

RECOVERING FROM POSTDOC MISTAKES

"The best thing you can do in a postdoc is to do things that you enjoy," urges **Doon Gibbs**, deputy director for science and technology at Brookhaven National Laboratory, who has overseen the supervision of many postdocs over 25 years. Ensure those tasks are noticeable, such as publishing papers and presenting at conferences, he adds. But possessing a passion and self-promotion prowess alone does not a successful scientist make. Too often postdocs end up making mistakes along the way that can sideline them from the vocation they desire. Whether it is spending too long in a postdoc appointment, relying too much on their advisor, or simply not taking ownership of their career, there are many possible ways that early-career scientists can blunder. But luckily, there are clever means and methods to remedy even the most serious of slip-ups.
By Alaina G. Levine

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Jimmy Weterings



Doon Gibbs

WHY AM I HERE?

The postdoc appointment is meant to serve as the stepping-stone to victory in academic science and certain positions in industry, says **Harold Myron**, former director of education programs at Argonne National Laboratory. The job is designed as a training program to instill certain skills, techniques, tools, and tactics for pursuing advanced research. Ideally, a postdoc should sharpen their innovative problem-solving abilities and learn to manage research group resources, such as employees and grant money.

Too often graduate students take a postdoc appointment for the wrong reasons, which of course, can be a mistake in and of itself. There is a decades-old tradition that "the postdoc is a training ground for a tenure-track position, that this is the metric for success for young scientists," says **Cathee Phillips**, executive director of the National Postdoctoral Association (NPA). "Postdocs have heard this for years, which causes them not to think about their own strategic career plan, because they think the postdoc will naturally flow into a tenure-track position." But with only 20 percent of postdocs advancing to tenure-track employment, many find themselves realizing too late, or waiting too long, to make a career plan with tangible contingency options.

Sebastian (not his real name), who works as an administrator at a medical school in the southern United States, admits he made a number of mistakes in his two postdocs, not the least of which were going in naively and staying too long without a concrete career plan. "If you don't want a tenure-track position, then there's no reason to do a postdoc," he declares, and reveals that his lack of planning led to miscommunication with his bosses and wasted time.

In his first appointment, which only lasted a year, Sebastian's principal investigator (PI) needed someone experienced in a particular biomedical technique, which he did not have. The mentor did not have time to train his protégé, which led to arguments. "It was the wrong lab for me, and my naivety led me to accept bullying [from my advisor]," he says. "My mistake was that I stayed as long as I did."

Ultimately, Sebastian recovered from what could have been a

costly career blunder by forging his own path into academic program management. "It is vitally important for postdocs to be aggressive and take charge of their careers," he cautions.

ALL THE DOCTORATES ARE DOING IT...

When deciding whether to accept a particular postdoc, it is paramount to confirm that you are proceeding with the appointment for the right reasons.

However, frequently, graduate students venture into a postdoc out of a feeling of desperation for a job, resulting in a lack of inquiry about basic elements of the appointment and little or no negotiation for benefits. "When you're finished with your Ph.D., people look into what postdocs they want," confesses **Jimmy Weterings**, whose appointment took place at Vrije Universiteit Amsterdam in the Netherlands, and who is currently seeking an academic position. "There are some people, and I count myself among them, who will take anything—it's a safety feeling. You finished your Ph.D., you know you will have income, but I didn't think beyond the two years."

Weterings, who did not possess a strategic plan, neglected to bargain for essentials that would have bolstered his **continued »**

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“Go home every night and ask yourself ‘what did I accomplish today that furthered my career?’ If every day you accomplish nothing, you need to take action...it’s a warning sign of bad things.”

—Trevor Penning

career progression, such as teaching his own course. “In hindsight, I learned a lot about negotiation and talking with people,” he says. Weterings advises you can prevent this common mistake by relinquishing the feeling of desperation that you have to take a job without asking vital questions about it from the start. And “don’t take the first one that comes along,” he adds. “Think if it’s the right opportunity, ask yourself ‘what will I accomplish?’”

Fiona (not her real name), who recently finished a two-year biology postdoc at a state university in the western U.S., had been thinking of leaving academia after earning her Doctorate. She decided to pursue the postdoc anyway because finishing her thesis left her “on a high,” and she thought “it might be rash” to depart the tenure-track too soon. Her gaffe was that she did “not question people enough” about what she would be doing day-to-day. “I was so excited about getting a job,...I didn’t think to ask how people in the lab generally felt,” she says.

