the scientific method to ensure robust and unbiased experimental design, methodology, analysis, interpretation and reporting of results. This includes full transparency in reporting experimental details so that others may reproduce and extend the findings. NIH expects applicants to describe how they will achieve robust and unbiased results when describing the experimental design and proposed methods. Robust results are obtained using methods designed to avoid bias and can be reproduced under well-controlled and reported experimental conditions.

The screenshot shows the NIH website's 'RIGOR AND REPRODUCIBILITY' page. The header includes the NIH logo and navigation tabs for Health Information, Grants & Funding, News & Events, and Research & Training. The main content area features a sidebar with links to Rigor and Reproducibility, Principles and Guidelines, Expanded Guidelines, Application Instructions, Training, Funding Opportunities, and Meetings and Workshops. The main article is titled 'Updated Application Instructions to Enhance Rigor and Reproducibility' and discusses updates to application instructions and review criteria. A list of key updates includes 'Consideration of Sex and Other Relevant Biological Variables' and 'Authentication of Key Biological and/or Chemical Resources'. The page footer indicates it was last reviewed on April 25, 2016.

U.S. Department of Health & Human Services

NIH National Institutes of Health
Turning Discovery Into Health

Health Information Grants & Funding News & Events Research & Training

Home » Research & Training » Rigor and Reproducibility

RIGOR AND REPRODUCIBILITY

Rigor and Reproducibility

- Principles and Guidelines
- Expanded Guidelines
- Application Instructions
- Training
- Funding Opportunities
- Meetings and Workshops

Updated Application Instructions to Enhance Rigor and Reproducibility

The National Institutes of Health (NIH) Office of Extramural Research (OER) clarified and revised application instructions and review criteria to enhance reproducibility of research findings through increased scientific rigor and transparency. These updates took effect for research grants and mentored career development award applications submitted for the [redacted] and beyond. Updates to institutional training grants, [redacted] awards (K12/KL2), and individual fellowships will be [redacted].

Application instructions clarify long-standing expectations to ensure [redacted] and most rigorous science, highlight the need for applicants [redacted] have been previously overlooked, highlight the need for [redacted] details in their reviews through revised review criteria, and [redacted]. These new instructions and revised review criteria focus on [redacted] for enhancing rigor and transparency.

Key Updates to Application Instructions

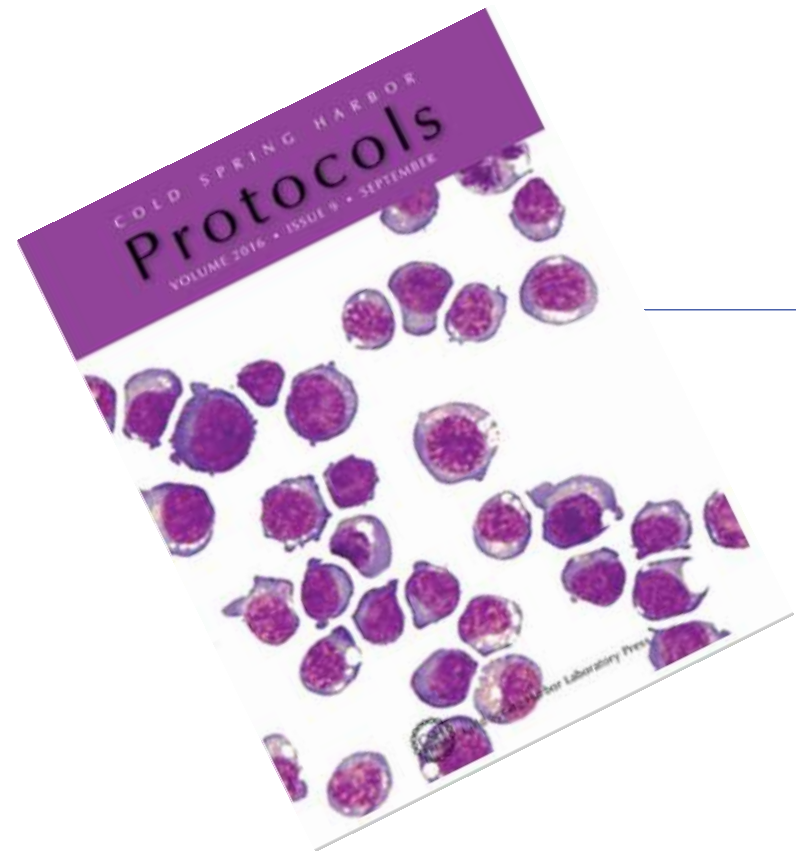
- Consideration of Proposed Research
- Experimental Design

Strict application of the scientific method to ensure robust and [redacted] design, methodology, analysis, interpretation and reporting of [redacted] full transparency in reporting experimental details so that others [redacted] the findings, NIH expects applicants to describe how they [redacted] unbiased results when describing the experimental design and [redacted] robust results are obtained using methods designed to avoid bias [redacted] and can be reproduced under well-controlled and reported experimental conditions.

- Consideration of Sex and Other Relevant Biological Variables
- Authentication of Key Biological and/or Chemical Resources

Investigators are strongly encouraged to discuss these revised application instructions with NIH program staff prior to submission of applications. Further information is provided at the following website: <http://grants.nih.gov/reproducibility/index.htm>

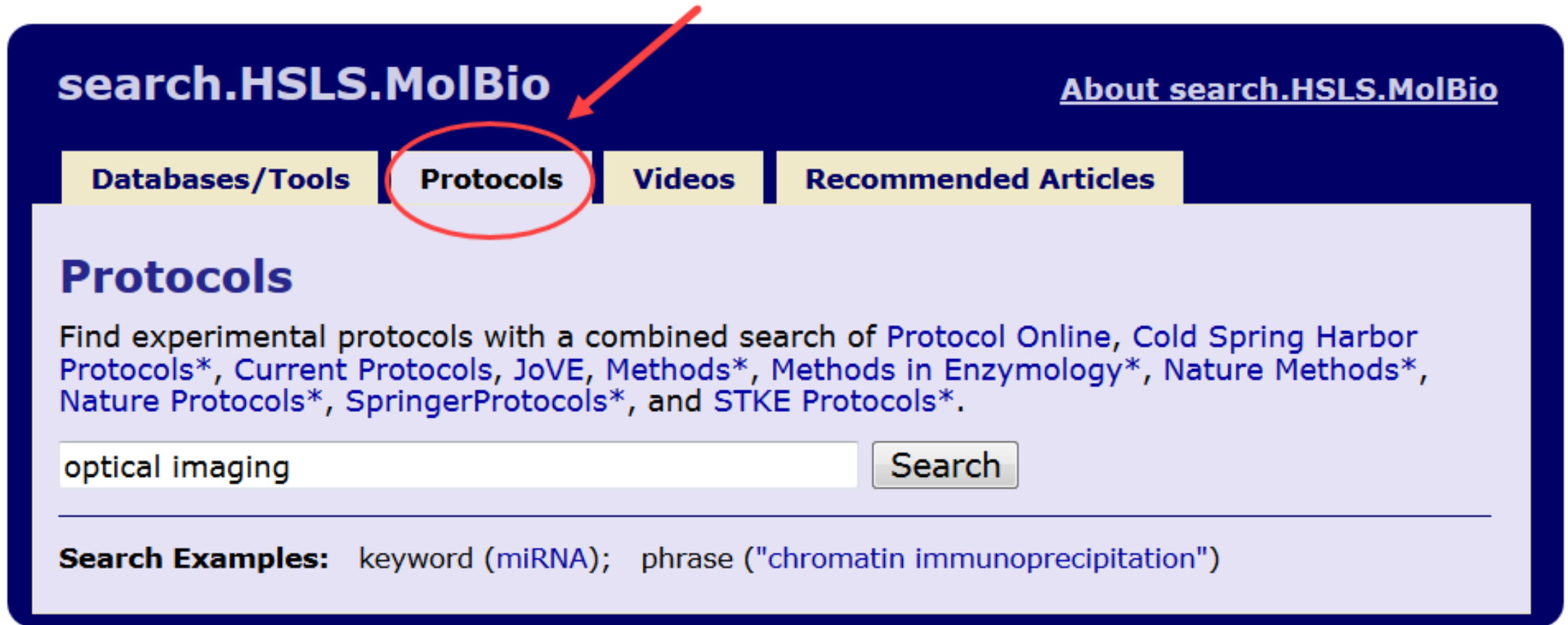
This page last reviewed on April 25, 2016



- 🔒 [Current Protocols in Bioinformatics](#)
- 🔒 [Current Protocols in Cell Biology](#)
- 🔒 [Current Protocols in Neuroscience](#)
- 🔒 [Current Protocols in Nucleic Acid Chemistry](#)



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Protocols

Find experimental protocols with a combined search of Protocol Online, Cold Spring Harbor Protocols*, Current Protocols, JoVE, Methods*, Methods in Enzymology*, Nature Methods*, Nature Protocols*, SpringerProtocols*, and STKE Protocols*.

optical imaging

Search Examples: keyword (miRNA); phrase ("chromatin immunoprecipitation")

Narrow your search:

Topic Source

Top 77 Results remix

- **In Vivo Optical Imaging** (6)

- Near-Infrared (2)
- Methods (2)
- Other Topics (2)

+ Tomography (6)

+ Bioluminescence Imaging (5)

- Cellular Imaging (5)
- [Optical imaging methods](#) (4)
- Brain (4)
- Approaches (3)
- Photoactivation, Localization Microscopy (3)
- Non-invasive (3)
- Live Imaging (3)

[more](#) | [all](#)

Search within clusters

Find

1. [Fluorescence-quenching of a Liposomal-encapsulated Near-infrared Fluorophore as a Tool for In Vivo Optical Imaging](#)

Authors: Felista L. Tansi*1, Ronny Ruger*2, Markus Rabenhold2, Frank Steiniger3, Alfred Fahr2, Ingrid Hilger1
JoVE

2. [Development and Application of a Dual-Purpose Nanoparticle Platform for Delivery and Imaging of siRNA in Tumors](#)

Summary:) for magnetic resonance imaging (MRI), labeled with Cy5.5 dye for near-infrared **in vivo optical imaging** (NIRF), conjugated to my complex...

Published: Jan-01-2009

Test: 2000

Springer Protocols

3. [Practical Methods for Molecular In Vivo Optical Imaging](#) [new window](#)

Source: Current Protocols in Cytometry

Date: January 01, 2012

Authors: Hannah Chen, Stephen H. Thorne

Wiley Current Protocols

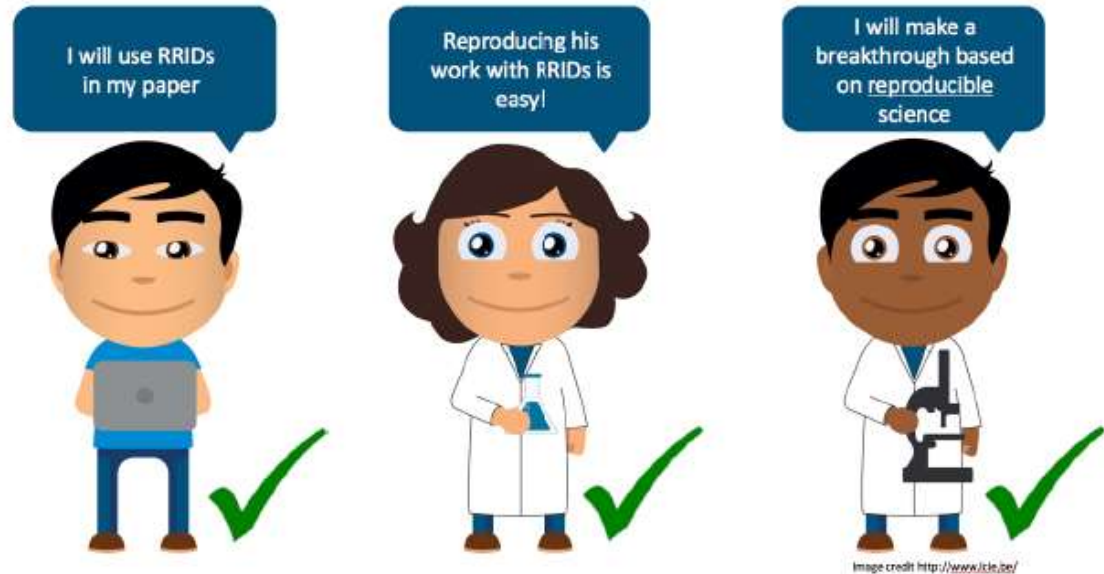
4. [In Vivo Optical Imaging of Brain Tumors and Arthritis Using Fluorescent SapC-DOPS Nanovesicles](#) [new window](#)

Authors: Zhengtao Chu1,2, Kathleen LaSance3, Victor Blanco1, Chang-Hyuk Kwon5,6, Balveen Kaur5,6, Malinda Frederick4, Sherry Thornton4, Lisa Lem
JoVE

Resource Identification Initiative

It is now possible to improve your next paper to make it more reproducible, findable and more widely read by including RRIDs.

