Being a postdoc: Things I wish I'd known and things I'm glad I knew

Rebecca Everett

August 16, 2020 SMB Mentoring Workshop





What is a postdoc?

- A postdoc is a temporary position after your Ph.D. to develop skills and prepare you for your academic career
- One of your main goals is developing research, teaching, etc.
- Another main goal is to get another job
- Both stressful applying for tenure-track positions and a lot of fun!



About me

- Undergrad at Samford University
- Graduate school at Arizona State University
- Postdoc at North Carolina State University with H.T. Banks
- Assistant Professor at Haverford College



Thank you H.T. Banks (and Yang Kuang)!

About me: How I got my postdoc position

- Attended the 2014 SIAM Conference for the Life Sciences (August)
- Saw H.T. Banks give a talk and spoke to him afterwards and a postdoc position came up in the conversation
- I emailed him saying it was nice to meet him and telling him more about myself
- We Skyped and he asked for my CV, letters of recommendation, etc.
- I received the official offer as a Research Assistant Professor (November)

About me: Applying for other postdoc positions

- First application due in August to the National Cancer Institute Cancer Prevention Fellowship Program
- Applied for postdoc and tenure track jobs on MathJobs.org, SMB jobs website (Digest), etc.
- Skype and on-campus (NCI) interviews in October

Time to make a decision:

Formal offer with H.T. Banks and other official offers (Nov)

Types of Postdocs

- Postdoc with a professor through their grant(s)
- NSF Postdoc fellowship with sponsoring scientist
- Postdoc at a department at a university
- Postdoc at a center, institute, industry, etc.
- Visiting teaching assistants

Thank you: Amanda Laubmeier, Allison Lewis, Neha Murad, Angie Peace









Postdoc with a professor

- Jumped into projects, resulting in publications
- Opportunities to mentor undergraduates and graduate students
- Research focused with some teaching
- Relationship with mentor
- Rely on mentor for funds for travel, publishing, etc.
- Didn't get to work on my own research, develop skills of defining my own questions
- Grant writing experience depends on mentor
- Seek out professional development (get on email list)
- Apply: Anytime!

NSF Postdoc fellowship

Propose a research project with a sponsoring scientist

Apply: October



Postdoc at a department

- Research and teaching experience (e.g., 2-1 load)
- Might have research mentor
- Develop skills to start your own research, define questions, etc.
- Time to develop research stemming from your dissertation
- Published less than joining existing project
- Lonely since not many other postdocs
- Actively seek our recourses, opportunities, professional development
- Apply: October/November

Postdoc at an institute

- For example:
 - $\begin{tabular}{ll} NIMBioS & (National Institute for Mathematical and Biological Synthesis) \end{tabular}$
 - MBI (Mathematical Biosciences Institute)
- Outside of official departments
- Cohort of postdocs (e.g., 8-10, a lot of fun!)
- Multiple mentors (e.g., 2 official mentors)
- Encouraged to collaborate but still in charge of own main project
- Develop skills to start your research, define questions, etc.
- Broaden network, centers host working groups/workshops
- Professional development workshops (applying for jobs, mock job talks, etc.)
- Possibly no teaching opportunities

Visiting Teaching Assistant

- Position usually exists because temporarily replacing somebody on sabbatical or department is short-staffed
- Primary focus on teaching
- If you want a tenure-track job, you'll want to keep up with some research on the side
- Senior thesis, REU (Research Experience for Undergraduates), independent study
- Great way to figure out what it is you're really looking for in a college before fully committing
- Get your feet wet as a teacher without a lot of other responsibilities, develop teaching philosophy
- Institutions can be very supportive of their visitors or treat them more like disposable labor

Postdoc in Industry

- Get to see real life applications of the models you build
- Faster turn round time to see fruition of your work into real world
- Work with people with diverse skill sets, different fields, etc.
- Might be only mathematician
- Higher pay, better corporate perks, better work-life balance
- More funding available for learning and development opportunities
- Not a lot of flexibility in choosing your project
- Publishing takes longer (more approvals)
- Company jargon and culture different to academia
- No grant writing nor teaching experience

