

Choosing and Structuring a Postdoctoral Experience

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Workshop outline

- ▶ Evaluating your needs

Understanding your options

Selecting an advisor

Being proactive



NIH's postdoc definition

An individual who has received a doctoral degree (or equivalent) and is engaged in a **temporary and defined** period of **mentored advanced training** to enhance the professional skills and research independence needed to pursue his or her chosen career path.

Do you really *need* to do a postdoc?

Yes

Tenure track academic positions at research universities

Probably

Many scientist or research-related positions in industry

Maybe

Other jobs that rely on your research fluency (government, NGOs, foundations, etc.)

No

Most other careers

Do you really *need* to do a postdoc?

What type of career is most attractive to you?

Do you genuinely enjoy research?

Is a postdoc experience obligatory in your field?

Will a postdoc experience enhance your employment prospects?

“I used to be indecisive,
but now I’m not so sure.”

Have a career game plan

“You have to choose what you want to do as a career because the postdoc is where you define yourself as a professional,” said Dr. Christina Hull of the University of Wisconsin. It’s no longer acceptable at this point to not know what you want to do with your life. You might change your mind, Dr. Hull noted, but if you go into a postdoc with a plan, then it will be much easier to come out with a plan. So head yourself in a direction you think you’ll enjoy, she said, “Because nobody wants to hire somebody without goals.”

Advantages of a postdoc

Enhance your research expertise

Work toward independence

Become known in the research
community

Build a network of collaborators

Develop transferable skills

Disadvantages of a postdoc

Experience a nebulous status: not a student, not faculty, not staff

Work long hours; experience strain on family life

Endure low pay and benefits

Most TSRI postdocs come here to diversify their research training

| Why did you choose your postdoctoral position at TSRI? Please select all that apply. | Percent |
|---|---------|
| To gain additional training in a field different than my doctoral research | 62% |
| To work with a specific individual at TSRI | 48% |
| To work at TSRI because of its reputation | 42% |
| To work on a specific research problem at TSRI | 29% |
| To work in San Diego | 29% |
| To work in the same general location as my spouse/partner | 16% |
| It was the only acceptable employment at the time | 4% |

TSRI postdocs seek faculty jobs

What was your primary career objective **when you began your postdoctoral appointment** at TSRI?

Faculty position at a research university **57%**

Research position at a biotech company 15%

Research position at a pharma company 15%

Other 13%

TSRI postdocs seek faculty jobs

At this time, what is your primary career objective?

Faculty position at a research university **42%**

Research position at a biotech company 20%

Research position at a pharma company 19%

Other 19%

60% of new doctorates in the biological sciences and 45% in physics, chemistry, or astronomy plan to obtain postdoc experience

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Industry postdocs

Advantages

Gain experience in a multidisciplinary, team-oriented, deadline-driven environment

Gain access to cutting edge equipment and facilities

Tap into industry networks and opportunities

Gain exposure to the business side of a company

Better salary and benefits

Drawbacks

Proprietary information, less control over publications

Less latitude to pursue interesting side projects or research directions

Risk of downsizing, mergers, etc.

No opportunity for writing grants or teaching



Postdoctoral Fellow Program

[FAQs](#)

Skip to: [Expectations](#), [Terms of Appointment](#), [Open Positions](#), [Research Publications](#)

Lilly's Postdoctoral Fellowship Program provides the opportunity for a Ph.D., M.D. or equivalent to gain and expand scientific expertise while working under the direct supervision of a senior Lilly scientist. The Postdoctoral Fellowship Program provides valuable training to prepare each Fellow to accept opportunities in academia or industry upon completion of the Lilly Fellowship.

During the two-year training period, Lilly provides each Fellow the opportunity to participate and complete research project(s) that encompass exploratory research, new technologies and/or novel methods to advance research and development related to the strategic interests of Lilly Research Laboratories worthy of publication in peer-reviewed scientific journals.

A mentor is assigned to each Fellow to assist in the training and coaching of each project and initiative in which the Fellow participates. State-of-the-art facilities and a strong scientific environment provide the Fellow with the resources necessary to complete the given assignment. Lilly also supports and encourages attendance at scientific meetings throughout the year to help further development.

Expectations of the Postdoctoral Fellow

Students selected for Lilly's Postdoctoral Fellow program are expected to:

- Provide a good faith effort to accomplish the scientific objectives agreed upon when hired
- Provide scientific influence within the laboratory and department via discussion and sharing of technical knowledge and experiences
- Present at various scientific seminars within Lilly Research Laboratories (LRL) on work performed at Lilly
- Write and submit at least one scientific paper to a peer-reviewed, high quality journal during Lilly tenure
- Present at least one abstract at a national/international scientific meeting

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Terms of Appointment

The initial Postdoctoral Fellow appointment is two years. After successful completion of the first year, the second year is automatically approved unless otherwise agreed upon with your mentor.