RRIDs are authentication tags for key biological resources such as antibodies, transgenic organisms, cell lines and software tools.



RRIDs are easy to find on scicrunch.org/resources a website for researchers to quickly identify the tools they use. RRIDs are required in journals published by Cell Press, BMC, Wiley, Elsevier and others.

****Contact info@scicrunch.org****

*Authentication is a new requirement for NIH grants starting in May 2016 ([NOT-OD-16-011](#))

*NIDA points to scicrunch.org/resources as a method for meeting this new requirement for Rigor and Transparency (-NIDA Neuroscience Update, March 4, 2016).

Target- and input-dependent organization of AMPA and NMDA receptors in synaptic connections of the cochlear nucleus.

Rubio ME¹, Fukazawa Y, Kamasawa N, Clarkson C, Molnár E, Shigemoto R.

Author information

¹Department of Otolaryngology, University of Pittsburgh, Pittsburgh, PA, USA; Department of Neurobiology, University of Pittsburgh, PA, USA.

Abstract

We examined the synaptic structure, quantity, and distribution of α -amino-3-hydroxy-5-methylisoxazole-4-propionic acid (AMPA)- and N-methyl-D-aspartate (NMDA)-type glutamate receptors (AMPA receptors and NMDA receptors, respectively) in rat cochlear nuclei by a highly sensitive freeze-fracture replica labeling technique. Four excitatory synapses formed by two distinct inputs, auditory nerve (AN) and parallel fibers (PF), on different cell types were analyzed. These excitatory synapse types included AN synapses on bushy cells (AN-BC synapses) and fusiform cells (AN-FC synapses) and PF synapses on FC (PF-FC synapses) and cartwheel cell spines (PF-CwC synapses). Immunogold labeling revealed differences in synaptic structure as well as AMPAR and NMDAR number and/or density in both AN and PF synapses, indicating a target-dependent organization. The immunogold receptor labeling also identified differences in the synaptic organization of FCs based on AN or PF connections, indicating an input-dependent organization in FCs. Among the four excitatory synapse types, the AN-BC synapses were the smallest and had the most densely packed intramembrane particles (IMPs), whereas the PF-CwC synapses were the largest and had sparsely packed IMPs. All four synapse types showed positive correlations between the IMP-cluster area and the AMPAR number, indicating a common intrasynapse-type relationship for glutamatergic synapses. Immunogold particles for AMPARs were distributed over the entire area of individual AN synapses; PF synapses often showed synaptic areas devoid of labeling. The gold-labeling for NMDARs occurred in a mosaic fashion, with less positive correlations between the IMP-cluster area and the NMDAR number. Our observations reveal target- and input-dependent features in the structure, number, and organization of AMPARs and NMDARs in AN and PF synapses.

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KEYWORDS: GluN1; RRID: AB_94946; RRID: nif-0000-30467; SDS-freeze fracture immunolabeling; dorsal cochlear nucleus; electron microscopy; synapses; ventral cochlear nucleus

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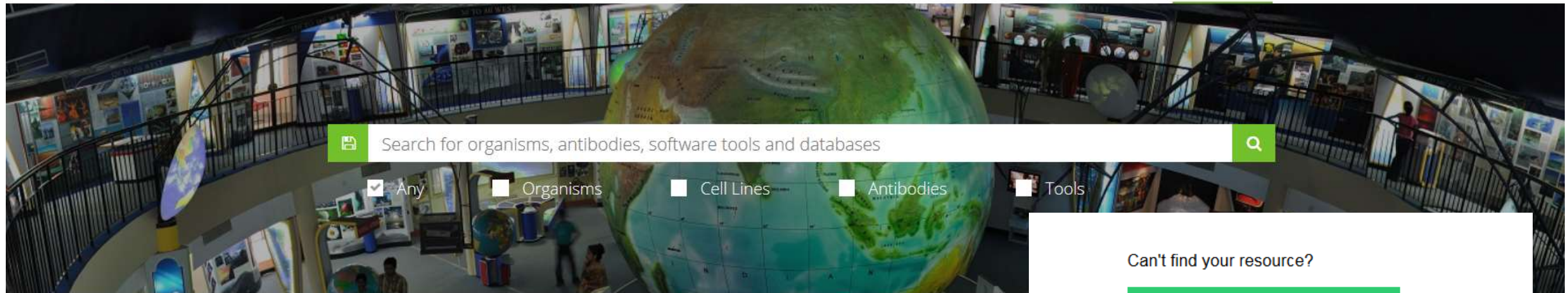
<https://scicrunch.org/resources>



Resource Identification Portal

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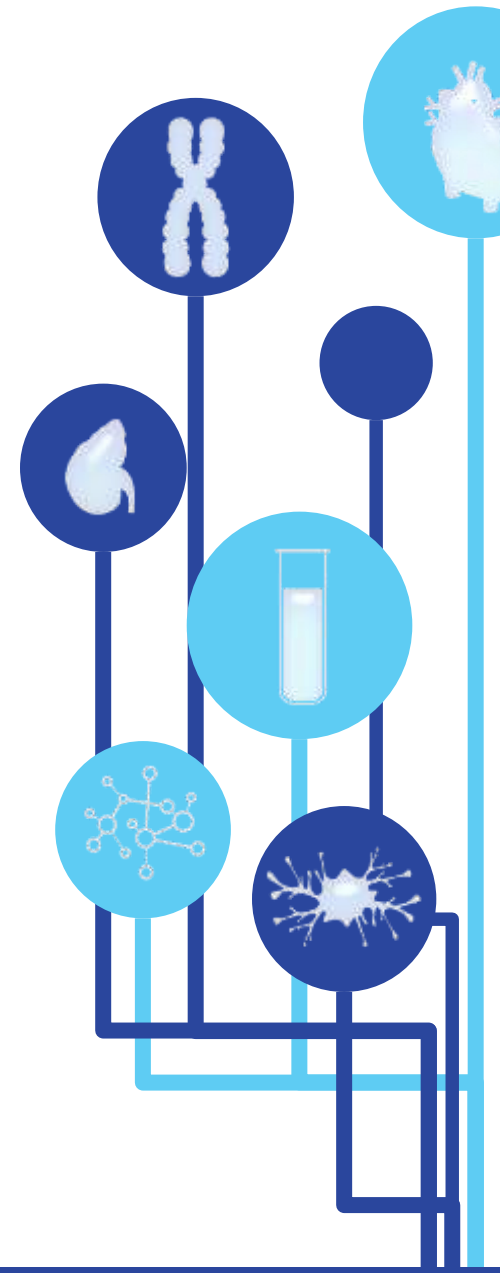
Welcome

This is the Resource Identification Portal, supporting NIH's new guidelines for Rigor and Transparency in biomedical publications. Authors are instructed to authenticate key biological resources: Antibodies, Model Organisms, and Tools (software, databases, services), by finding or generating stable unique identifiers. We appreciate your patience and any feedback. If you experience any difficulties, please contact us at rii-help@scicrunch.org or just click on 'report an issue' below and we will help you obtain the appropriate identifiers.

InfoBoosters

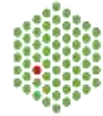
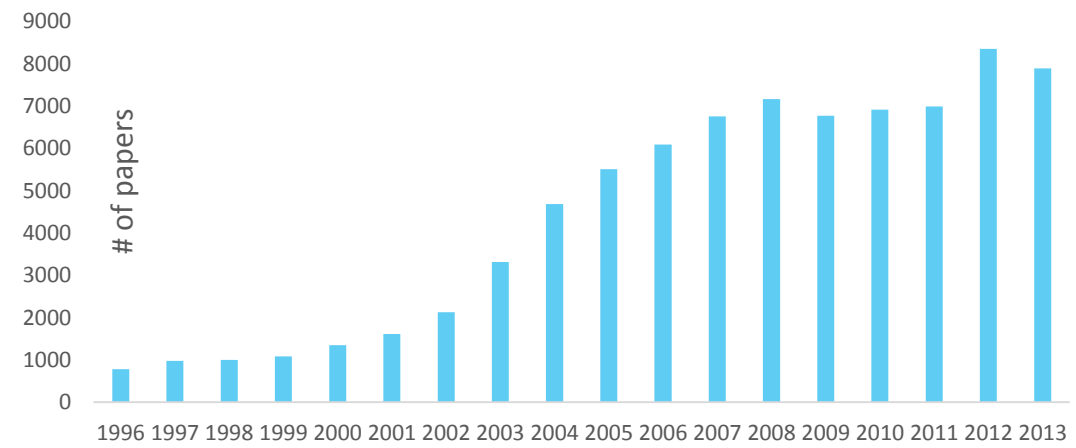
CONNECTING TEXTS WITH THE DATABASES

