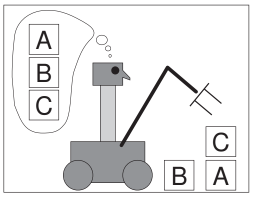

CS640 Fall 99

Research Memo 2: Getting Started on Research
or *Getting from Vague Idea to Proposal*

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The hackneyed phrase, "The hardest part of any journey is the first step", unfortunately succinctly characterizes a common problem with "doing research". Research is unstructured and requires novelty – you are not following a path, plan or procedure specified by anyone before you. Consequently, it becomes all too easy to be sucked into what in graduate school I called the *proposal black hole*, a frame of mind in which one avoids the project by finding other tasks that simply must be done immediately or flails, starting and shortly afterward abandoning tasks related to the project. The result is little or no progress and a generally sick feeling whenever you contemplate the enormity of your problem.

While I have not found a cure all to the problem, I can suggest some strategies for getting started and keeping moving.

Stop Idea Infanticide Nearly all ideas are quickly forgotten or discarded. While many ideas deserve such treatment, most people are overly hard on their ideas in the early days of a project. We can be our own worst critics. If you feel as though you don't have any ideas, consider seriously whether you actually think you don't have any *good* ideas. Then spend some time writing down your ideas, however apparently stupid or crazy; consider why you should reject them and then decide whether your initial reaction/reason is correct or could be addressed.

Play with your ideas. You may start out with something that is stupid, but it could evolve into something worthwhile or even great.

Lie to Yourself: Make-up Deadlines Everyone works on deadlines and due dates. For many of life's tasks (e.g., paying bills, taking classes, planting a garden), these deadlines are imposed externally; for research, external deadlines are few and far between. We have conference paper deadlines and end of semester deadlines, but the motivating panic of an impending deadline is not the best environment for developing and testing new ideas.

Loosely schedule what you will be doing to accomplish the longer term goal. Set shorter term "deadlines", dates by which you will finish a task. You'll see how everything combines towards meeting the distant deadline.

Those Who Fail to Remember History are Doomed to Repeat it: Write Research Memos Research goes in fits and starts. Some ideas work, most do not. Without tracking what we've tried, we may repeat the same mistakes. On the other side, if you run trial experiments or collect preliminary data, you may be unable to replicate good results later on.

Semi-formally track what you've done in occasional memos to yourself (or even show them to others to to get someone else's input). Writing memos is beneficial because: 1) you track what you've done (and so can see what you've accomplished), 2) you have a starting point for later documents (so you won't be confronted with the dreaded blank page), 3) you practice clearly articulating your ideas, and 4) you have something to give to with others who want to know about your work.

Collect Your Thoughts: The Research Notebook You need a central repository for notes, ideas, and commentary on related work. A research notebook (loose leaf or lab style, whatever feels most comfortable) is a personal diary for research. Write whatever you like in it, but above all, write ideas in it regularly.

On a related topic, start a research bibliography (as in a latex `.bib` file) or add to a group one. When it comes time to write papers, you'll appreciate already having entered the papers that you've read.

Set Aside Time to Think Finally, we all tend to count only the time we *do* rather than the time we *think*. Yet, thinking is the most critical part of research and can be time consuming.

Set aside time periodically to just sit and think. Take your research notebook someplace comfortable without distractions and write down what comes to mind. Give yourself the space and time to be creative.