

Building a community of practice: Situating data management in the transition to electronic lab notebooks



Electronic Lab Notebook



Materials Management



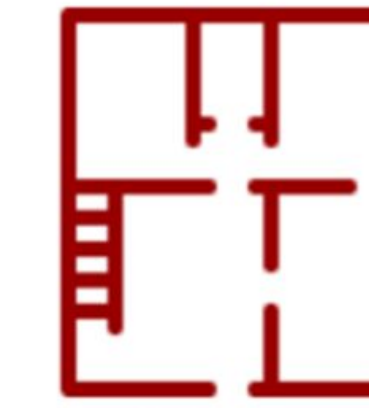
Lab Assets



Data Management Plans



Freezer & Fridge Management



Space Management



INDIANA UNIVERSITY
SCHOOL OF MEDICINE
Ruth Lilly Medical Library



IUPUI UNIVERSITY LIBRARY
Center for Digital Scholarship

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Indiana University School of Medicine (IUSM)

As the largest School of Medicine in the United States, IUSM has an incoming class of about 360 medical students with over 2,700 faculty members across 9 campuses in the state of Indiana. The majority of IUSM faculty, staff, and students are located in Indianapolis on the Indiana University Purdue University Indianapolis (IUPUI) campus.

BACKGROUND

This initiative originated in the IUSM Research Affairs office. The initial focus was on the efficient use of lab space. The conversation evolved to include other related areas of focus, such as information and materials management. The medical library was identified as a partner and eagerly accepted the responsibility for the information management components of this work - the electronic lab notebook and data management plan pieces.

KEY DRIVERS

- Prevent retractions
- Guard against research misconduct
- Prevent repayments to funders due to misconduct findings

EARLY ADOPTERS

- 16 labs, 12 departments
 - Basic science labs in disciplines such as: Pediatrics, Medical & Molecular Genetics, Microbiology & Immunology, Psychiatry, Ophthalmology, and Pharmacology & Toxicology
- 67 individuals (PI, Research Associates, Lab Managers, Post-docs, Research Assistants)

TIMEFRAME

- 2018-Jan** Begin conversations with consultants
- 2018-May** Begin planning for soft launch of ELN + DMP
- 2018-Sep** Soft launch of ELN + DMP begins
- 2018-Dec** Planning for rollout of ELN + DMP
- 2019-Apr** Rollout begins for optional ELN + required DMP

Soft Launch: Goals

1. Develop a training process and materials to inform 2019 rollout of electronic lab notebook (ELN) and data management plans (DMPs)
2. Test and refine the operational Data Management Plan template with early adopters of the ELN
3. Gather information to guide rollout:
 - Baseline level of research data management practices related to storage, documentation, and personnel
 - Pain points and challenges of researchers related to research workflows, information retrieval, data management, personnel
 - Support, resource, and infrastructure needs of IUSM researchers

Support for early adopters

Step 1 - gathered information about current practices, pain points, and cyberinfrastructure from each lab

Step 2 - identified priority areas where each lab could focus data management efforts

Step 3 - each lab completed ELN training

Step 4 - followed up with data management planning sessions to develop DMPs; distributed a survey assessing data maturity in lab

Soft Launch: Initial Outcomes

Developed recommended practices for ELN at IUSM

Identified core elements of “operational” DMP:

- Onboarding & exit procedures
- Roles & responsibilities for all team members
- Coordinated storage plan across file servers & ELN
- Folder structure & file naming conventions
- Specimen or tissue management

Gathered information about the scope of research - number of awards and PI - to guide rollout

Information Management Advisory Board convened to provide ongoing guidance and support

Considerations for Rollout

Getting people to respond to surveys and/or complete templates is a perpetual challenge

Variation in willingness and tolerance of PI and Lab Managers to dictate specific practices to their teams

High demand for ELN page templates, DMP examples, and boilerplate that are not available or commonly shared

What is a community of practice?

“...groups of people informally bound together by shared expertise and passion for a joint enterprise” (Wegner & Snyder, 2002)

Domain - a common sense of identity, with well-defined boundaries (the reason for being) (Wegner & Snyder, 2002)

Community - a group of people who interact, learn together, and build relationships that lead to a sense of belonging and mutual commitment (Wegner & Snyder, 2002)

Practice - a set of frameworks, ideas, tools, information, styles, language, stories and documents that community members share (Wegner & Snyder, 2002)

Reference
Wenger, E., McDermott, R. A., & Snyder, W. (2002). *Cultivating communities of practice: a guide to managing knowledge*. Boston, Mass: Harvard Business School Press.

How to support communities of practice?

Shared competence - Help nascent groups to identify and describe common problems that align with important organizational issues so that effective CoP can be established and supported; help to develop strategic intent (helping, best-practice, knowledge-stewarding, foster innovation)

Sponsor - Provide CoP with sponsorship by leaders to assist navigating obstacles, gaining access to resources, infrastructure, and time

Support communities - Advocate for space, time, and resources to foster regular, sustained interactions to build relationships and provide continuity

Assess and reward - Use methods for assessing the value of CoP that suit the potential indirect and delayed outcomes; listen to and gather members’ stories in a systematic way

Lingering Questions

What is the role of the library in fostering and sustaining communities of practice related to research data management and use of ELN?

What is the role of the Information Management Advisory Board in fostering and sustaining communities of practice related to research data management and use of ELN?

What types of support are needed for these communities of practice to be successful?

What types of incentives and rewards to participate will be meaningful to PI? Lab Managers? Other research personnel?

How do we measure the impact of communities of practice on research practices within the Indiana University School of Medicine?