ANSUMAN CHATTOPADHYAY, PHD
HEAD, MOLECULAR BIOLOGY INFORMATION SERVICE

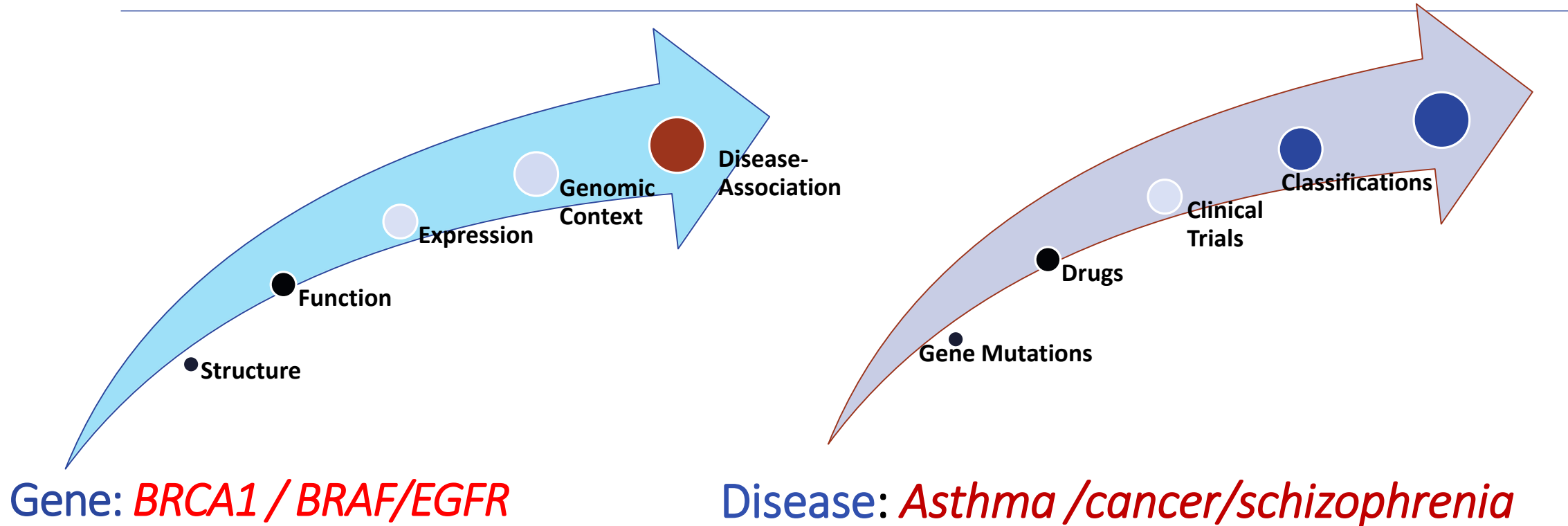


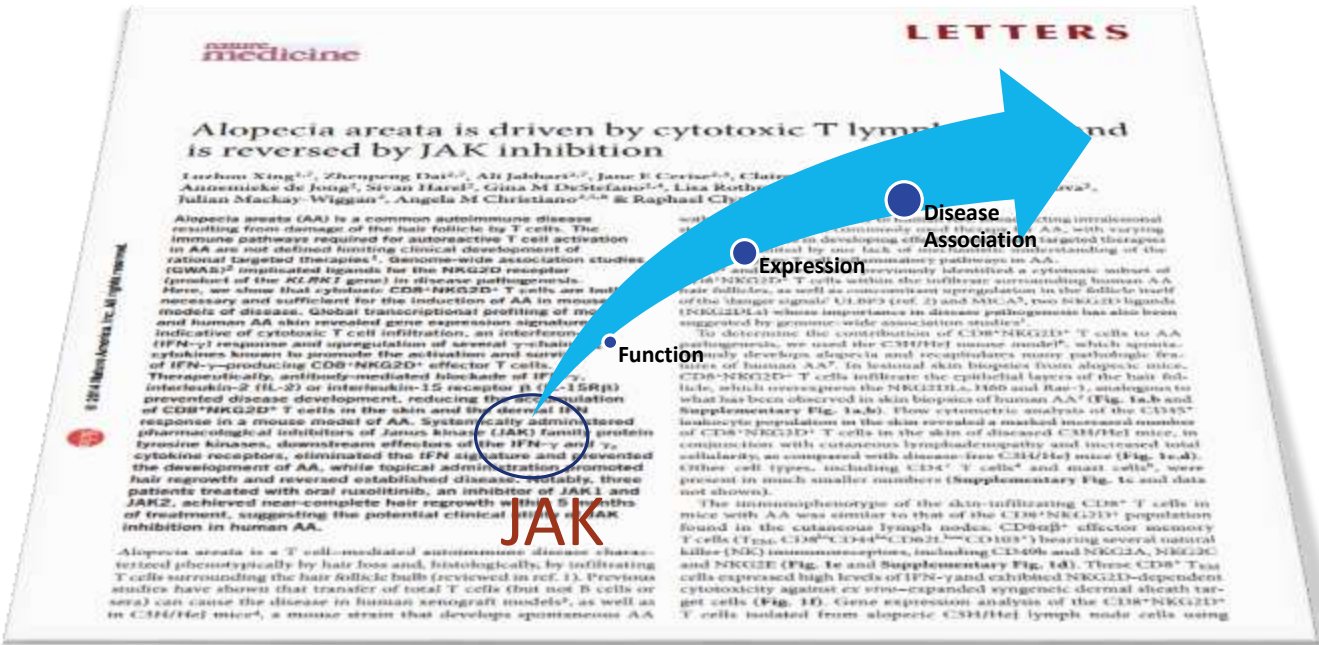


Growth of Molecular Databases and Tools



Multidimensional Data

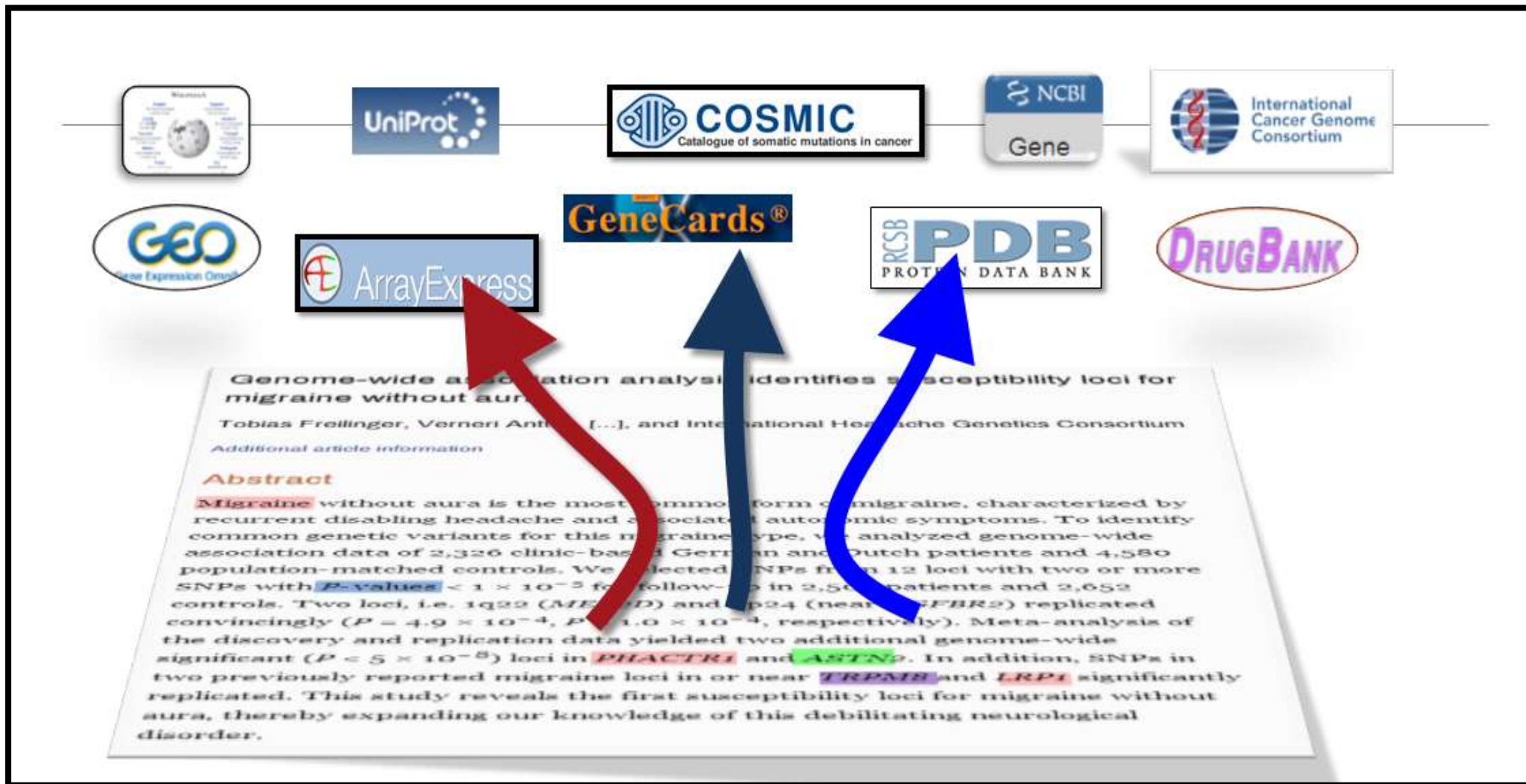




One-Dimensional Reading Format

InfoBoosters

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Genome-wide association analysis identifies susceptibility loci for migraine without aura

Tobias Freilinger, Verner Anttila [...], and International Headache Genetics Consortium
 Additional article information

Abstract

Migraine without aura is the most common form of migraine, characterized by recurrent disabling headache and associated autonomic symptoms. To identify common genetic variants for this migraine type, we analyzed genome-wide association data of 2,326 clinic-based German and Dutch patients and 4,580 population-matched controls. We selected SNPs from 12 loci with two or more SNPs with ***P*-values** $< 1 \times 10^{-5}$ for follow-up in 2,500 patients and 2,652 controls. Two loci, i.e. 1q22 (***MEIS1***) and 12p24 (near ***FBR2***) replicated convincingly ($P = 4.9 \times 10^{-4}$, $P = 1.0 \times 10^{-4}$, respectively). Meta-analysis of the discovery and replication data yielded two additional genome-wide significant ($P < 5 \times 10^{-8}$) loci in ***PHACTR1*** and ***ASTN2***. In addition, SNPs in two previously reported migraine loci in or near ***TRPM8*** and ***LRPI*** significantly replicated. This study reveals the first susceptibility loci for migraine without aura, thereby expanding our knowledge of this debilitating neurological disorder.

Nature genetics
Author Manuscript Europe PMC Funders

Genome-wide association analysis identifies susceptibility loci for migraine without aura

Tobias Freilinger, Verner Anttila, [...], and International Headache Genetics Consortium

Additional information

How is it calculated?



Migraine, characterized by recurrent disabling headache and common genetic variants for this association data of 2,326 clinic-based population-matched controls. We analyzed genome-wide association data of 2,326 clinic-based patients and 4,580 population-matched controls. We identified 12 loci with two or more SNPs with P -values $< 1 \times 10^{-5}$ in patients and 2,652 controls. Two loci, i.e. 1q22 (*MEF2D*) and 3p24 (near *IGFBR2*) replicated convincingly ($P = 4.9 \times 10^{-4}$, $P = 1.0 \times 10^{-4}$, respectively). Meta-analysis of the discovery and replication data yielded two additional genome-wide significant ($P < 5 \times 10^{-8}$) loci in *PHACTR1* and *ASTN2*. In addition, SNPs in two previously reported migraine loci in or near *TRPM8* and *LRP1* significantly replicated. This study reveals the first susceptibility loci for migraine without aura, thereby expanding our knowledge of this debilitating neurological disorder.

Main text

Migraine is a disabling episodic neurovascular disorder affecting 12% of the general population. It is characterized by recurrent disabling severe throbbing unilateral headache with associated symptoms such as phonophobia (migraine with aura) and photophobia (migraine without aura; MA). Previous genome-wide association studies have identified a migraine susceptibility locus on chromosome 8q22, close to *MTDH*, in the clinic-based International Headache Genetics Consortium (IHGC) MA study⁵ and three other loci in or near *PRDM16*, *LRP1*, and *TRPM8* in the population-based migraine Women's Genome Health Study (WGHS)⁶. For *TRPM8* there was suggestive association ($P < 1 \times 10^{-5}$) also in the clinic-based IHGC MA GWAS⁵. Here we report the first GWAS in MO, the most common form of migraine. We analyzed two large samples from headache centres in Germany and the Netherlands including 2,326 MO patients and 4,580 population-matched controls (Supplementary Fig. 1). We performed a Manhattan plot of the joint analysis of the two samples with a significance threshold ($\lambda 1000$) of 1.03. The analysis identified 12 loci with suggestive association ($P < 1 \times 10^{-5}$) (Supplementary Table 1). Eighteen SNPs from these 12 loci were taken forward to the replication stage in four independent clinic-based European MO samples (2,508 cases and 2,652 controls) (Supplementary Fig. 1 and Supplementary Table 1). Eight SNPs in six loci showed P -values < 0.05 in the replication study, and five of these SNPs also showed P -values $< 5 \times 10^{-8}$ in the meta-analysis combining the discovery and replication cohorts (Table 1, Fig. 1 and Supplementary Fig. 3). Four loci (1q22, 3p24, 6p24, 9q33) replicated, although replication was less convincing for loci on

What is its function?



