# Applying to Graduate School and Preparing a Stellar Application

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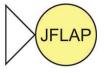
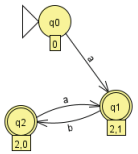
## Susan Rodger



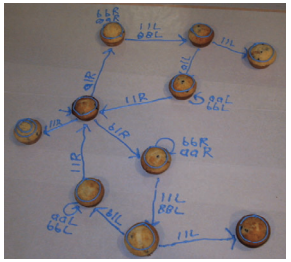




- My path
  - BS Math/CS NCSU
  - MS, PhD Purdue
  - Rensselaer Poly. Inst. – Assistant Professor
  - Duke University – Professor of the Practice (Pop)
    - (Assistant Pop, Associate Pop, Pop)
  - Research – CS Education, Visualization, Tools learning CS, integrating computing into K12



## Susan Rodger

- Fun - run/swim/hike, baking, cats, writing Wikipedia pages



- You should have something to keep your sanity!



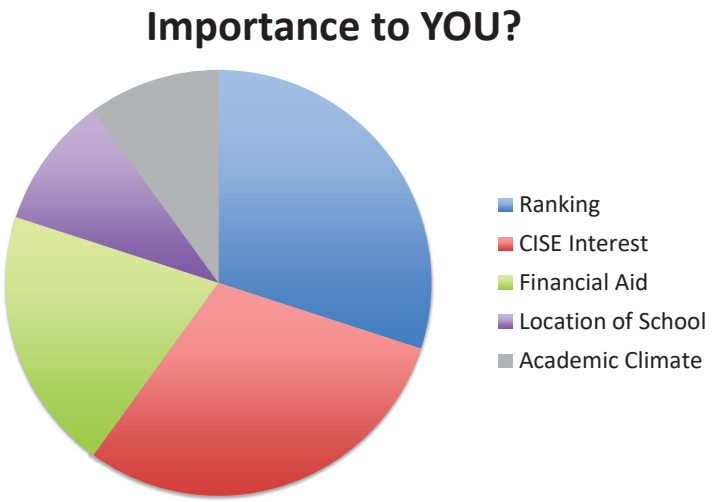
## The Application Process

# Deciding Where to Apply
(answer these questions)

1. What areas of computing interest me?
2. What type of degree am I considering? MS? PhD? Why?
3. What type of academic climate do I want to study in?
4. Do I have any geographic preferences? Any restrictions?
5. What are my academic credentials?
   (GPA, research experience, test scores, communication skills)



# Where to apply?
# Factors To Consider



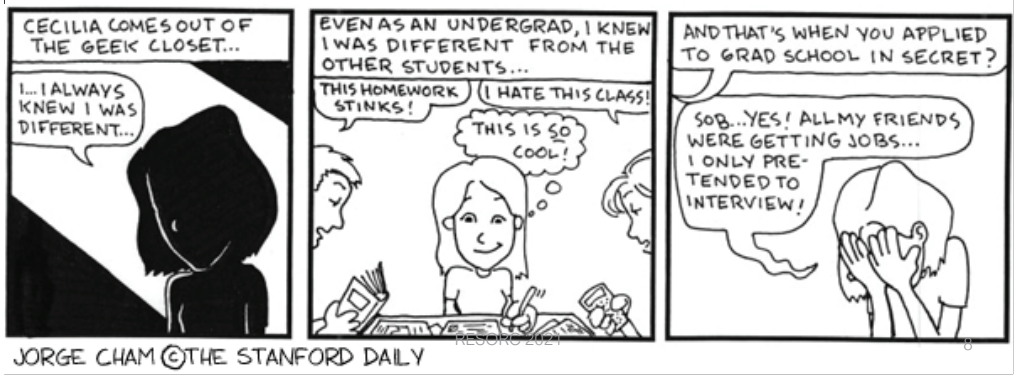



# Master's VS PhD

| Masters | PhD |
|---|---|
| 2-3 Years | 3-7 Years |
| Courses + Thesis/Project | Courses + Research + Dissertation |
| More attractive for industry/lab | Minimum for Industry/Lab Research |
| Minimum for Instructor | Minimum for Academic Position |
| Not much opportunity to specialize | Become expert in particular research area |
| Often limited grad study funding | Easier to obtain RA/TA support |



# Is grad school for you?



# How much do you want it?




# A Question to YOU

1-minute to think:

Assuming you have decided to pursue a PhD degree, what do you think is the *MOST* important decision you will make *DURING* graduate school?



