



University of Pittsburgh

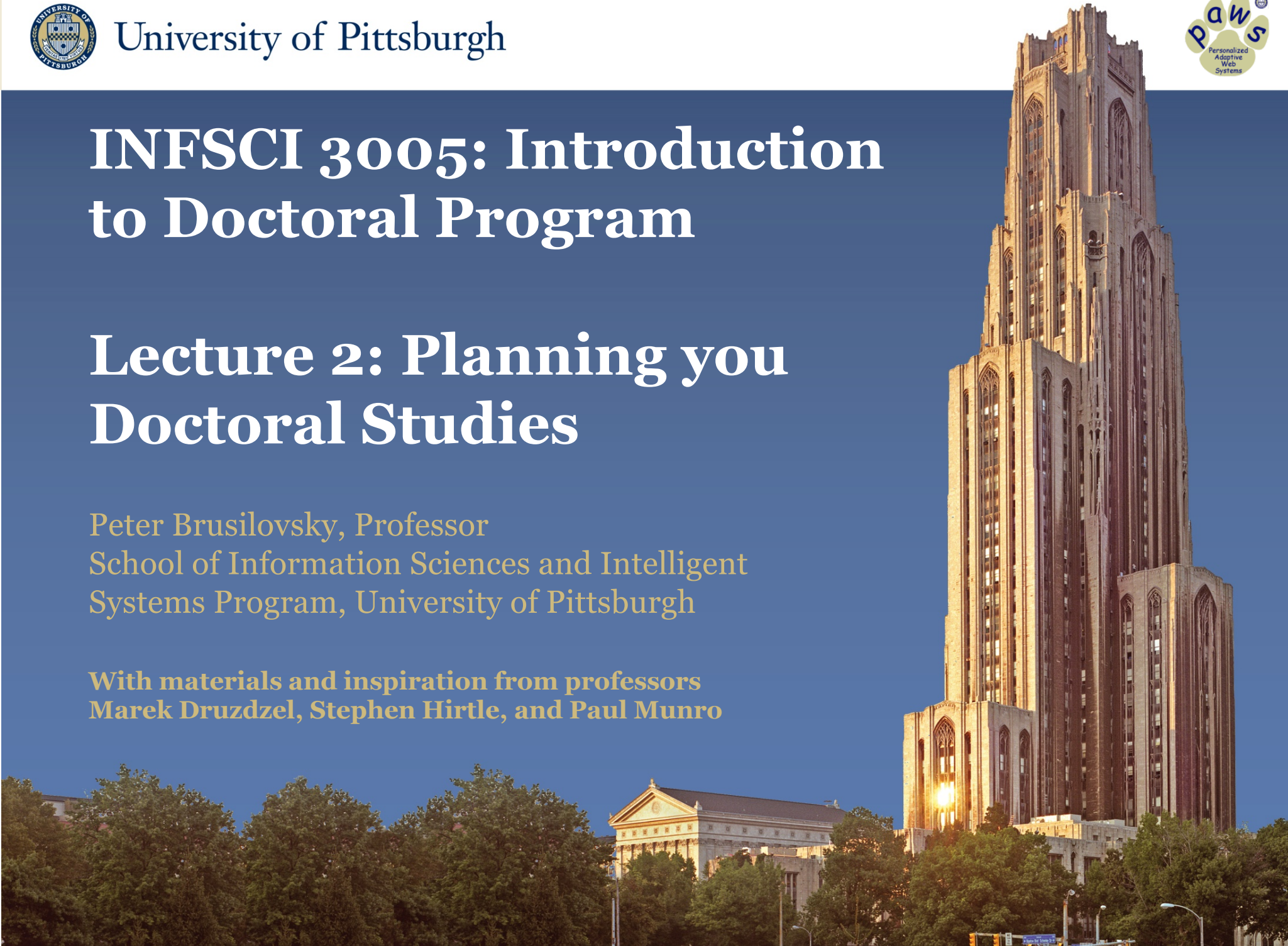


INFSCI 3005: Introduction to Doctoral Program

Lecture 2: Planning your Doctoral Studies

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





Housekeeping

- Reminders and comments about work to do
 - Your blog and home page
 - Read, contribute to the reading discussion (3 per week!)
 - Find, post, attend, summarize research talks
 - Posting errors (duplicates, metadata...)
 - Connect to me (and each other if you wish)
- Answering questions



