

Academic Career Paths and Job Search

Mary Lou Soffa, University of Virginia
Susan Rodger, Duke University
Michelle Mazurek, University of Maryland



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All academic positions involve research, teaching and service

Research

engage in scientific discovery, involve graduate and undergraduate students, fund research

Teaching

active teaching, mentoring, advising

Administration/Service

Chair, serve-on committees, etc.

- Departmental
- School /College
- University
- Professional

Types of Colleges/Universities

Type	Degree Program	Emphasize	Important
Research Universities	Ph.D.	Research	Teaching & Service
Colleges / universities	M.S.	Teaching	Research & Service
Selective Liberal Arts Colleges	B.S., B.A.	Teaching & Scholarship	Service & Research
Undergrad oriented	B.S., B.A.	Teaching & Service	Research

Example of Different Expectations Faculty

Research Institution:

60% - 80% Research

10% - 35% Teaching

5% - 10% Service

M.S./ B.S. College or Teaching focused at R1:

50 - 80% Teaching

10 - 30% Professional Development

10 - 20% Service



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Different Academic Positions within an Institution and Expectations

Professorial Ranks

Assistant

Associate

Full

Distinguished/Chaired/Endowed Professor

Instructor – teaching & service

Lecturer - teaching

Postdoctoral positions - research

Rest of talk

Research Universities – Mary Lou Soffa

Teaching-focused Positions – Susan Rodger

Search – Michelle Mazurek

Research Expectations: Research University

- **Publications** – journal, conferences, workshops (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 professional success)
- **Reputation** and **Impact**
 - Higher in rank: more visibility and international reputation – invited talks, conference org., journal editor/ed. boards, professional org roles
- Maybe:
 - MS/Undergraduate research mentoring
 - Patents, software artifacts,...

Teaching: Research University

- 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 research essential, good teaching useful**
- **But: you'll be teaching for years – worth it to yourself to do a good job**

Service Expectations: Research University

Committees and educational/administrative activities

- Department
- School
- University

External Professional Service

- Program committees
- Funding panels
- Professional society involvement
- Journal editorship; program chair, conference organization

Higher in rank – more external service

Pre-tenure: Favor research-oriented service

Be selective: choose roles that are important where you can engage – “power” committees

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, teaching 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**

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)

Post-Docs

Continue research with another mentor

- more papers, etc
- a new field

-Funding

Fellowship you apply OR university/department,
OR professor's research grants.

Best-case Scenario

1 - 2 years, good mentor, high-ranked school that
will help you transition to the academic position you
want

Some advice: pre-tenure years

- Find mentors and professional cohorts
- Collaborate if you can.
- Learn to say no politely and suggest alternatives
- Prioritize!! Especially in research.
- Choose your teaching and service assignments well.
- Enjoy your work and colleagues!!

Teaching Position

What types are out there?

- Teaching at small college
 - Professor (assistant, associate, full) with tenure
 - Lecturer
- Teaching track at Research University
 - Many different types/titles
 - Teaching Professor
 - Professor of the Practice, Clinical Professor, Lecturers with SOE (CA)
 - Few with tenure, most on contracts
 - Lecturer, Senior Lecturer

Teaching Position Expectations

- Teach 2-4 classes per semester
- Have busy office hours
- Teach out of your specific area (e.g. intro programming sequence, non-majors)
- Involve undergrads in research projects
- Attend meetings (dept., campus)
- Serve on campus committees (technology, etc.)

Teaching Position

Research

- Fewer institutional resources
- No graduate RAs
- Get undergraduates involved
 - Distributed Research Experience for Undergraduates
 - Collaborative Research Experience for Undergraduates
 - REU through NSF
 - Local programs at undergraduate institution

Teaching Position

Getting Hired/Cover Letter Essentials

- Your focus is on teaching.
- You can document relevant experience related to teaching.
 - Teaching Assistant
 - Center for Teaching programs
 - Instructor of Record for a course
- You can teach intro CS courses and courses for non-majors.
- Your teaching focus (e.g., systems) matches what is advertised.

Teaching Position: Challenges

- Perception that less prestigious than research focused/university
- Intense focus on students
- Staying engaged in research
- Infrastructure (e.g., computer services, grant administration)
- Small dept. (~5 profs) or small group in a large research department
- Salary: possibly lower?

Teaching Position: Rewards

Close relationship with undergrads

Be a member of the university culture

Chance for leadership and influence

Matches beliefs/lifestyle

Teaching is your gift and you want to share it with others

Possibly less travel

Flexible schedule for families

Career Path Option

What is a post-doc?

Training opportunity whereby a person can deepen his or her expertise and/or research skills for a few years, en route to a permanent position

Typically funded either by a fellowship awarded directly to the Post-Doc or by the institution at which they will spend a limited time

<http://cra.org/postdocs/workingpaper.php>

Some Post-doc Motivations

Timing: Graduate “off season”, Two-body issues,
Difficult job year

Improve job opportunities: Strengthen research,
Work in a highly regarded institution

Learn new area, field

Work with a specific expert: additional mentoring
Experience different type of university

What is a GOOD postdoc?

