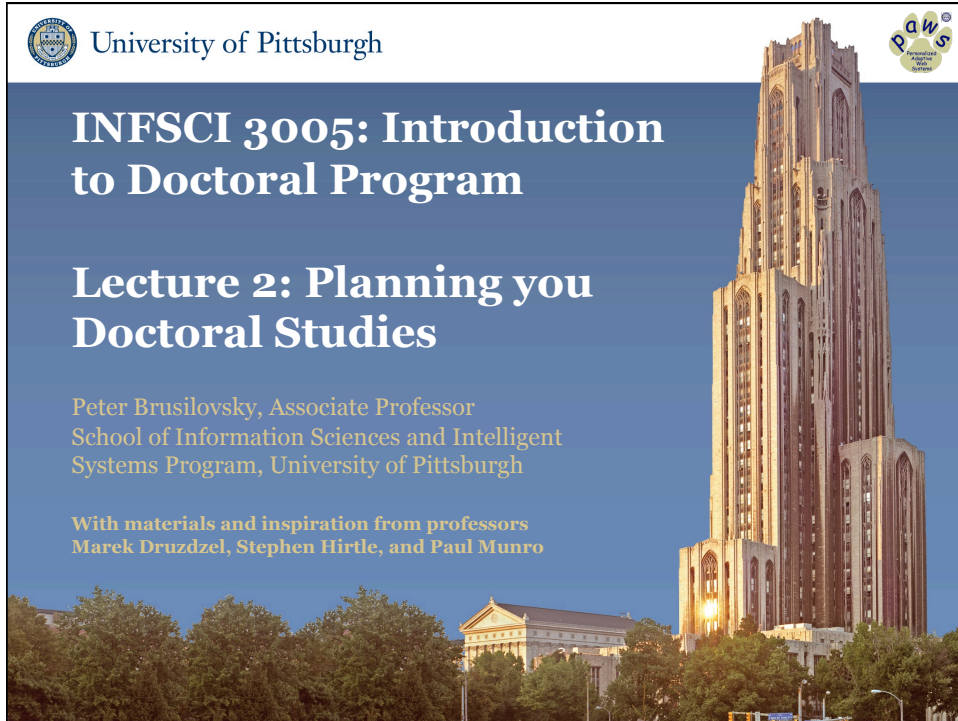



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INFSCI 3005: Introduction to Doctoral Program

Lecture 2: Planning your Doctoral Studies

Peter Brusilovsky, Associate Professor
School of Information Sciences and Intelligent Systems Program, University of Pittsburgh

With materials and inspiration from professors
Marek Druzdzel, Stephen Hirtle, and Paul Munro



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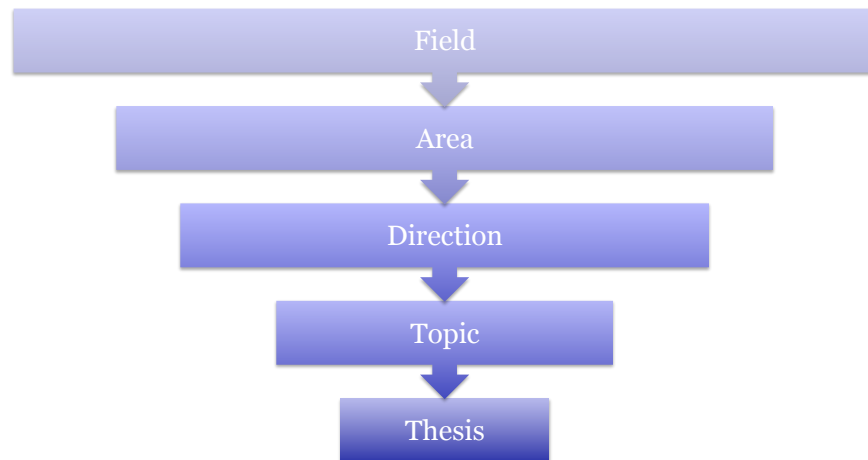
Overview

- Stages of the Doctoral Study
- The Daily Grind
 - Reading
 - Listening
 - Doing
 - Journal
- Advisor
- Committee
- Expectations



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Stages of the Doctoral Study



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The Daily Grind

- Getting the ideas
- Trying the ideas
- Sharing the ideas
- Documenting your work



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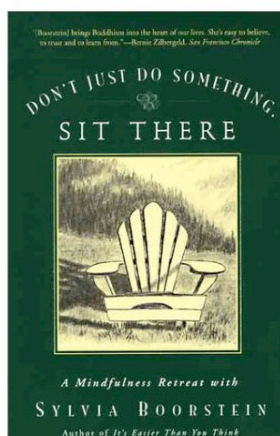
Getting the ideas

- Reading, reading, reading...
- Attending research seminars
- Attending conferences
- Talking
- Explore broadly! Most creative ideas appear on the crossroads
 - Old problem, new math
 - Problem from one field, approach from another



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The Motto of an PhD Student?





