**GUIDELINES FOR THE STORAGE OF RESEARCH DATA**

**Preamble**

The purpose of these guidelines is to provide a framework of best practices for the safe, accessible, accountable, and enduring storage of clinical and bench research data.  In keeping with our judgement that the finer operational details of data storage should be determined by each individual principal investigator and investigative team, these guidelines are intentionally broad in character.    We are especially mindful of the importance of addressing the parameters of data storage during personnel transitions at entry and exit. Further, we view these guidelines as a *“living document”,* understanding that they may require periodic updating as storage technology and the types of data we generate evolve.

In recognition of the specialized need for storage of publication-related data, we created a dedicated archive whose purpose is to permanently house all relevant files, figures, and tables that are linked to individual publications.  The publication archive is situated on the Pulmonary Center Y drive (“*Pulmonary Center - Archive”*). Access is granted upon request through the Center administrative office for all PIs. Upon publication acceptance, it is the responsibility of PIs and lead authors to transfer a zip file containing the final manuscript and all related data. The file should contain all figures starting with the original image and all subsequent iterations that led to the final published figure. The files should be named to indicate the authors, date of acceptance/publication, and journal.

**CLINICAL DATA STORAGE GUIDELINES**

* **Physical Storage**
  + Funding source and IRB regulations must be followed.
  + Paper forms (e.g. consent documents and surveys) should be converted to electronic form, if possible.
  + PI must provide clear guidelines on the manner in which data are stored (e.g. personal computers, BU desktops, networked drives etc.).
* **Backup**
  + Funding source and IRB regulations must be followed.
  + PI will have clear guidelines for what information is stored in backups.
  + A back up of data should be maintained on a BU managed system.

* **Content**
  + Funding source and IRB regulations must be followed.
  + PI will determine how daily work-load is maintained and annotated.
  + Original analyses, images, and databases should be maintained long-term without alternations (‘save as’ instead of ‘save’).
* **Duration** 
  + Funding source and IRB regulations must be followed.
  + De-identified data should be maintained in backup format for as long as possible.
* **Personnel Transitions**
  + Initial meeting with PI should define guidelines for data management and storage.

Exit meeting with PI should include pass-off transition of all research-related data in some format (e.g. zip file, USB drive, DVD, etc.) with clear instructions on how data will be stored.

* + A record will be maintained as to who has used each computer (via BU IT Tag) and for which dates. Hard drives need not be wiped when personnel leave but confidential data (e.g. data with identifiers) should be removed and transitioned back to the PI.

**BENCH RESEARCH DATA STORAGE GUIDELINES**

• **Physical Storage**

o All data should be stored in lab notebooks and/or computer files in a location that is safe and easily accessible by current and future laboratory members. Digital archives should be maintained in permanent locations whereas portable devices (e.g., laptops and flash drives) are discouraged for use as a long-term storage medium.

• **Backup**

o Digital data should be retained in no less than two permanent locations such as a

BU desktop computer and (preferably) a BU secure network drive (Y drive).

• **Content**

o Records should contain experimental information and raw data in as much detail as reasonably possible, and should be sufficient to reproduce all experimental conditions. Content should include but is not limited to the following: experimental design, materials used, raw data, and initial interpretations/conclusions. It is expected that entries are made in a timely manner.

• **Duration of storage**

o All data should be stored as long as reasonably possible, but at a minimum, duration must be compliant with guidelines specified by funding source.

**• Personnel transitions**

o Expectations and details of data storage and research-related reagents/ materials/information should be clarified when new staff members enter the laboratory and should be verified when staff members relinquish their positions and leave the laboratory. To ensure smooth transitions at exit, it is recommended that a formalized check-out procedure take place.

**Prepared by the Pulmonary Center Committee on Data Storage:** Alan Fine, Gabriela Fernandez, Lisa Gigalis, Anuj Mehta, Timothy Norman, Maria Catalina Perdomo, Lee Quinton, Nicole Stauffer, and Gregory Wasserman.