Extensions for third or fourth year Fellowships require special approval and will be determined on an individual basis.

Post-Doctoral Scientist - Neuroscience Discovery Research

| | | | |
|-----------------|------------------------|---------------------|---------------|
| Location | Indiana - Indianapolis | Education Required | Doctorate |
| Job ID | 50375571 | Years of Experience | Not Indicated |
| Functional Area | Post-Doctoral Program | | |
| Job Type | Post Doctorate | | |

[Add to Job Cart](#)[Submit Resume](#)

Job Description

For more than 130 years, Eli Lilly and Company has been dedicated to meeting the health care needs of people in the United States and around the world. We address these needs primarily by developing innovative medicines—investing a higher percentage of our sales in research and development than any other major pharmaceutical company. If you are interested in being considered for employment with a “Best in Class” Pharmaceutical company, please review the following opportunity:

Post-Doctoral Scientist - Neuroscience Discovery Research

This position is for a Post-Doctoral Scientist position within Neuroscience Discovery Research. The successful candidate will use state-of-the-art molecular, physiological and chemical methods to define molecular mechanisms for glutamate receptor function and plasticity. The post-doc's research will characterize how AMPA-type glutamate receptor protein complexes including TARPs regulate synaptic transmission and how this signaling is altered in psychiatric disorders including schizophrenia, depression and addiction. By interacting with chemists and pharmacologists at Lilly, the post-doc's basic science breakthroughs will lead to discovery and development of new treatments for psychiatric illness. For more details see Neuron 2008 59:986, PNAS 2007 104:18784, and Science 2006 311 :1253.

KEY OBJECTIVES/DELIVERABLES:

- The successful candidate will work for up to four years under the direct supervision of a Lilly Scientist.
- Identification of new targets for neurological disorders
- Development of cellular and molecular models of neurological disorders
- Collaboration with scientists in other functional areas to help translate your scientific discoveries to medical impact
- Publish your discoveries in high profile journals.

MINIMUM REQUIREMENTS:

- Ph.D. and/or M.D. in neuroscience, pharmacology or a related molecular biology research discipline
- Research experience in molecular, cellular or electrophysiology neurobiology
- Demonstrated scientific productivity and creativity

ADDITIONAL SKILLS/PREFERENCES:

- Excellent communication and interpersonal skills
- Strong communication and interpersonal skills and the ability to work successfully in a team/ cross-functional environment
- The ability to think and act globally with a solution orientation

OTHER CONSIDERATIONS:

- Lilly Corporate Center, Indianapolis 8 hours/day, Monday-Friday Limited travel required

Lilly credits its exceptional employees for its successes, and knows the key to ongoing achievement lies in attracting and retaining the best people. A company rich in heritage, Lilly employs individuals, conducts research and markets products worldwide. By providing for the unmet needs of our customers through a continuous stream of innovation, we will outgrow all competitors.

Lilly earns consistent and wide recognition for creating an exceptional work environment while maintaining our highly regarded reputation in the Pharmaceutical Industry and Community:

- ***FORTUNE*** Most Globally Admired Companies™
- ***FORTUNE*** Top Companies for Leaders in North America™
- ***Chronicle of Philanthropy*** Most Generous Companies in the US
- ***Business Week Magazine*** Best Places To Launch A Career™
- ***Information Week*** 500 Most Innovative Users of Technology
- ***Science Magazine*** Best Companies for Scientists™
- ***The Scientist*** Best Places to Work in the Industry™
- ***Black Enterprise*** Top 40 Companies for Diversity
- ***Working Mother*** Best Companies for Working Mothers™

LILLY IS AN EQUAL OPPORTUNITY EMPLOYER

Some companies with postdocs or grad student internships

- Amgen
- Amylin Pharmaceuticals
- BD and Co.
- Eli Lilly and Company
- Genentech
- Genzyme
- GlaxoSmithKline
- Illumina
- Johnson & Johnson
- Life Technologies
- Merck & Co.
- Novartis Institutes for BioMedical Research
- Pfizer
- Procter & Gamble
- Roche

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▶ **Selecting an advisor**

Being proactive



Established faculty members are often, but not always, the best choice

Established advisor

Pedigree, name recognition

Access to opportunities: talks, collaborations, reagents, resources, alumni

More stable funding

Can be easier to cross-train, and mentor others

More (and more varied) publications

Junior advisor

Frequent, regular contact with advisor

Less technical help

Few authorship complications

Advisor has high motivation, but may not make tenure

Risk of competing with advisor

Difficult to carve out your own research niche

Choosing a laboratory

- **Research:** Are you excited and passionate about the research going on in the lab?
- **Lab structure:** Do you want to be surrounded by a lot of scientists? Is a smaller lab more suited to your working style or the amount of contact you hope from the PI?
- **PI mentoring style:** Are you hoping for a lot of one-on-one attention from the PI? Do you work better in an environment with more independence?

