**Guide to Writing a Proposal**

**Format:**

Latex files:

<http://cs.uccs.edu/~kjustice/Guides/proposal.cls>

<http://cs.uccs.edu/~kjustice/Guides/proposal.tex>

Note that the proposal.tex document expects separate documents to exist for the Introduction, Background, etc… (see the comments). It will not build until each document has been created.

**Length:**

The final document should be about 20-30 pages double spaced.

For a PhD thesis, please aim for 15 pages single spaced (although what you present to the committee will be double spaced)- this closely matches NSF grant proposal requirements and thus can be easily rewritten to fit grant format (remove timeline and add impact analysis).

**Suggested Outline:**

1. Introduction (~1 paragraph for each bullet point)
   * There is a problem/lack of ability to do something
   * This problem is important because...
   * Stuff does exist for other domains/within other tools/using other analysis techniques/for other languages, etc… Here’s what exists.
   * But it doesn't work here because of these differences and challenges
   * What's needed (explain what's missing and what holes need to be filled) This set of paragraphs can also be used to explain other work that’s been done in some other field of CS that you can use to leverage your work.
   * So, in this work, you propose to .... (1-2 paragraphs)
   * In summary, the main contributions of this work will be: (bulleted list)
2. Background (Good overall- just rename and remove redundancy with what you put in section 3)
3. Proposed Work
   * 1- I like to write this section with a paragraph or two describing the problem
   * 2- Then 1-3 paragraphs describing the challenges
   * 3- Then 1-3 paragraphs describing your proposed solution
   * 4- Then Evaluation
     + Quickly, what will your experiments try to reveal (can put in bullet points)
     + What metrics will you use to prove that you do a good job?
     + What case study applications will you analyze?
     + (Do you build off any tools or use any tools? Could tie into metrics also)
     + Given all that, what experiments will you perform to empirically show you did a good job?
   * Note: if you are preparing a PhD thesis or a Masters thesis, you may have multiple subsections with #1-3 or #1-4. Divide your work into logical parts with 1 major “problem” per part. For a PhD Thesis, you’ll likely have 3 or 4 subsections. For a Masters Thesis, I would expect at least 2 subsections. If there is a lot of overlap in how you’d evaluate each subsection, leave evaluation to the end of the Proposed Work section. If not, describe evaluation for each subsection individually.
4. Work Completed
5. Related Work
   * In paragraph form, discuss work that is related to yours and for each work or set of works, state how your work is different
6. Timeline to Completion
   * Can be written in paragraphs, but a table is generally easiest (General dates/week number(s)  |  What you'll complete)
   * Include from proposal defense to final defense
7. Conclusion
   * Highlight the main contributions that you hope to make in the work
   * Do NOT include future work- as this is a proposal, everything you're discussing IS future work.  Ignore your future work paragraph until you write your final paper.