Things to think about

- Hard to get tenure-track position without postdoc position(s)
- Work on your own research vs. join a project
- Research vs. teaching
- Publication / travel funds
- Professional development opportunities, postdoc groups (not just in department)
- Mentoring opportunities
- Length of postdoc position (1 year is very short turn-around)
- Get people to observe your teaching
- Try to teach upper level classes
- Parental leave

Working Groups













About the Mathematics Research Communities Program

The AMS's Mathematics Research Communities (MRC) is a professional development program offering early-career mathematicians a rich array of opportunities to develop collaborative research skills, build a network focused in an active research domain, and receive mentoring from leaders in that area. Funded through a generous three-year grant from the National Science Foundation, the AMS, and private donors, the MRC is a year-long experience that includes:

- . Intensive one-week, hands-on research conferences in the summer:
- · Special Sessions at the AMS-MAA Joint Mathematics Meetings in the January following the summer conferences:
- · Guidance in career building:
- · Follow-up small-group collaborations:
- · Longer-term opportunities for collaboration and community building among the participants:





Over time, each participant is expected to provide feedback regarding career development and the impact of the MRC program.

Women, underrepresented minorities, and individuals from various types of institutions across the country are all encouraged to apply. The chief criteria for admission are an ability to contribute to the summer conference activities and a capacity to benefit from these interactions.

Since the inception of the MRC program in 2008, over 1,400 alumni from 43 different topical areas have participated. A list of all past MRC summer conference topics can be found here.

The topics for the 2020 summer conferences, which have been rescheduled to 2021 because of the COVID-19 outbreak, are listed here.

The summer conferences are typically hosted in consecutive weeks in June at a retreat-style site that is conducive to participant interactions and provides opportunities to enjoy the outdoors. To this point in time. MRCs have been hosted in such locations as Snowbird. Utah and West Greenwich. Rhode Island. The location for the 2021 summer conference location will be announced later.

Read about what it's like to collaborate with others doing math at an MRC.

Working Groups

2018 MRC: Agent-based modeling in biological and social systems









Working Groups: Funding for group collaborations

IAS (Institute for Advanced Study) Summer Collaborators Program



Andrew J. Bernoff, Michael Culshaw-Maurer, Christopher Strickland, Jasper Weinburd, Maryann E. Hohn, Rebecca A. Everett

- NIMBioS short-term visit
- AIM SQuaRES (Structured Quartet Research Ensembles)
- MSRI Summer Research for Women in Mathematics
- BIRS Focused Research Group

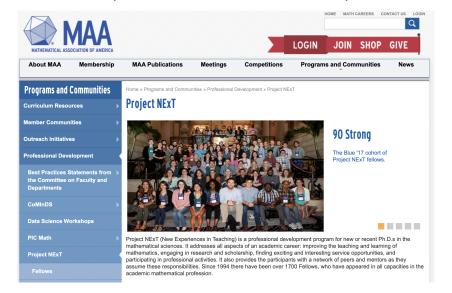
Working Groups

- Mathematical Problems in Industry Workshops
 For example: Industrial Mathematical and Statistical Modeling Workshop (NCSU) for graduate students
- Women in Math Biology (WhAM, WAMB)
- Research Experiences for Undergraduate Faculty (REUF)
- Get on email lists and get to know people!



Working group funded through SESYNC (National Socio-Environmental Synthesis Center)

Project NExT (New Experiences in Teaching)



Need funding support from institution

Other bits of advice

- No mentor is perfect, but multiple mentors have their own strengths
- If you have a 3 year postdoc position, apply for jobs in year 2
- Network, talk to people at conferences
- Take people up on their offer to help
 - Job talk, research/teaching/diversity statements, etc.
 - Negotiations for tenure track positions
 - People might be willing to share their documents
- Process for tenure track at liberal arts colleges was earlier than many research universities
- You can possibly defer a job offer for a year (push a bit during negotiations)
- Imposter syndrome

Thank you!

Have fun and enjoy your postdoc!

Feel free to reach out with any questions

My information:

Rebecca Everett
Haverford College
reverett@haverford.edu