

## ***NMR Newsletter v1***

<http://nmr.chem.umn.edu>

### **Staff**

Steve Philson retired as director in November, but you will still see him around about 30% of the time.

Letitia Yao is now the director.

New teaching assistant Reed Eisenhart started in the fall. We thank Karen Beckman for her years of service (and Ashley Dreis before that).



Starting in March, we will have the assistance of Jodi Ogilvie who will help us train users dependent on the autosampler.

### **Spectrometer status**



#### *VAC-200 autosampler (Varian Unity)*

Sadly, the 200 died just before classes began and our attempts to revive it have been unsuccessful. This instrument served as the workhorse of the organic teaching labs.



#### *VAC-300 autosampler (Varian Mercury-Vx)*

This instrument has absorbed the samples generated from the organic labs. Along with its normal usage, this instrument is now busy 24 hours a day when the organic labs have samples. We would like to encourage everyone dependent on this instrument for their research to get trained on the hands-on instruments.

#### *VI-300 (Varian Inova)*

The vast amount of variable temperature (VT) work on this instrument has damaged 2 of our probes. These are currently out for repair. In the instrument now is a probe tuned to P31 and H1. We hope to move the autosampler from the 200 to this instrument in the near future.



#### *VI-500 (Varian Inova)*



We are happy to report that the magnet has stabilized since construction in the laser lab below us was completed.

### AV-500 (Bruker Avance III)



This instrument also has a probe out for repair, the BBO probe. Currently in the instrument is the TBO probe that will run multinuclear experiments, but with reduced sensitivity for H1 and F19. The key feature of the TBO probe is that it can run C13 experiments with both H1 and F19 decoupling.

### HD-500 (Bruker Avance III HD)

The Prodigy probe has had issues running HSQC/HMQC experiments (but not HMBC experiments). We had thought they were software issues and were waiting for a fix, but have now determined that this is a hardware issue. Therefore, the probe will be sent back to Switzerland on March 14.



## Signal-to-noise values for instruments/probes

nucleus	HD Prodigy	AV BBO	AV TBO	VI-500
H1	2500:1	730:1	280:1	750:1
C13	350:1	250:1	220:1	100:1
F19	2000:1	550:1	220:1	n/a
P31	n/a	180:1	140:1	n/a

## Training

Autosampler training on the VAC-300 is available. Please sign up on the sheet outside Letitia's office with your contact info and schedule.

Hands-on training on the Varian is available after completion of the quiz.

Hands-on training on the Brukers is available after completion of Varian training and the Bruker quiz.

We encourage everyone to get trained on all instruments for maximum flexibility. You never know when your favorite instrument will be unavailable!

## Construction update

Construction on the exterior of Kolthoff commences the week of March 10 and is scheduled to last 4-5 weeks, with work occurring between 7am and 5pm. This may cause disruptions in service if vibrations exceed specifications.

## Future plans

Please see the PDF on our webpage on mission and plans.