RUTGERS UNIVERSITY
Interdisciplinary Job Opportunities for Biomedical Scientists

iJOBS Career Panel: Teaching-Intensive Academic Jobs
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Panelists

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Outline of Presentation

Deciding teaching vs reasearch intensive
How to select a postdoc that will eventually help you land an academic career
What other things you should be doing during your postdoc to be ready to apply for faculty jobs
Finding academic jobs to apply to
Networking
Preparing the research statement
Preparing the teaching statement
Preparing the job talk
Preparing the chalk talk
Preparing for the interview itself and tips
Negotiating offers
Setting up the lab
Filling your lab with students, postdocs and techs
Teaching for the first time and preparing classes
Service to the school
Preparing for tenure and expectations

Deciding Between Teaching-Intensive vs. Research-Intensive Careers

Ask Yourself:

- What excites you most - mentoring students or driving discovery through research?

-Teaching-intensive roles offer deep student impact and predictable semester outcomes.

-Research-intensive roles center on publications, grants, and building a lab.

-Your first position does not define your career- transitions are common and possible.

The Good News:

- You can blend both - undergraduate research and innovative pedagogy, bridge the divide.
- My path: Ph.D. at Howard University → Postdoc at Rutgers RWJMS → Teaching at Saint Peter's → Lecturer at Stevens.
- At Stevens, I run both a wet-lab (*C. elegans* genetics) and a computational lab - research and teaching coexist.
- Look for institutions that value your whole profile, not just one dimension.

Selecting a Postdoc for Teaching Careers

Research & Mentorship

- PI Track Record: Prioritize advisors who support diverse career paths beyond R1 tenure-tracks.
- Undergraduate Scope: Select research questions manageable for undergraduate research assistants.
- Management Experience: Gain critical leadership by coordinating instructional teams or lab sections.
- Time Agreements: Align early on a documented balance between bench work and educational development.
  Consider doing an IRACDA postdoc which is 70% research and 30% teaching. The IRACDA program at Rutgers is called INSPIRE.

Pedagogical Training

- Structured Fellowships: Leverage programs (e.g., NIH IRACDA) designed for scholar-educators.
- Instructor of Record: Target opportunities to act as primary/co-instructor rather than simple TA roles.
- Campus Resources: Engage actively with centers for teaching excellence and CIRTL networks.
- Curriculum Innovation: Build hands-on experience in active digital course design and open-access datasets.

Things you should be doing during your postdoc to be ready to apply for faculty jobs

- Developing research projects for your own lab
  - projects that will fit in the research environment of your target school. May need to switch from mouse work to model organism for cost and resource reasons.
- Mentoring undergraduate and graduate students
  - get used to working with students of different backgrounds and skill sets
- Looking for opportunity to teach an undergraduate course, if possible
  - guest lecturing
  - co-teaching

Finding Academic Jobs to Apply To

Search Broadly

- R1 and R2 research universities
- Regional universities and liberal arts colleges
- Community colleges - teaching-focused, high impact
- Apply even if you don't meet every preferred qualification - they are wish lists, not hard requirements.
- https://www.insidehighered.com/
- Science careers site (AAAS)
- https://www.higheredjobs.com/
- https://jobs.chronicle.com/

Tailor Every Application

- Customize your cover letter for each institution's mission.
- Adapt your research statement- emphasize translational work for teaching schools.
- Highlight undergraduate mentoring and student outcomes prominently.
- Show evidence of collaboration across disciplines.

What They're Looking For

- Publications and external funding track record.
- Teaching evaluations and course development experience.
- Service: committees, curriculum, outreach.
- Mentorship of students at all levels.

