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A FOOT IN THE DOOR

A postdoctoral application should present a person's best scientific self on paper. **Kendall Powell** demystifies why some applicants shine and others miss the mark.

Elizabeth Moritz does her homework. When she began her search for a postdoctoral fellowship in her final year of graduate school, she started a blog, in part to get advice from around the globe. Any time she saw an interesting paper in a journal's 'table of contents' e-mail, she jotted down the laboratory name. Eventually she had a list of 20–30 labs, which she eventually pared down to six applications — reading everything she could about those labs, looking up students she knew at those institutions, recalling meeting posters or talks from those groups.

"I applied to all big-name scientists, who get bombarded," says Moritz, a microbiology graduate student at the University of Illinois at Urbana-Champaign. "So I just wanted the chance to get my foot in the door and then I'd be fine once the interview was in my hands."

Moritz, who landed a postdoc at Harvard Medical School in Boston, Massachusetts, had the right attitude, say lab heads, because her diligent background research aimed to answer the question, "What do I want to get out of my postdoc?." Although they are short-term assignments, postdoc positions should be viewed as stepping stones to a longer-term

independent career — whether in academia, industry or another science-related post.

For that reason, it is hard to overstate the importance of the postdoc application. It is the fledgling scientist's bid to get noticed — to gain a phone or in-person interview with labs. Background research, a carefully crafted curriculum vitae (CV) and cover letter, and personalization of each application will open doors. Form letters and typos will get applicants nowhere.

There is no 'right' way to apply, say both successful postdocs and supervisors. Still, busy senior scientists screen dozens or even hundreds of applications a year. And there are common refrains as to what catches their eye, how they single out applicants to pursue and what red flags may send a CV straight into the rubbish bin.

Narrowing the field

Toby Franks knew he wanted to switch from the RNA-processing field to a cell-biology topic for his postdoc. But he had little idea where to start. "I wanted to apply to proven,

top-notch labs where I was going to have the success and track record of the people coming out of these labs," he says.

Franks went to the large annual meeting of the American Society for Cell Biology about 9 months before the date he hoped to start a postdoc, and made a list of the labs whose speakers most impressed him. He notes that some powerhouse labs that caught his interest required applications more like 12–18 months in advance. He applied to five

labs and, in the end, secured a postdoc at the Salk Institute for Biological Studies in La Jolla, California.

In the hope of increasing their chances of acceptance, other graduate students choose just one lab and assure the lab head they will accept

the position if chosen. This approach works for some, but carries the risk of having to make a series of applications if initial attempts fall through.

Moritz says she preferred sending simultaneous applications to six labs, which allowed her to have interviews in person with potential employers and lab colleagues before

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— Larry Goldstein

she made her decision.

With a short list of labs in hand, it is time to put together the actual application. The vast majority are simply sent by e-mail to lab heads, but some students still prefer to send a paper packet — investigators don't generally mind, as long as they have a quick way to reach applicants via e-mail. An application typically consists of a cover letter introducing the applicant and his or her reasons for joining this particular lab; a CV outlining education, publication record, honours and accomplishments; and three referees who will provide supportive letters of recommendation on request (see 'Postdoc application to-do list'). Some students also include a research summary of their graduate work; others incorporate this into their cover letter.

A little preparation goes a long way at this stage. Consider taking a workshop on writing cover letters and CVs, have senior colleagues review them, and proofread them carefully. "It's a total turn-off if the CV and cover letter are littered with mistakes," says Larry Goldstein, director of the stem-cell programme at the University of California, San Diego. "That, to me, says sloppiness, and I don't want sloppiness in my lab." Every lab head who spoke with *Naturejobs* echoed this.

