

LAB MANAGEMENT: THE HUMAN ELEMENTS

You've reached a career milestone: managing your own lab. This recognition of your achievements attests to your hard work, attention to detail, commitment to a goal—and outstanding science. But be prepared. You're about to face challenges you may not have considered. **By Carol Milano**

As **Frank Slack**, a Yale University professor of molecular, cellular and developmental biology, quickly discovered, “To be successful at running the lab, being a good scientist isn’t enough. It suddenly becomes all these different roles we weren’t trained for, like psychiatrist and personnel manager.”

Those responsibilities often require new skills. Here’s how some of your peers are mastering the “human elements.”

Networking and Collaborating

When you run your own lab, “networking” isn’t just about finding the next job. It means cultivating productive relationships, which succeed only when they are reciprocal. Mutual trust grows through willing exchange of information or services.

Start by developing contacts inside and outside your own institution—locally, nationally, and even internationally. Find your professional association’s nearest chapter. Ask your mentors and colleagues which organizations they belong to. Once you join one, get involved. Volunteering for a committee or writing for the chapter newsletter, for instance, makes you much more visible.

“You and the people you’re managing will have to speak in public or mingle effectively at meetings and conferences,” says **Susan Morris**, president of Morris Consulting Group, which coaches research scientists. To minimize uneasiness and build confidence if you’re shy, she suggests:

- **Network in small chunks.** Set a maximum of two carefully chosen events a month, ideally at your highest-energy time of day.
- **Arrive early.** Entering an uncrowded room is less unnerving than a noisy one, where most people are already conversing.
- **Go with a “buddy.”** Preferably someone who can introduce you to several people.
- **Talking to a stranger can be intimidating.** Safe “starters” include asking their current job, how they got it, why they chose this event, or other groups they belong to. Seek topics of mutual interest, such as that gathering’s focus. If you can offer information about anything that’s mentioned, jot a note on the person’s card. Follow up promptly.

Frequently traveling to give lectures, **Jennifer Lippincott-Schwartz**, chief of cellular biology metabolism at the US National Institutes of Health (NIH), National Institute of Child Health and Human Development, values professional meetings, despite the time drain. “I



Susan Morris

“People skills are teachable. Make a commitment to learn consistently, not in fits and starts.”

make contacts, hear things that would be difficult to pull out just by reading the literature, and meet people doing things relevant to our work.” Almost without trying, she says, collaborations develop.

Taking part on national panels “is a responsibility as senior members of the scientific community,” believes **Kelly Frazer**, who heads the new Division of Genome Information Sciences at University of California, San Diego School of Medicine. She finds those she’s on, like the expert scientific panel for the genomewide association program (a trans-NIH initiative led by the National Human Genome Research Institute), “very beneficial because of the contact with people and with what’s going on.” In a rapidly moving field, Frazer uses these events to stay connected through informal exchanges over coffee, lunch, and dinners. I listen to the science, give input, have discussions, hear others’ ideas, and look at the work.”

Lippincott-Schwartz prods every lab member to attend at least one professional meeting a year. “People don’t realize how social science is! By talking science during these trips, you learn what’s important to the field, what the major questions are, where your science fits the broader, bigger scheme, and how what you’re doing interests other people (or not).” *continued »*

UPCOMING FEATURES

Careers in Bioinformatics/Systems Biology—April 9

Bio/Pharma: Mythbusting about Industry—April 23

Careers in Water Science (Online Only)—May 14

ACQUIRING PEOPLE SKILLS

- Ask if your university holds workshops for new supervisors on management, delegating, interviewing, or other interpersonal responsibilities.
- Use available books, like *Academic Scientists at Work*, by Jeremy Boss and Susan Eckert (Springer-Verlag, 2002) and Kathy Barker's *At the Helm: A Laboratory Navigator* (Cold Spring Harbor Laboratory Press, 2001). Slack, impressed with how "it spells out all you need to run your own lab," gives a copy of the Boss-Eckert book to each postdoc progressing to the next position.
- Look for a special interest group on campus or nearby, such as Women in Science and Engineering. Members are often generous with support and information.
- Consider a few sessions with a private coach. Morris Consulting Group trains individual scientists seeking stronger managerial skills, and it recently published, *Leadership Essentials for Women Scientists: Tips, Tools and Techniques to Advance Your Career* (equally relevant to men.)
- "People skills are teachable," Susan Morris assures. "Make a commitment to learn consistently, not in fits and starts."

