Academic Career Paths & Job Search

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Outline of Presentation

• Introduction
• Research-focused Positions
• Teaching-focused Positions
• Job Search

About this session:
• You can ask questions at any time
• Come to the mic, state your name and school first, then ask you questions or share your comment
Zadia in Brief

• Education
  – MS Computer Science, University of Mauritius (2008)
  – Ph.D. Computer Science, Mississippi State University (2016)
  • Research Area - Software Engineering

• Professional
  – Industry - Accenture
  – Academia
    – University of Mauritius, University of Technology Mauritius
    – Currently a Visiting Assistant Professor at a Teaching Focused Institution (Colby College)
    – Tenure-Track Assistant Professor at a Research Focused Institution (starting Fall 2019)

• Personal
  – Fulbright Foreign Student Program Scholar (2011-2013)
  – IBM Ph.D. Fellowship Awardee (2013-2016)
  – Love traveling, cooking, photography and fascinated by lighthouses!
  – Attended Grad Cohort 2012-2014
Nancy in Brief

- PhD @ UIUC; MS @ Berkeley; BS applied math & econ @ Stanford
- Prof @ Texas A&M: 1995-2018
- Prof & Dept Head (back at) @ UIUC: since Jan
- Research – Applied Algorithms
  - robotics, computational biology & geometry, parallel algorithms
  - Graduated 24 PhDs (10 profs, 9 research labs, 2 postdocs, 3 startups)
Expectations of Academic Positions

• Research
  – Engage in scientific discovery, involve graduate and undergraduate students, fund research

• Teaching
  – active teaching, mentoring, advising

• Administration/Service
  – Internal - Departmental, school/college, university
    – Committee service, grad advisor, admissions, chair
  – External – professional society, govt agencies, outreach
## Types of Institutions & Positions

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Institutional Expectations Differ!

Research-Focused Positions
  50%-80% Research
  10%-40% Teaching
  5% - 10% Service

Teaching-Focused Positions
  50%-80% Teaching
  10%-30% Professional Development/Scholarship
  5%-20% Service
Small Group Discussion

First, think about research and teaching activities

• What would you like about a research-focused position?
• What would you like about a teaching-focused position?

Now, think about would be your ideal percentages for the time for teaching, research and service?
Research-Focused Positions
Research-focused Positions:

Research Expectations

- **Publications** - journal, conferences, workshop (focus on top peer-reviewed venues)
- **Funding** to support research group and summer salary (peer-reviewed, basic vs. applied, grant vs. industry)
- **Graduate student mentoring** (and their success)
- **Reputation and Impact**
  - Higher in rank: more visibility and international reputation - invited talks, conference or journal editor/ed. boards, professional org roles
- **Maybe:**
  - MS/Undergraduate research mentoring
  - Patents, software artifacts,...
Research-focused Positions: Teaching Expectations

- Teaching load: typically 1:1 to 1:2
- Mix of undergrad and grad courses
- Teaching assistants for grading, office hours, and overall course management help

**Promotion and tenure:**
- Good/excellent research required
- Good teaching required (poor teaching unacceptable)
- **but remember…..**
  - Teaching & students are why we are in academia – nothing beats the charge I get when my students “get it”
  - Everyone can learn to be a good/competent instructor
Research-focused Positions: Service Expectations

Be selective: choose roles where you can have impact & engage - “power” committees
- Pre-tenure: prioritize service synergistic with research goals
- As you progress, will have more opportunities, internal and external

Internal (Department or University)
- Graduate admissions (first shot at recruiting)
- Faculty search (select colleagues and future collaborators)
- Fellow/leadership training opportunities
- “Passion Picks” – the ones it will really pain you to decline (be careful!)

External (Conf, Professional Societies)
- Program committees
- Funding panels
- Professional society involvement
- Journal editorship
- Conference organization – workshop/program chair, invited speakers
- Organize workshops
Gaining the Necessary Skills

Graduate School!

Research

• Apprenticeship - learn from adviser, doing it, and others
• How do ideas come?
• How to organize research?

