

NMR FACILITY RULES & REGULATIONS

- 1. Use of the NMR Facility:** Only authorized users may enter the NMR lab. Unauthorized persons should not be in the NMR lab at any time, except to receive training.
- 2. Use of the Spectrometers:** Users must receive appropriate training before using the spectrometers. This requirement involves arranging for and attending four or more training sessions with an authorized user in your laboratory, and then demonstrating proficiency on the spectrometers to the director of the facility. In order to get a key for the NMR facility, the user must complete a key request form and have the facility director sign the form. The department operations manager will then issue a key. Other training arrangements may from time to time be required at the discretion of the laboratory director.
 - 2.1. Access to the Spectrometers:** *Please see the facility director for current spectrometer access rules.*
- 3. Behavior in the NMR Lab:** Users of the NMR facility must behave in a manner that is safe for themselves and others in the lab, and minimizes the potential for damage to the instruments. They also must behave in a way that supports the most efficient and accurate collection of data. Both of these objectives necessitate behavior that does not distract the user or others in the lab from their work on the spectrometer. **Socializing in the NMR lab or carrying on conversations unrelated to the sample being analyzed, for example, are never appropriate behaviors.** In addition to conforming with safety measures specific to the NMR lab, all behavior in the facility must conform to the regulations prescribed in the NMR Facility, Chemistry Department, and University Safety Documents. Eating and drinking in the NMR facility is prohibited, for example, as in the rest of the laboratories.
- 4. Standard Practices on the Spectrometer:** When the spectrometers are used, the users are responsible for the quality of their data. This means that appropriate parameters and careful shimming are essential to every experiment. Shim sets that meet instrument specifications are saved regularly by the director and may be recalled simply by any user. Users may also save their own “good” shims and recall them simply. Also, careful pulse width and power level calibrations are made regularly and saved in the standard parameter files. Users can also save their own parameters sets. Therefore, the quality of user’s data is not dependent on the skills or sample characteristics of the person preceding them on the spectrometer. Users should begin each session on the spectrometer by calling in a standard (or user defined) set of parameters and shims. Trained NMR users all have been instructed in these procedures, but a set of instructions will be provided to any user that requires them.

Previously required “standard spectra” will no longer be required resulting in considerably more time for sample analysis.

5. **Special Operations on the Spectrometers:** Procedures such as changing probes or performing variable temperature NMR require additional training from the facility director. Only users with permission to perform these operations may do so. In order to minimize the potential for damage to the instruments, the facility director will attempt to minimize the number of probe changes on the spectrometers. Also, some special operations (e.g. low temperature NMR) require cryogen storage devices not normally kept in the NMR lab. Therefore, users must arrange special experiments or probe changes ahead of time with the facility director. In addition, if help is required to perform a particular experiment, that time must be arranged for in advance so that users can receive the full attention of the director.

6. **Problems with the Spectrometers:** If a user discovers or causes a problem with the spectrometer (broken sample, computer malfunction, printing problem, etc.) they have two responsibilities: to prevent further damage to the system or its operators, and to notify the director of the problem. Further damage to the spectrometer is best prevented by warning other users not to use the instrument. This can be accomplished with a note placed over the keyboard or in some other conspicuous location on the spectrometer. Reporting the problem to the director should be done formally by completing a NMR Request/Problem/Complaint Form (located in the laboratory in a plastic holder near the fire extinguisher.) The form should include as much detail as possible. If a sample tube is broken in or near the magnet, the user must notify the facility director and complete a problem reporting form. The user must indicate the material in the sample, the solvent, and any information about its toxicity. A voicemail or email message may be useful in informing the director more quickly of a problem, and these are encouraged, but a problem reporting form still should be completed. **Please note that no user should attempt to fix or adjust a system that has malfunctioned. Air pressure adjustments, rebooting of computers, restarting spectrometers, etc. should all be performed by the director, a manufacture’s representative, or someone else in the Chemistry Department who has received training. Attempts to perform corrective measures by untrained users almost always result in more damage to the system than the original problem.**