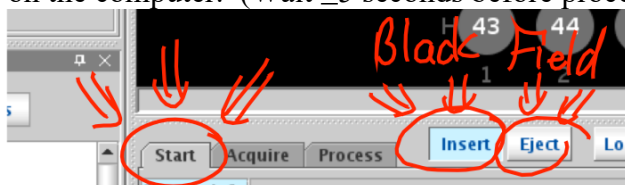
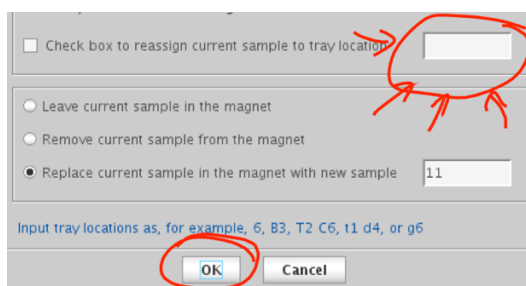
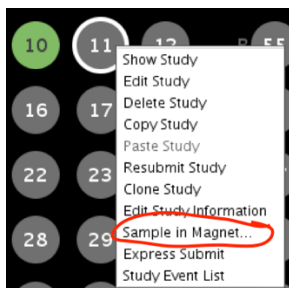


**User's Guide to NMR, 2024 Without Autosampler:** Draft 2/1/2022. Help: Dr. Jasperse, Hagen 407J, 477-2230

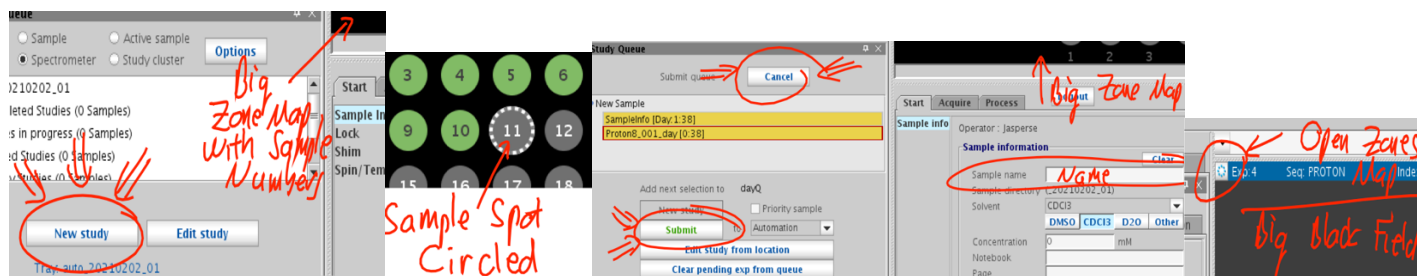
1. **Prepare sample** in lab; **add sample to sample-holder**; adjust sample depth using **golden depth finder**
2. **Eject/Insert** (Sample Exchange):
  - a. Hit "**eject**" button (below black field) to eject existing sample. (If not visible, click "start" button to make it so)
  - b. **Manually lift out sample-in-sample-holder** combination from the probe (place it in a box)
  - c. **Place your sample-in-sample-holder** into the probe
  - d. Hit "**insert**" button on the computer. (Wait  $\geq 5$  seconds before proceeding with step 3a).



3. **Spot Assignment**: (Each sample needs to be assigned a sample spot number)
  - a. **Right-click** on the lowest-numbered gray spot number in the zones map. (A pulldown will appear)
  - b. Select "**Sample in Magnet**" (3<sup>rd</sup> line from the bottom of the pulldown);
  - c. **Enter your spot number** into the upper field. (Remember your spot number)
  - d. Hit **OK**.



4. **NMR-Experiment Submission**:
  - a. Click "**New Study**" button in lower left. (A yellow experiment file-name will appear).
  - b. The default experiment is "Proton-8"; for something different select from panel on upper left.
  - c. **Left-mouse single-click on your sample spot**. (A white circle will appear around the sample spot)
  - d. Enter student name(s) into **Sample Name** field, which is underneath the black field
  - e. Submit: click the **green "Submit" button** on the lower left side. (your sample spot should turn color)
  - f. Hit "**Cancel**" to leave submit-sample mode.
    - a. Don't forget to do this. If you do, it will cause problems for both you and the ensuing user.
    - b. The yellow experiment file-name will disappear; unfortunately the zones map will too.
  - g. Re-open "zones" map: **Click on little circle icon** (⚙️) to the upper left of the big gray/black panel, and the zones map with all the sample spot numbers should re-open.
    - Note: An experiment should take about 7 minutes.
    - There should be an automatic one-page printout upon completion.



5. **Printing an extra copy** of spectrum (in case you have a partner)
  - Must be in zones-map display. If not, click on little circle icon (⚙️) upper left of the spectra-display panel.
  - a. **Right click on sample number**, and a pulldown will appear
  - b. Click "Show Study"
  - c. **Double click on green "PROTON\_01"** file that will appear in the lower left-hand area. (below your name)
    - a. Your spectrum should now appear in the display field, where the zones-map appeared before
  - d. Click "**Process**" button underneath the spectrum display field. ("Start" was highlighted previously)
  - e. Click blue-text-on-white-background "**Print**" button on lower right to print another copy.



## 6. Horizontal Expansions

- a. Steps 5a-d above describe how to get your spectrum loaded into the display field.
- b. With spectrum displayed on screen, use a panel of display icons on the far upper right
- c. Click on the **magnifying glass icon** (6<sup>th</sup> icon down, 🔍)
- d. Move your cursor to the left end of the zone you want to expand, then **hold down left mouse button and slide it** to the other end of the zone you want to expand, then release the button.
  - a. To return to the full display, you can either click on the 3<sup>rd</sup> icon (🖼️) or the 5<sup>th</sup> icon (🔍).
- e. Click blue-text-on-white-background "**Print**" button on lower right to print a copy. (Twice for 2 copies)



## 7. Exiting so that NMR is Ready for the Next user

- a. Click "**Start**" button underneath the spectrum display field. ("Process" was highlighted previously)
- b. Re-open "zones" map: **Click on little circle icon** (⚙️) to the upper left of the big gray/black panel, and the zones map with all the sample spot numbers should re-open.