Networking

- **Attend everything you reasonably can!**
- Professional Development Workshops
  - Active Learning
  - Syllabus development
  - Course Development
  - Use of AI in the classroom
  - Instructional Design
  - Accessibility
  - NTT/Teaching Faculty focused Groups- MATFA
- Student Research Symposiums
- Department Meetings
- Faculty Senate/Committee Work
- Scientific Conferences
- Research Collaborations
- Attend other faculty members classes
  - Peer Mentoring
  - Peer Evaluation

Tara

Preparing the research statement

- **Emphasize Undergraduate Engagement and Mentorship**
  - How you scaffold research for students with limited prior experience
  - How your projects generate publishable or presentable data while remaining accessible
  - How you cultivate scientific independence, confidence, and curiosity
- **Demonstrate Feasibility With Limited Resources**
  - Uses **affordable**, scalable techniques
  - Can be run with standard equipment (PCR, basic molecular biology tools, simple assays)
  - Has clear workflows that fit within semester timelines
  - Can thrive even without constant access to high-end instrumentation
- **Present a Clear, Sustainable Research Agenda**
  - A coherent research theme (e.g., microbial degradation pathways, environmental isolates, functional genomics)
  - A multi-year plan that can evolve with student cohorts
  - How projects interconnect but still allow students to “own” individual sub-questions
- **Highlight Pedagogical Approach to Research**
  - Show how your research integrates with teaching:
  - Course-based undergraduate research experiences (CUREs)
  - Lab modules that feed into your research pipeline
  - Opportunities for students to present at regional conferences
  - How you teach scientific writing, experimental design, and critical thinking
- **Show External Connectivity Without Overreliance**
  - Build collaborations for specialized assays (HPLC, MS, sequencing)
  - Maintain relationships with industry or nearby universities
  - Provide students with networking and internship opportunities
- **Articulate Broader Impact and Student Career Pathways**
  - Graduate school
  - Biotechnology and genomics careers
  - Industry roles in QC, fermentation, environmental microbiology, etc.

Igor Ivanovski

Preparing Your Teaching Statement

Philosophy & Strategy

- **Concept of Teaching:** Articulate your core values, beliefs, and aspirations as an educator in your discipline.
- **Concept of Learning:** Define what constitutes "success" or "mastery" of key skills and attitudes in your field.
- **Active Methods:** Highlight specific strategies (e.g., case studies, peer group work) and justify why they fit.
- **Inclusive Classroom:** Show how you actively build a sense of belonging and engage diverse perspectives.

Evaluation & Evolution

- **Evaluating Learning:** Clarify how you assess mastery (e.g., tests, problem sets, projects) and why those tools work.
- **Professional Growth:** Explain how you collect, analyze, and implement student feedback for lifelong refinement.
- **Generative AI Approach:** Address classroom policies, balancing discipline alignment, opportunities, and boundaries.

Adapted from resources provided by UMich, NCSU, UMN

Preparing the Job Talk (or teaching demo)

- **Job Talk:** 45-60 minute talk on your research
- **Teaching Demonstration:** a lecture topic is pre-determined by the hiring committee
- Opportunity to demonstrate:
  - → Research importance & fit
  - → Trajectory & future directions
  - → Science communication skills
  - → Pedagogy & innovations in teaching
- Tailor the talk to
  - The advertised job
  - The audience: hiring committee, other faculty, students
- Anticipate 10-15 minutes Q&A

Bella

Preparing the Chalk Talk

- 30-60 minute demonstration
- Topics: research, course proposal, DEI
- Prepare a “skeleton” / outline of your chalk talk
- Optimize organization and flow
  - Research aims
  - Timeline, 5-year plan
  - Frameworks
- Practice speaking, writing, & drawing out your talk
- Anticipate interruptions

Bella

Preparing for the job interview

- Learn about the department's research/teaching interests and culture
- Identify key faculty members and their work and know who will be interviewing you ahead of time
  - Chair of the department
  - Dean
  - Fellow Colleagues
  - Chair of another department whose course you may teach
- Come up with questions/topics you think each person will ask you; then ask questions to demonstrate your knowledge and interests
- Showcase your research, teaching, and fit for the department
- Listen carefully and clarify questions if needed
- Answer honestly and thoughtfully, admitting if unsure

