



STOCK.COM/ERHUI1979

How to find the right place for your Ph.D. or postdoc

By [Elisabeth Pain](#) Sep. 10, 2018 , 3:20 PM

Choosing where to do your Ph.D. or postdoc can be a career-defining decision. There are probably myriad places where you could have a truly rewarding experience, but getting it wrong can have dire consequences. Finding a good spot is a personal thing—a great fit for someone else may not suit you at all—so it is essential that you go into your search with a good idea of what you want. To get you started, and to offer some examples of the varied approaches others have taken to maximize their chances of finding a Ph.D. or postdoc position that is right for them, *ScienceCareers* asked researchers at different career stages to discuss their experiences of searching for a lab, principal investigator (PI), adviser, or training position and the lessons they learned along the way. Their responses have been edited for clarity and brevity.

Why is choosing where to do a Ph.D. or postdoc so important, and what do you consider the key criteria?

You will be spending a significant fraction of your week in your new lab, so it is important to ensure that you will be able to not only do good science, but also to thrive and be happy in that environment. Each lab has a unique atmosphere and working style, and there is a lab out there to suit everyone—you just need to find it. Personally, I have learned that what I need from a research group is a topic that I am passionate about to help me stay motivated in the face of pressure or failing experiments; a supervisor who suits my working style, allowing me to work independently yet available to discuss research problems and career choices; a friendly social group who will make it easy to share equipment, ideas, and support; and a lab and department that have the necessary resources available not just to support your research but also your wider career goals, mental health, and well-being.

—**Jessica Boland**, *postdoctoral research fellow in experimental condensed matter physics at the University of Regensburg's Institute of Experimental and Applied Physics in Germany*

Choosing a lab is well worth investing time and research into. Essentially, your next lab is going to be, all rolled into one, the place you'll spend the majority of the next several years; the people you'll be spending that time with, potentially in close quarters; the PI you will be asking to promote the subsequent stages of your career; and possibly the topics that will form the basis of your own research program should you start your own lab later down the line. My understanding of my needs and what my criteria should be evolved during my training. For my master's degree, I solely followed my research interest and didn't give much thought to the fact that few others in the lab were working on my subject. I was allowed more independence than I was ready for, and my first year was a disaster. When I decided to continue with a Ph.D. in the same lab, I switched projects and built my committee with people I knew would provide hands-on mentoring when I needed it. By the time I was looking for postdoc opportunities, I had an even better sense of what was important to me. I put higher priority on an environment where science was viewed as creative and fun and ideas would be welcomed, respected, constructively criticized, and nurtured amongst colleagues. My graduate lab certainly had these positive aspects, but I had encountered enough toxic personalities along the way that I knew I was better off avoiding them.

—**James "Jake" McKinlay**, *associate professor in biology at Indiana University in Bloomington*

For my Ph.D., I prioritized the research topic and the overall atmosphere of the lab. I knew that if I wasn't passionate about the science, it would make an already long, challenging path even more challenging. I also felt the weight of making a decision that would affect my quality of life for the next 5-plus years and shape my career trajectory, so I looked for a lab environment that was positive and productive, with team members who had a similar appreciation for hard work. Your set of selection criteria will however likely change depending on

your stage of training. For my Ph.D., I mainly wanted to gain expertise in a wide variety of techniques and was lucky to find a PI who I felt was a good fit for me. In a postdoc lab, I want to dedicate more time to career development, and so I'm now looking for a PI who prioritizes their role as a mentor and can help me translate my skillset into a career as a scientist.

—[**Bryn Sachdeo**](#), *Ph.D. candidate in nutritional biochemistry and physiology at Rutgers University in New Brunswick, New Jersey*

The labs and mentors you choose can have an immense impact on your research career. I am primarily driven by my scientific question, so I have mainly focused on aligning myself with mentors who will provide me the necessary knowledge, tools, and guidance to accomplish my research goals. More concretely, I have placed greatest weight on the type of project and level of independence I will have, my communication and relationship with the PI, and the accessibility of excellent training.

—[**Wendy Ingram**](#), *joint postdoctoral fellow in psychiatric epidemiology at Johns Hopkins University in Baltimore, Maryland, and Geisinger Health in Danville, Pennsylvania*

There is a lot at stake when choosing where to do your postdoc or Ph.D. Choosing a lab that is excellent scientifically should allow you to do excellent research, publish in excellent journals, and network with other excellent researchers. At the same time, doing research is a very intense personal experience that involves working closely with colleagues, students, and supervisors. Human relationships are critical, and I wouldn't work in the best lab on Earth if it meant that my personal life there was going to be a nightmare.