What is its structure?



The screenshot shows the 'InfoBooster' tool interface on the University of Pittsburgh Health Sciences Library System website. It includes a search bar, a 'What is it?' section explaining the tool's function, a 'How to Install:' section with instructions, and two rows of buttons labeled 'InfoBoosters' (Dictionary, Wikipedia, Google, Thesaurus) and 'Bundles' (Literature Search, Molecular DBs, Clinical DBs, Must Have).



The screenshot shows a PubMed search result for the article 'Biological insights from 108 schizophrenia-associated genetic loci'. It displays the article title, a citation from Nature (2014), an abstract describing a multi-stage genome-wide association study, and a list of collaborators. The right sidebar contains options for full-text links (Nature, PMC), saving items, and similar articles.

www.hsls.pitt.edu/molbio/infobooster

<https://goo.gl/99Fz2U>

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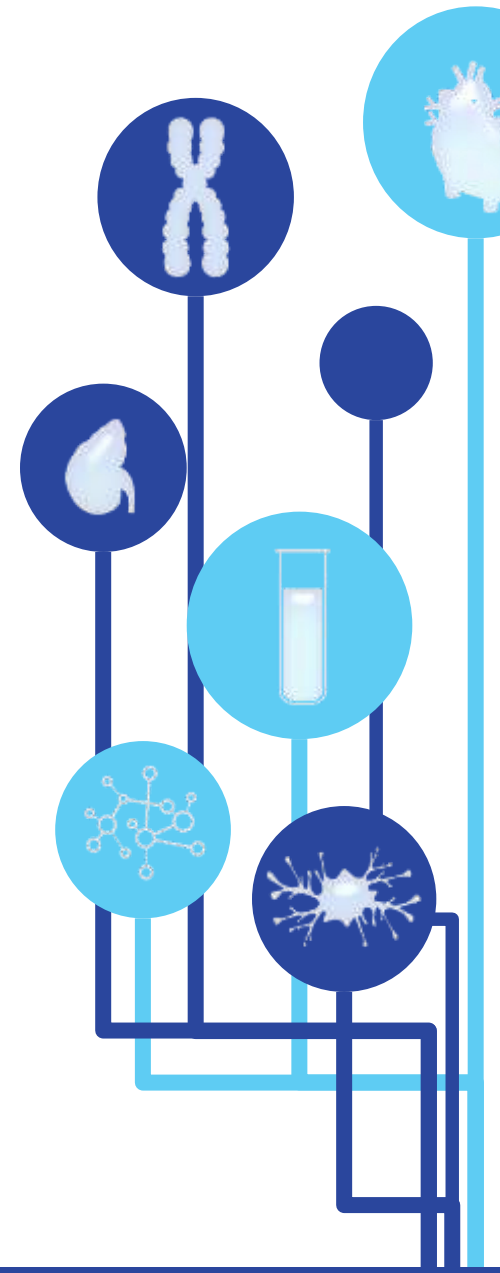
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*DISCOVER CUTTING EDGE, YET-TO-BE PUBLISHED
RESEARCH ARTICLES*

ANSUMAN CHATTOPADHYAY, PHD
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search.bioPreprint

Comprehensively search preprint databases to discover cutting edge, yet-to-be published or reviewed biomedical research articles.

Search Examples: keyword (CRISPR); phrase ("Zika virus")
Use quotation marks for searches with 2 words or more.

Resources searched: [arXiv](#) (Quantitative Biology), [bioRxiv](#), [F1000Research](#), [PeerJ Preprints](#)

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bioPreprint

Drag and drop it into the browser favorites/bookmark toolbar.

Steps to link highlighted text from an abstract in PubMed to preprint articles on the same subject using bioPreprint bookmarklet.

The screenshot shows a web browser with two windows. The main window is PubMed, displaying an abstract for "Zika virus outbreak in Brazil". The search bar contains "26927450[uid]". A callout bubble labeled "Step 2: Click on the bookmarklet" points to the bioPreprint bookmarklet in the browser's toolbar. The abstract text includes "Zika virus (ZIKV) infection is spreading rapidly within the Americas after an epidemic in Brazil...". A callout bubble labeled "Step 1: Select text" points to the highlighted text "Zika virus outbreak in Brazil".

The second window is search.bioPreprint, showing search results for "Zika virus". A callout bubble labeled "Step 3: Preprint articles pop up" points to the search results. The results list several preprint articles, with the first one being "Role of Host-Vector ratio on the dynamics of Zika virus". A callout bubble labeled "Step 4: Identify preprints by topic/source" points to the "Top 22 Results" section, which lists categories like "Infection (10)", "Human (7)", "Causality (3)", and "Dynamics of Zika virus (2)".

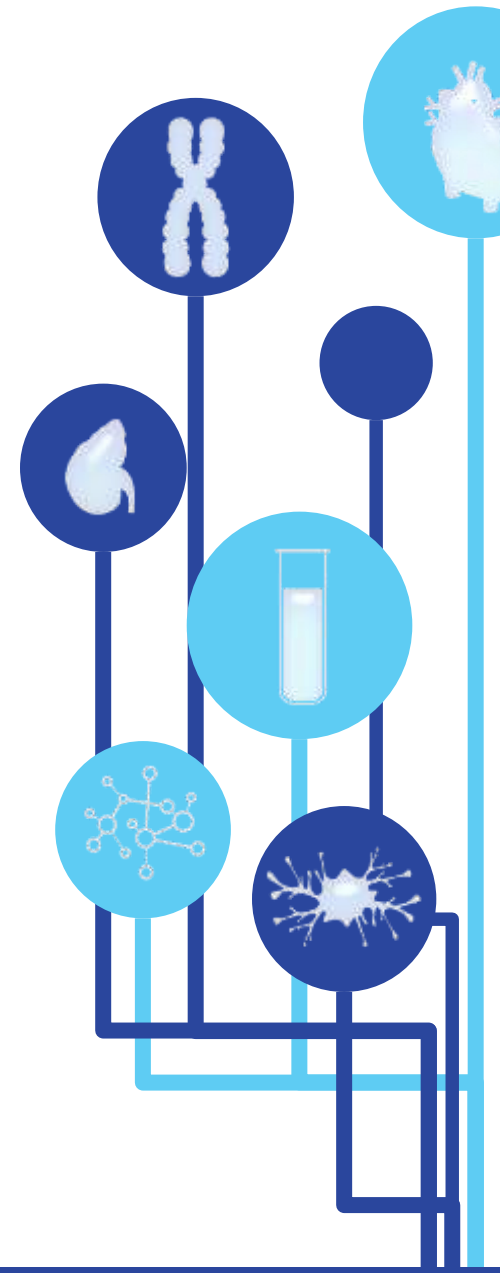
Callout boxes with the following text are overlaid on the image:

- Step 1: Select text** (points to the highlighted text in the PubMed abstract)
- Step 2: Click on the bookmarklet** (points to the bioPreprint bookmarklet in the browser toolbar)
- Step 3: Preprint articles pop up** (points to the search results in the bioPreprint window)
- Step 4: Identify preprints by topic/source** (points to the "Top 22 Results" section in the bioPreprint window)

PubMed Commons

ELAINA VITALE, MLIS

NATIONAL NETWORK OF LIBRARIES OF MEDICINE (NN/LM)
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(But first: PubMed)

- > 26 million citations for biomedical literature (and growing daily)
- ~7 million searches a day
- Citations come from MEDLINE, life science journals and online books
- Content spans life sciences, behavioral sciences, chemical sciences, and bioengineering
- Free resource maintained by the National Library of Medicine (NLM)

Getting started: what is PubMed Commons?

COMMONS

PubMed



A forum for scientific discourse

PubMed Commons enables authors to share opinions and information about scientific publications in PubMed.

Using PubMed Commons

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- Update and expand the public record, for instance by pointing to new data, relevant publications, or alternative interpretations
- Note corrections and retractions to publications
- Post discussion and critique, either directly or via links to blog posts and other platforms
- Provide links to datasets, code, or publicly accessible versions of publications
- Call attention to issues affecting reproducibility, such as cell line misidentification

(from "Commenting on PubMed: a successful pilot," 17 December 2015)

A few things to consider about PubMed Commons:



PubMed Commons is REALLY NEW!

- PubMed has > 26 million citations (14 September 2016) vs. PubMed Commons has 4442 comments (14 September 2016)
- Fewer than 1% of PubMed articles have comments

Commenting is restricted to users who:

- Have My NCBI accounts
- And are authors of publications in PubMed
- Journal clubs allowed, too

PubMed Commons: Rigor & Responsibility

J Clin Virol. 2016 Aug 30;83:63-65. doi: 10.1016/j.jcv.2016.08.297. [Epub ahead of print]

Fatal encephalitis associated with Zika virus infection in an adult.

Soares CN¹, Brasil P², Carrera RM³, Sequeira P⁴, de Filippis AB⁴, Borges VA⁵, Theophilo F⁵, Ellul MA⁶, Solomon T⁶.

PubMed Commons

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 2 comments

[How to join PubMed Commons](#)

Cristiane N Soares 2016 Sep 09 5:48 p.m. (6 days ago) 2 of 2 people found this helpful

The question regarding CHIK tests mentioned by Thomas Jeanne is really relevant in this case. In fact, we were concerned about co-infections, and after the paper acceptance we performed IgM and IgG CHIK tests in serum and CSF. All samples were negatives for CHIKV.

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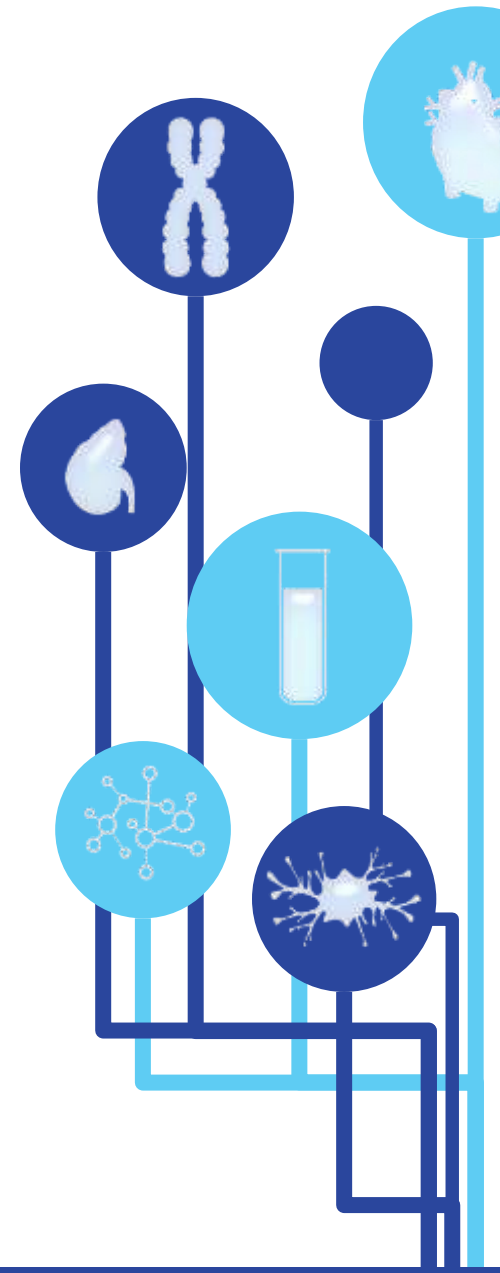
Thomas Jeanne 2016 Sep 07 8:33 p.m. 1 of 1 people found this helpful

In their case report, Soares et al. do not mention testing for chikungunya virus (CHIKV), which has considerable overlap with Zika virus (ZIKV) in both epidemiologic characteristics and clinical presentation. Brazil experienced a large increase in chikungunya cases in early 2016 ([Collucci C, 2016](#)), around the time of this patient's illness, and recent case series in Ecuador ([Zambrano H, 2016](#)) and Brazil ([Sardi SI, 2016](#)) have demonstrated coinfection with ZIKV and CHIKV. Moreover, a recently published study of Nicaraguan patients found that 27% of those who tested positive for any of ZIKV, CHIKV, or DENV (dengue virus) with multiplex RT-PCR also tested positive for one or both of the other viruses ([Waggoner JJ, 2016](#)). CHIKV itself has previously been linked to encephalitis including fatal encephalitis ([Gérardin P, 2016](#)), and some have speculated that adverse interactions could result from coinfection with two or more arboviruses ([Singer M, 2016](#)). Coinfection with chikungunya as a contributing factor in this case cannot be ruled out without appropriate testing.

