

So you've got a Ph.D.

Now what?

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Disclaimers

I can only tell you about my experiences and perceptions

- I'm an applied mathematician
- Everyone's experiences are different
- My focus is (and always has been) on being research-active
- A good job is a (personal) value judgement

There is no set formula for success

My Experiences

Ph.D.: University of Colorado, 2004

Postdocs: University of Colorado, 2004-2005
University of Minnesota, 2005-2006
TU-Delft & CWI, 2006-2007

Asst. Prof.: Tufts University, 2007-now

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Along the way, I've

- Turned down a few postdocs
- Applied for many faculty positions
- Interviewed for a few faculty positions

The Lingo

Post-doc: Usually research-only position, often paid by grant

Instructor: Teaching position, may be tenure track

Lecturer: Teaching position, usually fixed term

Assistant Professor: Junior faculty position

Fixed Term: A fixed-length contract

Tenure Track: A position that may become permanent

Tenured: A permanent faculty position

9/12 Month: Portion of calendar year under contract

Course Load: Teaching expectation (E.g., 2 and 2)

Expectations

Most research-active schools don't hire new Ph.D.'s as
tenure-track faculty

Four (or more!) options:

- Post-doc or Instructor in research-active department
- Tenure-track position in teaching-focused department
- Post-doc position at research institute
- Leave academics; get a “real” job

University Postdocs

Postdoc: a first job after completing your Ph.D.

Can mean anything

- Research position, paid by grant for specific research
- Research position, with minimal teaching
- Teaching position, with minimal research
- Teaching position, research on your own time

Research positions are sometimes advertized

- Department websites
- NA-Digest, HPC-wire
- SIAM and AMS job websites

Teaching positions are (almost always) advertized

Postdoc Grants

You can also apply for grants to fund a postdoc

Usually for specific project at specific institute

- NSF
- Other country's science foundations
- European Union (Marie Curie)
- Private foundations (Ford, Humboldt)

Need to apply for these often (long) before graduation

Fixed Term Assistant Professorships

Very common in Math departments

- Same (or similar) teaching as tenure-track asst. profs
- Independent research agenda
- Fixed term: usually 2-3 years

These can be great jobs, if there's active research in your field in the department

Teaching Jobs

Many schools aren't very interested in your research

Some of them will hire new Ph.D.s as tenure-track faculty

- Jobs have high teaching load (e.g., 3 and 3 or more)
- Very low expectations for research
- Two-year colleges, some liberal-arts

These jobs often pay less than research positions, but many people enjoy them

Research Institutes and Labs

Not all postdocs are within usual university departments

- National Labs (DOE)
- Commercial Labs (IBM)
- IMA, PIMS, SAMSI
- National research centers in Mathematics

These institutions are still research focused

Easy to transition from university to institute/lab and back

Long-term view

What do you want?

- Faculty position in research-active department
- Faculty position in teaching-focused department
- Something else

Research-active departments expect research-active people

- Research postdoc, institute, or lab
- Publication record
- Conference attendance

Teaching-focused departments expect teaching-focused people

- Teaching postdoc, or right away
- Classroom experience

How do I find a postdoc?

Ask!

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Not all postdoc positions are advertised

- Use your advisor
- Talk to people! Committee, other faculty, colleagues
- Go to conferences

Many advertisements are centralized

- AMS, SIAM job websites
- SIAM News, AMS Notices

Grant announcements come from sponsoring organization

- Look at previous years to get idea of deadlines

What about Faculty positions?

Faculty job search is much more standardized

- Job advertisements in the fall (AMS, SIAM)
- Applications due November - February
- Interviews early Spring
- Job offers mid-Spring
- Start in Fall

Faculty Application

Specifics vary, but always include some of

- Cover Letter
- CV
- Teaching Statement
- Research Statement
- Reference Letters

Start early!

Cover Letter

Personalize this for each job

Some standard material

- Brief summary of academic history, research field
- Brief research statement
- Brief teaching statement
- Formal statement about job you are applying for

Always personalize

- Research connections with department
- Other professional attraction to school

Curriculum Vita

Your first tool to sell yourself

Standard material

- Academic degrees
- Academic jobs
- Publications (and preprints)
- Conferences attended and presentations
- Research grants (funded and applied for)
- Teaching experience
- Service (referee, student groups, student government)

Must be easy to read

Teaching Statement

Expectations vary!

- Personal statement
- What is your approach in the classroom?
- Show that you value teaching
- Use examples, anecdotes
- Hook for some faculty
- Sometimes need detailed teaching vita
 - ▶ List of courses taught, class sizes, etc.
 - ▶ Summary of teaching evaluations
 - ▶ Student comments

Research Statement

Makes the difference

- Write for “average” mathematician
- Not too technical!
- Describe completed/ongoing research
- Show research vision
 - ▶ What research do you want to do in 5 years? 10?
 - ▶ Understanding of problems in your field
 - ▶ How does your research address open questions
- Personalize if there is a good connection

Evolves (dramatically) over time.

General Advice

Your application materials must entice reading

- Be concise, not terse
- Your best writing; eloquent, check spelling and grammar
- Most applications are quickly skimmed; stand out!
- Reinforce, but don't be repetitive
- Be realistic, but show vision

Reference Letters

Best case: strong letters from recognized experts

Who to ask:

- Your advisor, research mentors
- Faculty you've worked with closely
- Teaching colleagues
- "Famous" people

Different people write very different letters

- Some do it with no input
- Some want to see CV, research/teaching statement
- Some will show you letter
- Some will let you write/rewrite it

Communication is key: start early, be clear

Realistic View

Good jobs get many applicants

You **MUST** stand out

- Use your contacts
- Use your advisor's contacts
- Use your colleague's contacts
- Write unsolicited requests for “advice”
- Be professional, don't pester

Many applications don't get read in full!

Try to ensure that someone reads yours

The Interview

is exhausting

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General schedule includes

- Job talk
- Meeting with Dean
- Meeting with Department Chair
- Meeting with other faculty
- Meeting with grad students
- Campus tour
- All/most meals with faculty
- One or two 12-14 hour days

Looking Good

Your CV isn't enough to get a job

Interview has multiple goals:

- Are you as good as you look on paper?
- Would you be a good colleague?
- Can you explain yourself and your research?
- Can you teach?

Simple tips:

- Dress well (professionally)
- Be articulate and friendly
- Smile!

The Job Talk

Unlike any other talk you give

You have multiple goals

- Convince all faculty that you can teach
- Convince everyone that your research is worthwhile
- Show your expertise
- Convince experts in your field that you're good

General framework:

- Explain main ideas in your field
- Steer discussion towards your specialty
- Explain broad picture of your research
- Give specifics of your contribution

Questions to Ask

- Job expectations
- Department environment (seminars, activities)
- Class sizes
- Technology, Library
- Tenure expectations and rates
- Are people happy?

Questions Not to Ask

- Salary
- Other applicants
- Other interviews

Your Assets

- Papers, journal and conference
- Conference presentations and attendance
- Teaching experience
- Student activities

Sell yourself!