

# Postdoccing outside the norm

Lihong Zhao

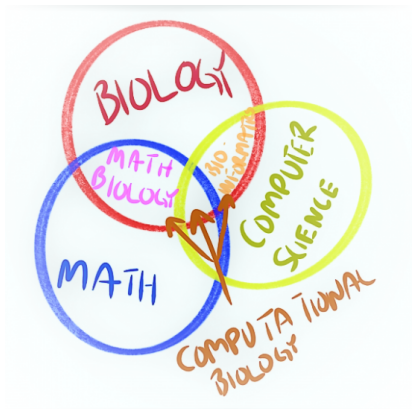
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SMB 2025 Early Career Workshop

# Overview of My Journey

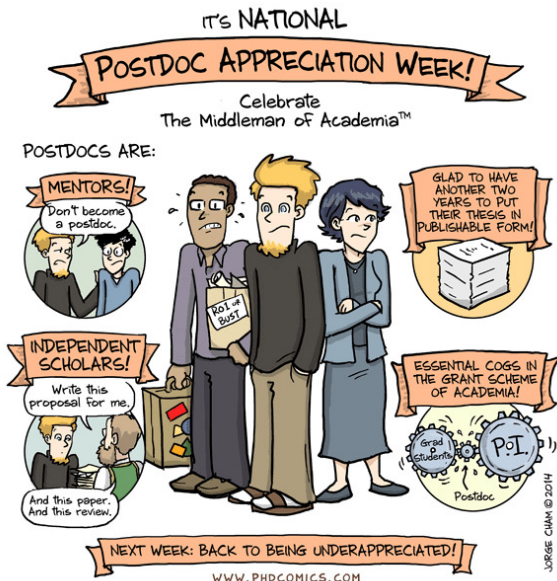
- B.S. in Mathematics, Beijing University of Posts and Telecommunications, China
- Ph.D. in Mathematics, University of Louisiana at Lafayette
- Postdoctoral Fellow, Institute for Modeling Collaboration and Innovation, University of Idaho
- Postdoctoral Fellow, Department of Applied Mathematics, University of California, Merced
  - NSF DIRAC-RTG Postdoctoral Researcher
  - The American Association of Immunologists (AAI) Intersect Postdoctoral Fellow
- Visiting Assistant Professor, Department of Mathematics, Virginia Tech
- Tenure-Track Assistant Professor, Department of Mathematics, Kennesaw State University

# More About Me



- Gained hands-on experience in experimental design through collaboration with empirical scientists
- Collected datasets for one of my Ph.D. dissertation projects
- Received Biosafety Level 2 (BSL-2) training
- Collaborate with mathematician, statistician, ecologist, microbiologist, philosopher, computer scientist, etc.

# What Is A Postdoc?



# Different Types of Postdocs

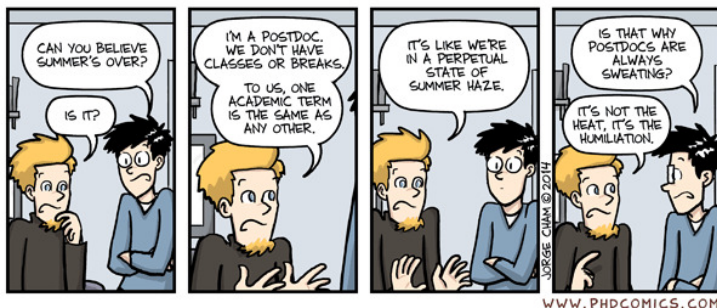
- Academic postdocs
- Industry postdocs
- Government postdocs
- Non-profit postdocs



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# Securing Different Types of Postdocs

- Postdoc for a principal investigator (PI)
- Funding your own postdoc
- Postdoc at a department or institute
- Professional postdocs



# Postdoc for a PI

- Often are hired to contribute to long-term projects
- Project is being led by the PI, or your employer
- Often jump into a well defined project resulting in publications relatively quickly
- Opportunities to mentor undergraduate and graduate students
- Relationship with mentor
- Ownership of the research project

# Funding your own postdoc

- Opportunities
  - NSF Mathematical and Physical Sciences Postdoctoral Fellowships
  - NIH Postdoctoral Individual National Research Service Award (F32)
  - NIH Pathway to Independence Award (K99/R00)
  - AAI Intersect Postdoctoral Fellowship
- Some fellowships require a faculty nomination or university endorsement in addition to identifying a postdoctoral supervisor
- Generally have specific citizenship or residency requirements
- Ability to pursue your own research program
- Demonstrate the potential to acquire external funding
- May not be eligible for teaching duties during the fellowship period



