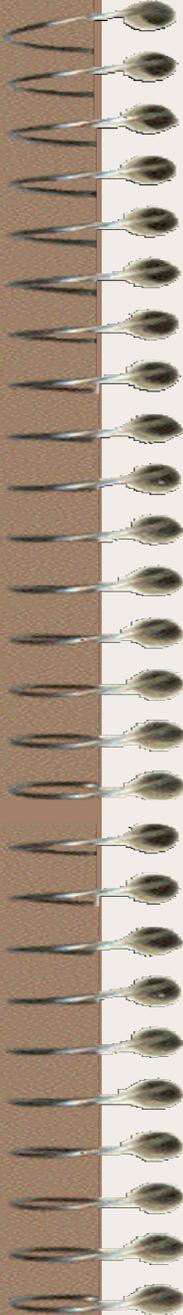
The background of the slide is a spiral-bound notebook with a light beige, textured cover and a dark brown spine on the left side. The spiral binding is visible along the left edge.

***The journey that lies ahead: What
to expect during the path a
graduate student must walk***

Alex Simpkins, Ph.D.

SICL and MCL

Fri, May 1, 2009



Outline

- Who am I?
- Why am I doing this?
- About the DQE/comp exam
- Preparing for the DQE/comp exam
- I passed! Wait....now what?
- Senate exam
- Defense - when to defend
- About the defense
- What is it like?
- Thesis format issues/OGS details
- Resources

A little about me

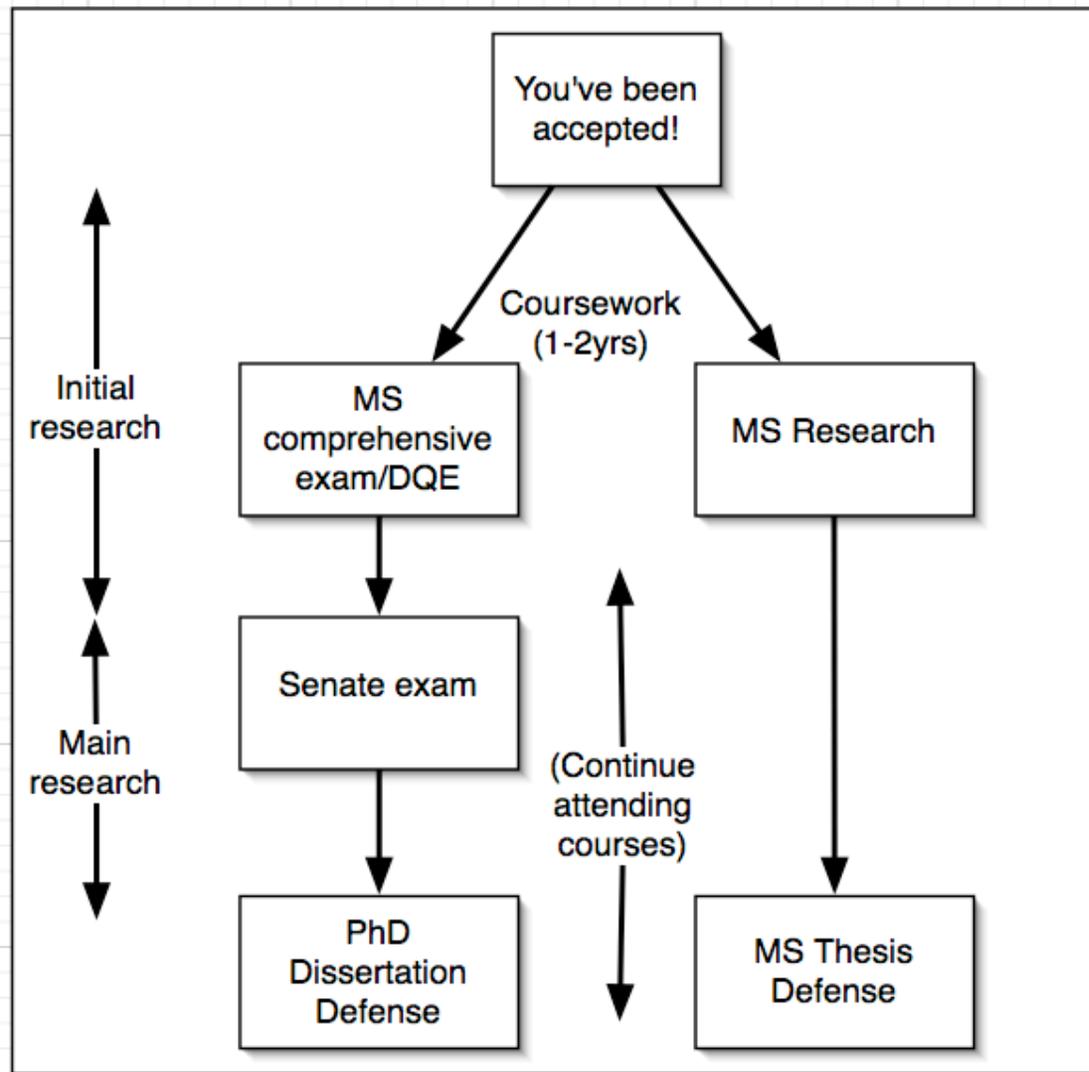
- BS AMES, BS Psyc->MS MAE->PhD MAE
- TA'd 21 times, taught 2 upper division undergraduate courses
- Associated with SICL, MCL, DS, TDLC, SRG
- 12 projects
 - Developed several biomimetic robotic systems (locomotion/manipulation)
 - Stochastic optimal control combined with Bayesian inference to model active exploration in humans and artificial systems
 - If you're really interested you can of course read my dissertation or papers