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Retrieved 16 September 16

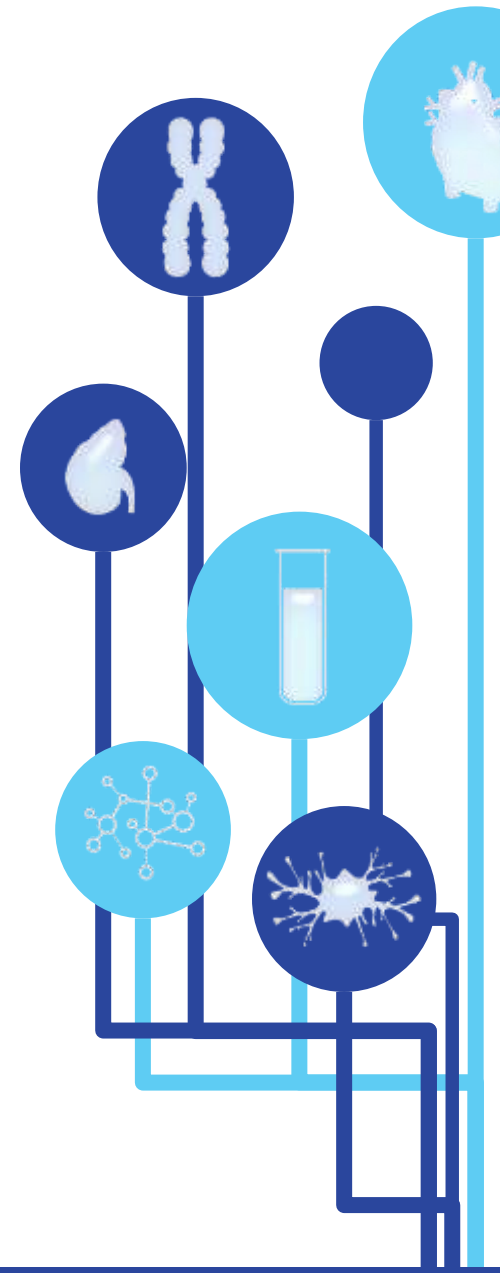
Questions?



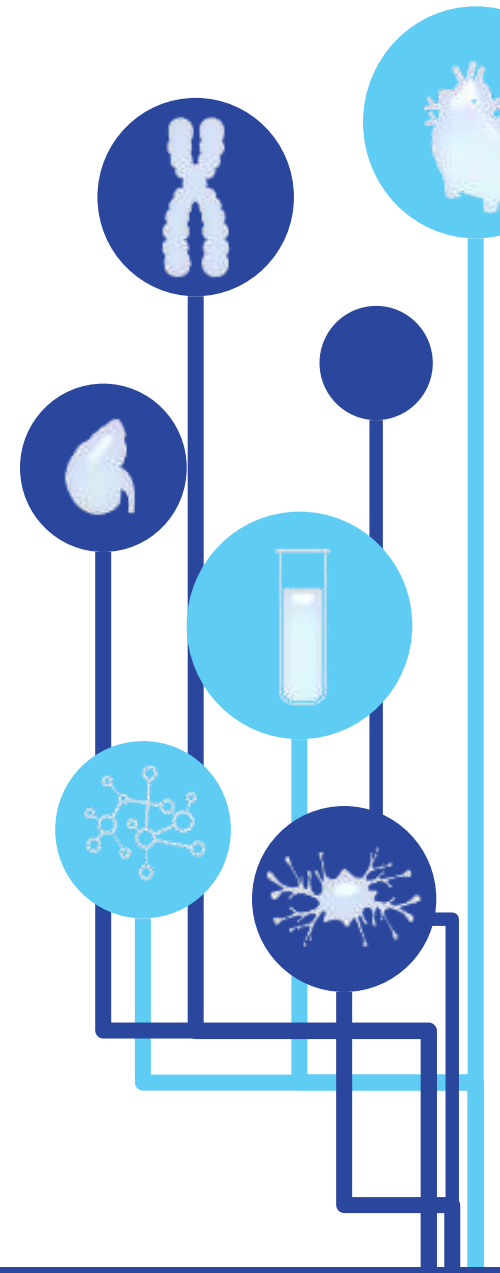
DMPTool

CARRIE L IWEMA, PHD, MLS, AHIP

INFORMATION SPECIALIST IN MOLECULAR BIOLOGY



A **Data Management Plan** is a formal document that outlines how you will handle your data both **during** your research and **after** the project is completed.



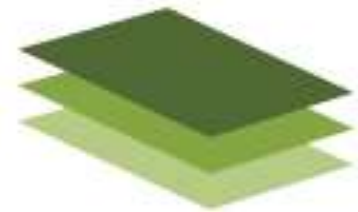
Why create a DMP?

- Grant requirement
- Saves time
- Simplifies research
- Facilitates sharing/preserving
- Decreases chances of data loss
- Extends life of research

What should be included?

- Types of data
- Data formats & standards
- Data access policies
- Data use & distribution
- Data preservation & archiving

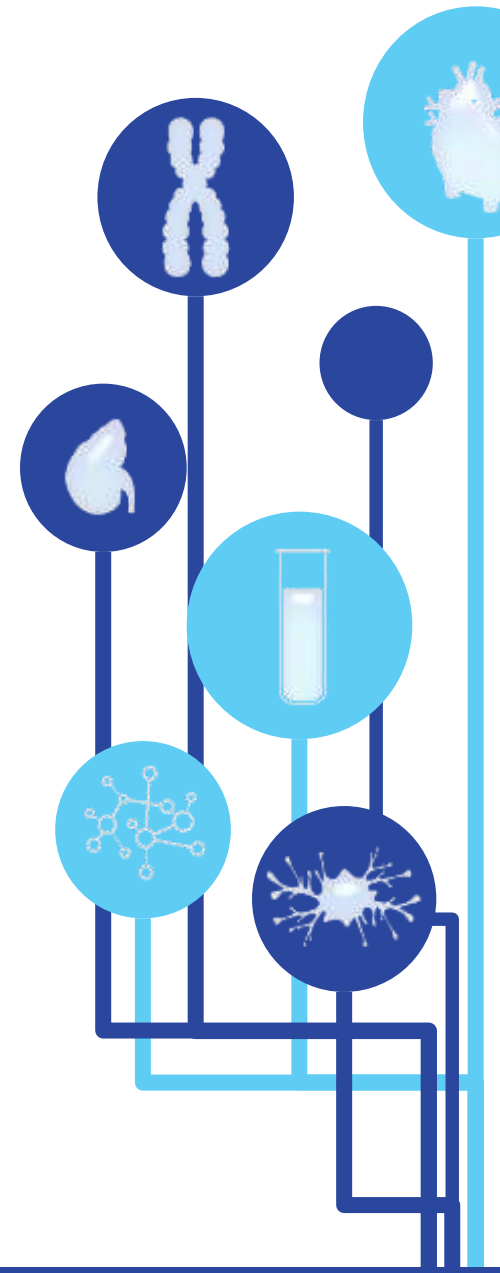
DMP Development Tool



DMPTool

Guidance and Resources for your Data Management Plan

<https://dmp.cdlib.org/>



DMPTool Highlights

- Step by step instructions
- Resource links
- Easy to edit & export
- Share via web link
 - PDF version
 - Only viewable to those w/URL (no edits)
- Institutional customization
 - Sample text
 - Policies
 - Contacts

Data Management: Data Management Planning

- Home
- Policies and Guidelines
- Data Management Planning**
- Data Repositories

What is a Data Management Plan?

A **DMP** is a formal document outlining how you will handle your data both **during** your research and **after** the project is completed.

[University of Pittsburgh guidelines \(PDF\)](#)

Sample DMP Checklists/Assessments

- Arizona State University
- Digital Curation Center (PDF)
- MIT Libraries
- Purdue University
- UNC: The Odum Institute

Why Create a DMP?

Many funding agencies are now requiring formal data management and/or sharing plans as part of their granting process. Each funding agency has specific requirements so be sure to check for your specific grant.

- National Institutes of Health
- National Science Foundation
- Requirements from additional agencies

However, there are many other reasons to create a DMP besides as a grant requirement, including:

- saving time
- simplifying research
- facilitating sharing & preservation
- decreasing chances of data loss
- extending life of your research

Elements of a DMP

Typical content may include (from the ICPSR):

- **Data Description:** nature, scope, and scale of generated/collected data
- **Access & Sharing:** how you intend to make your data available to others
- **Metadata:** descriptive standards about your data
- **Intellectual Property Rights:** data ownership
- **Ethics & Privacy:** informed consent and confidentiality issues
- **Format:** anticipated submission, distribution, and preservation formats
- **Archiving & Preservation:** how will you ensure this for the long term
- **Storage & Backup:** how and where will copies be stored
- **Security:** how will security be ensured
- **Responsibility:** who is the data steward
- **Existing Data:** is similar data available elsewhere
- **Selection & Retention Periods:** which data is retained and for how long
- **Audience:** who is likely to see and use this data
- **Data Organization:** version control and naming conventions
- **Quality Assurance:** are there standards to be met
- **Budget:** how will costs for archiving be paid
- **Legal Requirements:** are there any related to archiving and sharing

DMP Creation Tool

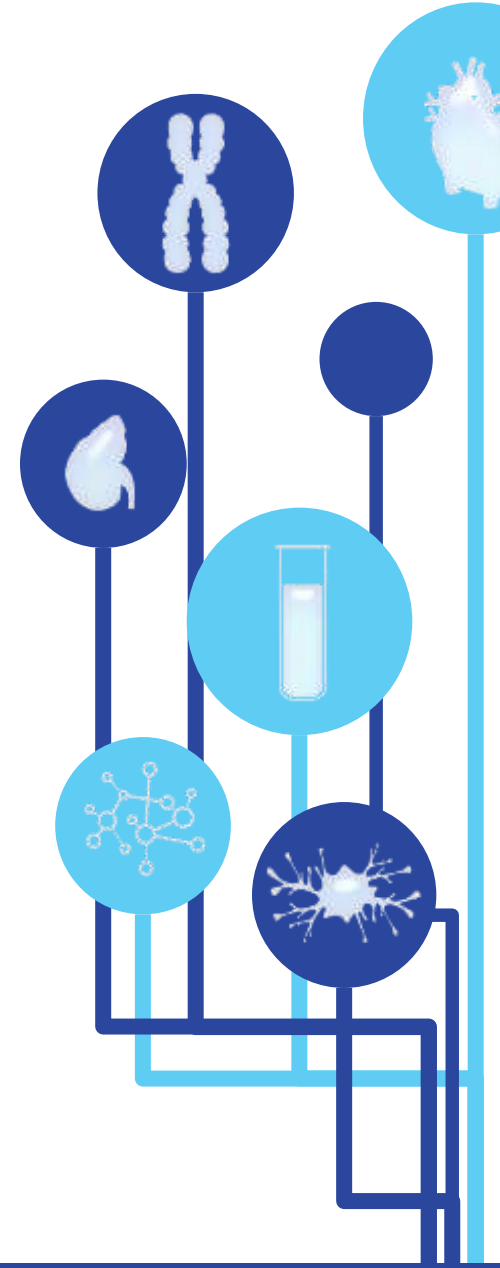


DMPTool helps researchers create, review, and share data management plans that meet institutional and funder requirements. To access, select "University of Pittsburgh" from the dropdown menu on the log in page.