Within the first year of her appointment, her project lost funding. There was no financial support to attend conferences. And with a PI who was close to retirement and on sabbatical, Fiona discovered difficulty maintaining motivation.

But Fiona was lucky in one respect: Although she did not have a crystallized career plan when she entered her postdoc, she did have ideas about where she wanted to go next. She leveraged her postdoc experience to launch a fulfilling career in medical writing.

HELP! I’M IN A POSTDOC AND CAN’T GET OUT!

Although the number of years one spends in a postdoc differs depending on the chosen field, specialty, and career choice, most advisors agree that three to five years should be the cut-off point. Yet, some postdocs stay much longer, languishing with seemingly no end in sight—a big mistake, stress some experts. “The postdoc experience is not meant to be limitless,” says **Trevor Penning**, who served as associate dean for postdoctoral research and training at the University of Pennsylvania School of Medicine from 1997 to 2005.

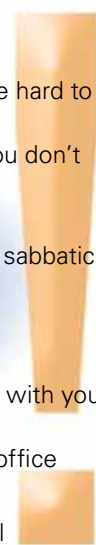
Some stay because they don’t know what else to do. “Knowing you have x years, a postdoc must develop a timeline and goals,” continues Penning. “Go home every night and ask yourself ‘what did I accomplish today that furthered my career?’ If every day you accomplish nothing, you need to take action...it’s a warning sign of bad things.”

With improper planning and a lack of assertiveness, early-career scientists can get stuck in a seemingly endless hamster wheel of postdoc appointment after appointment. After not landing a tenure-track position the first or second time around, some postdocs simply stay put where they are while others pursue another postdoc.

Gibbs is concerned that a postdoc who stays too long could be

LESSONS LEARNED

- Have a Strategic Plan
- Have a Plan B
- Be aware that tenure-track positions are hard to come by
- Don’t go into a postdoc just because you don’t know what else to do
- Have more than one mentor
- Be wary of a mentor who is absent, on sabbatical, or runs a large lab
- Don’t burn your bridges
- Communicate with your mentor
- Postdoc positions are a two-way street with you and your mentor
- Make use of your university’s postdoc office
- Apply for your own funding
- Look for a place that offers professional development
- Ensure you accomplish noticeable tasks during your postdoc, such as publishing papers and presenting at conferences



RESOURCES

- National Postdoctoral Association**
www.npa.org
- PostDoc Forum**
www.postdocsforum.com
- Science Careers Forum**
http://scforum.aaas.org

taken advantage of by their supervisor. Sebastian for example, feels he was treated as a technician during his postdoc. According to other associates and even PIs, it is not uncommon for some postdocs to be looked upon as an extra pair of hands and be charged with less complex routine tasks, as opposed to more creative, scientifically driven endeavors.

“If you find yourself in a situation that is untenable, [ask yourself] ‘is it in my best interest to stay in the lab?’” suggests Penning. Identifying the problem early is critical. “It’s much better to lose one year than five.”

THE MEDIUM IS ME (AND MY MENTOR)

Your mentor has the potential to heavily influence your career. But it is *your* career. Mary (not her real name), who received her Ph.D. in the biological sciences, proffers serious counsel regarding the all-too-frequent misstep of allocating complete control of your livelihood to another person, especially your supervisor. “Never expect your mentor to only be looking out for you. You have to look out for yourself,” she says. After all, “your boss’s priority is their own career.”

There is so much riding on your relationship with your PI, so “choose your postdoc mentor carefully,” warns Mary. In addition to serving as your advisor, and ideally as a coach and **continued »**



“When you ask for help, if help is not forthcoming, your decision is easy: you find another mentor.”
—Philip Clifford

FEATURED PARTICIPANTS

Argonne National Laboratory
www.anl.gov

National Postdoctoral Association
www.nationalpostdoc.org

Brookhaven National Laboratory
www.bnl.gov

University of Pennsylvania School of Medicine
www.med.upenn.edu

Medical College of Wisconsin
www.mcw.edu

Vrije Universiteit Amsterdam
www.vu.nl/en

champion, a good mentor should help orchestrate pathways for you to advance to the next stage of your career. So examine his or her track record of training associates, and pick “someone who moves people on to successful positions,” she says.