—[**David Fairen-Jimenez**](#), *reader (equivalent to professor) in chemical engineering and biotechnology at the University of Cambridge in the United Kingdom*

How have you gone about identifying potential Ph.D. or postdoc labs, advisers, or positions and ultimately deciding which one was best for you?

For both my Ph.D. and postdoc, I identified 10 to 15 potential supervisors based on their research. I sought advice from as many people as possible—most importantly my supervisor at the time—to narrow the options down to just a couple of labs. I then arranged an interview to chat in depth with each PI about the research topic, lab equipment, their expectations, and available funding. I also came up with a series of questions to determine the PI's supervision style and ensure a good fit. When choosing my Ph.D. lab, my supervisor also offered for me to chat with the other lab members to get an idea of what it would be like working in the group, and I found this extremely beneficial.

—*Boland*

In my graduate program, first-year students do lab rotations—working in a few different labs for 9 weeks each—to help us choose our thesis lab. During my rotations, I took note of my interactions with the lab members and the PI. Was the lab one cohesive group with everyone helping each other, or was everyone always working on their own? Were these people I could be friends with? What types of meetings did I have with the PI? Were they weekly or monthly, scheduled or not, lighthearted or all business? Most importantly, I talked with the current graduate students and postdocs over coffee or lunch and asked for their honest opinions about various aspects of the lab, including the PI's mentorship style. I wanted to be sure that I could be comfortable meeting with my PI and telling them about my professional goals and any opportunities I might want to pursue outside of the lab. I also noted the papers the lab had published and the apparent success of current and former graduate students. It ended up being an obvious choice, as my dream lab based on the research topic also turned out to have an amazing PI who not only knew how to support and challenge me but how to have fun, too.

—**Maiko Kitaoka**, *Ph.D. candidate in molecular and cell biology at the University of California, Berkeley*

When I chose my first Ph.D. lab, I was driven entirely by my scientific interest. This turned out to be a mistake. There is much exciting science out there for students to pursue, but the right mentorship fit is more elusive and should be considered more carefully. The second time around, I based my decision mainly on the vision and mentoring style of the PI, and my Ph.D. was a success.

For my postdoc, I blended the two approaches. I first made a list of potential labs to approach based on my scientific interests and the skills and experience that I hoped to gain. I identified options almost exclusively from the published literature. But to get a sense for where the research is heading, not just where it has been, it can also be helpful to look the PIs up in funding databases. Then I looked at the labs' productivity to see whether the trainees published consistently. At that point, I stopped trying to read the tea leaves and arranged to speak directly with the PIs and trainees to get a feel for the vision and mentorship fit. During my visits, I looked for whether I would have the independence to direct my own project without being micromanaged, whether the PI would allow me to take my work with me to start my own lab, how the trainees were doing and felt about the PI, and how much support they received in their transition out of the lab. My decision made itself naturally after the interviews. Several of the PIs would have been great fits, but what won me over were my PI's creativity and the adventurousness of the trainees—neither of which were criteria from the start.

—**Prachee Avasthi**, *assistant professor of cell biology at the University of Kansas Medical Center in Kansas City*

My approach has been to collect as much information as possible. Read current publications to identify the lab's most recent research focus and frequent collaborations, contact the PI by phone or email to express interest and ask questions, see if they're on Twitter and follow them, and talk to current and former lab members. Don't assume that the research descriptions on faculty websites are up-to-date. General interests are typically consistent, but ask lab members about their research and the PI about upcoming projects to get a more accurate understanding of the current questions they are tackling. If possible, spend some time in the lab, as there is no better way to gauge whether the culture and pace will be a good fit for you. There is no perfect lab or PI, only a best fit—for you, but also for that lab—so be honest with yourself about what you need and want, and don't take it personally if it's not a good fit. Finally, communication is key, and everyone deals with stress differently. Passive-aggressive comments and avoidance are red flags; seek out labs where proactive problem-solving is the norm.

—*Sachdeo*

When I was looking for a postdoc, I was also navigating a two-body issue as my girlfriend (now wife) graduated a year ahead of me and had already started a postdoc at a new institution where I was hoping to join her. This narrowed the field for me and excluded most PIs that I would have met at conferences or departmental seminars. To identify prospective PIs in that institution, I read papers from the labs I was interested in. I would still recommend that today—social media is great for getting an initial impression of a lab but is no substitute for a personal assessment of the work a lab produces, both in terms of quality and whether it sparks your interest. I also talked to faculty members at my graduate institution who might have insight into the PI's mentoring style and lab atmosphere. Being limited to one location, I didn't rely on the traditional approach of contacting PIs about an interview and hope they would fly me out. One of my graduate committee members pointed out that, since I was going to visit my wife anyway, I could just let potential PIs know that I was looking for a postdoc position and that I would be in town and available to stop by to give a seminar. This presented no travel or accommodation costs to the labs, and thus little incentive to decline having an interview. I now encourage my trainees to consider this strategy to create interview opportunities, for example by combining vacations or conference trips with meeting or interview requests.