Why am I doing this?

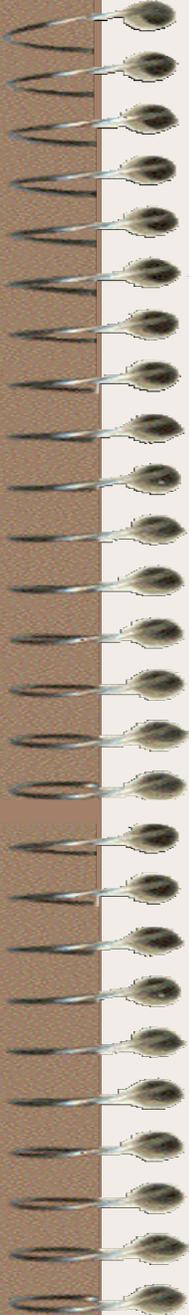
- I didn't have this when I went through
 - First day introduction overview by a staff member
 - Really would have helped to have been oriented to some of these details from a student's perspective
- To help you focus not only on the structure of the degree (i.e. 'getting through it'), but also on self-improvement, doing good research and teaching, and overall to improve your experience at UCSD

The general path



The DQE/MS comprehensive exam - what is it like (I)?

- You, the committee, a chalk board, chalk
- They can ask you any question about any topic related to the courses you took, or material pertaining to those courses, or material which may be derived from an extension of the knowledge gained in those courses
 - Two areas of specialization
 - Major, minor, basic science and mathematics
- Lasts between 0.5-1.5 hours typically, but you schedule for 2
 - That's not that long, so the questions won't be too long
- On the DQE there are three examining Profs., and a fourth member who is an observer (to keep things fair) - they may also ask questions as appropriate
 - The MS exam has one less person

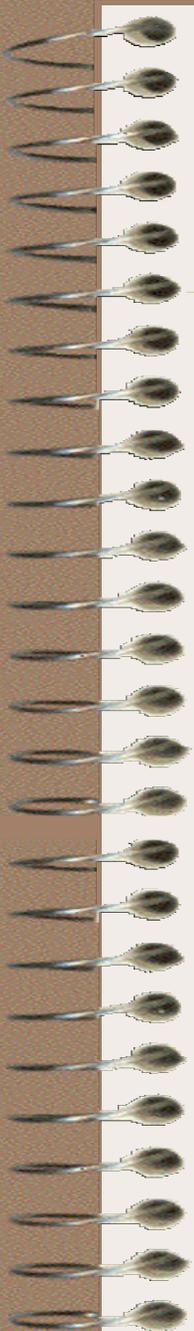


More on the DQE/MS comp. Exam (II)

- Generally the committee will each come up with a few representative questions appropriate to the material from the courses or topics
- It's a good idea to meet with each committee member if possible to discuss the exam with them - what they see the exam as, as it depends on the Professor how you will be examined exactly
 - Typically they will ask both simple and challenging questions, moving towards a boundary of your knowledge and then challenge you to think on your feet in some way
 - It is done in a reasonable way - they don't throw rotten vegetables at you if they don't like what you say