Choosing a laboratory

- **Training history:** How have previous postdocs fared in the lab? How long have they typically stayed?
- **Careers:** Where have students and postdocs gone after leaving the lab? Do trainees make collaborative contacts with other labs and within the research field? Do prior postdocs' experiences fit with your own goals?

Interviewing: information to request

- A copy of the advisor's CV. Check for high quality publications, invited presentations, grant review panels, and editorial boards.
- Research background of lab personnel, and advisor's philosophy on collaboration.
- History of job placement for postdocs for the past 5-10 years, including contact info.
- List of chores you will be expected to perform in the lab. Technical assistance?
- Lab policy regarding authorship, ownership of ideas, and taking some aspect of your project with you when you leave.
- Benefits for you and your dependents, including expectations for work hours and vacation.
- Starting salary range and basis for annual merit increases.
- Duration of appointment, source of funds for position, and stability of lab funding.
- Likelihood of supervising junior scientists.
- Availability of funds to support attending/presenting at meetings.
- Advisor's willingness to mentor you in grant/manuscript writing.

How advisors choose postdocs

“So what should a supervisor look for? The most common attribute 2009 [P.I.] survey participants looked for when recruiting a new postdoc was strong research experience; it was cited by 82 percent of those polled. Other common factors included interest in working in new fields (53 percent), having a graduate adviser with a good reputation (48 percent) and coming from a good research institution (34 percent).”

Evaluating your campus visit

- Did you have a good rapport with the advisor? Were you able to communicate on the same wavelength?
- How open was the lab head to your ideas and your interests in certain projects?
- Where is the group's science going? Does it match your interests?
- What direction is the lab headed in? Is it expanding or contracting? What is the overall funding situation of the lab?
- What is the structure of the lab? Does the training environment match your personality? What sort of mentoring will you get?
- What types of opportunities will you get? Will you be writing papers, writing grants, presenting work at meetings?
- What projects are available to work on? What components will be available to take your next career stage? (Hint: if an investigator is uncomfortable talking about this at the interview stage, that is a bad sign.)
- What did other lab members have to say about the advisor? Did more than two people have complaints? What was the undercurrent of their comments—satisfaction or sarcasm?

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- ▶ **Being proactive**



Take charge!

Be efficient

Do not become a 'perma-postdoc'

Be productive

Finish at least one significant project

Be active

Establish yourself in the field

Commitments of Postdoctoral Appointees

- **I acknowledge that I have the primary responsibility for the development of my own career.** I recognize that I must take a realistic look at career opportunities and follow a path that matches my individual skills, values, and interests.
- **I will develop a mutually defined research project with my mentor that includes well-defined goals and timelines.** Ideally, this project should be outlined and agreed upon at the time of the initial appointment.
- **I will perform my research activities conscientiously, maintain good research records, and catalog and maintain all tangible research materials that result from the research project.**
- **I will respect all ethical standards when conducting my research including compliance with all institutional and federal regulations as they relate to responsible conduct in research, privacy and human subjects research, animal care and use, laboratory safety, and use of radioisotopes.** I recognize that this commitment includes asking for guidance when presented with ethical or compliance uncertainties and reporting on breeches of ethical or compliance standards by me and/or others.
- **I will show respect for and will work collegially with my coworkers, support staff, and other individuals with whom I interact.**

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Formulate an Individual Development Plan

Clarify expectations

Set training goals and timelines

Identify projects

Assess strengths and identify areas for improvement

IDP templates:

<http://www.scripps.edu/services/postdocs>

Skills Assessment Worksheet for Researchers

Assess your strengths and weaknesses in the following skill areas:

