

Keeping your ducks in a row during research

1) Organizing your notebook

- a) Leave pages 1-3 blank as your table of contents
- b) Start each experiment on a new page. Write the date and time, a title describing what you are trying to do, and list a full citation for any relevant paper (eg, if you are using a procedure from a published paper). If a chemical reaction is involved, write it down, preferably in balanced form, and give basic info about each species such as the formula weight or key spectroscopic features.
- c) Put the procedure on the right side of the page (like a recipe!) and jot down notes/calculations/observations on the left side of the page.
- d) **An experiment is not finished until you have evaluated its results.** If you're not sure how to analyze the data or what to conclude, talk to Dr. L.
- e) Use the back of the book for recording procedures such as how to use instruments or fabrication recipes that you use over and over again. Refer to them like this: "I made three PADs using the procedure on page 58"

2) Labeling and archiving data

- a) Back up all data to AFS space or to a USB drive.
- b) If you take AFM or SEM images, spectra, or other data, note down the file names and a brief summary of the result in your notebook. For example:
"Took AFM (ML060311a—saw rectangles but there was a tip artifact, changed tip; ML060311b—good image at 5 micron scale; ML060311c—blurry image at 1 micron scale; ML060311d—moved sample a little, good image at 1 micron, saw Au particles!"
- c) Compounds and other samples should be labeled with your initials and the page number of your notebook (use a, b, c to distinguish multiple samples)

3) Weekly report

You are responsible for preparing a weekly report containing the following:

- i) Your goals for the week
 - ii) Progress made and data collected
 - a) Experimental write-up of protocols used (journal format)
 - b) List raw data collected and include key results (images, PADs)
 - iii) Goals for the upcoming week
- (Send electronic copy to Dr L, bring a hard copy to group meeting)

4) Reading and keeping track of literature: WOS, INSPEC, PubMed, SciFinderScholar. Print out useful papers (at least 1 per week) and store them in a 3-ring binder. A group of students working on the same project may share a literature binder but each should do the lit search.

5) All of this paperwork and library work "counts" as research time!