# Postdoc at a department

- Both research and teaching experience (teaching load varies)
- Might have research and/or teaching mentor
- Time to develop your own research projects
- Publish less than joining an existing project
- Might be lonely and/or isolated

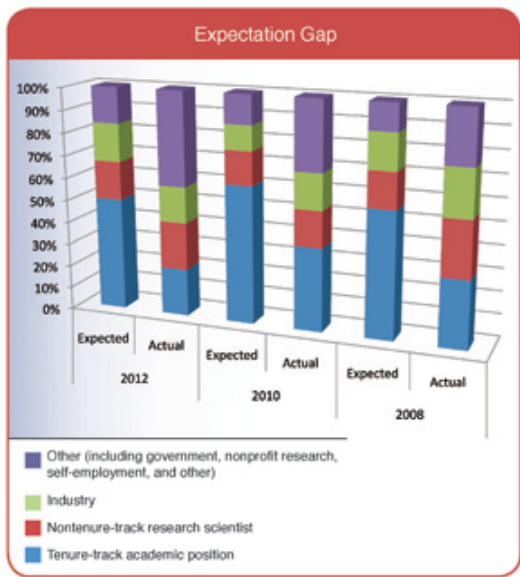
# Postdoc at an institute

- Often outside the math department
- Often interdisciplinary and need to navigate through disciplinary barriers
- Might be the only mathematician
- Might have more than one mentor
- Might be cohort of postdocs
- Encouraged to develop own project as well as to collaborate
- Possibly no teaching opportunities

# Professional postdocs

- Involves professional training in a strategic area
- Opportunities
  - AAAS Science & Technology Policy Fellowships
  - McCall MacBain Postdoctoral Fellows Teaching & Leadership Program
  - ...
- Informational interview helps!

# The Expectation Gap



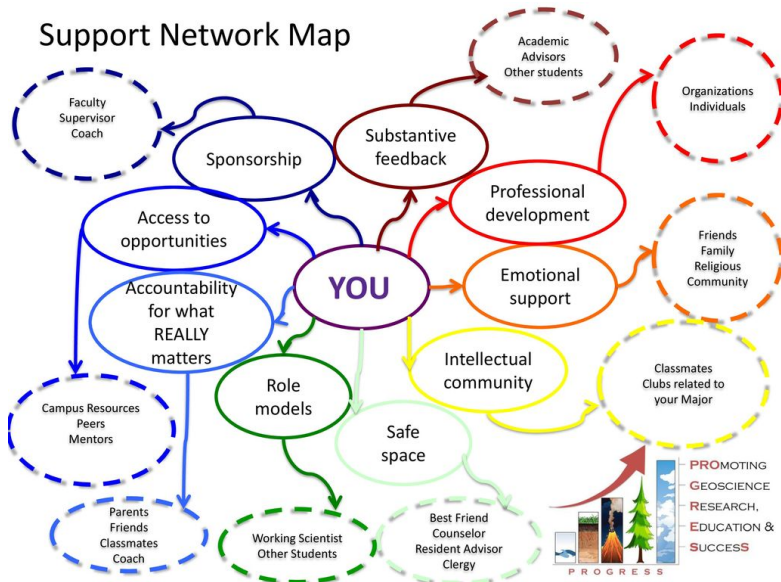
The postdoc experience: High expectations, grounded in reality

# How to Set Yourself Apart?

- communication skills  $\Rightarrow$  make yourself understood
  - adapt your presenting and writing styles to fit your audience
  - take advantage of free communication skills training your university and the scientific community may offer
- publications
- work independently
- seeking and hopefully securing your own funding
- get a life
- network
- build a support system
- carve out time for personal career development
- keep an open mind
- manage the worst case scenario

# Build Your Own Support Network

## Support Network Map



# Find Your Community

- Mentoring program:  
AWM, SMB
- AMS's [Mathematics Research Communities](#)
- AWM [WIMB \(Women in Mathematical Biology\)](#)
- American Institute of Mathematics: workshops, [SQuaREs](#)
- Collaborate@ICERM
- SLMath: ADJOINT, [Summer Research in Mathematics](#)





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# Join the `25-`26 SMB Postdoc Cohort Community!

Looking to build a peer network as a  
postdoc?

Want a place to discuss challenges, get  
feedback on research and presentations, and  
share tips and tricks for navigating this  
unique career stage?

Small groups meet weekly/biweekly  
on Zoom

The community shares a SLACK  
workspace



New groups start in September!

Questions?

Contact Laura Strube (LFStrube@gmail.com)