Mary made the mistake of not checking on this before securing her appointment. Her PI had never gotten anyone through a Ph.D., let alone on to a good job, she claims. As such, her career has progressed at a very slow pace. She is now in her second postdoc at the same institution where she received her Doctorate.

“Postdocs have to be realistic about what to expect from their mentors,” says Phillips. “These are busy people, and just because they hired postdocs doesn’t mean they will automatically be good mentors, particularly if you are looking at a career outside of academia.” Moreover, “the [appointment] is a two-way street with the mentor,” notes Penning, “but the postdoc has to take ultimate responsibility for their own career success or failure.”

PEDIGREE IS NOT ALWAYS KEY

Another classic conundrum is the sometimes misguided conviction that in order to progress in academe, you must spend your postdoc in a big, well-funded research group, says Carla (not her real name), a biologist who completed a five-year postdoc at a prestigious private university. But a large lab run by a famous scientist doesn’t guarantee direct value for the postdoc, as she found out the hard way.

Carla, who is an assistant professor at a medical school in the eastern U.S., divulges that her postdoc was complicated by lack of face time with her PI. The supervisor was well-known and traveled extensively. He directed an enormous lab, consisting of a score of postdocs who were all jockeying for time with their advisor. Upon returning from his trips, the PI “would only talk to those whose projects meant the most to him or to people close to submitting a paper,” she says.

But her research was not the group’s main focus, so she did not receive substantial opportunity to meet with her mentor. Carla recommends staying on the supervisor’s “radar screen” by making a careful decision to work on a project that is the highlight of the lab, she says.

“The largest labs may not give you the skills to be a professional scientist,” warns Penning. And selecting your mentor “is not just about the lab’s pedigree,” he adds. “Choosing the wrong person to be a mentor can make an experience go south from the beginning.”

But by networking and seeking out other mentors besides their PI, a postdoc can remedy a difficult situation. “They can’t depend only on the PI for points of contact,” says **Philip S. Clifford**, associate dean of the Graduate School of Biomedical Sciences at the Medical College of Wisconsin.

If there is confusion as to whether your supervisor is actively participating in your professional advancement, “it boils down to good communication between the mentor and the postdoc,” states Penning. “When you ask for help, if help is not forthcoming, your decision is easy: you find another mentor.”

WHEN ANOTHER POSTDOC TAKES OVER

There is great internal competition among postdocs that is often not acknowledged, admits Carla. She describes how another person in her lab “liked my project and usurped it,” and the PI, whose management skills were subpar, did nothing. Carla was then faced with the decision of whether to leave the lab, start something fresh, or partner with someone who seemed like the enemy. “I decided to collaborate,” she recalls, “but I ended up suffering because the other person ended up talking about it on job talks,” which she felt limited her ability to use it in presentations for academic positions.

Carla’s solution was to recognize that there was enough room in the job market and in the research field for her to differentiate herself from the other party. But “the onus was on me to distinguish myself,” she says. “I took the hard road, but in the end, this gives the most meaning in science.”

If you find yourself in a situation where you are faced with an internal rivalry that could backfire, Carla suggests speaking with the PI and the other person to find ways to partner together. For example, there might be an angle that allows both people to co-first-author a manuscript. Communication is crucial, she says, “so everyone maxes out the benefits.” The bottom line is you don’t want to burn any bridges.

THE PORTAL TO SUCCESS

Every vocation has potential pitfalls and every professional has made their share of mistakes. Whether it’s spending too much time in “PostdocLand,” choosing the wrong mentor or lab, or not having a targeted career plan with flexibility for unforeseen twists, there will always be opportunity to err in academic science. Fortunately, as sources say, if you recognize that you are in the driver’s seat, acknowledge a problem’s existence early on, and focus on finding a resolution, you can recover and discover success. There are plenty of resources to aid you on your adventure, (see “It Pays to Plan: Why You Need a Career Map,” DOI:10.1126/science.opms.r1000098), and best of all, if you learn from your mistakes, some might argue they were never mistakes in the first place. As James Joyce wrote, “A man of genius makes no mistakes. His errors are volitional and are portals of discovery.”

Alaina G. Levine is science writer based in Tucson, AZ.

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