



HIGH B/T FACILITY

(Operated by the University of Florida)

USERS MANUAL

Mission: The MagLab High B/T Facility at UF offers Users a safe, comfortable atmosphere for performing research in high magnetic fields and at ultralow temperatures with an ultra-quiet electromagnetic interference environment.



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Mailing/shipping address for *MagLab High B/T Facility*:

c/o (person to take receipt of package)
Department of Physics
University of Florida
2001 Museum Road
Gainesville, FL 32611-8440

Physical address for *MagLab High B/T Facility*:

Microkelvin Laboratory (Building #99)
1819 Stadium Road
Gainesville FL, 32611-8440

Safety and Contact Information

Although safety issues and best operating procedures will be discussed at the appropriate places in this document, this section summarizes important reference material and contact information.

Contact Information

Director: Mark Meisel, Tel: 352-392-8867, Email: meisel@ufl.edu

Microkelvin Lab Manager and Microkelvin/Williamson Hall Safety Person:

Chao Huan, Tel: 352-846-0823, Email: huan@ufl.edu

NPB 15, High Bay Convergence Lab (HBCL) Safety Person:

Chris Ollmann, Tel: 352-846-3600, Email: collmann@ufl.edu

Cryogenic Facilities: Greg Labbe, Tel: 352-392-0486, Email: labbe@phys.ufl.edu

MagLab AMRIS and HBT Research and Outreach Coordinator:

Eli Wolf, Tel: 352-294-4786, Email: eli.wolf@ufl.edu

All users must comply with the following safety instructions:

1. No user may transfer cryogenic fluids.
2. No user may charge or discharge any magnets in the facility.
3. All undergraduate students must be accompanied by a supervising faculty or a staff member at all times.
4. Users may not be present in the lower floor area when the dewars or electromagnetic shields (“socks”) are being raised or lowered and when the pit covers are temporarily open. Only staff trained in Fall Protection and Confined Space Entry, may enter the pits or shielded rooms (when barriers are not in place) using the proper Personal Protective Equipment (PPE).

In an Emergency, dial 911

If you are using a cell phone, you should know the UF building numbers:

Microkelvin Lab = 99

Williamson Hall = 100

New Physics Building (NPB) = 92

UF Police (not an emergency) 352-392-1111

Introduction

The High B/T Facility (HBT) of the National High Magnetic Field Laboratory (MagLab) is operated through an award from the National Science Foundation (NSF). The facility is managed by faculty members of the Microkelvin Laboratory in the Department of Physics at the University of Florida (UF). The HBT mission is to offer Users a safe, comfortable atmosphere for performing research in high magnetic fields and at ultralow temperatures with an ultra-quiet electromagnetic interference environment. In other words, the facility provides access to various combinations of experimental environments that are not found in single-investigator or small-group laboratories and institutions.

The UF community embraces a set of shared values, <https://www.ufl.edu/about/core-values/>, which are also reflected in the National Science Foundation policies on Responsible and Ethical Conduct of Research, <https://www.nsf.gov/od/recr.jsp>. Embracing these values and policies is a key aspect of providing a comfortable environment for everyone.

Access to Facility

The Facility is open to all qualified users from US or international institutions. Magnet time is awarded based on research proposals submitted by potential users. The proposals should outline the scientific goals of the proposed experiments, the justification of the use of the specialized facility, and a summary of relevant preliminary work and sample characterization at higher temperatures where applicable. (For proposals <https://users.magnet.fsu.edu/>). Each proposal is reviewed by external scientists for scientific merit and by local facility faculty for feasibility. The specific schedule of the experiment is set by the local committee and technical communications is established with local staff members. There are no user fees for conducting experiments in the High B/T Facility.

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4. Users may not be present in the lower floor area when the dewars or electromagnetic shields (“socks”) are being raised or lowered and when the pit covers are temporarily open. Only staff trained in Fall Protection and Confined Space Entry, may enter the pits or shielded rooms (when barriers are not in place) using the proper Personal Protective Equipment (PPE).

Configuring an Experiment

Once a magnet schedule is assigned, the principal investigator of the user group will interact with a local scientist on the design and assembly of the experiment. When the experimental set-up has been approved by the staff, the Director of the High B/T Facility notifies the user of the final schedule for the experiment. For short-term experiments, users are recommended to reserve accommodations at the Reitz Union, which provides parking: <https://www.union.ufl.edu/UnionHotel>. The Reitz Union also houses a food court and other facilities for the convenience of users and visitors.