Used to expand experience

- entering a new research discipline

- gaining a distinctly different perspective on the scholar's current research base

Specific & relevant intellectual growth

- working with a particular mentor or on a particular project

Two years in duration

<http://cra.org/postdocs/>

GOOD postdoc position offers:

Mentoring & guidance that directly supports professional development

- not simply serve as a contract researcher

Significant opportunities to explore independent research topics

- in addition to supporting existing research efforts of the mentor's group

- manage operational aspects of a project under the supervision of the mentor

Enhance the breadth of their research

- exploring new fields or new perspectives

- not simply refine material from PhD

Expectations

Variable, some combination of:

Teaching, Research, Supervising, Mentoring,
Organizing

The ratio will depend on your own long-term goals, and the position

Should get a clear understanding BEFORE accepting job

Challenges

Low 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

Job Search in ~2 years?

What to do now?

- Publish great work!!
- Go to Conferences, meet researchers in your area
- Figure out research and/or teaching focused
 - Teaching— attend a SIGCSE conference, try to teach a course, think about teaching initiatives and philosophy
- Attend CRA or CRA-W Career Mentoring Workshops
 - <http://cra-w.org/ArticleDetails/tabid/77/ArticleID/50/Career-Mentoring-Workshop-CMW.aspx>

Some numbers (YMMV)

I applied to:

- 35 faculty, 2 research labs

- Mostly CS, 2 iSchools, 1 systems engineering

- Systems, security, and unspecified

- US News rankings from 1-99

Informal heuristic:

- 25-30 applications -> 4 interviews -> 1 job

What's in an application?

- Pages of online forms
 - Takes longer than you think!
- Cover letter (lightly personalized)
- CV
- Research and teaching statements
- 3-5 references
 - People who can write knowledgeable letters
- Diversity – sometimes separate statement, sometimes mention in teaching / cover letter
- Due dates Nov – Jan, often not firm

Phone/On-site interviews

- Sometimes phone interview first – 1 hour typically with search committee
- On site: 1, 1.5 or 2 days
 - Mostly 30 min slots throughout the day
 - Faculty 1 on 1, dept chair, dean, students
 - Job talk
 - Sometimes demo lecture (teaching school)
 - 3+ meals

A long day!

- Not more than 3 in 2 weeks (Greg's rule)
- Breakfast often at 7:30, dinner until 9-10
- Very limited breaks between slots
- Lots of walking, going outside
- Lots of repetition

Research Talk

- Usually 45 min in 55 min slot
- Prepare for lots of interruptions
 - Plan to make shorter on the fly
 - Don't go over
- Goal: Accessible to non-specialists but also deep technical content (this is hard)
 - Don't: excessive background (need some)
 - Do: provide framework for research agenda

Things you will be asked

- Why do you want to be in academia?
- Where else are you interviewing?
- Tell me about your research/teaching (current, agenda)
 - Something not in your job talk
 - Something in your field you aren't working on
- Who here do you expect to collaborate with?
- Where do you expect to get funding?
- What lower-level classes can you teach?



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Questions you should ask

- How many faculty? Teaching load?
- How much (if any) TA support?
- What is the quality of grad students? How recruited
- What is the support for new faculty: mentoring, help with grants, teaching priority and relief, etc.?
- What is the review process? Tenure rate?
- What about IT, admin, grant-writing support, etc.?
- How collaborative are the faculty members?
- What is it like to live in this area? Where do faculty typically live?



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Where to find job listings

- CRA: <http://cra.org/ads/>
- IEEE: <http://careers.ieee.org/>
- Chronicle of Higher Ed:
<https://chronicle.com/section/jobs/61>
- Listservs, e.g. <http://www.sigsoft.org/seworld/>
- Many have RSS feeds!

Job Search – Closer to getting out

Prepare CV and research/teaching statements

Get these materials reviewed

Talk to advisor/other faculty about where to apply

Apply to several places

Prepare/Practice interview talk

Be assertive

- my Duke story

How to get a post-doc

Can be posted in same venues as other academic jobs

Not always advertised

Use Your Network!

Give talks as you get closer to graduating

Remain in PhD lab

Usually for timing reasons only

Moving between schools and positions

University to university

Not particularly difficult

If have tenure, usually get tenure

- But not in all cases: schools have different rules and moving to higher ranked school

University to teaching-oriented college

Must show evidence of being good teacher

Teaching-oriented College to university

Must show can do research - publications

Resources

CRA-W Career Mentoring Workshops:

<http://www.cra-w.org/ArticleDetails/tabid/77/ArticleID/50/Career-Mentoring-Workshop-CMW.aspx>

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://dynamicceology.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/>

<http://people.mills.edu/spertus/job-search/job.html>

<https://homes.cs.washington.edu/~mernst/advice/academic-job.html>

Job Ads:

<http://cra.org/ads/>



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