

# Developing an Affordable Lab Manager Database System

The Pennsylvania State University, College of Medicine, Hershey, PA

## INTRODUCTION

The establishment of a concise data informational system for use in laboratory settings has become essential in all aspects of the research laboratory.

**Lab Manager** is a database repository designed to maintain and consolidate all aspects of sound laboratory management in one useful tool.

The system was developed mutually by the College of Medicine Research Quality Assurance (RQA) and Research IT teams.

## METHODS/GOALS

The system was developed in several phases throughout the last three years including:

- placement of the standardized Biosafety Level Lab Survey in the specific lab associated with the survey
- loading of the established lab equipment inventory and service records directly to the specific laboratory for proper tracking
- updating and placement of a lab placard template to the specific lab area emphasizing the proper emergency lab contacts

The ultimate goal is the ability to link all appropriate lab compliance areas on a simple lab specific platform.

## BACKGROUND

The Penn State University College of Medicine in Hershey, PA, established the Research Quality Assurance Office five years ago to establish a structured relationship between laboratory Principal Investigators (PI's), Compliance areas, and Administration.

A Biosafety Specific Lab Survey and Asset Management system was developed over this period that evolved into a tool that kept track of all Biosafety, Institutional Animal Care and Use Committee (IACUC), and Institutional Review Board (IRB) issues including: SOP's, protocol development, lab training, equipment service, and laboratory emergency contacts.

The **Lab Manager** database system was developed in-house to provide labs with a "hands-on" system available to laboratory PI's and staff for the daily operation of the laboratory.

## LAB MANAGER VIEWS

The screenshots show the Lab Manager interface with three main views:

- Buildings Listing:** A table listing various buildings such as Animal Resources Facility, Biomedical Research, Cancer Institute, and Hershey Center for Applied Research.
- Equipment Listing:** A search interface for equipment with filters for categories like Biosafety Cabinets, Incubators, and Freezers. It shows "No Search Conditions Selected".
- College of Medicine - C4605A:** A detailed view for a specific lab, including general information (Principal Investigator, Emergency Contact), placard information (Flammable Liquids, Toxic Chemicals, etc.), and a table of equipment with columns for Type, Brand, Model, Serial Number, and Owner.

## LAB MANAGER USER GUIDE

The user guide screenshots provide instructions on how to use the system:

- Home Page:** Explains the purpose of the system and how to navigate to specific lab pages.
- Equipment Listing:** Provides detailed instructions on how to search for equipment, including tips on using filters and the search button.

## RESULTS

**Lab Manager** has proven to be a practical resource and an effective Laboratory Management tool at all levels of the campus including:

### College Administration

(develops reports and reference information on)

- capital equipment replacement schedules
- specific research being performed in college labs
- chemical and radiation use by specific labs and training compliance by all laboratory personnel

### Principal Investigators

- utilize to seek out potential collaborators for research grant submissions
- utilize to assist in identifying items such as cell lines and research products that may be available internally rather than having to wait to obtain product from outside labs or companies

### Facilities

- A comprehensive listing of all essential lab equipment provides critical information needed to rebuild lab infrastructure in the event of catastrophic events.

### Business/Purchasing Office

- The ability to acquire appropriate information when developing the RFP (Request for Proposal) that insures effective laboratory service cost control.

### Compliance

- provides proper documentation of:
  - laboratory approvals
  - general lab safety, blood borne pathogen, lab specific, and biosafety training dates
  - Preventative Maintenance, certification and calibration records ensuring lab equipment is maintained according to established standards and specifications
  - CDC, NIH, OSHA required lab specific emergency plans

### Controller's Office

- Assisted in reducing overall operating costs by ten percent across the College of Medicine campus with the addition of accurate inventory information.

## CONCLUSIONS

-The ability to manage all information within a laboratory is essential for all of our Principal Investigators.

-The availability of accurate, concise information is located in the **Lab Manager** database.

-The availability and use of **Lab Manager** enhances university funding possibilities in a time where funding has been decreased at all levels.

-In addition, **Lab Manager** enables the RQA (Research Quality Assurance) staff to manage resources to ensure safety and reduce institutional risk by providing a means to more efficiently track compliance and identify specific areas of improvement within all of our campus research labs.

## ACKNOWLEDGMENTS

Penn State College of Medicine Administration:

- Sheila L. Vrana, PhD – Interim Vice Dean for Research
- Wayne W. Zolko – Associate Vice President for Finance and Business, Controller
- Vincent A. Falvo – Associate Controller
- Philemon M. Canakis – Research Informatics Team Lead

## CONTACTS

- William Pogash** Director, Research Quality Assurance  
Penn State College of Medicine  
Phone – (717) 531-3968  
Email – wpogash@hmc.psu.edu
- Raymond Scheetz** Manager of Research Biosafety  
Institutional Biosafety Officer  
Penn State College of Medicine  
Phone – (717) 531-5573  
Email – rscheetz@hmc.psu.edu
- Robinn Moyer** Administrative Assistant  
Office of Research Affairs  
Penn State College of Medicine  
Phone – (717) 531-4196  
Email – rmoyer3@hmc.psu.edu