Tips for Succeeding in your Ph.D. Candidacy Examination:

***You are responsible for understanding EVERYTHING that you write in your report. Make sure that you can explain in a concise and clear manner such things as the experimental techniques, synthetic pathways and mechanisms, spectroscopic assignments, etc. which you describe or refer to in your report.**

***If you cite a paper/review article/book chapter in your report, READ the article rather than just citing it in your report.**

***If you have a deficiency in a particular area of chemistry which is relevant to your research topic and report, START EARLY to improve your background knowledge in that area, rather than leaving it to the last minute.**

***It is very beneficial to have "dry" runs of your presentation with as many QUESTIONS as possible, on your report and research topic, posed to you by others in your research group, including your supervisor. Practice using the BLACKBOARD to draw structures, diagrams, etc. so that you can answer the questions in a clear and descriptive fashion.**

***Bring your own HARD COPY of your report to the examination.**

Tips for writing the Candidacy Report:

In scientific writing you want to strive for:

Precision – saying what you mean by choosing the correct words

Clarity - not confusing the reader by choosing any wrong words

Familiarity - using language familiar to your readers

Fluidity - smooth writing by paying careful attention to the transitions from sentence to sentence, paragraph to paragraph, etc.

Forthrightness – the use of sincere and straightforward language, which is not pompous or arrogant

Conciseness – making every word count and using the fewest words required to make your writing completely clear to the reader

Imagery - using language which shows, not just tells, the reader what happened in your research

Introduction:

- To avoid plagiarism, read the background papers, take notes, put the papers away, and then write the introduction/literature review in your own words. Make sure that you cite the original sources from which you obtain any ideas/information/diagrams, etc. which are not your own.
- Consider your audience when writing your report (and thesis). The readers of your candidacy report are faculty in Chemistry who may or may not be in your sub-discipline of Chemistry and are likely not familiar with the background to your particular research topic. You want to provide enough background information so that the reader can understand your report in terms of the chemistry of your research topic, why you are interested in pursuing the particular line of research, and the significance of the results of the research.
- Read and cite the original references for the background information, in addition to any recent review articles and/or book chapters.

Results and Discussion:

- Present the results and discussion in a logical sequence, using subheadings to organize your research results and your discussion of the results.
- Use well thought out figures, schemes and tables to show results that are representative of the work you have done, rather than just presenting all of your primary data.
- Include an experimental section (just as you would in an article or thesis) which outlines your methodology and presents (if appropriate) the details of the synthesis and characterization of novel compounds (consider using schemes and tables to present these results concisely)
- Place your research results and conclusions in context with (a) related results from the literature, and (b) your planned future work, showing the significance of your research results.

Future Work:

- In this section describe and rationalize your short-term and long-term research plans (discuss these with your supervisor, if necessary).
- Consider what your alternative research plans and ideas might be, if certain aspects of the proposed future work are not successful.
- Leave the reader with the feeling that you understand the "big picture" and significance of your present and future research with respect to it.

Figures and Tables:

- Use figures, schemes, equations and tables to compliment (not duplicate) the information presented in the text of the report.
- When referring to a figure, table, or equation, use its number (sequentially) in the text and place the item as close as possible after first referred to in the text.

- Equations will normally have a number placed in parentheses at the right margin.
- The figure captions and table titles should be concise but fully describe the information presented within them, without the reader having to refer to the text.

Other tips for preparing figures and tables:

- the labels on the axes of graphs should have both the variable name as well as the units
- use reasonable scales and tick marks. The tick labels do not have to show the full number of significant figures
- table columns should specify the units for the variable under each heading
- table entries should have an appropriate number of significant figures

References:

- be consistent in the format you are using to cite journal articles, books, patents, theses, etc. (see the ACS format below)
- give the names of ALL of the authors, in the order found in the article
- use the correct abbreviation for the journal. A list of abbreviations can be found at: http://www.cas.org/expertise/cascontent/caplus/corejournals.html
- you need to list the citation only once, but can refer to it multiple times in the report
- if you are describing the work from a particular reference in a paragraph, it is not necessary to cite the work numerous times within the paragraph, provided it is clear that you are still referring to the same reference.
- if results or diagrams, etc. from other work appear in figures or tables in your report, the source of this information must be cited in the figure caption or the table entries (or heading/ footnote).
- if you are using reference management software (eg. Endnote), make sure that you proofread the list of references for consistency.

For journal articles in the ACS format:

1. Koner, A. L.; Ghosh, I.; Saleh, N.; Nau, W. M. *Can. J. Chem.* **2011**, *89*, 139. (year in bold; *volume in italics*; give either first page or page limits – but be consistent in your list of references)

For books:

2. Dresselhaus, M.; Dresselhaus, G.; Eklund, P. *Science of Fullerenes and Carbon Nanotubes*; Academic: New York, 1996; pp 126-141. (for a book where the authors have written the whole book)

3. Watanabe, N.; Touahra, H.; Bartlett, N.; Mallouk, T. Fluorine Intercalation Compounds of Graphite. In *Inorganic Solid Fluorides: Chemistry and Physics*; Hagenmuller, P., Ed.; Academic Press: New York, 1985; pp 331-369. (for a book or book series, where the authors have written only a portion (give chapter title) of the book and there is an editor of the book or series)

For websites:

4. Queen's University Chem 422 Lecture Notes.
http://www.chem.queensu.ca/courses/11/CHEM422/ (accessed May, 2012).

For other types of citations, such as a thesis, conference abstract, patent, etc., check a recent issue of an ACS journal such as the *Journal of the American Chemical Society.*

Proofreading:

Your first written copy should be regarded as a draft, which you should thoroughly read and revise. Rather than looking for every error in your draft copies, go through your writing by looking at one feature at a time. Some of these features include:

- spelling, scientific nomenclature (check names of compounds for correctness and consistency), and abbreviations/acronyms
- punctuation, grammar, and sentence structure
- citing of information/ideas/figures from sources other than your own work
- the correct and sequential numbering of references, figure numbers, table numbers, equation numbers, etc.
- correct and consistent format of references (pick one format, such as ACS or RSC, for example, and stick to it)
- correct and consistent verb tenses

When you think you have your final version, put it away for a day or two and then re-read it and read it out loud. A final proofreading by your supervisor or other "set of eyes" is also important prior to submitting your report to your examination committee. A well-written, easy-to-read Candidacy report gives the examiners a very good initial opinion of your abilities, whereas a poorly-written report can really annoy an examiner.