

CAREERS

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DAVID SIMONDS



LAB LIFE

Battle zone

Disputes are bound to happen in high-pressure research environments. The key is knowing how to respond when they do.

BY KAREN KAPLAN

Erica Sparkenbaugh was apprehensive when her principal investigator (PI) asked her to finish a paper that a more senior postdoc had started. But, as a recent arrival to the lab, she did not want to seem uncooperative. “I was kind of embarrassed, and I felt bad,” remembers Sparkenbaugh, who researches inflammation and coagulation at the University of North Carolina at Chapel Hill. “I didn’t want this to be the start of my new postdoc.” Soon, she started hearing whispers that her colleague was upset about having his project snatched away. Worried about the future of their working relationship and about lab camaraderie, Sparkenbaugh approached her miffed lab-mate on a quiet evening at the

campus postdoctoral office. She explained that she had not intended to step on his toes. “I walked up to him and asked if he was OK with my finishing the paper,” she says. “I wanted him to know that our PI had asked me to finish things up because he knew [the colleague] was busy with other projects.”

The conversation proved fruitful. Her colleague’s vexation evaporated, and he agreed that they should talk to their supervisor about a more collaborative approach. The three settled on a timeline for the postdocs to finish the paper together and submit it to a journal, and all went according to plan: the paper is now under review. “I think it was really helpful that I went to him directly,” says Sparkenbaugh. “He and I have a really good working relationship now — it was worth those 10 minutes of sweating.”

All sorts of discord can arise in the lab, tripping up the most well-meaning postdocs and graduate students. Differing expectations and ineffective or insufficient exchange of information are at the root of many clashes, say conflict-resolution experts. Younger researchers might be unclear about their own or their lab-mates’ responsibilities, or might not fully understand how the lab functions. They might also communicate poorly, and unwittingly come across as truculent or confrontational.

Junior researchers can reduce the risk of serious, potentially career-marring conflicts through a few simple measures: gathering information before arriving at a lab; having a thorough chat with the principal investigator and other lab members; and remaining calm when disagreements arise. It can also help ►

► to consult a senior colleague, an administrator or a support organization such as the campus postdoc office — especially if a dispute seems too delicate or explosive to deal with alone. Ignoring a volatile situation, or letting it fester, will not make it disappear, and may put a researcher's good standing at risk.

SETTING THE STAGE

As soon as graduate students or postdocs know that they will be working in a particular lab, they should aim to find out as much as possible about their supervisor and team. Useful information on a principal investigator's personality and management style can be unearthed by talking to his or her current or former lab members, suggests Charles Dwyer, an executive coach and an emeritus professor of education at the University of Pennsylvania in Philadelphia. "Find out what has happened with people who have worked with this professor before," he says. Such off-the-record, first-hand information is invaluable, agrees John Baldoni, an executive coach in Ann Arbor, Michigan. "You want to understand where your boss is coming from," he says.

Once armed with this intelligence, the junior researcher should arrange a chat with the principal investigator, perhaps over coffee, as soon as possible and ideally before starting work. The goal is to understand what specific duties and obligations are expected of each team member; how the lab works on a daily, weekly and monthly basis; and how the supervisor might handle typically sticky issues such as a non-renewed grant, long work hours or determining lead authorship of a paper. "If the postdoc or graduate student doesn't get anything from the PI about this, they need to ask for it," says Tony Nunez, a neuroscientist at Michigan State University (MSU) in East Lansing, where he also heads the postdoctoral office.

A similar fact-finding chat with a group of lab-mates can demonstrate how they function and interact. Louellen Essex, an executive coach in Minneapolis, Minnesota, says that the goal is to head off discord by learning the lie of the land before arguments have a chance to form. "The best way to deal with anything is before it happens," she says.

When joining a lab, junior researchers need to follow basic rules, says Wei-Chun Wei, a molecular cell biologist who is in her second postdoc at the University of Oxford, UK. "I always talk to an older lab member, usually the PI, to determine what those rules are," she says. "I ask about how the space is arranged, how to hook up the microscope, things like that."

But an initial meeting is not enough — the lines of communication need to stay open. Early-career researchers need to make sure that they are on track by checking in with their supervisor regularly, and not just in lab meetings that focus on research progress. Over time, the supervisor's requirements may shift. "You need to visit expectations periodically,"

says Nunez. "There is such a thing as memory decay, and things also change."

