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TIME MANAGEMENT

Seize the moment

A successful leap from postdoc to lab head requires tight control over time and tasks.

BY JEFFREY M. PERKEL

For the brand-new principal investigator (PI), excitement can soon give way to stress as the mountain of tasks becomes clear. In addition to the main charge — to develop and carry out a research programme, complete with writing grants and managing a lab — the new PI must find time to prepare and give lectures, grade papers, develop and administer examinations and fulfil service obligations to the institution and scientific community.

It is all a far cry from a postdoctoral fellowship, in which the job is to focus on research and nothing but. The transition can be like jumping from musical soloist to symphony director, says biologist Jing-Ke Weng, who was hired in 2013 as an assistant professor of biology at the Massachusetts Institute of Technology (MIT) in Cambridge. "You're not just responsible for your own playing, you are responsible for the music coming from a group of people," he says.

But new faculty members can adopt strategies to minimize panic and maximize productivity. Some take leadership and management seminars (see 'Learn the ropes'). Some seek guidance from mentors and administrators, and many rely on classic techniques such as goal-setting and calendar management. PIs need to develop a balancing act that works for them, reserving sufficient time for teaching and service while still focusing on their research. "If things don't seem to you to be critical for that mission, then deprioritize them," says Kevan Shokat, chairman of the Department of Cellular and Molecular Pharmacology at the University of California, San Francisco. "Let the department chair deal with the consequences of that."

Inexperienced PIs often find that it is difficult to establish or to settle into a daily routine, in part because challenges crop up all the time. "Every day has been completely different and, to some extent, unpredictable," says Marcelo Behar, who last September became a PI in biomedical engineering at the University of Texas at Austin. In a given day Behar might have to negotiate with vendors, meet with students, install laboratory equipment or IT infrastructure, handle administrative or human-resources tasks (such as ensuring that students receive promised tuition waivers) or prepare lectures — and of course, do science.

It helps to maintain a detailed calendar and set aside blocks of time each day and week for tasks such as grant writing, class preparation, keeping up with the literature and lab work. "Manage your time by becoming regimented in your time," says Joseph Steinmetz, provost at The Ohio State University in Columbus. With experience, that kind of discipline becomes less necessary, he adds.

Behar originally organized his day like that, he says, but the approach proved too inflexible. Dealing with vendors, for instance, could consume 4–6 unanticipated hours per week at the outset. Today, his schedule blends structured and unstructured time, which he manages using Google Calendar. "It took me nearly a semester to figure out a balance that works for me, my students and the department," he says.

For grant writing, it also helps to break the process down into intermediate deadlines to allow ample time for colleagues to comment on the text and for administrators to approve it, says Julia Salzman, a biochemist at Stanford ▶

HOW TO GET STARTED

Learn the ropes

Junior and newly hired faculty members can hone key skills at a wide variety of seminars hosted by universities and funding agencies. Susan Olesik, head of chemistry and biochemistry at The Ohio State University in Columbus, sends her new faculty members to workshops on grant writing and teaching, such as the New Faculty Workshop run by the Cottrell Scholars Collaborative in Washington DC.

The European Molecular Biology Organization (EMBO) in Heidelberg, Germany, offers a course for postdocs that offers tips on managing conflict, communication, building a team and setting goals and priorities, among other issues in laboratory management. Any postdoc with at least 6 months' experience can attend, says programme manager Anne-Marie Glynn. EMBO fellows, young investigators and installation grantees can attend for free; others must pay a fee.

The course advises researchers to divide tasks into four groups according to urgency and importance.

Those that are important and urgent must be tackled immediately. Important but not urgent tasks, such as making progress on a grant application that is still some way from its deadline, should be handled steadily to avoid becoming urgent. Other tasks, such as those delegated by a committee chair, may be considered urgent but not important, and still others as neither important nor urgent.

Ibrahim Cissé, a physicist at the Massachusetts Institute of Technology in Cambridge, took the EMBO course after a three-year postdoc. He says that he found it particularly helpful in helping him to identify the underlying source, motivations and possible solutions for personal conflicts within his team as quickly as possible. "No one budgets time for conflict management," he notes.