Tara

Negotiating offers

- **Know Your Market Value Before You Walk In**
  - AAUP salary tables for comparable institutions
  - State university salary databases
  - Regional cost-of-living benchmarks
  - Typical ranges for Assistant Professors in your discipline
- **Frame Your Ask Around Institutional Value, Not Personal Need**
  - Student success
  - Curriculum expansion
  - Research productivity
  - Community engagement
  - Accreditation or program growth
- **Negotiate *After* They Show They Want You**
  - After the campus interview
  - After positive signals from the committee
  - After they indicate you're a finalist
  - Don't give a number first
- **Use a Gracious but Firm Tone**
  - Appreciative
  - Collaborative
  - Confident
  - Non-apologetic
- **Justify Your Ask With Specific Achievements**
  - Grants
  - Publications
  - Industry partnerships
  - Curriculum development
  - High-impact teaching practices
  - Student research mentorship

***Cautionary Tale…**

Setting up the lab

- **Take Inventory First**
  - Avoid purchasing duplicate equipment
- **Guage Interest**
  - Discuss research projects with students informally
  - Pivot towards aspects of your expertise which students show excitement towards
- **Build a Core Equipment Backbone (Your "Essentials List")**
  - You will use weekly
  - Supports multiple projects
  - Is durable and low-maintenance
  - Prioritize Consumables That Enable Semester-Length Projects
- **Choose Research Projects That Fit Your Budget**
  - Use inexpensive assays
  - Don't require constant outsourcing
  - Can be broken into small, student-friendly modules
- **Plan for Student Training Infrastructure**
  - Clear SOPs
  - Safety signage
  - Organizational systems (labeling, storage, workflow charts)
  - Whiteboards, timers, and shared notebooks
  - A freezer inventory system
- **Budget for External Services Strategically**
  - Essential workflow
  - Analysis
  - Collaborations with nearby universities
- **Leave Room for Growth (If Possible)**
  - Don't spend everything immediately. Reserve 10–20% of your startup funds
  - Unexpected needs
  - New project directions
  - Equipment repairs
  - Opportunities that arise after your first year

Filling your lab with students, postdocs and techs

- Interviews and making decisions
  - coursework / research background / motivations
  - potential red flags???
- Working with the first group of students
  - conundrum of spending time on training or DIY
  - common techniques: train a small group at a time
  - pairing two students in one project

Preparing to teach your first class

- Speak to other faculty who teach similar classes or who previously taught your class
  - Obtain course materials from them??
- Determine departmental expectations for the course
- Elective or Requirement?
- What types of students take the course and why?
- What learning management system is used?
  - Canvas
  - Moodle
- *Make the course your own*
  - Bring in your experiences
  - Use teaching techniques that work best for **YOU!**
  - Design assignments and assessments based on what works for that specific course
- *Prepare the course ahead of time*
  - Syllabus
  - You must have an outline of the topics that will be covered and the basic methods you will use to deliver the course
  - Stick with your plan
  - **KEEP IT SIMPLE! AND HAVE FUN…**
- Stay true to your teaching philosophy and communicate this with your students
- Do not let students intimidate/manipulate you

Tara

Service to the School Matters

Why Service Matters:

- Service signals institutional commitment- you're invested in the community, not just your lab.
- Promotion and tenure committees weigh teaching, scholarship, and service to make the decision.
- Leadership roles grow organically from consistent, visible service.
- Service differentiates candidates with similar publication records.