DMP Examples

- University of Pittsburgh (NIH Genomic Data Sharing Policy) (PDF)
- University of Pittsburgh (NSF) (PDF)
- UC San Diego (NSF)
- University of Michigan (ICPSR)
- University of Minnesota (various)

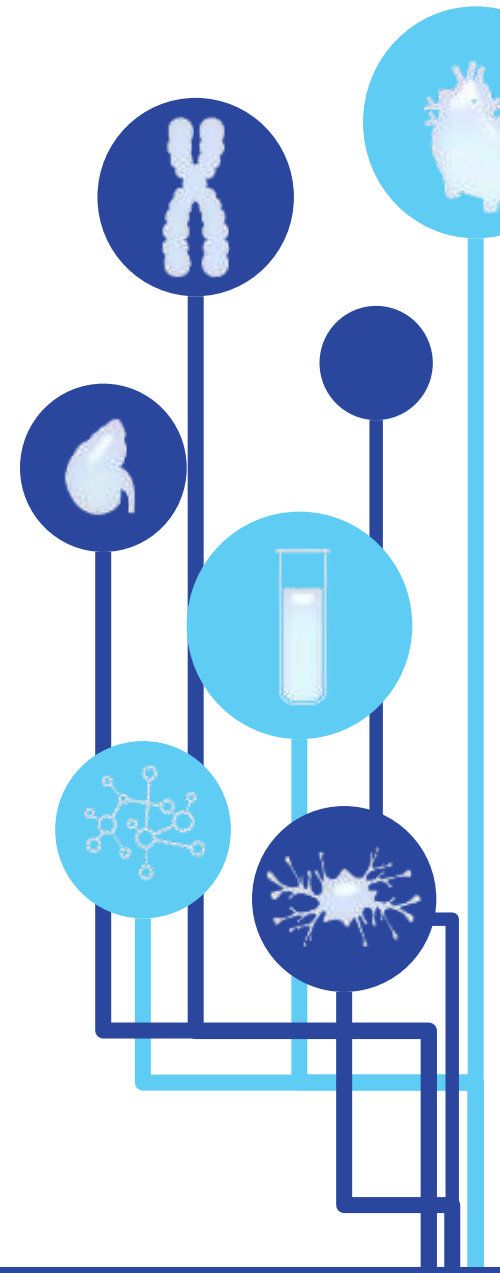
<http://hsls.libguides.com/datamanagement/DMP>



Electronic Lab Notebooks

CARRIE L IWEMA, PHD, MLS, AHIP

INFORMATION SPECIALIST IN MOLECULAR BIOLOGY



WHAT is an electronic lab notebook (ELN)?

A computer program designed to replace a paper lab notebook.

WHY use an ELN?

- **DOCUMENTATION** of experiments (as with paper versions)

AND

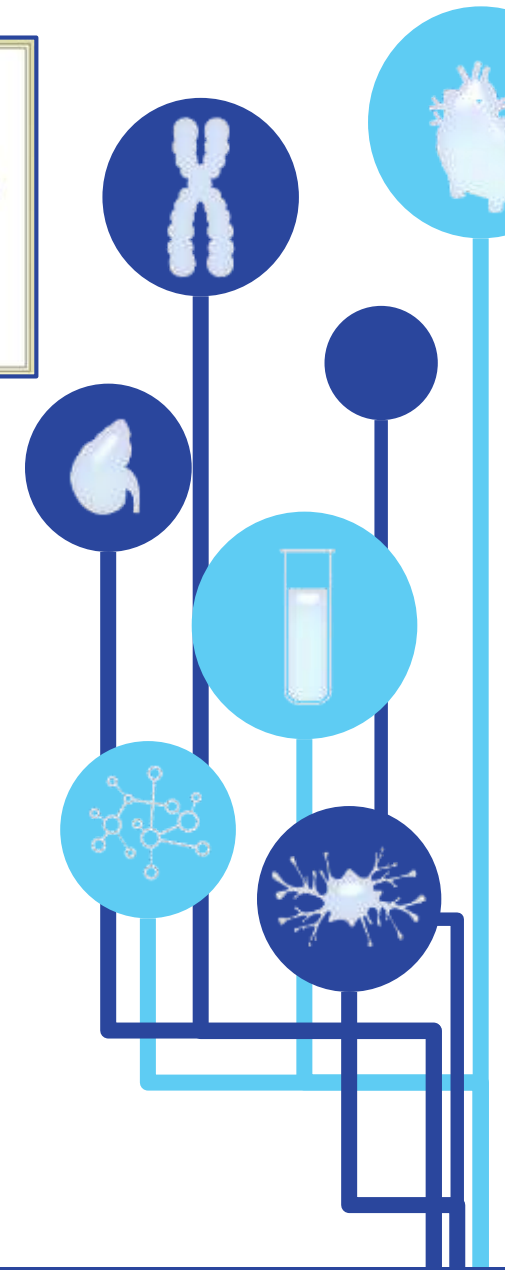
- **SEARCHABLE** notes
- **SHARE** notebooks
- **SAVE** more than numbers, protocols, taped-in read-outs
- **SECURE** backup
- **TRACEABLE** versions
- **LOCATION** independent (cloud-based, need Internet)

Pitt & ELN decision



Ditching paper for digital → 18 February 2016

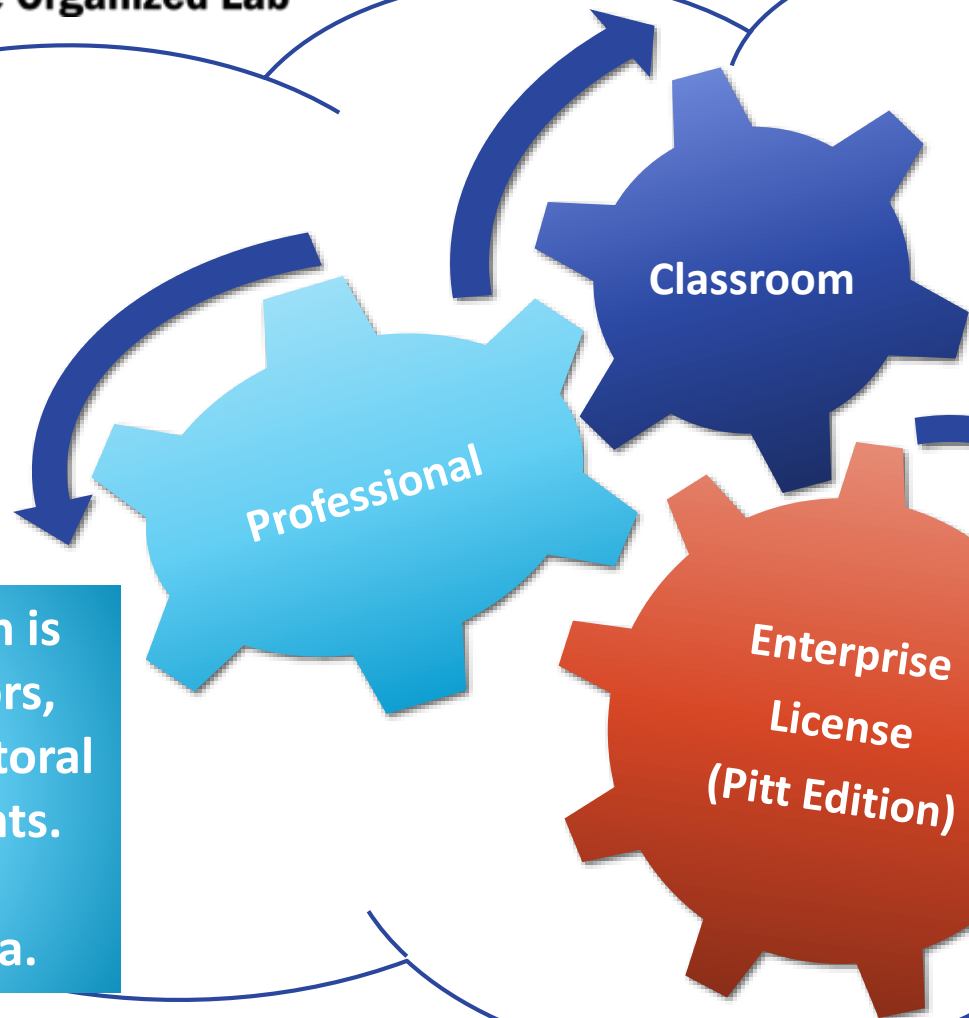
- Enterprise ELN (i.e., free for Pitt researchers)
- Valuable for research data management
- Surveyed faculty / research administrators / technology staff
 - easy to use, flexible, accessible
 - automate common tasks
 - fix processing trouble spots
 - enhance not change existing workflow
- Addresses Pitt's legal, regulatory, QA, records management, collaboration, & centralized reporting needs



So what ELN was chosen???



- Proof-of-concept trial period
- Flexible integration
 - Microsoft Office Windows
 - Google Docs
 - ChemDoodle
 - PubMed
 - GraphPad Prism
- Customizable widgets
- Unlimited storage
- Mobile versions for Android & iOS
- Professional & Classroom editions



The classroom edition is for instructors, TA's, lab coordinators, and students. This edition is focused on increasing student completion rate for lab courses.

The professional edition is for principal investigators, lab managers, post doctoral fellows and grad students. Store, organize, share laboratory research data.

The enterprise license provides the University with unlimited users, unlimited storage, customer support, and most favored pricing.

Access to LabArchives — www.labarchives.com

#1 Sign in

#2 Go to your institution's Login

#3 Submit

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Chance Favors the Organized Lab

Professional Edition Classroom Edition Enterprise License Support

We are an Institution.

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Organize and manage all your laboratory data safely.

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Pitt Passport

Username
Enter username

Password
Password

Submit

Forgot password? | Need Help?