Every network needs ongoing maintenance—allocate at least one hour a week for brief steps that keep your name in front of people. "Make a follow-up call, meet for coffee, or send a handwritten note," says Morris.

You'll probably work with departments and scientists inside and outside your own institution. Lippincott-Schwartz encourages collaboration within her group. "Each person is an equal part. I try to get people talking to each other in small groups, making sure to include everyone who's interested in this topic. It's so cool to see people with different expertise working together—their energy feeds on each other."

"I know our lab isn't able to do everything," Slack acknowledges. "We seek collaboration where we think someone could be constructive in a project. Fortunately, Yale is very collaborative; its 400 bio labs have most of the expertise we've needed. It just takes a few e-mail rounds: 'do you work on X?' They may say 'No, but try Y'."

Finding academic science increasingly interactive, Frazer sees large collaborations encompassing diverse skill sets. Her new international grant has five M.D. clinicians and five Ph.D. biologists, plus genomicists and informatics specialists, in San Diego, Vancouver, and Toronto. Beyond monthly phone meetings of all 20 researchers, Frazer has frequent contact with other genomicists. The entire group will meet in both Toronto and San Diego annually.

Joerg Schaefer directs the Cosmogenic Dating Lab at Columbia University's Lamont-Doherty Earth Observatory. His lab collaborates with scientists on related projects, all over the world, including with a New Zealand team for nearly a decade. They stay in close contact through Skype and other technologies. The complexity of establishing a partnership in a distant country calls for exceptionally resourceful networking. Through another Lamont lab, Schaefer was able to join a collaboration, the Asian Monsoon Project, with the nation of Bhutan.

Sustain previous collaborations, recommends **Michel Tremblay**, director of McGill University's Rosalind and Morris Goodman Cancer Center, with 300 students, postdocs, and technicians. "When you leave a lab and get out on your own, it may be a different kind of project. Your [previous colleagues] won't follow you. If you had a good relationship with your ex-mentor, maintain it."

Which collaborations thrive? Setting mutual goals fosters strong,

honest, productive interaction. "Especially with virtual relationships, take incremental steps to build trust," Morris recommends. Spell out communication pathways at the very beginning: how often, in what form, and who gets to know what? "With a global team, have at least one face-to-face meeting to establish ground rules."

Mentoring

"There's a big difference between mentorship and directing research," explains Tremblay. "Don't micromanage—mentoring isn't telling the scientist what to do. Like a good parent, offer guidance, but let the [mentee] develop. Give freedom. Treat individuals as partners." Good mentors, he adds, know their way around the university and understand how to get to the right people.

"Learn to juggle many different things simultaneously, but keep emotionally steady because people in your lab really look to you," says Lippincott-Schwartz. "It's a huge roller coaster every time you send out a paper—everyone's going through emotional ups and downs. To be cheerleader is critical!" When a project isn't working well, talk through options, brainstorm new ideas, and ask, "So if we get this result, then what?" Lippincott-Schwartz doesn't prevent anyone from trying a new idea they feel strongly about. "I might argue against it, but I won't say, 'No, don't.'"

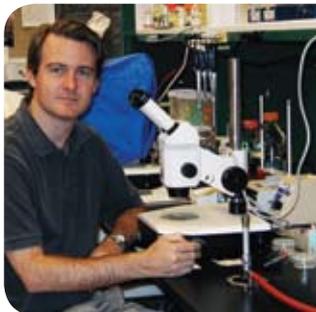
"My door is always open," declares Slack, inviting everyone to see him whenever they want, show him data, or call him to the microscope. "I don't go to them every day, or even every week. I tend to encourage by steering, not forcing, and giving a little space to find their own way."

To Frazer, it's vital for managers "to be open, honest, and straightforward, but simultaneously kind and compassionate. The fun stuff is easy. Deflecting a potential problem is harder."

When one new postdoc was, as Frazer described it, "all over the place," she discreetly intervened. "It was important for him to stay on track and learn to get things done, or else he'll have a tough time in future jobs." In giving well-defined assignments, she would emphasize, "This is the task," then thank him warmly upon completion. After four months, things are improving. "Now when we have a conversation, he realizes, 'I have to focus, not be distracted,'" Frazer reports.