My Experience at Stevens:

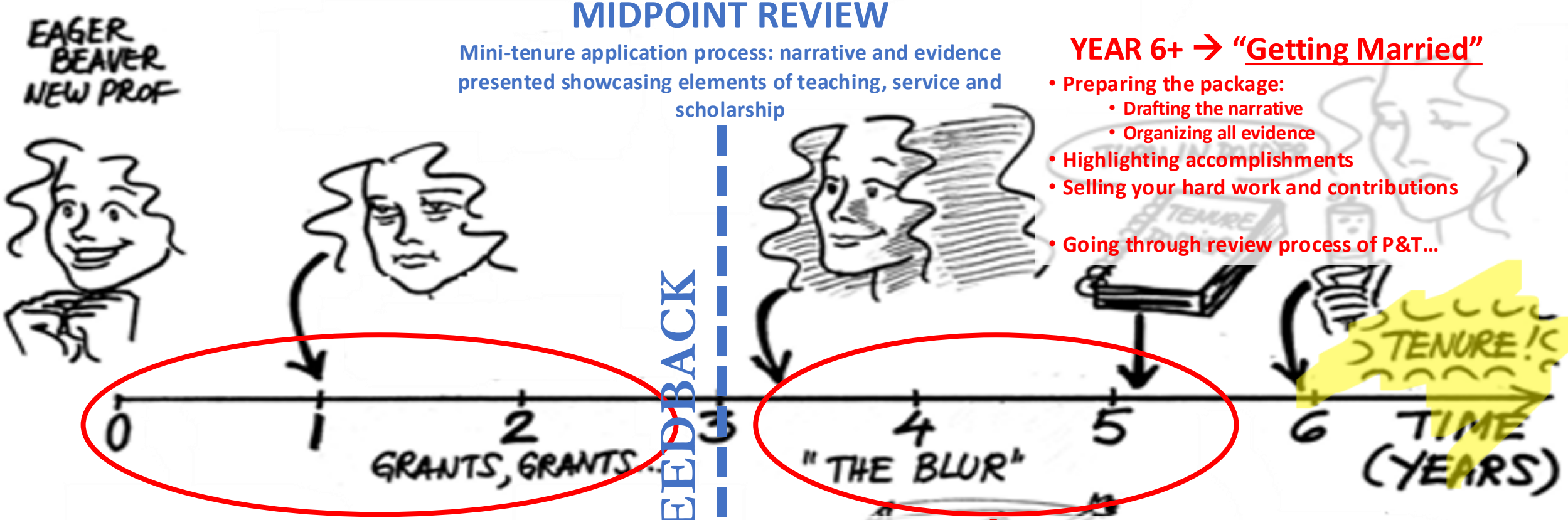
- **Biology Program Coordinator** - Assessment, Coordination & Improvement
- **Undergraduate Education Committee** - curriculum and policy review
- **REU Symposium Member** - supporting research experiences for undergrads and teachers
- **Ph.D. Committee Member** - mentoring graduate researchers (2023-present)
- **Capstone Mentorship** - guiding undergrad research projects end-to-end
- **AI in Biology Education** - interdisciplinary curriculum innovation

Academic Success = Teaching + Scholarship + Service

THE TENURE-TRACK TIMELINE

MIDPOINT REVIEW

Mini-tenure application process: narrative and evidence presented showcasing elements of teaching, service and scholarship



YEAR 1-3 → "Dating"

- Getting your footing in the job
- Finding your stride in the classroom
- Getting involved on committees/service
- Starting research initiatives

- Collecting evidence begins day one, year one!

YEAR 4-5 → "Getting Engaged"

- A blur of time! Doing the job!
- Focus on addressing any points from the mid-point review
- Increasing involvement across all areas of teaching, scholarship and service
- Gaining publications, grant procurement, committee engagement, leadership, mentorship
- Leaning in to the programs you developed – improving and refining

- Still collecting evidence!

YEAR 6+ → "Getting Married"

- Preparing the package:
  - Drafting the narrative
  - Organizing all evidence
- Highlighting accomplishments
- Selling your hard work and contributions

- Going through review process of P&T…

Samantha Schlachter

(modified cartoon from Xykademiqz 2014)

Teaching

Scholarship

Service

Samantha Schlachter