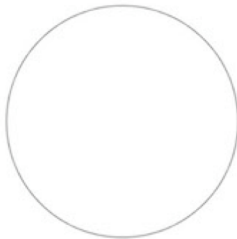
Overview

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

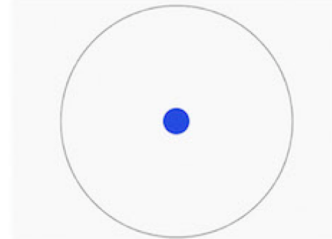


What is a PhD?

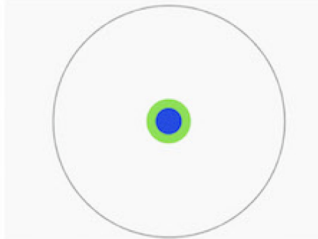
Imagine a circle that contains all of human knowledge:



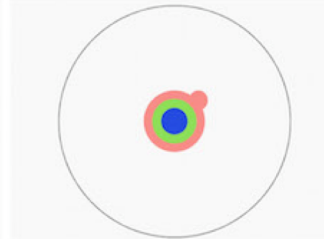
By the time you finish elementary school, you know a little:



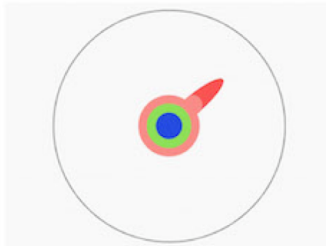
By the time you finish high school, you know a bit more:



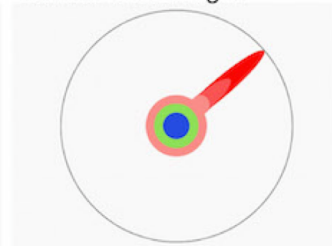
With a bachelor's degree, you gain a specialty:



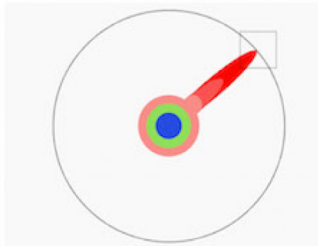
A master's degree deepens that specialty:



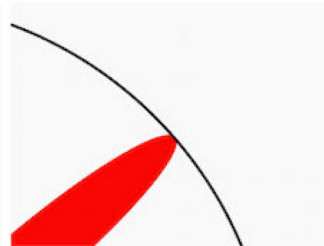
Reading research papers takes you to the edge of human knowledge:



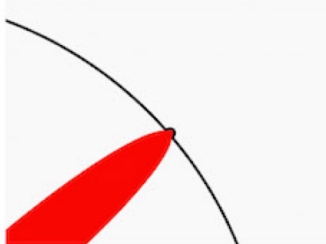
Once you're at the boundary, you focus:



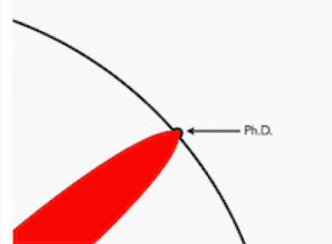
You push at the boundary for a few years:



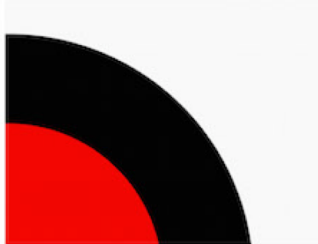
Until one day, the boundary gives way:



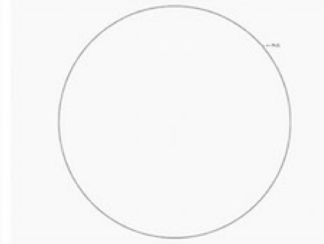
And, that dent you've made is called a Ph.D.:



Of course, the world looks different to you now:



So, don't forget the bigger picture:

