Launching Your Career: Making the most of your postdoctoral experience

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What is a postdoc?

A postdoc is an individual holding a doctoral degree who is engaged in a temporary period of mentored research... for the purpose of acquiring the professional skills needed to pursue a career path of his or her choosing.

Source: The National Postdoctoral Association
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The pathway to scientific independence

The delay before scientific independence is growing longer

Source: Science, “Not Your Father’s Postdoc”, 2005
Will your postdoc be a holding pattern or a launch pad?

The training you need will not automatically fall in your lap. Your career is in your hands. You must be proactive!
Finding the right postdoc for you
Strategies for preparing to become a postdoc

- Develop a strong scientific record.
- Take opportunities to increase your visibility.
- Define what kind of postdoc you need to reach your career goals.
- Identify research areas/labs that excite you.
What to send in your application

- Who I am
- Lab I did my graduate work in
- We met at a Gordon Conference
- When I will finish my Ph.D.

- My work as a graduate student
- Highlight publications

- Why I’m interested in your lab
- What I could bring to the lab

- I would like to interview
- Attaching CV
- Attaching PDFs of publications
- Can have references send letters

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Dear Dr. Bement,

I am writing to apply for a postdoctoral position in your lab. I am a graduate student in Tony Koleske’s lab at Yale University. I met you briefly at the “Mobile and Contactile Systems” Gordon Conference this past summer, where I was very impressed with your talk and with the work presented by members of your lab. I am planning to complete my thesis in September 2004 and to receive my Ph.D. from the department of Molecular Biophysics and Biochemistry in December 2004.

My broad research interests involve: 1) Determining the molecular mechanisms that regulate the cytoskeleton to direct cell migration and 2) Studying how disruption of this regulatory balance contributes to disease. In the Koleske lab, we are studying the Abl family kinases (Abl and Arg), which are required for proper neuronal morphogenesis in the developing brain and for normal synaptic function and behavior in adult mice. Each of these processes depends on carefully regulated reorganizations of the cytoskeleton. My work has focused on investigating how Arg regulates dynamic rearrangements of the actin and microtubule (MT) cytoskeletons and how these cytoskeletal changes affect cell adhesion and cell migration. We have shown that Arg binds and bundles F-actin, and Arg localizes in concentrations at the periphery of fibroblast cells where it promotes F-actin concentrations (Proc Natl Acad Sci. 98: 114865-114870). We recently demonstrated that Arg also binds MTs in vitro and organizes F-actin and MTs at the periphery of fibroblasts, serving as a physical link between these two cytoskeletal components. Arg requires this F-actin:MT crosslinking activity to promote dynamic lamellipodial activity following adhesion to fibronectin (J Cell Biol., in press).

I am very interested in your studies on cytoskeletal regulation using the Xenopus oocyte wound healing system. I think the ability to use this system to study the molecular mechanisms that regulate the complex cytoskeletal processes that occur during wound closure using both quantitative microscopy and biochemistry is very exciting. In addition, I have heard outstanding things about you and your work through discussions with my research committee members (Tony Koleske, Paul Forscher, and Joan Stetz, and particularly your former advisor, Mark Moses). I think your lab would be an excellent place for me to further develop my intellectual and research expertise, and I hope my experience in biochemistry, molecular biology, cell biology, and microscopy could be an asset to your lab.

I would appreciate the opportunity to talk with you about your research and the possibility of doing a postdoc in your lab. I am attaching my CV and PDFs of my publications, and I will ask my references to send letters to you upon your request. Thank you for your consideration, and I look forward to hearing from you soon.

Sincerely,
Ann Miller
What to expect during the postdoc interview

- Give a talk about your graduate research
- Meet with the potential postdoctoral advisor
- Meet with graduate students and postdocs who are currently in the lab
- Meals with the potential postdoctoral advisor and/or people in the lab
- Tours of the university and the area
Preparing for the postdoc interview

- Give a great talk on your graduate work.
- Be familiar with the current and past work from the lab.
- Think about:
  - what kind of project you would like to work on
  - what you are hoping to get out of your postdoc
  - what you can bring to the lab
- Think of lots of questions to ask the PI and lab members.
- Follow up after the interview with a thank you note.
Making the most of your postdoctoral experience
Strategies for making the most of your postdoctoral experience

- Work on both a “meat and potatoes” project and a “pie in the sky” project.
- Develop your own research niche that you can take with you.
- Apply for postdoctoral fellowships to develop a track-record of independent funding.
- Build additional skills that are required for your particular career goal.
- Take opportunities to increase your visibility.
- Set goals, re-evaluate them frequently, and stay focused on reaching your goals.
Postdoctoral Fellowships include:

- NIH Ruth L. Kirschstein NRSA
- NSF fellowships
- American Cancer Society
- American Heart Association
- Damon Runyon
- Helen Hay Whitney
- Jane Coffin Childs
- Leukemia and Lymphoma
- Life Sciences