—*McKinlay*

While looking for my postdoc, I was also applying for fellowships, which meant that my search was not restricted to labs that had advertised open positions or even had available funding. I asked my network for their recommendations and read papers from those labs. I looked up former members to see how they progressed after leaving the lab and emailed a few of them to enquire about their experience working in that environment. Choosing a lab is no exact science, and there is always an element of luck. Sometimes, parameters like

wanting to live in a beautiful place can make all the difference. But ultimately, I trust my intuition.

—*Fairen-Jimenez*

Familiarize yourself with your discipline's application process well in advance. In my field, pure mathematics, it is very rare to get in touch with the faculty member directly to see if they have an opening. Most open postdoctoral positions are advertised online and applications are sought every year in what amounts to one big cycle starting in the fall. I mainly based my decision on whether my new position would give me a great opportunity to stretch my research in new directions.

—***Tyler L. Kelly***, lecturer (equivalent to assistant professor) in mathematics at the University of Birmingham in the United Kingdom

Visiting prospective postdoc labs helped me realize that each option had pros and cons, and I had to pick which cons I was willing and able to navigate and which pros meant the most for advancing my career. Long contemplative walks and trusting my gut served as the tie breaker. Ultimately, though, I became aware of the postdoc lab I ended up joining when the PI contacted me through LinkedIn, so my advice is to keep your LinkedIn profile up-to-date and stay open to surprises!

—*Ingram*

Conferences can be a good way to meet prospective PIs. Remember who asked you a question during your presentation and make sure to talk with them during the next coffee break. Your next position could well be in their lab. Once the contact is firmly established and you start discussing how to better define the project or look for funding, pay attention to how much time the PI spends in these early interactions. This will likely reflect the involvement that they will later invest in your work, and you need to make sure this matches your own needs for guidance and autonomy.

—***Romain Pierron***, lecturer (equivalent to assistant professor) in plant biology at the University of Upper Alsace in Colmar, France

Do you have any further advice?

It often takes time to find a lab—6 to 8 months in my case—so start contacting prospective labs earlier rather than later. This also allows both the PI and the applicant to more easily make plans for funding. Then, regardless of what lab you choose, seek out additional mentors who can provide further support and unique outside perspectives.

—*Avasthi*

Always, ALWAYS inquire about funding. A Ph.D. is stressful enough without having to worry about how—or if—your tuition, stipend, or research will be

financially supported. Every university, graduate program, department, and PI treats funding differently, and you must take it upon yourself to ask what options are available versus guaranteed and to get commitments in writing whenever you can.

—*Sachdeo*

Numerous publications and a high impact factor are not the only sign of excellent research, but when applying for your next position, people will want to see that. In retrospect, I would probably put more weight on finding a research group that offers extensive opportunities to publish and collaborate and that promotes your work to help you move up the career ladder.

—*Fairen-Jimenez*

Do not underestimate the impact of **lab culture** and interpersonal issues on your academic success. Arming yourself with communication tools like active listening and managing up skills will pay dividends when navigating labmate or PI conflicts. But better yet would be to find a place that attracts the kind of people who share your work ethic, values, and scientific curiosity, as well as a commitment to being kind to one another.

—*Ingram*

One of the best perks of science is this beautiful opportunity to get to know new people, cultures, and countries. Follow your heart and go and work with researchers you admire and get along with, in all kinds of places.

—*Pierron*

Be wary of joining groups solely for their outstanding publication records. While there is always the temptation that it could fast-track your career, the pressure may be particularly strong in that working environment and you may also struggle to get your ideas recognized or later develop your own niche in the field. Focus instead on research you enjoy and let that interest develop with a supportive group by your side.

—*Boland*

Compromise is an important and often necessary part of choosing a lab. Determine what's important to you, but once there, work with what's at hand and look beyond your lab to supplement whatever you think you're missing. In some cases, the things you compromise on might also take you out of your comfort zone. Try to embrace that experience rather than fight it, as you can learn a lot from it.

—*McKinlay*

Posted in:

- [How-To](#)
- [Postdoc](#)

- [Advice](#)
- [Non-disciplinary](#)
doi:10.1126/science.caredit.aav3719