Keeping careful work records in a lab notebook or other medium can also help to stave off trouble. Jeremy Boss, an immunologist at



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Emory University in Atlanta, Georgia, recalls an awkward confrontation with a graduate student who seemed to be unproductive. "She started to tear up," he says. But then she pulled out her lab notebook and showed him detailed documentation of her work over the past year. "She was making great progress; it was just that I was unaware," says Boss.

Another way to avoid blow-ups is to keep a comprehensive shared calendar of the team's daily and weekly schedules and projects. Anna Kopec, a pathology postdoc at MSU and co-chair of the university's postdoc association, says that her lab keeps such a list on a whiteboard. At a glance, everyone knows what everyone else — including the technicians — is doing, as well as when and for whom.

SIMMER DOWN

So what happens when a conflict does arise with a colleague or supervisor? It is crucial to remain non-defensive and diplomatic, says Essex. "Don't come out confronting in a way that might be career-derailing," she says. It helps to calmly restate the other person's position (see 'How to handle friction'). "Paraphrase and ask questions if it's not clear, and

then respond with your point of view," she says. "The key is to be open to whatever it is they're saying."

If, for example, a principal investigator accuses a postdoc of failing to manage and mentor a graduate student effectively, the postdoc should stay calm, repeat the complaint and ask for clarification and examples. If the supervisor has the wrong impression or faulty information, the postdoc can clear up the misunderstanding.

But if the criticism is fair, the postdoc should agree and outline a remedy such as scheduling regular meetings with the student or sitting down to discuss his or her needs and presenting the outcome to the lab leader. The postdoc should make sure to thank the supervisor for bringing up the matter. "Staying off the defensive and being open to critical feedback is necessary to create productive professional relationships," says Essex. "No one is perfect."

When the junior researcher is the one broaching a sensitive topic or bringing up a complaint, Essex advises that he or she articulate the problem clearly and concisely, using conciliatory language such as, "I wonder if you might be open to," "Can you help me with" or "Do you think that", and presenting possible solutions. If, for example, the problem involves working extremely long hours, the junior researcher could suggest doing some of the work — data analysis, for example — from home. In some cases, requesting a shorter work week might be contrary to the lab culture; whether this is the case can often be discovered during the preliminary lab-group chat.

If the junior researcher is worn out and needs a few weeks off, it is best to arrange for lab-mates to pick up the slack during the absence before approaching the supervisor. "Tell the PI that you have it covered," says

COMMUNICATION

How to handle friction

As junior team members, graduate students and postdocs often face tricky moments with their principal investigators and lab-mates. Here are some ways to head off disputes and to manage them when they crop up.

Set up an introductory chat. Before the lab rotation or postdoc stint begins, arrange for a one-on-one meeting with your supervisor to clarify expectations and requirements such as working hours, performance assessments, what happens if a grant is not renewed and how lead authorship is decided.

Meet lab-mates. Get other members of the team together for a coffee before starting the post. Find out about the

principal investigator's foibles, quirks and hot buttons. How does he or she like the lab to be set up? What is the team dynamic like?

Keep breathing. Do not panic or get defensive if the supervisor or a lab-mate criticizes you. Take a breath and calmly paraphrase what was said. Try to avoid an argument by briefly explaining how you are handling the situation. If you were unaware of the problem, sketch out a plan of action and accept suggestions.

Walk away. If the other person is shouting, state that this is not the best time to discuss the issue and leave the room. A 10–15-minute stroll will help you to clear your head and think of solutions. **K.K.**



Wei-Chun Wei recommends learning about a lab's rules before starting work there.

Kopec. “You’ve talked with the other postdocs, the graduate students, the tech — and you can check on experiments from home and you have access to the data.”

If an exchange gets heated, try stepping back, perhaps by telling the other person that this is not the right moment to discuss the subject, and suggesting another time to talk, Nunez counsels. Kopec says that when she is upset, she takes a deep breath and heads out for a walk. “Only deal with conflict when you’re calm,” she says. Use the interlude to contemplate solutions.

Publishing is a frequent source of conflict. Perhaps a postdoc or graduate student has been contacted by a journal about submitting a paper, but the supervisor objects because the journal is not high-profile enough. The exchange has the potential to escalate: the junior researcher needs the publication for his or her CV, but the principal investigator refuses to consider the journal, and one or both parties start to fume.