EMBO also offers a course for young female PIs that addresses negotiation, leadership and how to say no. Glynn says that these are skills that many must learn to apply, especially when issues of collegiality and institutional hierarchy are involved. At the end of the day, people have to prioritize. "If there was one plan that worked for everyone," she says, "it would be well known." J.M.P.

VALERIE NIES

Cancer researcher Amy Brock (centre) appreciates administrative and technical support in the lab.

University in California. She suggests creating faux deadlines by counting backwards from the grant's final deadline. For instance, if the deadline is 1 April, have a draft ready for colleagues' comments by 1 March and a final draft ready for administrators two weeks later.

Those with teaching responsibilities can work on ways to cut preparation time. Susan Olesik, head of chemistry and biochemistry at Ohio State, says that senior faculty members in her department offer lecture notes to younger PIs. Junior PIs can also ask colleagues for guidance on how to gauge the amount and depth of material to cover in the course, how quickly it should be delivered and the degree of difficulty to aim for in preparing exams.

Bonnie Baxter, director of the Great Salt Lake Institute at Westminster College in Salt Lake City, Utah, says that junior faculty members at Westminster are usually required to teach five courses a year, but that two sections of the same class can count as separate courses. Because teaching responsibilities at Westminster are planned up to a year in advance, flexibility may be limited, she says. Still, she recommends discussing it with the department chair or dean. Baxter was also able to count lab-mentoring time — she had accepted five undergraduates into her lab in her first year on the job — as a four-credit research course. "That was one course I didn't have to teach," she says. Further, working with so many eager protégés helped her to advance her research programme.

To bank more precious minutes, Baxter also offers office hours by appointment only, and telecommutes one day a week to minimize interruptions. "Scheduling is everything," she says.

Researchers must also carve out time for other commitments that come with academic positions, including committee work and external roles such as conference organization and advisory-board membership. In many departments, new PIs can decline such requests without penalty, but they cannot say no to everything. Plus, the more they accept, the more visible they will be, says Hu Li, a computational biologist at the Mayo Clinic in Rochester, Minnesota. It makes sense, he adds, to look at how well those requests dovetail with, or benefit, the research programme. "That's a priority," he says.

Behar, for instance, has just one appointment, to his university's graduate admissions committee. "I get to influence the selection process and make sure candidates who are a good match for my lab get offered admission," he says. Similarly, MIT physicist Ibrahim Cissé has served on a colloquium planning committee and two recruitment panels, assignments that could yield collaborators and students. "There are some committees that are directly related to your research and your research success, and maybe those are the ones that you want to focus on," he says. And always be polite when refusing such requests — cite, for example, a lack of time to provide quality service or a need to learn relevant rules and regulations. A new PI might also offer to defer service for a year rather than refusing a request outright.

TOKEN MEMBER

Women sometimes find themselves fielding more requests than their male counterparts, says Anne-Marie Glynn, programme manager for courses and workshops at the European Molecular Biology Organization (EMBO) in Heidelberg, Germany. In departments that have fewer female than male faculty members, women may find that they become the 'token' female member on committees, she says. So it is important to weigh up the benefits of serving.

The department chair (or faculty mentorship committee) can be an ally and a sounding board when deciding which service requests to accept. "I can't stress enough the role of the department chair in this," says Rebecca Ropers-Huilman, chair of the faculty governance executive body at the University of Minnesota in Minneapolis. For instance, some service roles sound easy but

actually require a lot of time and work. Others can yield large benefits for little effort, and a good chairperson can help younger faculty members to figure out which is which.

Shokat, for instance, recommends that junior investigators avoid becoming a PI on large multi-investigator grants because it typically involves a huge time commitment, Instead, he says, it is best to negotiate to be co-PI to tap into the awarded funding and research resources without such a heavy administrative burden.

For those who can swing it, an administrative assistant or grants or lab manager can be tremendously helpful. Amy Brock, a cancer researcher in the biomedical-engineering department at the University of Texas at Austin, says that such staff members can save PIs precious time — for instance, by booking travel, formatting and uploading documents for grant and manuscript submissions, updating CVs and creating and reconciling budgets. "I would advise new faculty to see how administrative support is used by other PIs in the department and then take advantage," she says.