In academia, teaching is central, Tremblay observes. [continued »](#)

FACULTY



"I tend to encourage by steering, not forcing, and giving a little space to find their own way."
—Frank Slack

FEATURED PARTICIPANTS

Columbia University
www.columbia.edu

McGill University
www.mcgill.ca

Morris Consulting Group
www.morrisconsulting.biz

National Human Genome
Research Institute
www.genome.gov

University of California,
San Diego
www.ucsd.edu

US National Institutes
of Health
www.nih.gov

Yale University
www.yale.edu

"Promote your young faculty members through lecturing responsibilities, such as teaching fourth-year undergraduates. That makes them better known to students deciding which laboratory to choose for graduate studies." Remind research students to make a career plan. Instead of directing where to do further training, you might say, "these few labs are the best in their fields. The PI. is well known for mentorship. These are some I wouldn't choose because of track record, funding, field of research, or networking."

One touchy situation: a young researcher with consistently disappointing performance. "Some P.I.s won't get involved at all. It's very hard to say, 'academia is not for you,'" Tremblay finds. "Sometimes you must tell your mentee, 'These are your strengths. Here is where you are weak. I think you might not make it as a faculty member at a top university. You have good expertise in other aspects of research, such as administration. You would be great in translational research or clinical trials.'"

When a postdoc heads toward another job, "Leave space for them to start their own program. It takes generosity," says Tremblay, "to allow this best trainee in the last year to start a new one to bring along. Have an open discussion with each trainee about what they'd like to do next. Provide tools for them to move forward," including the time and resources to carve something from the current project.

Motivating and Managing

A corporate lab's objective is meeting the business goal. An academic lab's goal "is whatever the PI got money for," Morris notes. "Every department meeting, every printed document, every conversation should reinforce that 'the mission of this lab is to....' Constantly remind people that we're not here to do our individual experiments. This is part of something bigger."

Morris cites the "complex demographics of lab personnel. Managing and leading require respecting differences between cultures and generations. Accept that work can be done in individual or innovative ways," Morris suggests. "One person may complete projects by setting a timeline for each day's work, while another needs the adrenaline of last-minute pressure, completing the project by several all-nighters. Yet both produce a quality product."

To promote a team's trust and cooperation, Tremblay advises setting clear expectations for your lab, staying aware of what's going on there, and quickly resolving conflicts within your group.

What constitutes conflict? Hogging a piece of equipment or writing notes in a native language instead of lab language affects everyone. Ideally, Morris advises, let lab members resolve minor tensions, stepping in only when something escalates enough to disrupt the

research. "Establishing and following performance guidelines that define appropriate versus inappropriate lab behavior is essential to becoming an effective lab manager. Make every employee aware of guidelines and consequences for not complying," says Morris.

Clarify academic realities, too, Tremblay stresses. A researcher may be the inventor of a discovery, and receive acknowledgment through an ensuing patent with his/her institution, but the university owns everything done in any lab on its property. "To make sure everyone is treated fairly, keep your lab well organized so you're clear about who's done what, who started what. People should get the credit they deserve. That's what justifies the hard work, especially on licenses, patents, and publications."

Some of Schaefer's lab members go on lengthy field excursions, to locations as far-flung as Patagonia or New Zealand. "Working globally, the areas we study are always beautiful, and we post wonderful photos. Then the researchers come back and share their adventures on the field trip. It makes everyone feel very involved."

Schaefer's team-building has a firm foundation: "I make it clear that I expect everyone who works here to have fun. We have lunch together once a month, off campus. Every week, one group goes out after work, for beer."

Slack's lab prefers champagne, popping open at least one bottle a month to celebrate a birthday, new grant, or accepted paper. He cooks an annual dinner for all 17 researchers at his home. The team takes one day trip each year, like canoeing.

Slack's annual State of the Lab address "honestly assesses where we are in terms of new money, new people, our papers, our goals for that year. We'll all know what our colleagues are working toward. I give information and want them to tell me what they think. They get to speak up about direction, or any area where they think we should focus or add effort."

His entire team gets involved in hiring. "Any postdoc I consider comes to the lab for a day, meets everyone to talk about science one-on-one, and has lunch and dinner. Each of my people reports on the interaction. We check motivation, interest, and personality," Slack confides. "We have few interpersonal issues because we try to encourage smart, socially adept people to join. And we demand they each be a good lab citizen."

Carol Milano is an independent journalist in New York City, covering health care and science.

DOI: 10.1126/science.opms.r1000086