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Trying the Ideas

- Don't just sit there, do something
 - You will not get real experience until you try to do something
- Try a small-scale project
 - You have a space for two with two independent studies!
- Start something new or add new component to an existing project
- The benefits of a large group



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Sharing the Ideas

- Sharing you ideas will bring you critical feedback
 - White paper, share with advisor and friends
 - Presentation at your group seminar
 - Doctoral Brown Bag
- Start publishing early
 - Workshops, student posters
 - Your Prelim paper
- Share broadly
 - Sharing your ideas will make you “known”
 - It's easy to learn from others when you have something to say!



Documenting Your Work

- Maintain a research journal
- Central place to put in ideas, reflect on readings and seminars, plan the work and analyse results
- Paper days are gone, use an information system
 - Search, tagging, structuring
- Keeping a blog may combine the journaling and the sharing issues – you will be heard
 - Sometimes you do not want to ...



Advisor

- Advisor is the most vital to your success
 - PhD study is an apprenticeship
- Academic advisor vs. research advisor
- Find your research advisor
 - See and talk to every candidate advisor
 - Go to Brown bag seminars, colloquia
 - Ask around (but use your common sense!)
- Follow your candidate advisor
 - Take his/her classes
 - Attend his/her research seminar
 - Read his/her thesis and papers



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The Advisor: Critical Issues

- Is his/her area of research something that I want to get into?
- Is he/she a good scientist?
- Does he/she have a good track record in terms of publications and funding?
- Has he/she been a good advisor for his/her students (ask around)? Have there ever been problems in his/her interactions with students?
- Is his/her research style fitting my expectations? Can he/she be my role model?
- Will he/she have enough time for me?
- Can I get along with him/her personally?
- Does he/she have (prospects for) money for me?



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Your Dissertation Committee

- The Committee is very important
 - Shaping your thesis from multiple prospects
 - The committee should be strong in the area of your proposed work and should be able to contribute something meaningful to your thesis (they are your secret weapons)
- Think about the committee early
- Choose the committee together with your advisor
- Preferably involve the potential committee members in your Comprehensive Exam



The Committee: Critical Issues

- There should be no fundamental scientific disagreements between your advisor and the other committee members
- There should be no personal animosities between your advisor and the other committee members
- They should be reasonable (ask around). Every committee member potentially pulls in his/her direction and can mean more trouble for you
- Try not to have more than three or four people in your committee. If the requirement is higher, take the minimal number



Expectations

- You already selected your field by applying to SIS
- Choose your area and your advisor within the first 2 years
 - Preliminary Examination is a good trial of an area and an advisor, but it is not a contract
 - Your first projects is more for trying and area and learning how to do research
 - Until this is done, your reading should be broad, not narrow: read many overview papers
- Choose your specific direction of work within first 3-4 years
 - Once it is done, start extensive reading and exploration in this direction
 - The structure of Comprehensive Exam helps you to do it
 - Do research and start publishing your work in this direction early (the earlier, the better, you will not get a good job with a thesis alone!)
- Start working on your thesis before you hit 5th year in the program
 - Your thesis is the culmination, but not the whole content of your study
 - Still a lot of reading and a lot of work



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Wise Words from the Faculty (M.D.)

- Don't wait for your "lifetime" topic - this is an illusion
- Don't think that hanging around for five years will give you a degree
- Freedom of choice is also an illusion
- Make a commitment to your career, organize your life, make sacrifices (no TV, no newspapers, no newsgroups and web surfing)
- Consider quitting your job so that you can focus on your studies
- Have a role model, be careful whom you are following and who you are listening to. Avoid crowd mentality



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More Wise Words from the Faculty

- Get involved in research as soon as possible, preferably during your first semester here
- Don't jump around in terms of research groups and advisors. Make a commitment and follow it up (unless it really does not work out)
- Work hard, spend time on things. You can't go around the 10 years 80 hours a week baseline
 - Perhaps, if you are exceptionally smart, 9 years and 75 hours a week will suffice
- Stop working in the "course and exam" mode. Everybody knows that you are good at it