Conducting an Experiment

When conducting an experiment, the user group must observe all the safety precautions required by the National High Magnetic Field Laboratory and the University of Florida. Prior to conducting an experiment, all members of the user group planning to perform the experiment must pass the safety training provided by the Tallahassee site of the National High Magnetic Field Laboratory (<https://nationalmaglab.org/user-resources/safety>) and by UF, as appropriate. On the first day of their visit, Users are introduced to the facility and its layout and the safety precautions for working in the area (including the use of O₂ deficiency sensors, the coverings of all pits, the location of safety goggles, tools, and exits in case of an emergency).

Access to the High B/T Facility is limited to authorized personnel who will be provided with keys for access to the various buildings. These keys **MUST** be returned before leaving Gainesville.

Conclusion of Experiment

All UF keys **MUST** be returned before leaving Gainesville.

At the conclusion of an experiment, the principal investigator of the experiment is asked to complete a brief report summarizing the important features and results of the experiment. For especially noteworthy results, the investigators may be asked to prepare a two-page highlight to be forwarded by the Director of the National High Magnetic Field Laboratory to the National Science Foundation. In addition, the principal investigator is encouraged to comment on the experiences of his user group and to provide any specific suggestions for improvement of the facility operations and safety procedures.

Data Management, Reports, and Products

Here, Users reminded about their obligations with FAIR data management plans, filing reports, and the citation to use in products resulting from their use of the facility.

When requesting access to the High B/T Facility, <https://nationalmaglab.org/user-facilities/high-b-t/>, a FAIR data management plan must be described, and the appropriate protocols and requirements are described on webpages maintained by the MagLab, <https://nationalmaglab.org/research/research-groups/center-for-fair-open-science/products/data-management-plans/>.

The control of raw data files and rights to the data are retained by the Principal Investigator (PI) for the experiment. The PI has full control of the use of the data, including its publication in the refereed literature. The PI is responsible for adhering to the policies and procedures of their funding agency.

As a user service the High B/T Facility uses external back-up recording devices on all computers employed for data taking at each station of the facility. The data will be kept for a period of up to at least 2 years and will not be shared without express permission of the Principal Investigator.

Principal investigators on all experiments are expected to publish their data in the scientific literature and to prepare short reports that can be made available to the National Science Foundation or to review committees seeking information on scientific highlights of MagLab activities. Acknowledgements of the use of the High B/T Facility should add the following note in presentations, posters, and publications:

A portion of this work was performed at the National High Magnetic Field Laboratory High B/T Facility, which is supported by National Science Foundation Cooperative Agreement No. DMR- 2128556, and the State of Florida.

The National Science Foundation requires a report of all products resulting from the use of MagLab facilities, including talks, books, Ph.D. and Masters theses, publications, other scholarly products, and outreach activities for each calendar year by using the MagLab reporting system, <https://reporting.magnet.fsu.edu/guidance/publications.asp>.

Special Notes about UF and Gainesville

Normally, Gainesville and UF provide a calm and picturesque setting. However, certain times can be quite eventful, and the city and campus can be filled with traffic and noisy activities. The NHMFL staff will make every attempt to provide advance advice about these situations. Nevertheless, Users should be advised about certain dates that can be quite hectic, especially with somewhat restricted access to the Microkelvin building, and these days are when home football games are played in Gainesville. The schedule for these events can be found at http://espn.go.com/college-football/team/schedule/_/id/57/florida-gators. In addition, the access to local hotels can be limited (and expensive) for these dates, especially if not booked well in advance. Other times when the hotel market experiences pressures are at the start of the academic year in August and its end in early May. Finally, one week in March, a drag car race competition known as “Gator Nationals” comes to town.

Campus Map and Parking/Bus

Today, a wide variety of navigational tools are readily accessible, and UF has an interactive campus map located online at <http://campusmap.ufl.edu/>.

Parking can be an issue between 07:30 hrs and 16:30 hrs, when restrictions are in place and enforced. Some visitor parking is available in the Reitz Union parking lot, but this location can be saturated. A convenient *Pay-by-Plate* location (about \$7/day) is the main part of the lower level of Parking Garage 5 across from the Physics Building, which is a short walk away from the Microkelvin Lab. Be careful, the western extent of the lower level is reserved for cars with RED permits. A complete discussion about these parking options is available online at <https://taps.ufl.edu/visitors/welcome-center-parking-garage/>.

Up-to-date information about parking and the enforcement of the rules is available at <https://taps.ufl.edu/parking-info/parking-restrictions/>.

Information about the City of Gainesville Department of Transportation (City Bus Service) is available online at <https://go-rtts.com/>, and UF provides additional information about routes that come to campus, <https://taps.ufl.edu/alternative-transportation/rtts/>, and the UF Campus Connector system is also available when classes are in session, <https://taps.ufl.edu/alternative-transportation/campus-connector/>.