Teaching

• Teaching experience (even if don’t have to)

Service

• Organizing student organizations/support groups - Women in CS
• Working on department committees
• Volunteering at conferences
Challenges

**Balancing** the three roles - same as in graduate school
- All three can be infinite sinks
- Should not spend all time on one
- Remember you mentors – they can help!

**Networking** - forcing yourself to talk to strangers

**Pressure** of tenure and promotions
Rewards

- Love of research and freedom to do research that you want
- Working on research with graduate students
- Involving undergraduates in research
- Making friends across the world
- Variety and flexibility of work
- Creating the kind of career that you want - independent (as long as meet expectations)
Some Advice: pre-tenure years

● Find mentors and professional cohorts
● Choose your teaching and service so they are synergistic with your overall career plan
  ● Prioritize
● Collaborate if you can
● Learn to say no politely and suggest alternative
● Enjoy your work and colleagues!!
Postdocs

Continue research with another mentor
  • Expand network, stronger record, etc
  • a new field

Funding
  • Fellowship you apply OR university/department
    OR professor research grants

Best-case Scenario
  • 1-2 years, good mentor, high-ranked school that will help you transition to the academic position you want
  • Increasingly, already have tenure-track position and defer start for 1-2 years
Challenges of Postdocs

Lower pay (compared to faculty, industry)

Role in the university
- Not a student, but not faculty
  - Depending on school, can feel isolated

May not have independence
- working on PI’s grant

If you have family, can be difficult to move for a temp position
Research Scientist

No tenure

“Soft money” - grant writing!

Less requirements (service, teaching)
Can focus on research

Dependent on PI
Hired to get things done for grant
Not independent
Need a good advocate, well-funded lab

Possibly easier work/life balance
Teaching-Focused Positions
Types of Teaching-Focused Positions

- Small College/University
  - Professor with tenure
  - Lecturer/Term Faculty
  - Professor of the practice

- Research University
  - Variety of types/titles
  - Teaching Professor
    - Professor of the Practice/Clinical Professor, Lecturer with SOE (CA)
  - Lecturer/Senior Lecturer
Expectations of Teaching-Focused Positions

- Primary workload is teaching
  - 2-5 classes per semester
  - Significant office hours expected
  - Wide variety of courses at all levels
  - Advising may be required

- Scholarship/Professional development
  - Mentoring undergraduate research
  - Remaining current in technical and pedagogical aspects of the discipline

- Service
  - Department - curriculum, outreach, advising
  - Campus-wide – committees
  - Encouraged – conferences, professional societies
Research at Teaching Universities

• Financial support is limited
  – May be startup funds or small institutional grants
  – Typically small or no budget for student support

• Release from teaching is not guaranteed
  – May get load credit for research mentoring
  – Some have summer research programs

• Utilizing undergraduate research programs helps
  – CRA-W DREU and CREU programs
  – REU programs through NSF
Preparing for Teaching-Focused Career

• Take every opportunity to gain relevant experience
  – TA positions
  – Instructor of record for one or more courses (often possible at lower levels)
  – Training by university center for teaching excellence
  – Ask for written evaluation of teaching from peers/mentors

• Don’t ignore scholarship
  – Know how your research interests can involve undergraduates
  – Engage in the educational community (e.g., SIGCSE)
Challenges of Teaching-Focused Career

- Student demands can be very high
- Finding time for scholarship/research
- Finding collaborators for research
- Over-involvement in service
- Infrastructure (computer services, grant administration, etc.) may be more limited
- Perceptions of prestige
- Salary differential
Rewards of Teaching-Focused Career

• Student/alumni relationships run deep
• Colleague relationships extend across the university - fosters interdisciplinary work
• Opportunities for departmental and university leadership
  • Director of Undergraduate Studies
• May better align with personal goals/interest
Job Search
My Journey in Academia (Zadia - Post Ph.D.)

