

 NATIONAL HIGH  
**MAGNETIC**  
FIELD LABORATORY

**HIGH B/T FACILITY**

**(Operated by the University of Florida)**

**USERS MANUAL**



**Revised September 25, 2018**

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

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

**Mailing/shipping address for *UF Physics Department*:**

2001 Museum 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.

### NHMFL High B/T Safety document:

[https://nationalmaglab.org/images/user\\_resources/searchable\\_docs/safety/ism.pdf](https://nationalmaglab.org/images/user_resources/searchable_docs/safety/ism.pdf)

### Contact Information

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Coordinator: Chao Huan, Tel: 352-846-0823, Email: [huan@ufl.edu](mailto:huan@ufl.edu)

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### 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 number is 99.**

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

## Introduction

The High B/T facility of the National High Magnetic Field Laboratory is operated through an award from the National Science Foundation. The facility is managed by the faculty members of the Microkelvin Laboratory in the Department of Physics at the University of Florida.

## 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 full guidelines for submitting proposals see: <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 carrying out experiments at the High B/T Facility.

## Setting up 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 carrying out an experiment, all members of the user group planning to conduct an experiment must pass the safety training provided by the Tallahassee site of the National High Magnetic Field Laboratory (<https://nationalmaglab.org/user-resources/safety>). 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 (use of O<sub>2</sub> sensors, covering of all pits, location of safety goggles and tools and exits in case of a magnet quench etc.).

Access to the High B/T Facility is limited to authorized personnel who will be provided with a key for entry.

### **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).

Many experiments take several months to complete and it is possible for a user group to arrange for automated data taking with the assistance of the High B/T facility staff. The data are recorded on dedicated systems unique to each experimental station.

## **Conclusion of Experiment**

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 one-page highlight to be forwarded by the Director of the National High Magnetic Field Laboratory to the National Science Foundation. In addition we ask the principal investigator to comment on the experiences of his user group and any specific suggestions for improvement of the facility operations or recommendations for improved safety procedures.

## **Data Management, Reports, and Publishing**

Here we advise and re-emphasize Users about their obligations with filing reports and the citation to use in publications.

The High B/T Facility adheres to the NHMFL Data Management and Sharing Policy (<https://users.magnet.fsu.edu/Documents/DataManagementPlanPolicy.pdf>) regarding publication and dissemination of data obtained at the facility and will ensure that the NHMFL Data Management and Sharing Policy continues to be aligned with the policy applied to NSF single investigator grants, as the NHMFL user community consists primarily of researchers supported by traditional single investigator grants.

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 NHMFL activities. Acknowledgements of the use of the High B/T Facility should add the following note in 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- 1644779, the State of Florida, and the U.S. Department of Energy.*

The National Science Foundation requires that the Magnet Lab collects and reports the scientific activities of the laboratory. **Users and faculty are encouraged to report these activities as they occur throughout the year**, but they **must be reported by year-end** via <https://reporting.magnet.fsu.edu/>

## **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](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.



University map: <http://campusmap.ufl.edu/>



## Travelling to the University of Florida

See: <http://www.phys.ufl.edu/department/visiting.shtml>.

## Driving from Gainesville Regional Airport to the New Physics Building ([Print PDF](#))

Gainesville Regional Airport is located approximately 6 miles from the [University](#) of Florida. There is only one road from the passenger terminal. When you reach the airport exit, turn right onto State Route 222 (NE 39 Ave). Take this road to its intersection with NW 13 St, a distance of 3-4 miles. (You will pass through lights at the intersections with Waldo Rd, NE 15 St, N Main St and NW 6 St before reaching the light at NW 13 St.)

Turn left onto NW 13 St and follow it for about 2.5 miles until you approach the light at W University Ave. University Avenue is equivalent to NW 0 Avenue, so it is fairly easy to count down the crossing streets between NW 39th Ave and W University Ave.

The University of Florida campus begins on the southwest corner of the intersection between W University Ave and NW 13 St. [Continue](#) on NW 13 St until the intersection at Museum Road. Take a right on Museum Rd and cross the intersections at Newell Drive and Center Drive. To reach the Reitz Union, take the Reitz Union Drive. The New Physics Building is located at the intersection of Gale Lemerand Drive and Museum Road.