4 = Highly proficient

1 = Drastic improvement needed

NA = Not applicable

| Research Skills | | | | | | |
|----------------------|---|----|---|---|---|---|
| | Critical evaluation of data and scientific literature | NA | 1 | 2 | 3 | 4 |
| | Experimental design | NA | 1 | 2 | 3 | 4 |
| | Problem solving/troubleshooting | NA | 1 | 2 | 3 | 4 |
| | Statistical analysis | NA | 1 | 2 | 3 | 4 |
| | Computer skills | NA | 1 | 2 | 3 | 4 |
| | Creativity/developing new research directions | NA | 1 | 2 | 3 | 4 |
| | Skills specific to your field (see prompts below) | NA | 1 | 2 | 3 | 4 |
| | | | | | | |
| Professional Skills | | | | | | |
| | Oral presentation skills | NA | 1 | 2 | 3 | 4 |
| | Manuscript writing skills | NA | 1 | 2 | 3 | 4 |
| | Grant/fellowship writing skills | NA | 1 | 2 | 3 | 4 |
| | Teaching skills (in a classroom) | NA | 1 | 2 | 3 | 4 |
| | Teaching skills (one-on-one) | NA | 1 | 2 | 3 | 4 |
| | Identifying mentors and utilizing them effectively | NA | 1 | 2 | 3 | 4 |
| | Mentoring others | NA | 1 | 2 | 3 | 4 |
| | | | | | | |
| Time Management | | | | | | |
| | Meeting deadlines | NA | 1 | 2 | 3 | 4 |
| | Establishing priorities within your schedule | NA | 1 | 2 | 3 | 4 |
| | Working efficiently | NA | 1 | 2 | 3 | 4 |
| | Organizing skills | NA | 1 | 2 | 3 | 4 |
| | Flexibility and multitasking | NA | 1 | 2 | 3 | 4 |
| | | | | | | |
| Interpersonal Skills | | | | | | |
| | Positive relationships with colleagues | NA | 1 | 2 | 3 | 4 |
| | Reliability; following through on commitments | NA | 1 | 2 | 3 | 4 |
| | Communicating effectively in written correspondence | NA | 1 | 2 | 3 | 4 |
| | Communicating effectively in conversation | NA | 1 | 2 | 3 | 4 |
| | English proficiency – spoken and/or written | NA | 1 | 2 | 3 | 4 |
| | Ability to give and receive constructive feedback | NA | 1 | 2 | 3 | 4 |
| | Networking/meeting new colleagues | NA | 1 | 2 | 3 | 4 |
| | | | | | | |

Write your plan!

“The discipline of writing something down is the first step toward making it happen. In conversation you can get away with all kinds of vagueness and nonsense, often without even realizing it. But there’s something about putting your thoughts on paper that forces you to get down to specifics. That way, it’s harder to deceive yourself or anybody else.”

Resources

- IDP Templates: <http://www.scripps.edu/services/postdocs>
- “[Planning for and Executing a Successful Postdoctoral Experience](#).” Sandra Schmid, TSRI 2008.
- “The Chicago Guide to Your Career in Science.” Victor Bloomfield and Esam El-Fakahany, University of Chicago Press, 2008.
- “A Ph.D. is Not Enough.” Peter Feibelman, Basic Books, 1993.
- “[To be or not to be a postdoc?](#)” Kathleen H. Berecek, Women in Physiology Workshop, EB 2004
- “[Staffing the Lab: Perspectives from Both Sides of the Bench](#).” BWF, 2008.
- “[Take Charge of Your Career!](#)” Philip Clifford, EB 2004
- “[Making the Most of Your Postdoc](#).” Zoe Smith and Ariana Sutton-Grier, The Chronicle of Higher Education, 2010.
- “[Industrial Postdocs: The Road Less Traveled](#).” Laura Bonetta, ScienceCareers.org, 2008.
- “[Eight Ways to Boost Your Postdoc](#).” Becky Oskin, NewScientist.com, 2008.

Resources, continued

- ["Searching for a Postdoctoral Position: How to Find what is Right for You!"](#) Angela Grippo , EB 2004.
- ["Your Career Plan: Consider the Forest While You're Focused on the Trees."](#) Bill Lindstaedt, ASCB Newsletter, March 2007.
- ["How to Succeed in Science: A Concise Guide for Young Biomedical Scientists. Part 1: Taking the Plunge."](#) Jonathan Yewdell, Nature Reviews Molecular Cell Biology, 2008.
- ["The Postdoc Experience: Not Always What You Expect."](#) Laura Bonetta, ScienceCareers.org, 2008.
- ["The Evolving Postdoctoral Experience."](#) Laura Bonetta, ScienceCareers.org, 2009.
- ["How to Have a Successful Postdoc Experience and Get a Good Job."](#) Sandra Schmid and Sandra Masur , ASCB Newsletter, September 2007.
- ["Types of Postdocs: What Do I Want to Be When I Grow Up?"](#) Laura Nisenbaum, EB 2004.
- ["Interview and Follow-up."](#) Donna Korzick, EB 2004.

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