- Faculty Job Search in 2015
- Ph.D. 2016 (Fall)
- Visiting Assistant Professor (starting Spring 2017)
- International Faculty Job Search in 2018
- New Position in Fall 2019 (Assistant Professor)
Faculty Positions - By the Numbers

- Hiring for a single position can bring in hundreds of applications
- Phone interviews can be some small percentage of all applicants
- Between three to eight applicants brought to campus for interviews
- One offer made to top interviewee
Faculty Job Application Documents

- Cover Letter
- CV
- Research Statement
- Teaching Statement
- Diversity Statement (some schools)
- Reference Letters
- Sometimes, online forms (extract information from your CV).
- Essay-type questions (Australia/UK)
Cover Letter

• Customize it
  – Name of chair of search committee (if available)
  – Exact position (include any reference number)
  – Name of school

• Highlight your accomplishments

• Include what courses you can teach (if asked)

• Depending on teaching or research position, highlight that aspect first

• Demonstrate your interest in the school/position

• Proof read!
CV

Standard Information
- Standard resume information (contact details, education, work experience,..)
- Awards and Honors
- Publications with full citations
- Service
- References

What we look for (in a glance):
- Holes in education/employment
- Number and quality of publications (by type)
- Teaching Experience
Research Statement

• Introduction – general field and topic of your research

• Different sections
  – Doctoral research (cite your work)
  – What are you currently working on? (not applicable to fresh graduates)
  – What do you plan to work on next?

• Remember: This will be read by experts in your area and non-experts

• Trying to assess if your work will be a good fit to our department
  – Does your area strengthen our current areas?
  – Teaching - Can undergraduates participate?
  – Research - Is this a good area for funding, future work?

• Limit to 2/3 pages
Teaching Statement

• Introduce your teaching philosophy

• Relate your teaching-based activities to your philosophy
  – What concrete activities have you done that backs up your philosophy?

• Teaching-based activity:
  – Teaching
  – TA
  – Student Mentoring

• About 2 pages
Diversity Statement

• Some institutions are now asking candidates to provide a diversity statement (e.g., UC schools, UIUC, more)

• statement showing commitment to diversity
• demonstrate evidence of activity related to diversity, equity, and inclusion through research, teaching, and/or service endeavors
• Discuss future plans
Reference Letters

- 3-4 letters
- Writers must address your skills for the position
- Writers have freedom:
  - Can discuss timeline gaps

- This is one of the most critical components of your application!

- Some tips:
  - Academics typically know how to write these
  - Letters from the same writer for two applicants can be compared
  - Help your writers!
After the Faculty Application

• Phone Interview
  – Typically one hour
  – Typically with Chair or Search Committee
• In person interview and talk
  – 1-1.5 long day(s) (breakfast to dinner)
  – 45-55 min research talk
    • Specialists and non-specialists
    • Don’t go over
    • Lots of questions
  – Meetings with: Chair, faculty, dean, other departments, etc.
• Offer and negotiation

• Hints
  • After all applications are out, start working on your talk early!
  • Get help along the way!
  • Feel free to run to the bathroom!
  • Bring energy/granola bars
Postdoc Applications

• Usually a two year position

• Think about what you want to do:
  – very similar to what you do
  – something that extends your current work

• Talk to people
  – your advisor
  – faculty in your area
  – postdocs in your area

• Interview process usually informal: emailed CV, in person visit with talk
• It’s easier to get a postdoc than most people think. We love postdocs!
• Use them to:
  – Move to a more prestigious institution
  – Move to a different area
  – Get skills you didn’t have before
Where to Find Job Listings

CRA:  http://cra.org/ads/
  • You can also submit your CV/materials to the CRA database where CRA member institutions can access them

ACM:  https://jobs.acm.org/


Chronicle of Higher Ed: https://chroniclevitae.com/job_search/

Listservs, e.g., CRA, Robotics-Worldwide
Resources

CRA-W Career Mentoring Workshops:
https://cra.org/career-mentoring-workshop/

On Academic Life:
http://dynamicecology.wordpress.com/2014/02/04/you-do-not-need-to-work-80-hours-a-week-to-succeed-in-academia/

On Post-Docs:
http://cra.org/resources/bp-view/best_practices_memo_computer_science_postdocs_best_practices/

Tips on doing an academic job search:
http://matt.might.net/articles/advice-for-academic-job-hunt/
https://homes.cs.washington.edu/~mernst/advice/academic-job.html

Thanks to prior Grad Cohort speakers for these resources
Now for your Questions!

• Come to the mic
• State your name and institution
• Then share your question or comment