## *One Page Guide to Writing Lab Reports for Inorganic Chemistry Lab*

**BEFORE** you enter the lab, you must have completed the handwritten prelab portion in your lab notebook. Your TA will sign this at the beginning of the experiment to allow you to begin your lab work. The prelab is typically 1-2 notebook pages in length. It should include:

- Descriptive title ("Resistive measurements of the solubility of NaCl")
- Balanced chemical reactions ("$NaCl(s) \rightarrow Na^+(aq) + Cl^-(aq)$")
- 1-2 sentences summarizing the lab (concepts, techniques, etc.)
- Table of reagents (including MWs, structures, MSDS hazards)
- Potentially significant hazards and associated safety precautions
- Flow chart or outline of procedures ("add 5.00 g NaCl to 20ml $H_2O$")

DURING you lab, you will keep a running narrative in paragraph form describing your actions and your observations of events. This is hand-written directly into your notebook, and must be signed by your TA at the completion of lab. Please include:

Actual procedures ("5.03g of NaCl was added to 19 ml of $H_2O$ with stirring.").
These often differ from your prelab goals.
Data and Observations ("A colorless solution was formed", "Peak at 3500$cm^{-1}$").
All numbers and data go in this section.

AFTER the conclusions of your experiments, you will have the time to do a more detailed calculations and a rigorous experimental analysis. This will be written up in the spirit of a paper to be published, and must be typed up. Note that the CRC (http://www.chem.umass.edu/~crc) computers have the full suite of Microsoft Office software, internet access, and printing for a nominal charge. Please include the following sections in your typed report:

Title page: (expt title, date, lab section, your name, TA name)
Introduction: (1-2 paragraphs, why the experiment is interesting and important)
Data analysis: A description of the methods used and your calculated results.
It is good to include equations and sample calculations in sufficient detail to evaluate the level of your understanding.
Discussion: What did we learn? ("NaCl is very soluble in $H_2O$")
What are the broader implications? ("Method works for other Na salts")
Theoretical concepts involved in the experiment should be discussed.
What were major sources of actual/potential errors? Are there ways the experiment could be improved? (Hint: "Human error" is uninformative)
Questions: Any numbered questions should be answered in order here.
Unnumbered questions may be answered in the discussion section.

The stapled package handed in to your TA should be arranged in the order below:

Title page, Introduction (typed)
Prelab, Lab carbon copy pages of your notebook entries (handwritten)
Analysis, Discussions, Questions (typed)