

## Department of Chemistry NMR Center Instrumentation

### General

Director: Peter F. Flynn  
peter.flynn@utah.edu  
801-581-3828  
<http://chem.utah.edu/facilities/nmr/index.php>  
Location: HEB 1017, B100

### Services, Equipment and Users

#### Main Services

The Department of Chemistry NMR Facility provides essential access to walkup mode NMR instrumentation. The NMR instruments primarily support research within the Department of Chemistry, with additional users from the commercial sector. The focus of the use of NMR Center instruments is toward short recording intervals, e.g., to monitor results of chemical reactions, that are vital to the successful of the synthetic organic chemistry research programs.

#### Major Equipment: Liquids NMR

Chemistry NMR Facility instruments were all manufactured by Varian and include one Unity-class 300 MHz ( $^1\text{H}$ ) four-channel ( $^1\text{H}$ ,  $^{19}\text{F}$ ,  $^{13}\text{C}$ ,  $^{31}\text{P}$ ) spectrometer named Unity300, one 400 MHz ( $^1\text{H}$ ) two-channel ( $^1\text{H}$ , X-low-band, wherein X-low-band refers to all nuclei up to a resonance frequency of  $^{31}\text{P}$ ) Inova-class spectrometer named Inova400, and a 500 MHz ( $^1\text{H}$ ) two-channel VXR-class spectrometer ( $^1\text{H}$ , X-low-band) named VXR500. The Unity300 instrument is a 1980's instrument that remains quite serviceable and provide facile access not only to  $^1\text{H}$  and  $^{13}\text{C}$  detection, but also  $^{19}\text{F}$  and  $^{31}\text{P}$  detection. The Inova400 console was installed in 1990, and features both wide-range VT capabilities ( $-100^\circ\text{C}$  to  $+100^\circ\text{C}$ ) and a broadband direct detection probe ( $^{15}\text{N}$  to  $^{31}\text{P}$ ). The VXR500 instrument is a 1980's vintage NMR instrument that provides relatively high-sensitivity  $^1\text{H}$  walkup NMR access with workable direct detection of  $^{13}\text{C}$ .