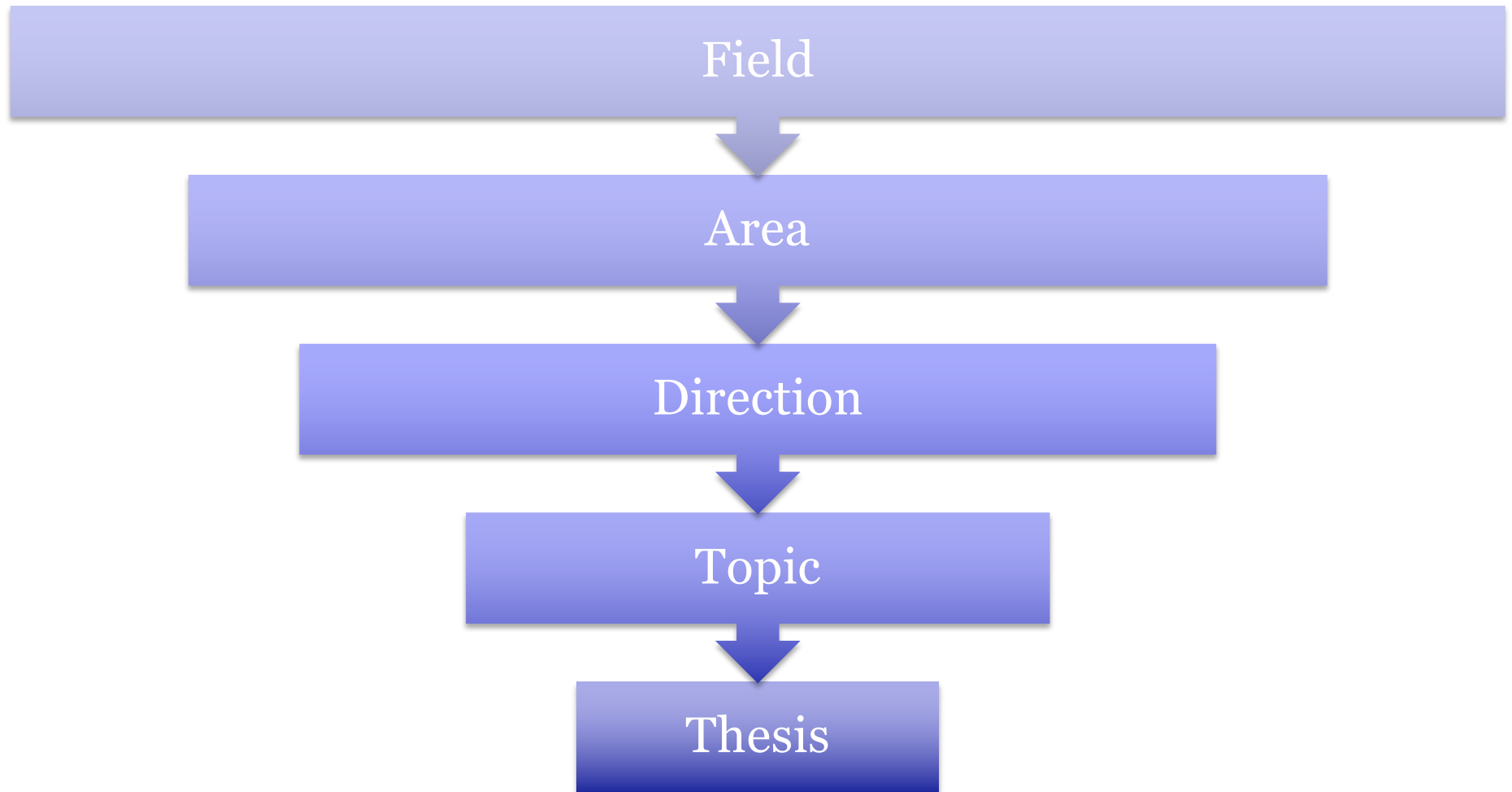


Keep pushing.

