



Welcome to the NMR Centre at the University of Guelph

The Centre offers three Bruker instruments for solution NMR: a 400 MHz instrument with a sensitivity-enhanced Prodigy probe, a 600 MHz instrument with a sensitivity-enhanced Cryoprobe, and another 600 MHz instrument with a range of probes suitable for both low and high temperature NMR studies. For comparison of the ^{13}C sensitivity of these instruments, please see the figure on the last page.

Prior to using the Centre's instruments, users must receive formal training from the NMR staff. After attending a training session, users will have one month to practice their skills and pass a practical test.

Please note that training on the 300 MHz instrument (for research work) is not conducted by the Centre; interested users should contact Dr. Robert Reed (rwreed@uoguelph.ca) in Chemistry.

Basic NMR Training

Training sessions for new users are about one hour in duration and cover general NMR safety, sample preparation, and the collection, processing, and analysis of ^1H and ^{13}C spectra. Sessions are primarily done using the 400 MHz NMR. There is no fee for a new user's first training session.

New users interested in NMR training should send a request to Dr. Andy Lo (andylo@uoguelph.ca). Please include the following items in the e-mail request:

- your research supervisor's name
- details of any prior NMR experience
- your schedule for the next two weeks
- whether you have a pacemaker or any magnetic implants

Dr. Lo will reply with a training time in about a week.

Training sessions are in MacNaughton 305. Ring the doorbell or use your research's group access card to enter the room, but please **stay away from the instruments**. New users are expected to bring a pen/paper to take notes with during the training session.

FACES Online Booking System

After receiving basic training, students will have permission to perform routine NMR experiments without supervision. The NMR should always be reserved before using it, using the FACES booking system (<http://faces.cccrc.uga.edu>). Log in to the booking system by filling in group name (GUELPH_NMR), user name, and password. The latter two will be sent out by email after completing basic NMR training. Please follow the booking rules posted on the wall by the 400 MHz instrument.

NMR Test

Within one month of receiving training, new users must schedule and pass a practical NMR test, or else their FACES account will be deactivated. As part of this test, users will collect basic 1D NMR experiments while demonstrating proper safety and sample handling. The purpose of the test is to ensure that users are able to work in the NMR lab safely and to carry out NMR experiments successfully. Users are strongly encouraged to practice the use of the NMR and review lab safety before taking their test.

If new users do not pass their test within one month of their training date, they will need to schedule and attend another training session; this time, the technician's hourly rate will be charged.

Using a FACES account belonging to another user is prohibited, and will result in the banning of both users from the NMR Centre.

Advanced NMR Training

Training on advanced topics, including spectra of other nuclei (e.g. ^{19}F , ^{31}P , etc.), operation of the 600 MHz instruments, and 2D or 3D NMR, is available on request to Dr. Sameer Al-Abdul-Wahid (s.wahid@uoguelph.ca).

NMR user email list

To obtain up-to-date information from NMR center such as available new equipment, instrument down time, repairs, etc., students are asked to subscribe to the NMR email list:

To join to the list:

- i) Send an e-mail to: listserv@listserv.uoguelph.ca
- ii) Leave a blank subject line
- iii) In the body of the e-mail type: "subscribe nmr-users [firstName] [lastName]" (e.g., subscribe nmr-users Andy Lo)
- iv) A confirmation e-mail will be sent, click on the link as requested.

To be removed from the list, send a blank e-mail to: nmr-users-signoff-request@listserv.uoguelph.ca

Miscellaneous

If you encounter difficulties while using the instrument and cannot reach any of the NMR Centre staff, please immediately send an email to Peter (pscheff@uoguelph.ca), Andy (andylo@uoguelph.ca) and Sameer (s.wahid@uoguelph.ca). This will ensure that the problem can be addressed as soon as possible.

^{13}C NMR Spectra of Brucine Using Multiple Instruments

