1. **Prepare Sample**
   - Proton NMR: About 0.07 mL (1 or 2 drops) of sample for H-NMR, plus about 0.8 mL of CDCl3.
   - Using a long pipet, fill it maybe 1 inch, shoot that into your tube, and dilute with CDCl3.

2. **Add sample to a Spinner/Turbine**

3. **Adjust depth** by placing the turbine into the golden depth finder, and gently slide the sample till the tube just barely reaches the bottom

4. **Load sample/turbine into autosampler.**
   - Note: DO NOT JUST GRAB OPEN THE AUTOSAMPLER DOOR WHILE IT IS LOCKED. YOU CAN DAMAGE THE ALIGNMENT BY FORCING IT OPEN WHEN IT IS LOCKED. IF THE STATUS LIGHT IS GREEN, YOU MAY NOT OPEN THE DOORS!
   - Press the round white **Access Request Button** on the panel below the sample trays/doors
   - **Wait until the “status” light turns to a solid yellow, and the message panel reads “door unlocked”**
   - Gently open the doors, and swap your sample/turbine(s) into the autosampler.
     - Remember which site(s) you placed it into!
   - Note: Samples can be added in this way to the autosampler even while the instrument is running somebody else’s sample.
   - Note: The door needs to be closed when a sample is going to be ejected.

5. **Login from within VNMRJ:** click **Unlock** (note: if VNMRJ is left open, as it should be for all of this week, then there will be a screensaver that goes black after a period of non-use. To get back in you will need to “unlock” the screen.)
   - User: nmr Password: none
   - Operator: Chem365 Password: nmr

6. **Select/Prepare for the first experiment** (for the first experiment)
   a. **New Study** (push button on lower left)
   b. **Experiment Selection: Proton8** (on the left. The “UserStudies” folder at the lower left-hand corner of the Experiment Selector folders must be opened for this to be available.)
   c. **Node/site identification.**
      - Click on the button showing where in the autosampler your sample is.
   d. **Sample Name:** fill in your name
   e. **Comment box:** fill in your name (optional)
   f. **Shim:** this needs to be checked on (shimming takes extra time but is essential for good hydrogen spectra)

7. **Submit** the experiment(s) by clicking the bright green **Submit** button on the lower left side.

8. **Adding your Sample into the Sequence when the Autosampler is Already Running a Queue**
   a. Prepare and correctly load your sample into the autosampler
   b. At the computer, click on your sample node your, then:
      c. change the Sample Name: fill in your name
      d. change the comment name: fill in your name
      e. click submit.
9. **Plotting extra copies from the Queue**
   a. Under **Study Queue** on the left, change the **View** to **Spectometer** (you may need to click the “done” button first)
   b. A key will show up next to each completed node
   c. Click on your experiment.
   d. Below the viewscreen, click **Process** (3rd from left)
   e. Click **Plot** (2nd from bottom)
   f. Click **Automatic Plot Page** (top left)

10. **Opening and Printing From the Data Folders**
    a. Click on the Folder icon, upper left, the icon is right below the “Edit” menu.
    b. If you’re lucky, it will go directly to the home/nmr/vnmrsys/data/Chem355 folder.
    c. Double-click on the folder with your name.
    d. Double click on the file that has PROTON in it’s name
    e. Print as described in steps d-f above.
    f. To get the Folder icon to go back to the main Chem355 folder, click on the Folder icon again, then click ONCE only on the a little icon that shows an arrow up

11. **Horizontal Expansions**
    a. Make sure your spectrum is opened and displayed on the screen. If so, there should be a panel of display icons on the far right side.
    b. Below the viewscreen, click **Process** (3rd from left)
    c. Click on the magnifying glass icon (6th icon down)
    d. More your cursor to the left end of the zone you want to expand, then hold down the mouse button and slide it to the other end of the zone you want to expand.
    e. You can plot the expansion as described earlier (see 9)
    f. To return to the full display, you can either click on the 3rd icon or perhaps the 5th icon, and expand other zones as needed.

12. **Defining Integrals: Manual Integration**
    a. Make sure your spectrum is opened and displayed on the screen.
    b. Below the viewscreen, click **Process** (3rd from left)
    c. Choose “Integration” (6th menu item down)
    d. Hit “Clear Integrals” button
    e. Hit “Interactive Resets” button
    f. Then click on the left and right sides of a signal set to mark it for integration. Repeat this for each integration zone.
    g. To make the integral numbers easier, click Normalize Area to “Single Peak”
    h. Set the “integral area” to some nice number (1, 2, or 3, depending on whether you think you have a CH, CH2, or CH3)
    i. Click the “set integral value” button
    j. If your cursor was on the wrong integral or on no integral at all, click on an integral of choice and re-click the “set integral value” button again.
    k. You can plot as described earlier.