At most universities, says Shokat, few junior faculty members will get access to administrative assistants. If they do, the person is typically shared. (Shokat's department gives each faculty member one-third of an assistant's time.) Glynn recommends that PIs ask whether such resources can be locked in during their hiring negotiations.

Some junior PIs can use start-up funds to pay for an assistant. Kimberly Reynolds, a systems biologist at the University of Texas Southwestern Medical Center in Dallas, hired a lab manager-cum-technician when she started her post. The assistant orders lab equipment and supplies, reconciles budget statements and maintains a lab-reagent archive system. "That's really taken a lot of stuff off my plate," Reynolds says.

"I would advise new faculty to see how administrative support is used by other PIs in the department and then take advantage."

And, say seasoned PIs, junior faculty members should keep in mind that effective time management includes making time for life outside the lab. Behar promised his wife that he would work 12-hour days four days a week and be home earlier on the fifth. "I've been trying to stick with that even though it feels wrong," he says. Such arrangements often become harder to maintain as tenure decisions approach and stress levels rise. But young investigators also need to remember what they have accomplished and to appreciate where they are. "You've been looking to do this for most of your academic career," says Reynolds. "You finally get to do it, so you should enjoy it." ■

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CARMEN DANESHMANDI

TURNING POINT
Swati Padmaraj

Swati Padmaraj was fulfilling her lifelong dream of becoming a chemist when she earned a master's degree in inorganic chemistry from the University of Bombay, now known as the University of Mumbai, in India. But today she owns and operates a fashion design company, Àtiz Fashion House near Seattle, Washington. Here, Padmaraj explains how chemistry continues to play a prominent part in her life.

What inspired your interest in chemistry?
I grew up in Mumbai, India, where career choices for those graduating from university were very limited. In the early and mid-1980s, you became a science major, an engineer or a doctor — that was the Indian culture. I was fascinated by chemistry because I could connect minerals and metals with elements in nature. The brilliant chalcopyrite, a copper iron sulfide, is bright yellow, whereas turquoise, a copper aluminium phosphate, is blue–green. The colours that are frequently associated with gems — such as emerald, ruby and sapphire — reflect the mixture of metals in the minerals.

Did you work as a chemist?
I did a lot of fieldwork in inorganic chemistry while I was pursuing my degrees. Inorganic chemistry is about elements and metals, understanding their molecular structures and composition, and how they affect the environment. I explored the prevalence of metals in different types of rock and soil. There are more than 90 metals in the periodic table and I studied how they coexist in nature.

Why did you choose to do a master's degree in business administration instead of a PhD in chemistry?
After my chemistry master's, I was going to do more research and pursue a PhD. But the chemicals I was using weren't very safe — I was losing a lot of hair and my skin wasn't doing well. I decided not to do a PhD, but still wanted a career that involved chemistry. The next best thing I could think of was to get a business degree to find other ways of making that happen.

What led you to the United States?
My husband was working as an orthodontist in the Seattle area. We decided to raise our family in the United States, and I put my career on hold while I was raising children.

How did you transition from a degree in inorganic chemistry to fashion design?
I found my passion for creating things when I started thinking about how chemicals affect fabrics. I knew that cotton was the number-one fabric in India, but growing it requires so many pesticides, which pollutes the environment. I also know that polyester can be recycled and can be a good alternative to other fabrics.

How does your chemistry background influence your fashion design?
Chemistry and fashion are interlinked in many ways. My knowledge of chemistry helps me to choose environmentally friendly fabrics, but it also helps me to understand the environmental implications of various inks that are used for digital printing. Water-soluble inks are good for the environment, but can need more energy to fixate. Also, the chemical make-up of a fabric helps to determine how the fibres will accept colour saturation and at what point the volume of ink might compromise the fabric. My background also helps me to produce garments that last.

What lies ahead for your design business?
There is so much progress going on in fashion these days, especially when it comes to printing. Block printing requires water washing, which is not as environmentally friendly as digital printing. I'm always looking at how to be environmentally friendly when choosing fabrics. I am using silk and polyester prominently in my current collection, which includes such statement pieces as trench gowns — long-sleeved, hooded dresses — and jumpsuits, both of which are good for people who travel globally. ■

INTERVIEW BY SCOTT KRAFT