Guidelines for Advisees

Let me begin by saying that I am happy to work with students on research or special projects; however, some guidelines should be followed to make this a worthwhile and meaningful experience.

**Preliminary Evaluation** Usually, I require you to have taken at least one course with me before becoming an advisee. In this way, you can determine if you would like to work with me, while I can assess your skill level during the course. If you decide you would like to work with me, please send me e-mail to set up an initial meeting. I usually work with five to eight advisees in any given semester.

**Attitude** I expect you to have a positive and respectful attitude throughout your research work. You should always look at ideas with an open mind – try to avoid any initial "it can't be done" reaction. I have had far too many students take this position when, in fact, the proposed research has already been done, or is done by someone else shortly after this statement is made.

**Forms** You are responsible for submitting all forms by their respective due dates (see the calendar on the grad school webpage at www.grad.clemson.edu). If you need my signature, please do not wait until the due date, as I may not be available. You may also simply leave the form in my departmental mailbox for signing.

**e-mail** Please check your e-mail every day since I may need to get in touch with you quickly. Also, if you need to meet or need a signature, please send me e-mail first to set up a time.

**Meetings** Please keep me updated as you progress through your research. You are free to work at your own pace; however, I will occasionally ask to meet with you, or request that you finish a certain amount of work before a publication deadline. Otherwise, you can contact me whenever you need to meet with me. If you stop by at a scheduled meeting time and I am not in, please wait a few minutes as I am often behind schedule.

**Resources** I will try to help you acquire any resources you may need for your research, including office space, machines, accounts, software, etc.

**Assistantships** Ideally, I would like all of my advisees to have an assistantship; however, it's not always possible. If you do have an RA with me, I expect you to perform the work as I prescribe. I also expect you to be available (i.e., don't disappear) and to keep me posted on a regular basis. If you do not have an RA with me, then you are free to pursue a relevant research topic of your choosing.

**Termination of Agreement** I will try my best to work with you to help you complete your degree. If at some point, however, things do not appear to be working out, I may suggest that you find a more suitable advisor.
**Research Topic**  Part of the research experience is identifying an appropriate research topic. I can assist you with this task; however, you must play a significant role, including a web and literature search, as well as some preliminary experimentation. Additionally, I have a short list of research topics you may choose from, but ultimately, finding the right research topic is your responsibility. Keep in mind that for a research paper, the topic idea need not be completely original; however, an original idea is better. For thesis work, the research idea should be original. Your work does not have to be ground-breaking; it could be an improvement on a previous method, or an incremental step built on previous work. Obviously, the expectations for PhD work are much higher.

**Thesis/Research Paper**  You should allow ample time for finishing your thesis or research paper before your anticipated graduation date. Writing should begin only after a significant amount of the research has been completed. At that time, you should begin with a general outline of the document. After we have reviewed it and agreed upon any changes, you can begin writing. After you submit your first full draft of the thesis to me, you should expect at least three iterations of reviews and edits: organizational, content and grammar, and final review. Editing a thesis usually takes me a week, so please plan accordingly. I will not allow you to schedule your presentation until the thesis is completed and distributed to the committee members.

**Thesis/Research Paper Organization**  As you write, please be clear and thorough – don’t assume that your readers already know all about your work. Most theses and research papers are composed of 40-70 pages and 25-40 pages, respectively, and are organized in the following way:

- **Abstract** (0.5-1 page)
  - succinctly state the problem and why it is important
  - describe the method you chose to solve this problem

- **Chapter 1: Introduction** (1-4 pages)
  - start somewhat broadly and narrow in quickly on the problem you are trying to address
  - state why this problem is important
  - give a brief preview of your solution
  - provide a description of the remainder of the paper/thesis

- **Chapter 2: Background** (5-15 pages)
  - give any technical information necessary to understand the remainder of the thesis/paper
  - describe related work that has been published in this area – also give reasons why these solutions do not fully address the problem
  - set the stage for your work, which follows

- **Chapter 3: Implementation** (8-20 pages)
  - describe your work: the system you created, the code you implemented, the theorem you proved, etc.
  - use diagrams, images, or other figures to support your work
  - feel free to describe other techniques you tried that ultimately did not work
  - state any limitations of your work
  - provide a user's guide or explain the GUI for the system you created
  - segue to the next chapter

- **Chapter 4: Results** (5-10 pages)
  - show the results of your research -- examples:
    - if you created a parallel rendering system, show performance results of sample renders on 1, 2, 4, … machines
• if you wrote code for a new rendering technique, show final rendered images for various objects
• if you developed a real-time visualization system, show screen shots from the system working on small, medium, and large sets of data, and provide fps info
  – list limitations or show results where your system does not perform well

Chapter 5: Conclusion and Future Work (1-4 pages)
  – summarize what you have accomplished; state why your work is useful
  – if possible, provide additional related problems where your work may be useful (for example, perhaps the rendering technique you developed can also be used to model hair)
  – provide two or three significant improvements that could be made to your work (given more time, resources, etc.)
  – conclude with a positive statement, perhaps re-iterating that the problem you addressed is important and that additional study in the field is encouraged

References (1+ pages)
  – include as many references as possible (more is better)
  – it is not imperative that you read every paper listed, but you should have a good idea of what is covered by each paper
  – I prefer the references be formatted as a 6-character string, with the 4 first characters being the first 4 letters of the primary author’s last name, and the remaining 2 characters being the last two digits of the year; for example


  – in the body of the paper, use references like this

  … as the leaf animation method proposed in [Barr01].

  – for web references, list the URL and the date accessed


Presentation For any Masters option, you should prepare a presentation lasting approximately 35 minutes with PowerPoint or some other electronic presentation tool. You must have a practice presentation with me, usually during the week preceding the proposed presentation.

Final Copy of Research Paper/Thesis Once your thesis has been approved and finalized, please submit to me a bound copy of your final thesis. If you wrote a research paper, please provide me with a clean final copy with the standard departmental binding (yellow cover).

Publications If you performed original research of some kind, I expect at least one paper to be written and submitted to a technical conference or journal. Usually, I will be listed as the first author; however, if you write the majority of the paper and plan to present the work, your name can appear first.

Timothy A. Davis
Assistant Professor
Department of Computer Science, Clemson University