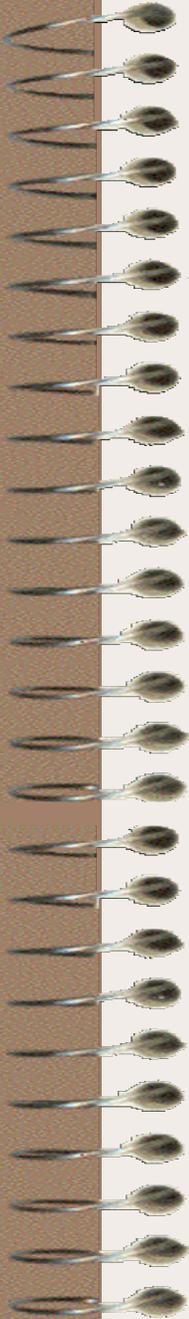
DQE/MS comp. exam preparation (I)

- Go through the course material,
 - know first all the material from
 - assignments, examples, and exams
 - as the Professor will include the most important material from his/her course there
 - know all the readings, notes, and additional references given to you
- If you are computational (MAE) DO PROBLEMS
 - don't just study them.
 - DO THEM ON A BIG CHALK BOARD, NOT JUST PAPER
- Have meetings with fellow students and have them ask you questions
 - Help each other
 - Practice thinking on your feet
- Discuss the type of examiner which each Professor is like with students who have taken their exams with one of those Professors



DQE/MS comp. exam preparation (II)

- Meditate
 - Be calm, breathe, clear your mind before, count your breaths, or use visualization
- DON'T SAY "I DON'T KNOW!"
 - Most importantly, when asked a question NEVER throw up your hands and say I have no idea how to answer that - this doesn't give them a good feeling for the knowledge you've gained - start from something and work your way towards the answer
 - "That's an interesting question, here's how I might begin to address that"
- Realize they will know more than you, and that's OK!
 - Since their combined education and experience may be over 100 years of study, you aren't competing against the Professors!
- You will probably feel challenged afterwards
 - It's rare for people to walk out of the exam and say - wow that was easy, I feel really smart! It will be a challenge, but many people have faced this challenge and succeeded, and if you keep a positive attitude and put one foot in front of the other, you'll do it too!
 - Use the exam for feedback to see where you are weak, where you are strong - these are smart, wise people, and they are honoring you by giving you instruction. Take it as such, and you will improve.



DQE/MS comp. exam preparation (III)

- Final detail
 - Bring snacks that each Professor likes, it makes them happier to be there, and it is a way to treat them with respect
 - Be sincere in your respect

I passed! Wait...now what?

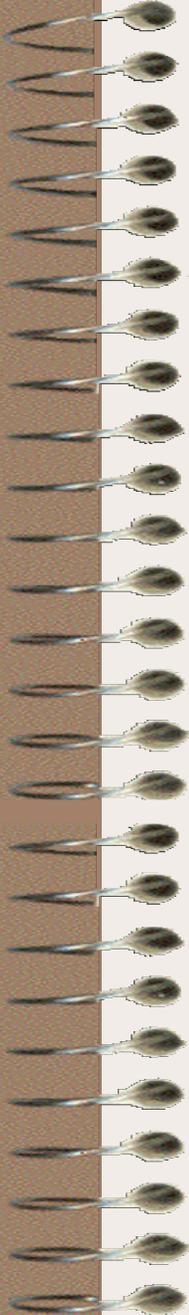
- You'll start research if you have not already, and look for your question/topic
- TA
- Continue courses, audit courses, read, always learn
- Go to every seminar you can in all areas and majors to broaden yourself
- Have a life as well
 - It is important to evolve as a complete person
 - Intelligence stems from specific and broad knowledge and experience
 - There are direct and indirect contributions to your evolution through extracurricular activities

What if I did not pass?

- It sometimes happens that the committee feels it is appropriate for a student to perform further studies before attempting to delve deeply into research
- Don't worry, just take feedback from the committee if this happens, and either
 - Go back through classes (either by auditing or taking pass/no-pass)
 - Study additional references
 - Practice problems, do small projects, apply the learnings
 - Work with other students, practice with each other up at the board
- Try again! You have a few opportunities (varies how many by department)
- Sometimes the committee will suggest the person concludes a PhD program with an MS, and gets experience out in the workforce before attempting to complete a PhD
- If you feel you were prepared and something internally kept you from performing, try seeking some form of internal change/improvement - UCSD has a counseling center, or you could try learning - to perform your best, always strive for a healthy mind and body