One option, says Kopec, is to consider doing more experiments, amassing stronger data and submitting to a better journal. But she adds that junior researchers need to get used to not always getting their own way: “You have to remember that your boss is still your boss at the end of the day.”

It may also help to discuss any quarrel with a more senior lab member, administrator or mentor. “People need to know there’s help for them when they’re in conflict with a PI,” says Kathy Barker, a lab-management specialist

in Seattle, Washington. “It’s important to get out there, talk and get advice.” The university postdoctoral office or international-scholar office (where applicable) can also provide support and advice.

At the very least, says Kopec, talking the problem through with a third party will give the postdoc a chance to vent and discuss it. The international-scholar office can help in administrative disputes involving visas, given that lab leaders often don’t know the particulars of immigration law.

CALLING IT QUITS

Sometimes, no matter how much an early-career researcher may have tried to soothe troubled waters, the relationship with his or her supervisor may be unworkable or irretrievably damaged. Changing labs is not the career-destroyer some might fear; staying in a conflict-ridden environment can be much worse (see *Nature* **442**, 324–325; 2006 and *Nature* **470**, 129–131; 2011). “If it’s not working out in a lab, the postdoc and graduate student need to think about their career,” says Boss. “It’s a bad marriage and it needs to be annulled.”

If quitting seems to be the best path, it is important to approach the issue tactfully and diplomatically, to give at least a few weeks’ notice and to offer to finish a concrete set of tasks. “Don’t say, ‘Your lab is terrible, you’re a monster and no one should work for you,’” says Boss.

Instead, he recommends that graduate students or postdocs explain that they have a certain number of years left before their lab rotation or postdoc is over, and that they would like to act now to make a transition into another area of research at another lab. “Defuse the conflict and take the high road,” says Boss.

There may be logistical obstacles. If a postdoc is funded by a principal investigator’s grant or being paid for by the university, the principal investigator should not object and there should be little problem in giving appropriate notice and switching to the new lab. But a postdoc fellowship might be restricted to research in a specific field or discipline, which would make it difficult to transfer to a lab doing different work. The fellowship’s funding agency or foundation programme officer will be able to clarify the situation.

Ultimately, says Barker, managing conflicts is a finely nuanced balancing act. Early-career researchers must see to their own interests but avoid burning bridges with their principal investigators and other lab members. “Most bad situations will not fix themselves,” she says. “You have to advocate for yourself.” ■

Karen Kaplan is associate *Careers* editor at *Nature*.

FACULTY

Minority mentoring

A study finds that mentoring can help life-sciences faculty members at US institutions that serve ethnic minorities to win more grants, boost their publication rates and participate in more professional activities, including attending scientific conferences and developing collaborations (A. G. Campbell *et al.* *CBE Life Sci. Edu.* **12**, 394–402; 2013). The study, published on 4 September, partnered 32 faculty members from minority-serving institutions with established scientists at research-intensive universities for 8–10-week internships between 1997 and 2011. Participants’ average number of publications rose from 0.84 before the internship to 1.37 afterwards. Their average number of grants increased from 0.06 to 0.59, up to four times the average of a control group of 129 faculty members at the same institutions who were not mentored.

REPRODUCIBILITY

Identification failure

Researchers are impeding reproducibility by not identifying experimental resources or properly sharing data, says a study (N. A. Vasilevsky *et al.* *PeerJ* **1**, e148; 2013). In the methods sections of 238 biomedical journal articles from 2012–13, 54% of resources such as antibody types and cell lines were not fully defined. A lack of identifiers also plagues online data-sharing, says lead author Nicole Vasilevsky, an ontologist at Oregon Health and Science University in Portland, adding that editors, funding agencies and grant reviewers should mandate resource identification. “If researchers don’t keep track of what reagents they used, it could impact their own — and others’ — research,” she says.

SALARY

Maths degrees pay

US holders of master’s degrees in maths earn more than those with degrees in biology or chemistry, finds a report, *Higher Education Pays*. Research firm College Measures in Rockville, Maryland, analysed first-year salaries for 15,118 master’s holders in various fields from 2006 to 2011. Maths graduates typically earned US\$49,280–\$59,113, whereas biology graduates earned \$35,788–\$40,561 and chemistry graduates \$47,045–\$49,421. The numbers, says College Measures president Mark Schneider, imply high demand for mathematical problem-solving skills.