NATIONAL HIGH MAGNETIC FIELD LABORATORY

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National High Magnetic Field Laboratory
Data Management Plan
(Adopted 8/22/2011, revised 1/24/2018)

The National High Magnetic Field Laboratory (MagLab) provides seven high magnetic field user facilities across the three campuses of the MagLab at Florida State University, the University of Florida, and Los Alamos National Laboratory. These user facilities are the DC Field Facility, Pulsed Field Facility, High B/T Facility; and the Nuclear Magnetic Resonance (NMR), Electron Magnetic Resonance (EMR), Ion Cyclotron Resonance (ICR), and Advanced Magnetic Resonance Imaging and Spectroscopy (AMRIS) Facilities. Each user facility is built around unique magnetic-field facilities and world-leading scientific expertise serving a multi- and inter-disciplinary scientific research community. Though each facility has a unique environment and tradition of data management, this policy is applied in a consistent way across sites. Our data management practices are driven by our user community and the standards of the associated funding agencies. The policy is reviewed annually to stay current with user demands and changes in technology.

Data Types

Our user facilities data consists primarily of electronic records of measurements taken during a scheduled experiment. Data from a facility can be generated on either a facility computer system, visiting user's computer, or special data acquisition systems provided by a user. These electronic records may or may not exist on a facility computer during the course of an experiment.

The MagLab scientific staff develops, maintains and updates many software routines for analysis of data tailored to the different needs of the user facilities.

Data Standards

The standards for data vary across user facilities as required by the experimental methods and equipment used. The most open standard for the DC Magnet facility is for ASCII text files in column format. High data rate experiments such as the Pulsed Field Facility necessitate the use of open binary formats or custom file formats developed by MagLab personnel. The ICR facility also stores data in a MagLab-developed format. For NMR experiments, data formats are dictated by the research equipment used, such as the vendor-specific format for NMR data collected by Bruker spectrometers. Magnetic Resonance Imaging data from our AMRIS facility is in DICOM images for OSIRIX viewer. Data is made available to researchers through the use of the current picture archiving and communication systems (PACS) with dedicated computers on a local high speed network.

All MagLab-developed formats are open. Specifications and software to read and analyze data in these formats is available to the scientific community for free or at nominal reproduction costs. These software tools are provided on laboratory web sites and software storage areas.

Meta-data can be recorded with the raw data files at the option of the researchers. Other meta-data is recorded in the users written notebooks, computer files, or other media at the option of the principal investigator. Management of the meta-data associated with standard data files is exclusively the purview of the principal investigator.

Data Access Policies

The principal investigator in charge of a user experiment has exclusive rights to all data related to that experiment, including raw data and meta-data. Access to experiment data is granted only to individuals designated by the principal investigator. The principal investigator retains full control of the use of the data, including its publication in refereed literature. The principal investigator is responsible for adhering to the policies and procedures of their funding agency.

The MagLab's data management and sharing practices align with the policy applied to NSF and NIH single investigator grants, as the MagLab user community consists primarily of researchers supported by these types of awards.

Data Re-use Policies

Data is not reused nor are any data-mining operations performed by the MagLab on historical user data. Once data is collected and provided to the user, it is solely the property of that particular user. Any reuse within their own program (external to MagLab) is strictly at their discretion. Users are encouraged to make their research findings and final data readily available for research purposes to qualified individuals within the scientific community by publishing the results in peer-reviewed journals and by presenting the findings at conferences. In addition, the MagLab requires all users to submit a one-page annual research report on each project for inclusion in the MagLab Annual Report. These reports are available on the MagLab web site and serve to illustrate the quantity, quality and breadth of research activities at the lab. Each year, a subset of these reports are chosen as highlights to be published in a Special Issue of MagLab Reports, the MagLab's quarterly magazine that is widely distributed to scientists, students, and granting agencies.

Users are reminded to follow all regulations of the NSF and NIH data sharing policies by posting of this policy (http://grants.nih.gov/grants/policy/data_sharing) on the AMRIS webpage (http://amris.mbi.ufl.edu) as well as via periodic emails to the user group. (see NIH Grants Policy Statement: http://grants.nih.gov/policy/nihgps/index.htm and NSF Award and Administration Guide http://www.nsf.gov/pubs/policydocs/pappguide/nsf11001/aag_6.jsp). When appropriate, users are encouraged to deposit standard data formats in existing repositories, such as the "Protein Data Bank" and "Biological Magnetic Resonance Data Bank".

Data Archiving

Data collected and stored on a MagLab facility computer system are backed-up to local hard drives, tape storage or other common backup media. Data archiving is primarily the responsibility of the PI at their home institutions, but archived user data are retained at the MagLab facility for a period ranging from six months to two years after collection at the MagLab. This retention policy is reviewed annually and may be revised at the request of our user community, or in response to the continually evolving capabilities and reduction in costs of data storage. Archived data will only be made available to individuals at the request of the principal investigator of the project.

Users may transfer their data to portable storage devices or other computers, both local and remote, in accordance with local facility administration policies. Upon request user data will be archived on optical or other similarly permanent media and provided to the user.