Senate exam

- Now you've done some research and are ready to take on a thesis topic
 - Some departments are quite formal about the process leading to this
 - Generally you know it is time to take the senate exam when
 - You discuss the idea with your advisor and he/she agrees (or)
 - Your advisor tells you it is time (or)
 - You have a time limit to complete the exam before
- You must constitute a committee
 - MS - advisor plus two committee members
 - PhD - advisor plus three members, two in and two out of the major area of research
- Less an exam, more a presentation of what you want to do and then feedback by the committee
 - It will help you finish in a reasonable time, and guide you towards successful research topics
- Closed door (to public)



I think I'm ready to defend

- Some important issues/notes
- You need to write your thesis, and get it fairly close to completion
- At least 3 quarters must pass after your senate exam
- Two kinds of dissertations
 - Staple thesis - you put together several papers (alter their form to conform to the OGS standard) and write an introduction and conclusion
 - Standard thesis - you write something from scratch - usually more cohesive with a central theme and a path
- In either case, a thesis is a statement which represents what you did, learned, and are contributing to the academic world which is unique and new

OGS meetings : *Defense, thesis, paperwork have many details*

• 2 meetings with OGS, one before defense one after

• **1st (at least a week before, preferably 2) :**

- Rough draft (complete) of thesis, they will go over formatting, give you a list of corrections
- Permission letters for publications
 - One signed by **each** coauthor (form in OGS handbook), with a cover letter by chair of committee, signed by **chair and student**
 - Can be a single document containing all publications

• **2nd :**

- General Petition and Fee - if not enrolled, \$119 readmission fee in addition to the \$60 filing fee
 - Signed by chair of department (i.e. P.F. Linden)
- Defense report
 - signed by committee and department chair
- 3 copies of abstract, not stapled

Defense non-specifics

- Most important - work with your advisor first as you go
 - Plan and be organized
- Then meet with each committee member if you can to
 - present your intended path
 - request specific input from them
 - they are there for additional guidance and wisdom, though the advisor is primary
 - If you can address any concerns or changes before the defense, the defense holds no surprises for anyone
- Perform a practice as many times as possible in front of your advisor (once probably), colleagues, etc, and request input

What is the defense like?

- You've probably seen many defense talks
 - Go to as many as you can (if you have not yet)
- From the other perspective
 - You may be concerned you won't be able to answer some question, or that you may be challenged during your talk
 - This is unlikely, especially if you have worked with your advisor/committee all along
 - Remember - *you* did the research, so you know the most about it
 - Your advisor will not suggest you defend if he/she feels it is not appropriate yet
 - Others have done it, so can you!

What is the structure of a defense?

- Public part (30-45min)
 - You give a brief presentation on the main topics of your thesis
 - Many bring refreshments - it may be a good idea to ask your committee what they like, since they are giving their time to you kindly
- Private part (10-15min)
 - The public is asked to leave
 - Committee stays
 - Give comments
 - Ask some detailed questions
 - If all goes well, when this is over, your committee signs your signature page and the final report form

What next?

- Make any corrections given to you
- Gather your paperwork, and arrange your 2nd meeting with OGS
- **Before** the meeting, you have to upload your thesis to the UMI database (see formatting issues on next slide) and pay the copyright fee
- After the 2nd meeting, the papers are being processed and you will receive a letter from the dean congratulating you soon after

