Chem 403/404 Paper

Requirements:

- Paper is an in-depth review article. It should review at least three closely related primary research papers and make connections between the papers.
- Paper topic must be chemistry-based. It may have strong connections to other fields like biology, physics, and mathematics, but the focus of your paper must be on the chemical aspect. Work with your adviser to make sure you are meeting this criteria.
- Length: Approximately 2500 words (excluding title page, figures, tables, and references). This is the equivalent of 9-10 full pages of 12-point font, double spaced text, with 1.25-in margins.
- Audience is your seminar advisor.
- Use prescribed template for final draft. (See example on web site.)

Recommended Format:

- *Abstract* - A good abstract should contain the following:
    - A brief statement (1-2 sentences) as to why the topic of your paper is of interest.
    - A brief summation of what will be covered in your paper.
    - If necessary, a brief account of the background of the field.
    - Example: "Even though the first expanded porphyrin was reported in the mid-1960's, the advances in its chemistry are more recent. New and powerful synthetic methods have facilitated the availability in affordable quantities of expanded porphyrins in general and core modified systems in particular. This has stimulated interest in studying various properties pertaining to their potential applications in biomedicine and materials chemistry. In this Account, we not only summarize the details of the synthetic methodologies reported, but we also highlight studies that focus on the structural diversity, aromaticity, and anion and cation binding abilities of expanded porphyrins." *Acc. Chem. Res.* 2003, *36*, 676-691
- *Introduction* - A good introduction should contain the following:
    - A description of the topic of the paper and why this topic is important.
    - Any and all background information (i.e. definitions or chemistry discussions) that is necessary to read the paper. Remember your audience!
    - A brief history of the field.

- If there has been a review of this field, state this fact. Then address the following: does *your* paper include any of the material covered in the prior review or does it pick up where the other review left off?

- *Paper Body*
  - Make good use of headings to keep the paper organized, but don't overdo it.
  - Experimental information may be presented in this section if it adds to the story. However, it should not read like the experimental section of a primary source. (You would not need to put something like this. "5.0 mL of an unknown NaOH solution in a 25 mL Erlenmeyer was titrated with 17.5 mL of 0.157 M HCl. From this experiment, the NaOH concentration was determined to be 0.550 M." Instead you would report the information like this. "The concentration of an unknown NaOH solution was determined to be 0.550 M via titration with standardized HCl.

- *Conclusions* - A good conclusion should contain the following:
  - A brief summation of the key points of the paper
  - A brief summation of why the topic of the paper is important
  - If necessary, a brief discussion of future directions that the field may take

- *References*
  - Use your 3 papers as your examples. Most journals have their own way of referencing.
  - Use RefWorks to create your citations and bibliography. Choose ACS style.
  - Most ACS journals are referenced like this: author's last name, author's initials. *journal title* year, *volume number*, page number(s). Example: Ulness, D. J. *J. Am. Chem. Soc.* 2010, *17*, 124.
  - Each reference should be put in the report as either a bracketed number or as a superscripted number. Do not use the ALA style.
  - Example:

    The report on the first synthetic allene can be dated back to as early as 1887 [1].

    OR

    The report on the first synthetic allene can be dated back to as early as 1887.[1]

    NOT

    The report on the first synthetic allene can be dated back to as early as 1887 [Burton and Pechman, 1887].

- The first citation is always numbered as reference #1, and each the second citation is reference #2, etc.
- If a source is referenced more than once in a paper, each citation is given the number that was originally assigned to the source.
- In the reference section, the references are listed in numeric sequence as they appear in the text.