<http://www.openculture.com/2017/06/the-illustrated-guide-to-a-phd-12-simple-pictures-that-will-put-the-daunting-degree-into-perspective.html>

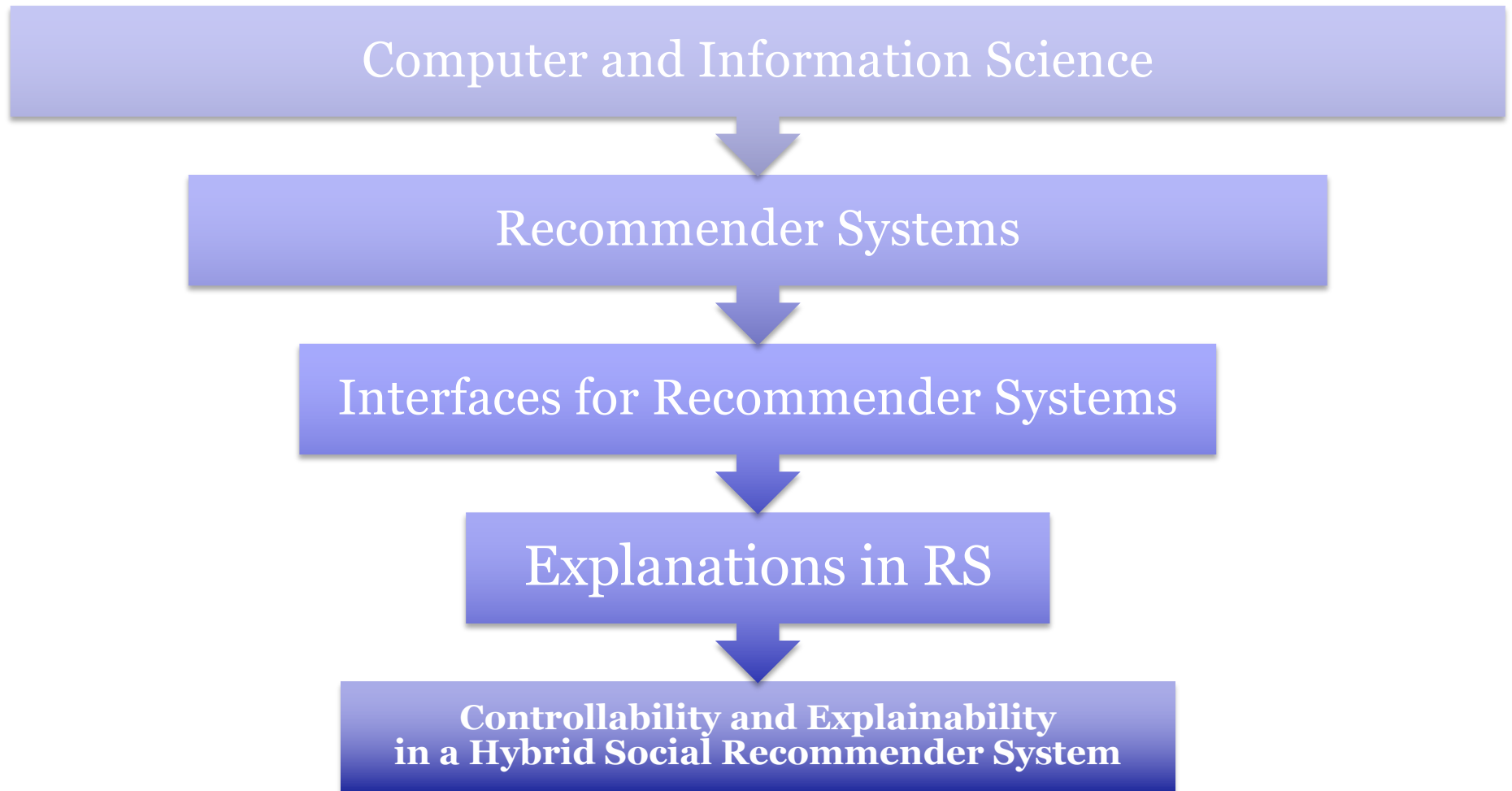


Stages of the Doctoral Study





Example: Chun Hua Tsai





The Daily Grind

Getting the ideas → Trying the ideas →
Sharing the ideas → Documenting your work ↗