LabArchives Features



Replace the Paper Notebook to better monitor, engage and evaluate your teams' lab work



Easily import and access digital experimental data captured from original lab machines produced by hardware/software



Interconnect all your lab data and image files to your observations and notes



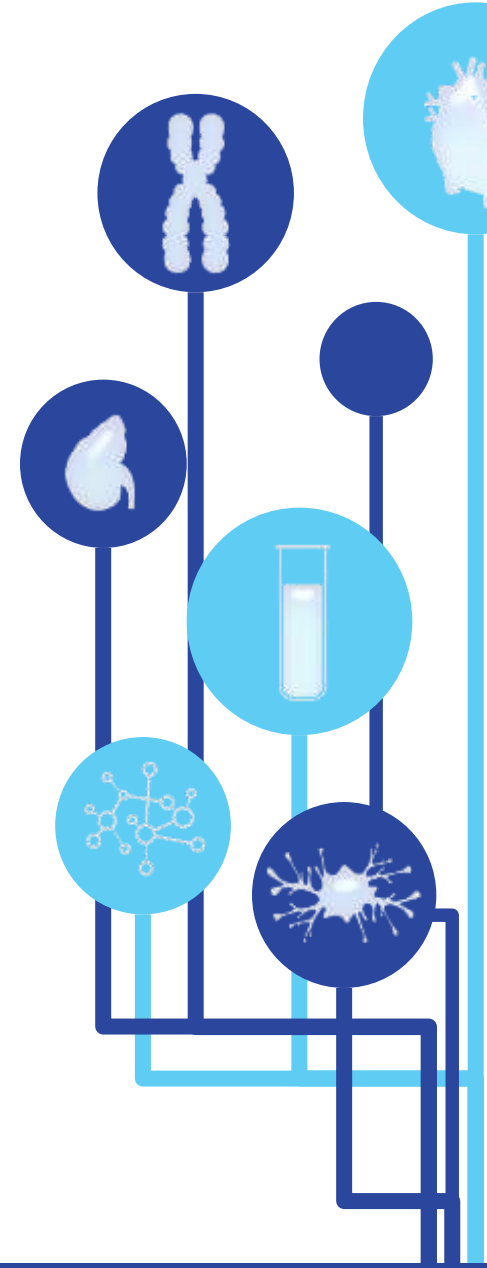
Lab team can easily upload images and videos directly to their notebook while conducting lab experiments



Notebook user access can be managed to allow access rights to certain notebooks, pages and/or entries



Complete audit control - tracks and stores ALL revisions, by users, for every entry - NO entry can be deleted - Protect IP

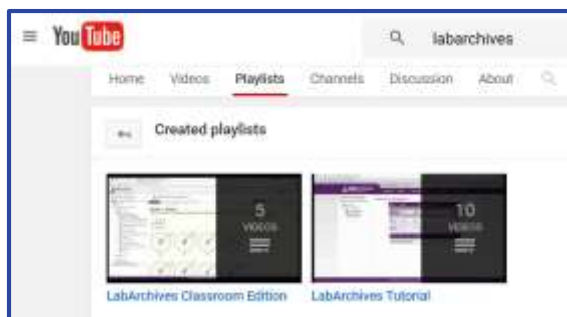


LabArchives — Resources



The screenshot shows the top navigation bar of the LabArchives website with links for Professional Edition, Classroom Edition, Enterprise License, Support, and Sign in. The main content area features the LabArchives logo and the tagline "Chance Favors the Organized Lab". Below this, a heading reads "Learn how ELNs can change the way you collaborate." followed by a paragraph: "In these personalized 30 minute training webinars we highlight the key features relevant to your use in a research or teaching lab, provide tips on tailoring a notebook to your specific needs, plus time to ask questions in order to save you time and get started using the platform." At the bottom, there are links for "Learn more", "Professional Edition", "Classroom Edition", "TA Training", and "Widgets".

www.labarchives.com/training-webinars/



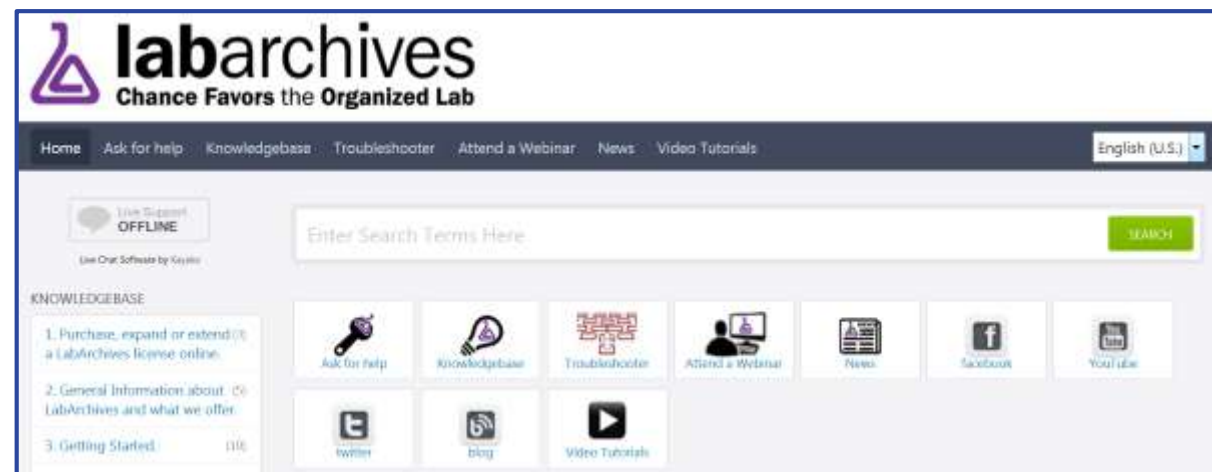
The screenshot shows a YouTube channel page for LabArchives. The page displays the channel name "LabArchives" and a search bar. Below the navigation tabs, there is a section titled "Created playlists" which includes two video thumbnails: "LabArchives Classroom Edition" (5 videos) and "LabArchives Tutorial" (10 videos).

www.youtube.com/user/LabArchives



The screenshot shows a purple header for a "QUICK START GUIDE FOR NEW USERS". It features the LabArchives logo and tagline. Below the header, the address "1915 Aston Ave., Carlsbad, CA 92008 U.S.A. / +1.760.579.0342 / www.labarchives.com" is displayed.

www.labarchives.com/newsletter/images/LA_Quick_Start_Guide_NewUser.pdf



The screenshot shows the LabArchives Knowledgebase website. The header includes the LabArchives logo and tagline, along with navigation links for Home, Ask for help, Knowledgebase, Troubleshooter, Attend a Webinar, News, and Video Tutorials. A search bar is prominently displayed. Below the search bar, there is a "KNOWLEDGEBASE" section with three numbered items: "1. Purchase, expand or extend a LabArchives license online.", "2. General Information about LabArchives and what we offer.", and "3. Getting Started". To the right, there are icons for various services and social media links: Ask for help, Knowledgebase, Troubleshooter, Attend a Webinar, News, Facebook, YouTube, Twitter, and Blog.

<http://labarchives.kayako.com/>

<http://technology.pitt.edu/service/electronic-lab-notebooks>



Electronic Lab Notebooks

Share data within your lab or with collaborators around the globe.

Access your data securely from any device, even while traveling.

Learn more: technology.pitt.edu/ELN

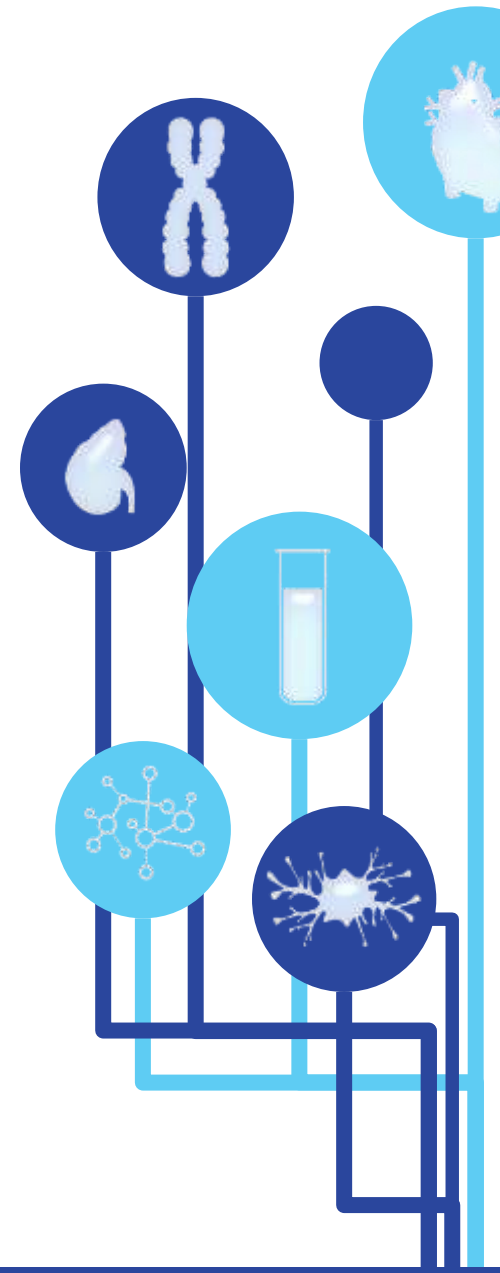
 Pitt | **Information Technology**
COMPUTING SERVICES AND SYSTEMS DEVELOPMENT

CSSD: Brian Stengel & Jay Graham

- Overview
- Benefits
- Access Info
- FAQ
- Restrictions
- Getting Started & Help

HSLS Systematic Review Program

MARY LOU KLEM, PHD, MLIS
HEALTH SCIENCES LIBRARY SYSTEM
KLEM@PITT.EDU



Systematic review

"A scientific investigation that focuses on a specific question and that uses explicit, planned scientific methods to identify, select, assess, and summarize the findings of similar but separate studies. “

Finding What Works in Health Care: Standards for Systematic Reviews, 2011; pg 21

Systematic review

"An SR must minimize bias in identifying, selecting, and interpreting evidence to be credible. "

Finding What Works in Health Care: Standards for Systematic Reviews, 2011; pg 28

Steps to a well-designed SR

1. Organize the review team and formulate a research question

- *Librarian as co-investigator*
- *Assist in question development and refinement*
- *Search for existing SRs on your topic*

Steps to a well-designed SR

1. Organize the review team and formulate a research question

2. **Develop the review protocol**

- *Provide you with guidelines on protocol development*
- *Develop a proposed search strategy*
 - *Choose appropriate bibliographic databases*
 - *Identify grey literature resources*

Steps to a well-designed SR

1. Organize the review team and formulate a research question
2. Develop the review protocol
- 3. Systematically locate, screen, and select studies for review**
 - *Design and test comprehensive searches for each bibliographic database*
 - *Provide detailed documentation of all searches*
 - *Access to DistillerSR for Pitt faculty and students collaborating with a librarian*

Steps to a well-designed SR

1. Organize the review team and formulate a research question
2. Develop the review protocol
3. Systematically locate, screen, and select studies for review
- 4. Appraise the risk of bias in individual studies and extract data**
- 5. Synthesize findings and assess overall quality of body of evidence**
 - *Point you to resources on data extraction, data synthesis and quality appraisal*

Steps to a well-designed SR

1. Organize the review team and formulate a research question
2. Develop the review protocol
3. Systematically locate, screen, and select studies for review
4. Appraise the risk of bias in individual studies and extract data
5. Synthesize findings and assess overall quality of body of evidence
6. **Prepare a final report and undergo peer review**
 - *As a co-author:*
 - *Provide standards for reporting the completed systematic review (PRISMA)*
 - *Draft the literature search portion of the Methods section*
 - *Review the entire final manuscript*

Steps to a well-designed SR*

1. Organize the review team and formulate a research question
2. Develop the review protocol
3. Systematically locate, screen, and select studies for review
4. Appraise the risk of bias in individual studies and extract data
5. Synthesize findings and assess overall quality of body of evidence
6. Prepare a final report and undergo peer review

*Adapted from: Institute of Medicine (2011). *Finding What Works in Health Care: Standard for Systematic Reviews*. Washington DC: The National Academies Press.



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Thinking of doing a systematic review?

- [Getting Ready for a Systematic Review: Things to Consider](#)

What is a systematic review?

"A scientific investigation that focuses on methods to identify, select, assess, and summarize the findings of similar but separate studies. It may or may not include a quantitative synthesis of the results from separate studies (meta-analysis) depending on the available data." [IOM p 1.](#)

What do systematic reviews accomplish?