# MOST IMPORTANT DECISION DURING GRAD SCHOOL

*Choice of a dissertation advisor.*

So,

Learn about the faculty:

- their areas of interest
- their research records
- their success in mentoring students
- their success in graduating female/minority students



# What can I do to increase my acceptance into grad programs?

- Maintain a high GPA
- Take as many high level courses as you can, particularly within your interest area
- Gain undergraduate research experience
- Participate in internship, preferably in your area of interest
- Create connections with qualified, respected faculty

# What can I do to increase my acceptance into grad programs?

- Seek *strong* recommendations from qualified, respected faculty
- Take GRE subject test early so you can retake
- Apply to multiple schools of various rankings (1-2 reach schools; 1-2 safe schools)
- Apply as a PhD student rather than an MS student



# CRA-WP DREU program:

## Distributed Research Experience Undergrad

(hits 4 of the 9!)

- Gain undergraduate research experience
- Participate in internship, preferably in your area of interest
- Create connections with qualified, respected faculty
- Seek *strong* recommendations from qualified, respected faculty



# Preparing Application Materials

EVERY program is different, but most want:

- Application (basic contact info)
- Transcripts
- Letters of recommendation (2-3)
- Statement of Purpose (Goals/Research/Intent)
- Resume
- Test scores (GRE, TOEFL / IELTS)
- Fee
- Deadline!



# Engaging Letter Writers

Typically 3 letters.

- Who?

  "Would you be able to provide a positive recommendation?"

  Research advisor, teacher of high level course, employer in CISE, REU mentor,

- What to give them?
  - Transcript, resume, statement of purpose
  - Chart of schools, deadlines, how to submit letter

  When?

  At least 2-3 weeks before first deadline

# Taking Entrance Exams

- GRE general and Advanced in CS
  - Are they required?
  - What scores are acceptable?
  - Take spring junior/fall senior years
  - Retake if needed
- If non native English speaker:
  - TOEFL, TOEIC



# Statement of Purpose

- Your motivation for grad school
- Your CS interests
- Your professional goals
- Evidence of potential success:
  - Research experience
  - Relevant accomplishments

*** originality, creativity, problem-solving ability, inquisitiveness, independence, the ability to collaborate, and good writing skills



# Biggest Mistakes on Statement?

- Not referencing any other research
  - Shows you haven't done your homework, not familiar with area
- Not asking professor/advisor to comment on statement
  - They can't write it for you, but can give you feedback on what you have written



# Finalizing the Application

- Follow up with letter writers
- Request official transcripts be sent
- Report test scores
- Complete/copy application

PAY ATTENTION TO DETAILS!!!
MEET THE DEADLINE!!!

# Financing Your Graduate Study

- Admission application - 1st Step
- THEN, Apply for financing opportunities:
  - Teaching Assistantships
  - Research Assistantships
  - Fellowships
- Apply for Outside $$
  - Grants
  - Loans(at banks not through financial aid)
  - Fellowships – e.g., NSF Graduate Research Fellowship Program



# NSF Graduate Fellowship

- How much?
  - $34,000/yr plus tuition– 3 years
- When can you apply?
  - Senior, 1st and 2cd year grad student
- Should you apply as a senior?
  - Yes, compared to other seniors, not grad students
- Four parts: personal statement, previous research, proposed research, reference letters
  - Must address intellectual merit, broader impacts
  - Why address broader impacts?
    - Is government spending money wisely?



# Evaluating Your Offers March/April

- Spend time researching programs
- Visit the schools
- Meet faculty in your CISE interest area
- Admission decisions by committee
  - meet more faculty
- Meet current grad students/alumni and ask about their experiences
- Don't attend a school that is great in Cyber Security with no HPC if you want to do HPC (what's HPC?)



# Making Your Decision

- You will probably do well at any of your top choices.
- Make decision and inform ALL schools in timely manner.
- Write thank-you notes to letter writers.
- Look forward and celebrate!!!

# Resources

- Talk to your professors!
  - Ask them why they went to grad school
  - Ask them why they became a professor
  - Tell them you are considering grad school

- "Applying to Ph.D. Program in Computer Science" PDF - http://www-2.cs.cmu.edu/%7Eharchol/gradschooltalk.pdf



# Do you have questions?

- Where to apply
- Preparing application
- Getting letters of reference
- Taking GRE's
- Finalizing the application
- Funding Graduate School
- Evaluating Offers
- Making final decision