

## NMR MAGNET SAFETY

<http://nmr.gmu.edu/nmrsafety.pdf>

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Each of the NMRs has a very strong superconducting magnet maintained at liquid helium temperatures. You must observe the following guidelines in order to protect yourself from it, and to avoid damage to it.

1. No metal beyond yellow chain. Empty your pockets of metal-containing objects.
2. If you have a heart pacemaker, metal pins in bones, metal plates, or other metal-containing bodily implants, you will not be allowed beyond the yellow chain, but it is safe for you to sit at the computer. The magnet can incapacitate a pacemaker, and strongly attract metal objects.
3. If you wear a hearing aid, you can run the computer with it in. Take it off before you pass the yellow chain to insert and remove samples. All hearing aids contain materials that are attracted to a magnet, so this is very important. Don't forget.
4. No user is permitted beyond the chain in the high magnetic field area near the magnet until checked off.
5. Do not bring paper clips or loose staples into the NMR room. Do not bring staplers into the NMR room. Stapled pieces of paper are permitted.
6. Cards with a magnetic stripe will not be damaged if you leave them outside the chained off area. They can be erased, however, if you take them beyond the chain. Similar precautions apply to magnetic diskettes.
7. Do not bring magnetic stirring bars into the NMR room.
8. Do not bring iron filings into the NMR room, inside or outside an NMR tube.
9. Do not toss items to a friend in the NMR room, especially pens, which often contain metal parts. If even a small metal object is thrown at the magnet, it can puncture the magnet casing and destroy the magnet.
10. If you have any kind of watch with moving parts, take it off. If you have any kind of expensive watch with moving parts, leave it at home. Gears can be pulled off or permanently magnetized. If you have an electronic watch, take it off. The electronics in the watch are not visibly affected by the magnetic field, but clasps are sometimes attracted to a magnet.
11. Cell phones are very strongly attracted to magnets. Power them down and leave them outside the yellow chain.
12. The DPX 300 magnet is on donuts. **Do not lean on the DPX 300 magnet.** It will not support your weight. If you lean on the magnet you may cause a quench. While inserting and removing samples, you should hold the ladder with one hand and remove the sample with the other.

13. As in all instrument rooms, wild motions and joking around will not be tolerated. All superconducting NMR instruments are expensive to purchase and maintain. **The standard behavior in this room must be serious and professional.**