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SUPERVISION

Clear direction

Managing laboratory members as well as a research strategy can be difficult for early-career principal investigators, but help is at hand.

BY BOER DENG

Vivek Kumar admits that he has not always been the best manager. Routinely, the neuroscientist would fail to provide important details about his expectations to junior colleagues, then lose his temper when they did not meet those expectations. In the laboratory where he conducted his postdoctoral research, for example, Kumar tasked the technician with cloning cells but did not give her a deadline. She had not completed the work when he demanded the clones, and she later told him that her blood pressure would rise whenever she heard him approaching.

The comment might have been difficult to hear, but it helped Kumar to realize that he needed to improve his management skills. When he set up his own lab in January 2015 at the Jackson Laboratory in Bar Harbor, Maine, he was determined to receive training in how to be a good leader, mentor and manager. A few months later, Kumar attended a workshop on leadership at the Cold Spring Harbor Laboratory in New York. There, he learned about the communication and negotiation skills that would help him in his role as principal investigator (PI). But almost one year on, that role can still feel uncomfortable. Managing people remains one of his biggest challenges, Kumar acknowledges — especially when it comes to having difficult conversations with colleagues about expectations. However, the course did teach him new skills and tactics. "I came away from the workshop with a clear sense that it's part of my responsibility to make the whole lab a success."

Many junior researchers say that they feel poorly prepared for managerial roles. "Knowing how to do good science, that's the price of admission for being a researcher," says Jeff Gustafson, an organic chemist who has led a lab ▶

for three years at San Diego State University in California. "But when I started my own lab, there were other things that I just had no idea how to do." Juggling the challenges of teaching and administrative duties while guiding the members of his lab was a mixture for which he had not been prepared.

Graduate students, junior researchers and their institutions have been awakened to the fact that, early in their careers, they need to develop the interpersonal skills that lab leaders require. "Over the past ten years, the interest in learning management as scientists has gone from a trickle to a small stream," says Carl Cohen, an executive coach for scientists who, in 2011, helped to start the leadership programme that Kumar attended at the Cold Spring Harbor Laboratory. In fact, a number of institutions have launched workshops and seminars to teach management to postdoctoral researchers and junior faculty members (see 'Learn to lead').

One reason for the increase in management-training options for early-career researchers is that although universities are producing more researchers, many will not remain in academia. Former trainees often enter fields in which management skills comprise a significant component of their jobs. "Students and their PIs know that they may not have the same careers," says Cohen, who taught and led research in molecular haematology at Tufts University in Medford, Massachusetts, before holding executive positions at several biotechnology companies.

AVOID CONFLICT

Academic scientists have also realized the importance of good management for success. For example, it is easier to attract talented researchers to a lab that has no conflicts, points out Markus Seeliger, who leads a cancer and ageing research group at Stony Brook School of Medicine in New York. Junior faculty members can highlight this selling point to potential recruits, who might otherwise want to work for more established researchers.

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Kathy Barker, a microbiologist turned author and management consultant in Seattle, Washington, has noticed that an increasing number of scientists now mentor each other and address the cultural and interpersonal aspects of science. "In the first lab I worked in, no one talked to me for three days because I asked the wrong person how to use the autoclave," recalls Barker, who in 2001 published *At the Helm* (Cold Spring Harbor Laboratory Press), a management guidebook for inexperienced PIs. Her experience spurred her to write about the importance of management and crafting a comfortable culture in which to do science. These days, many institutions pay attention to making their labs more welcoming, she says.

The field of research, number of members and culture of each lab bring their own predicaments for new PIs. "Issues can be quite different depending on whether you are working in a narrow field versus a field with lots of collaborative projects," says Justin Cotney, a developmental biologist at the University of Connecticut Health Center in Farmington. In small labs, interpersonal relationships between PIs and lab members are often more important — and potentially thorny — than in larger labs. Because PIs are able to spend more time and work more closely with postdocs and students in a small group, issues such as a communication problem or something not working are harder to ignore.

PIs can help by setting expectations and developing lab protocols that make negative feelings less likely to crop up. A month or two after setting up his lab at Georgetown University Medical Center in Washington DC, neuroscientist Patrick Forcelli received complaints from his disgruntled lab manager, who was upset about mess left in the lab and incomplete paperwork. Forcelli has since assigned a specific responsibility for lab upkeep to each member of his group, and devotes the beginning of the lab's weekly meetings to reviewing whether tasks have been completed. Making lab members accountable to each other has united everyone behind a shared standard — and has also made the lab a nicer place to work.

But sometimes the problems are not so easy to fix. As in any other workplace, the personalities and moods of individuals affect the overall lab environment. PIs must be attuned to how each member behaves in and perceives the work environment. "Knowing the people you work with and figuring out what each member of the lab will respond to helps you to know when a conflict might arise or escalate," says Cotney. He learned the lesson firsthand while he was a postdoc. When a colleague who had been struggling with personal issues snapped at a new junior researcher, Cotney stepped in to defuse the tension. He reminded his colleague not to direct unreasonable anger at another lab member. "It was good to be proactive, and is something I do as a PI." Forcelli says that in small labs, it is especially important for PIs to play an active part in handling conflicts. "I've seen cases where the PI will just be hands-off, which makes the environment miserable for several people in the lab for an indefinite period of time," he adds.

Kumar thinks that training can help researchers to appreciate the importance of good management. He says that the workshop he attended helped him to better understand his role and responsibilities. For PIs like Kumar, it can be a relief to know that they can learn discrete skills for resolving management challenges. Perhaps the most important lesson is learning to view difficulties as normal and tractable. "One thing I take away is that it's OK that something falls through — that you don't have to be perfect all the time. You realize that everybody is facing these things," says Cotney. "It's nice to know you're not alone." ■

Boer Deng, *a former* Nature *intern, is the Washington DC correspondent for* The Times.

LEARN TO LEAD

Management resources abound

Management science has existed for more than a century. In 1911, engineer Frederick Taylor outlined the principles of 'scientific management', which aims to improve productivity in the workplace through collaboration. Management resources for early-career researchers are increasing. Here are a few.

- The Leadership in Bioscience workshop at the Cold Spring Harbor Laboratory in New York runs for 3.5 days every February or March. Aimed at postdoctoral researchers who are about to take leadership of a lab, as well as early-career principal investigators, the workshop accepts around 25 students, from a pool of about 40 applicants.
- The European Molecular Biology Organization (EMBO) in Heidelberg, Germany, holds a comprehensive series of workshops for early-career scientists. When they began in 2005, the workshops were offered only five or six times a year. Now, they take place 20 times a year, with each workshop of 16–20 participants filling quickly. There is a waiting list for EMBO's lab-management courses for principal investigators and postdoctoral researchers.
- The UK-based Vitae online resource offers career-development advice for researchers. Registered members around the world can access tools to learn about conflict management and coaching for researchers, as well as other areas of professional growth.
- The Jackson Laboratory in Bar Harbor, Maine, offers a course called The Whole Scientist, which helps graduate and postdoctoral researchers to make the leap from acolyte to doyen. Georgetown University in Washington DC holds a similar course for early-career researchers.
- And this year, the Van Andel Research Institute in Grand Rapids, Michigan, began a series of workshops in leadership and management skills for scientists that it plans to continue yearly. **B.D.**