Beyond publication records

Some lab heads use the 'first-author' rule to weed out applicants, looking for at least one first-author paper to signify that a junior scientist can complete a project from start to finish. However, a lack of first-author publications in high-impact journals does not mean all doors are closed. Many

POSTDOC APPLICATION TO-DO LIST

- Send your application by e-mail or overnight delivery. Consider a paper packet if you have unpublished manuscripts you want to include.
- Make it easy for lab heads to contact you by e-mail or phone.
- Follow-up by e-mail in 1-2 weeks to make sure they received your application. Don't phone.
- Choose referees who really know you, such as collaborators, unofficial advisers or others beyond the standard committee members.
- Meet with your referees to explain your career goals to them.
- Encourage referees to send their letters promptly (Salk Institute cell biologist Martin Hetzer says that the speed with which a letter lands in his inbox is usually much more telling than the letter's content).
- Prepare for the possibility of phone interviews, which may be scheduled or spontaneous. Make sure the conversation is two-way and ask your own questions, too. Have a list of bullet points handy in case you get nervous. **K.P.**



Winning formula: preparation paid off for (from left) Xiaoli Du, Toby Franks and Kristofor Langlais.

supervisors say they look for other hints of talent and promise.

"I personally don't put too much weight on the CV," says Martin Hetzer, Franks's postdoctoral adviser at the Salk Institute. "I'd rather pay someone who has the potential to be successful." Hetzer and others say that they factor in the size of the home institution and the resources available to the student's graduate laboratory. Other lab heads suggest that applicants list experiences that illustrate other responsibilities — such as sitting on graduate-school or department committees or hosting seminar speakers.

Applicants should highlight what they hope to accomplish in general in a postdoc position. Specific details of projects should be left for the interview. Agneta Nordenskjöld, a genetics researcher at the Karolinska Institute in Stockholm, advises spelling out your contributions to a graduate research project. "Write it in a way that says, 'I did this' or 'My part of the project was,' especially if you did something outstanding," she says.

Those applying after taking a break from science must work harder to convince a lab head. Kristofor Langlais had been teaching high-school science at a ski academy in Vermont when he applied for postdoc positions in the Washington DC area.

After extensive research into each lab's publications, websites and even annual reports, he wrote his cover letters from the angle of someone already in the lab. He mentioned specific results he found interesting and the next natural steps the lab might take. "I tried to make it sound like I could walk in that day and be self-sufficient immediately." He spent 20 hours or more on each application and his strategy paid off — he had four phone interviews, and ended up in a molecular-genetics fellowship at the US National Institute of Child Health and Human Development in Bethesda, Maryland.

Likewise, when Xiaoli Du was finishing up her doctorate at Peking Union Medical College in Beijing, she knew she would need to send applications to 30–40 labs if she wanted to obtain a postdoc in the United States. But she avoided the form-letter

strategy. "Dear Professor' does not show respect or that you are really interested in their lab," she says. Instead, she personalized each application and stated how her training and experience would distinguish her from other applicants. Her hard work led to a postdoc at the US National Cancer Institute in Bethesda, Maryland. Du suggests attending international meetings to make first contact with potential advisers.

Few things, though, confer more of an advantage than secured funding. "If a postdoc has their own fellowship, they can write their application to me in crayon and I'll take them," says Phil Baran, an organic chemist at the Scripps Research Institute in La Jolla, California. Unfunded applicants should

assure the lab head that they have checked on specific fellowship possibilities and outline a plan to apply for them.

What not to do

There are some definite 'wrong ways' to apply. Goldstein, whose e-mail inbox is so overloaded that his system sends an automated response to direct queries to assistants and lab managers, says there is no room for red flags in the competitive arena. Avoid telling personal-life woes, bad-mouthing previous labs or advisers or expressing a desire to work at night so that you can surf during the day. Explain gaps in a CV or publication record.

"Anything that signals the person is a prima donna, no matter how great they are, I don't go for," says Ken Yamada, laboratory chief at the National Institute of Dental and Craniofacial Research in Bethesda, Maryland. "Research requires teamwork."

Lab heads want a clear indication that applicants have carefully thought through their career goals and chosen this lab as the appropriate stepping stone. "Does a genuine passion, drive, and hunger for research come through in their letters or on the phone?" asks Yamada. "Would they be doing the same thing if they were suddenly independently wealthy?"

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