"Well-conducted systematic reviews systematically identify, select, assess, and synthesize the relevant body of research, and will help make clear what is known and not known about the potential benefits and harms of alternative drugs, devices, and other healthcare services. Thus, systematic reviews of

A systematic review primer

Umscheid CA. [A Primer on Performing Systematic Reviews and Meta-analyses.](#) *Clin Infect Dis.*

www.hslls.libguides.com/systematicreviews

outlines
hors

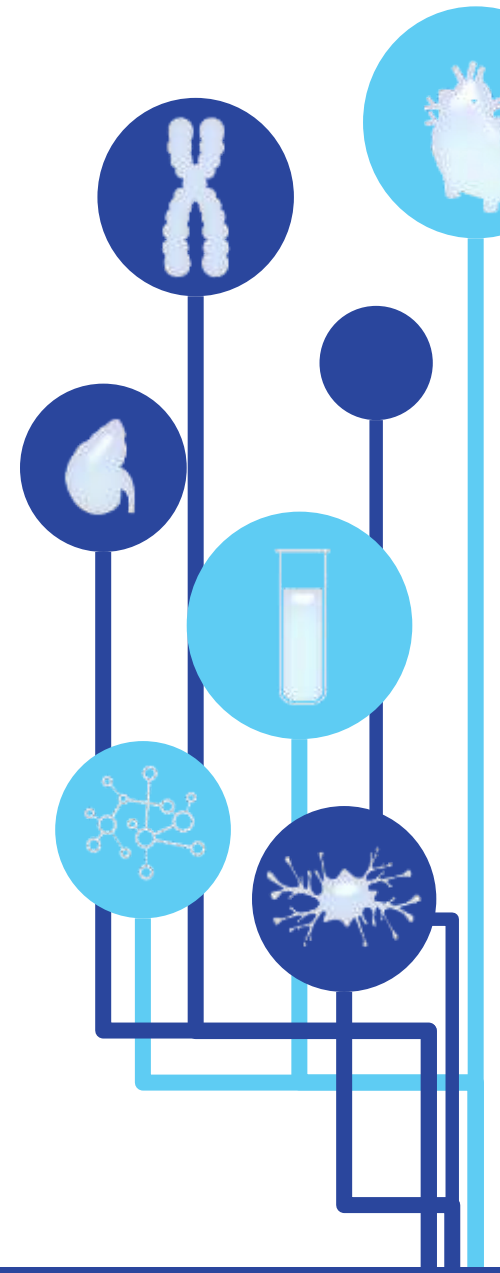
"... perform and report valid and actionable systematic reviews."

How long does it take to complete a systematic review?

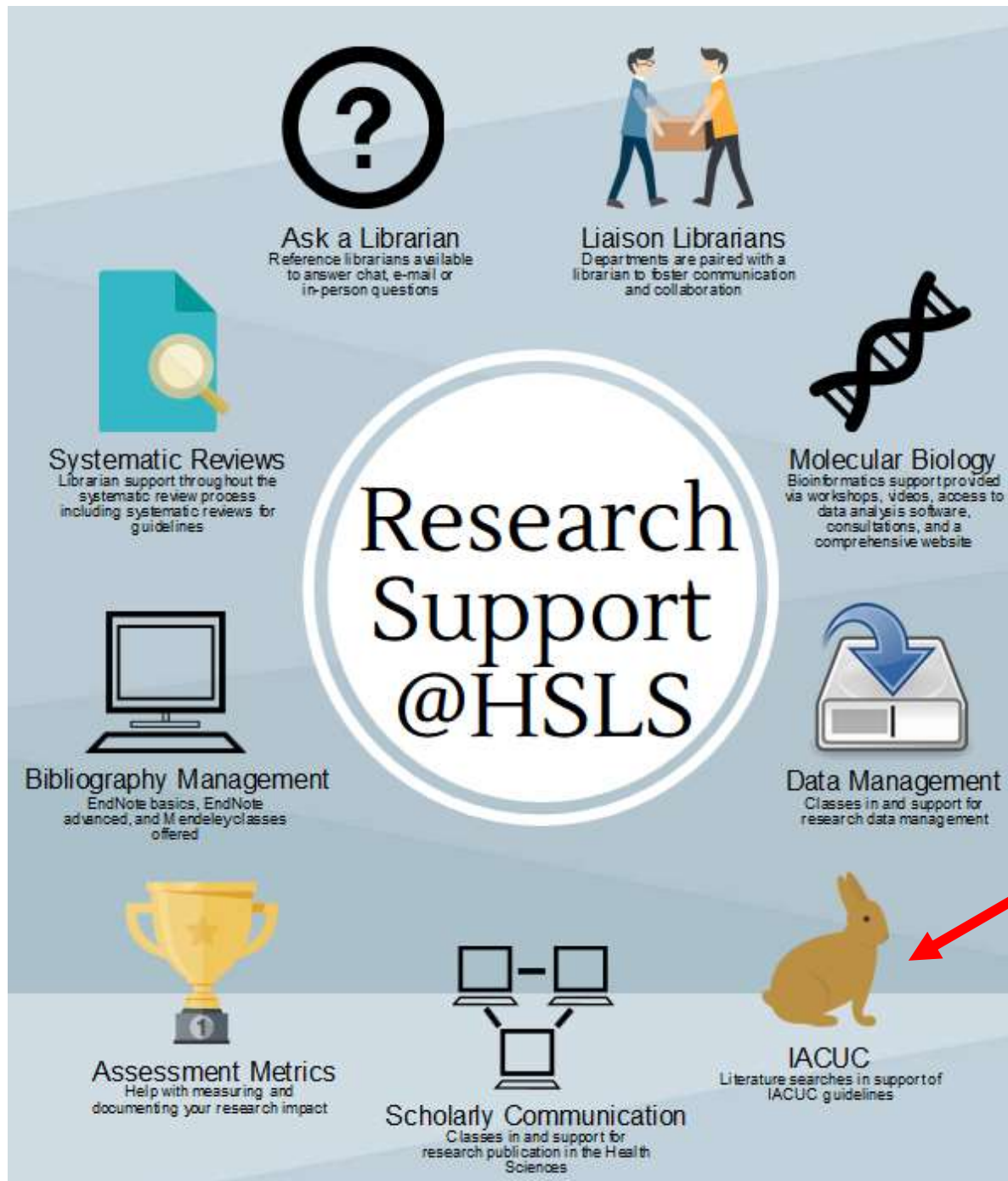
Planning and conducting a systematic review is a time intensive research project. Time to completion will vary depending on the scope of the review and the size and availability of the review team. A well-designed systematic review may take a year or more to complete.

HSLs IACUC Service

MELISSA RATAJESKI, MLIS, RLAT, AHIP
COORDINATOR OF DATA MANAGEMENT SERVICES
IACUC LIAISON



Research Support @ HSLs



Subject: **Consideration of Alternatives to Painful/Distressful
Procedures**

Policy #12

References: AWA Section 2143(a)(3)(B)
9 CFR, Part 2, Section 2.31 (d)(1)(ii)and (e); Section 2.32 (c)(2) and (5)(ii)
Principles of Humane Experimental Techniques, William Russell and Rex
Burch, 1959
Public Health Service Policy on Humane Care and Use of Laboratory
Animals (IV,C,5)
Animal Welfare Information Center

History: Replaces policies dated April 14, 1997, and June 21, 2000.

Justification: The Animal Welfare Act (AWA) regulations require principal investigators to consider alternatives to procedures that may cause more than momentary or slight pain or distress to the animals and provide a written narrative of the methods used and sources consulted to determine the availability of alternatives, including refinements, reductions, and replacements.

What Animal Models?

Required for research using warm-blooded species other than birds, mice of the genus *Mus*, and rats of the genus *Rattus*



What Pain Class?

Classification B: Animals being bred, conditioned, or held for use in teaching, testing, experiments, research, or surgery, but not yet used for such purposes.

Classification C: Animals upon which teaching, research, experiments, or tests will be conducted involving no pain, no distress, or no use of pain-relieving drugs. Euthanasia must precede any invasive procedure (i.e. tissue harvesting) to be in Classification C.

Classification D: Animals upon which experiments, teaching, research, surgery, or tests will be conducted involving accompanying pain or distress to the animals and for which appropriate anesthetic, analgesic, or tranquilizing drugs will be used. Acute or terminal surgery is considered a painful procedure, which is alleviated by anesthesia.

Classification E: Animals upon which teaching, experiments, research, surgery (survival or non-survival), or tests will be conducted involving accompanying pain or distress to the animals and for which the use of appropriate anesthetic, analgesic, or tranquilizing drugs will adversely affect the procedures, results, or interpretation of the teaching, research, experiments, surgery, or tests and/or animals upon which teaching, experiments, research, surgery (survival or non-survival), or tests will be conducted resulting in either death as an endpoint or permanent physiological impairment that may lead to chronic pain or distress.

How?

The USDA considers the performance of database searches and analysis of articles as an effective method for demonstrating compliance with this requirement

“You must provide written narratives that will convince the IACUC reviewers you have made a good faith effort to substantively address each of these three issues”

1. You have **refined** potential pain/distress producing methods as much as possible
2. You have considered **replacing** with other techniques (e.g. in vitro techniques, computer simulations, lower animal species, etc.)
3. You have **reduced** animal numbers as much as possible without jeopardizing statistical validity

Documentation Required

- Name of database/s searched
- Date of the search
- Time period covered
- Search strategy used

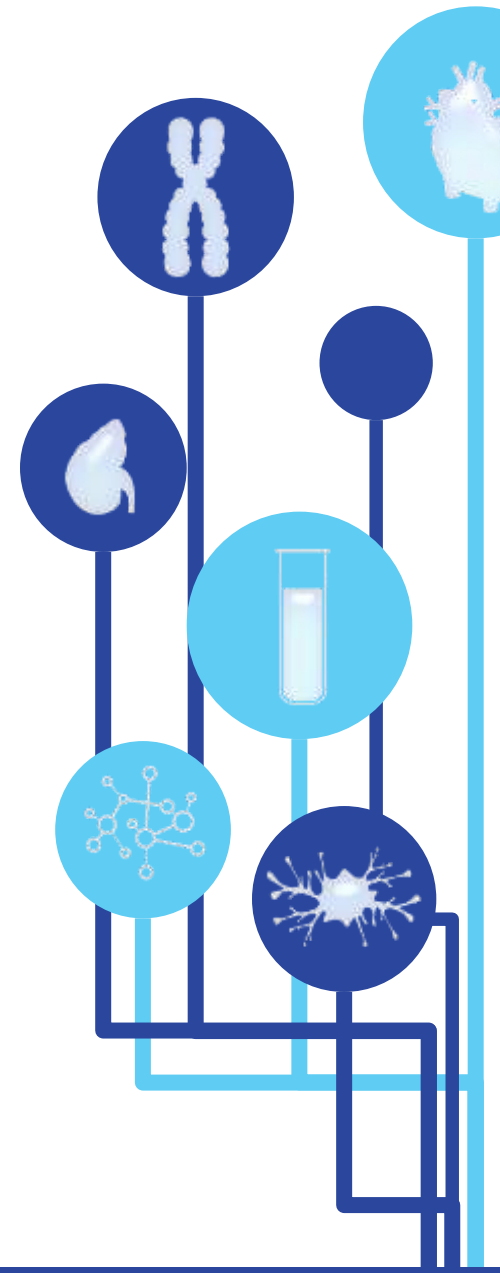
#	Searches	Results
1	macaca/ or macaca mulatta/	51856
2	(monkey\$ or non-human primate\$ or nonhuman primate\$).mp.	95337
3	1 or 2	111179
4	((induc\$ or experimental\$) adj3 tuberculosis).mp.	3929
5	Blood Specimen Collection/mt [Methods]	4369
6	Bronchoalveolar Lavage/	2987
7	4 or 5 or 6	11283
8	3 and 7	77
9	limit 8 to (english language and yr="2006 -Current")	34
10	*Analgesia/ or Pain/pc [Prevention & Control]	23232
11	(Zolazepam/ and Tiletamine/) or telazol.mp.	281
12	10 or 11	23508
13	3 and 12	71
14	limit 13 to (english language and yr="2006 -Current")	13

Consult a Librarian

- Suggest terminology
- Provide database instruction
- Complete searches with your input

Melissa Ratajeski
mar@pitt.edu
412-648-1971

Questions?



www.hsls.pitt.edu/bringing-rigor-and-reproducibility-research