Piled Higher and Deeper by Jorge Cham

www.phdcomics.com



WWW.PHDCOMICS.COM

title: "The Daily Routine" - originally published 4/20/2012

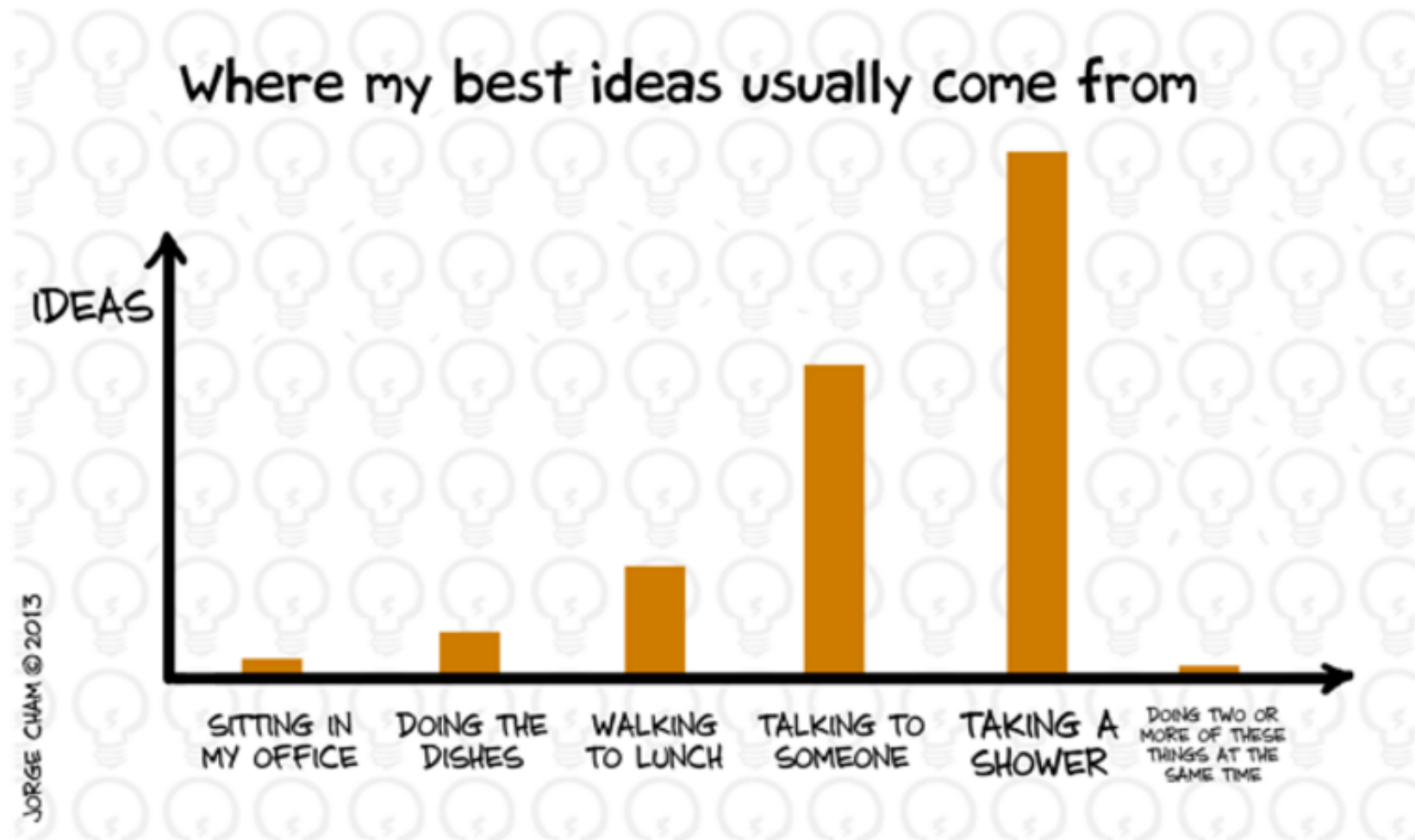


Getting the ideas

- Reading, reading, reading...
 - How many papers per year?
 - Journal club
- 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