Fellowships that provide funding for the transition from postdoc to independent faculty include:

- NIH Pathway to Independence Award
- NIH K grants
- NSF fellowships

Develop a track-record of independent funding
Build additional skills that are required for your particular career goal

- Teaching experience
- Writing/grantsmanship skills
- Public speaking experience
- Job hunting advice
- Lab management training
- Mentoring from someone in a field you’re interested in
Take opportunities to increase your visibility

- Attend conferences, and try to present your work there.
- Take opportunities to speak about your work.
- Try to meet with scientists who are visiting your department to give a talk.
- Look for opportunities to interact with other grad students/postdocs/faculty.
- Develop relationships with PIs other than your advisor at your new postdoc institution.
Set goals, re-evaluate them frequently, and stay focused on reaching your goals

- Set specific goals--both short-term and long term.
- Identify specific means of achieving your goals.
- Have a back-up plan in case your first-choice career option doesn’t work out.
- Re-evaluate where you are and whether you are making progress toward your goals on a regular basis.
Graduate & Post Doctoral Interests

ASBMB greatly values its graduate student and postdoctoral members, as they will become tomorrow’s scientific leaders. Therefore, the Education and Professional Development Committee includes both graduate student and postdoctoral fellow representatives and provides information and resources to help graduate students and postdocs successfully navigate and make the most of their training.

- PhD Guidelines
- Mentoring
- Preparing Future Faculty Programs and Resources
- Positions Available in Academics
- Becoming a Graduate Student
- Becoming a Postdoc
- Funding Opportunities for Graduate Students
- Funding Opportunities for Postdocs

Departments with degree programs in Biochemistry and/or Molecular Biology

Select State or Province

Career Brochure

This brochure identifies career opportunities available to scientists in biochemistry and molecular biology and the training needed to pursue these careers. Click here to view a pdf version of the ASBMB Career Brochure.
# RESOURCES: http://grantsnet.org

## SEARCH GRANTSNET

<table>
<thead>
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<th>RESEARCH FUNDING</th>
<th>STUDENT SUPPORT</th>
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### REQUIRED FIELDS

- **Training**
  - Master's Student
  - Early Doctoral Student
  - PhD Dissertation Student
  - Medical Student
  - MD/PhD Student
  - Initial PhD Postdoc
  - Advanced PhD Postdoc
  - Initial MD Postdoc
  - Advanced MD Postdoc
  - Junior Faculty
  - Administrator
  - Senior Scientist/Faculty

- **Type of Application**
  - Individual
  - Institution
  - Both

### OPTIONAL FIELDS

**Limit Research Area To:**

- Anatomy
- Astronomy
- Astrophysics
- Biochemistry
- Bioengineering
- Bioinformatics
- Biology
- Biophysics
- Biostatistics
- Geology
- Immunology
- Instrumentation
- Materials Science
- Mathematical and Computational Biology
- Microbiology
- Molecular Biology
- Nanotechnology
- Neuroscience

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### For Job Seekers
- Find a Job
- Login to My Account
- Post Resume
- Sign up for Job Alerts

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### GrantsNet Tools
- Saved Searches
- Saved Grants
- Funding News Alerts
- GrantsNet Express Alerts
- GrantsNet Account
- GrantsNet Logout

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### Program Administrators
- Sign up to post grant announcements
- Current program administrators login

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### ADVERTISEMENT

- STAY PLUGGED IN
- Elementary Education and More

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### ADVERTISEMENT

- AAAS Members save 10% or more
Ann Miller
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Panelists

Jessica Bell, Ph.D.
Assistant professor of at Virginia Commonwealth University, did postdocs at UCSF and the NIH

Parag Chitnis, Ph.D.
Program Director at the NSF
did a postdoc at ***

Ann Miller, Ph.D.
Postdoc at the University of Wisconsin-Madison

Ali Nahvi, Ph.D.
Postdoc at the Johns Hopkins University
Questions to ask at the interview: the PI

- How will we decide what project I will work on?
- Will I be able to take my research project with me to start my own lab?
- Will I interact directly with the PI on a regular basis or is the PI more “hands-off”?
- How many grants does the lab currently have? When are they up for renewal?
- Am I expected to get my own funding? Are there any internal fellowships available for postdocs?
Questions to ask at the interview: the lab

- How big is the lab?
- What is the environment like in lab--collaborative, independent?
- What have postdocs from the lab gone on to do?
- How long do postdocs generally stay in the lab?
- Is all the equipment I would need for the kind of work I want to do currently available in the lab?
- Will I have access to a technician’s help?
What are the benefits like for postdocs?

What is the environment like for postdocs?
  - Is there a postdoc office?
  - Is there a postdoc association?
  - Are there opportunities for professional development?

What is life like in the city/town where the institution is located?