

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



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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



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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)



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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



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Types of Institutions & Positions

Type	Degrees offered	Primary	Important
Research universities	Ph.D.	Research	Teaching & Service
		Teaching	Scholarship/Research & Service
Colleges/ universities	M.S.	Teaching	Research & Service
Selective Liberal Arts Colleges	B.S., B.A.	Teaching	Scholarship/Research & Service
Undergrad oriented	B.S., B.A.	Teaching	Service & Research



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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



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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?



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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,...



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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



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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



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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



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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)



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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!!



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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



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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



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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



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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



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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



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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



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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)



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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



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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



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Job Search

My Journey in Academia (Zadia - Post Ph.D.)



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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



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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)



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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!



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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



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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



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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



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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 a activity related to diversity, equity, and inclusion through research, teaching, and/or service endeavors
- Discuss future plans



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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!



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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



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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



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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/>

IEEE: <http://careers.ieee.org/>

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

Listserves, e.g., CRA, Robotics-Worldwide



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Resources

Thanks to prior Grad Cohort speakers for these resources

CRA-W Career Mentoring Workshops:

<https://cra.org/career-mentoring-workshop/>

On Academic Life:

<http://blogs.scientificamerican.com/guest-blog/2013/07/21/the-awesomest-7-year-postdoc-or-how-i-learned-to-stop-worrying-and-love-the-tenure-track-faculty-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>



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Now for your Questions!

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



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