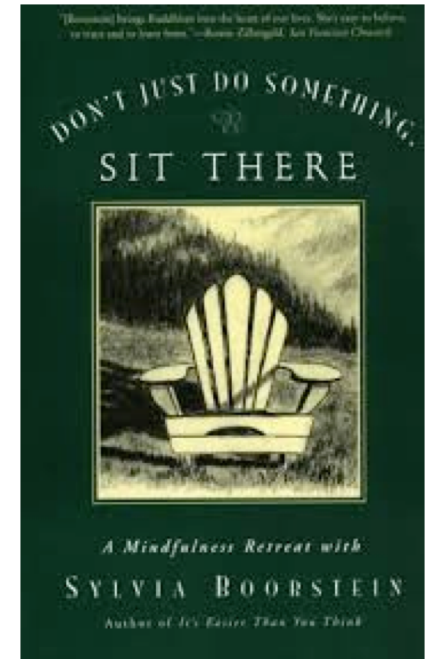
Getting the Ideas?





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 NOW
 - IS students have a space for two with two mandated independent studies, but ISP students can take independent studies too!
- Start something new or add new component to an existing project
- The benefits of a large group





Sharing the Ideas

- Sharing your ideas will bring you critical feedback
- Shape your ideas as white papers, share with advisor and friends (course project!)
- Present at your group seminar
- Doctoral Brown Bags
- Your prelim paper
- Submit to Student/Doctoral Consortia at research conferences



Share Broadly!

- Start publishing early
- Sharing your ideas will make you “known”
- It's easy to talk to / learn from others when you have something to say!
 - Start with your poster/paper when talking with others at conferences!
- Plan realistically, start small
 - Posters
 - Workshop papers
 - Short contributions
 - But think core conferences!
- Make sure your prelim paper is really published



Documenting Your Work

- Maintain a research journal!
- Central place to put in ideas, reflect on readings and seminars, plan the work and analyze 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





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?



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)
 - They will also learn the details of your work and cite/promote it
- Think about the committee early
 - Take classes with faculty who will likely to be on your committee
 - Seek research advise of prospective committee members when appropriate
 - Preferably involve the potential committee members in your Comprehensive Exam
 - Engage with prospective external committee members (classes, indep. studies, conferences, advise meetings, internship, joint work)
- Discuss potential committee members and choose THE committee together with your advisor

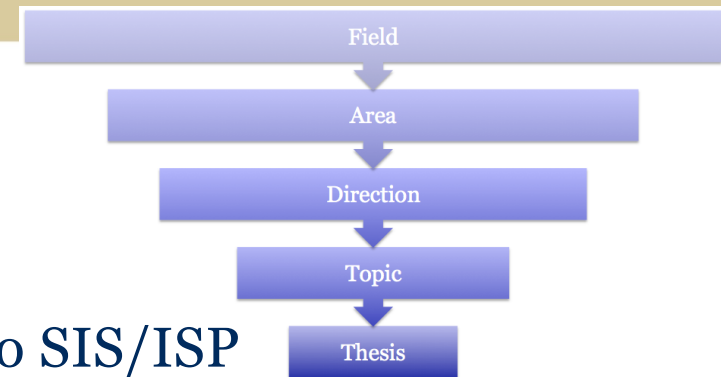


The Committee: Critical Issues

- 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 minimal required number of people in your committee (4 for IS/ISP)



Expectations



- You already selected your field by applying to SIS/ISP
- 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 (3-4 projects of increased complexity and maturity)
 - 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



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)
- Stop working in the “course and exam” mode. Everybody knows that you are good at it
- Don't think that hanging around for five or six years will give you a degree
- A degree alone is not enough to get a good job!
 - Make sure you are visible, well-published, and competitive when you graduate



More Wise Words from the Faculty

- Don't wait for your “lifetime” topic - this is an illusion
 - Newell's lecture "Desires and Diversions"
- 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)
- Part-time PhD? Consider quitting your job at some point 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



And Yet...Do not Burn Yourself out

- PhD years are not only about study, it is possibly the best time in your life
 - Make them memorable
- Combine work, study, with active life
 - Take care of your body (eat well, exercise, and use sunscreen 😊)
 - Do not neglect social life
 - Enjoy cultural life
- Pittsburgh is a city of opportunities
 - Pitt Arts: <http://www.pittarts.pitt.edu/>