Thesis format issues

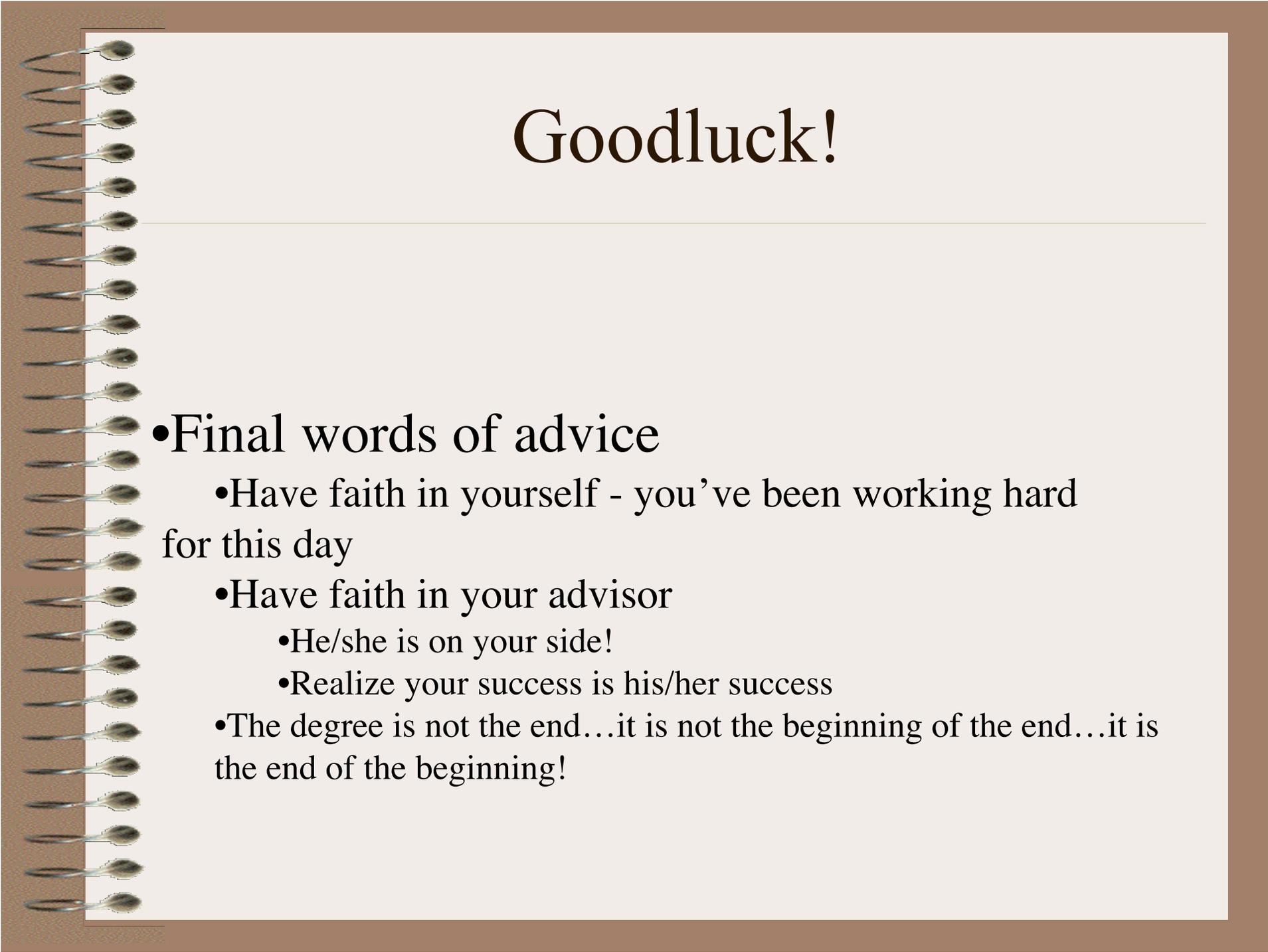
- More specifics in OGS handbook
- Margins most common issue (see handbook)
- Embed ALL fonts
- Pay attention to the order of items in the thesis manual
- Chapter, figure, table, appendix labels must be the same as they appear in the thesis
- Pagination details
- Don't say the word **thesis** for a PhD dissertation - use **dissertation**
- List of committee members -
 - Chair
 - Co-chair (if you have one)
 - The other committee members in alphabetical order
- For electronic filing of dissertations, decide copyright type (public or retain copyright)
 - School pays this fee
- UCSD latex template (available online - unofficial, but helpful)

Resources (I)

- OGS handbook
- Norienne Saign, OGS (Assistant director for graduate academic affairs, for PhD)
- Michelle Carlson, OGS (Graduate advisor, Masters degrees for MS)
- Department web page
 - MAE
 - <http://maeweb.ucsd.edu/grad/advising/advising.php>
 - COGSCI
 - <http://www.cogsci.ucsd.edu/index.php?cat=grads&page=phd-requirements>
- My website (<http://maelabs.ucsd.edu/alex>)

Resources (II)

- Your advisor
- Your graduate advisor
- Unofficial UCSD LaTeX template
 - Available in multiple places, I have a version I'll post on my website which works with the OGS guidelines
- Friends who have defended/completed recently
- All your colleagues at UCSD

A graphic of a spiral-bound notebook with a brown cover and a white page. The spiral binding is on the left side. The word "Goodluck!" is written in a large, dark brown serif font at the top center of the page. Below it, there is a horizontal line. Underneath the line, there is a bulleted list of advice.

Goodluck!

- Final words of advice

- Have faith in yourself - you've been working hard for this day

- Have faith in your advisor

- He/she is on your side!

- Realize your success is his/her success

- The degree is not the end...it is not the beginning of the end...it is the end of the beginning!