

# Careers

## Finding balance in a new lab

Setting up a new laboratory is a formidable challenge for early-career researchers.

**Sarah Bohndiek** shares a few lessons she learned in her first year as a group leader



Phil Mynott

**Rollercoaster ride** Sarah Bohndiek learned a lot from her first year of running a new lab.

A little over 12 months ago, after years of working in established laboratories with up to 50 group members, I embarked on a daunting process: replicating all that scientific infrastructure and camaraderie in a lab of my own. In retrospect, this task was not quite as insurmountable as it first seemed. After all, a university lab – even a brand-new one – exists within a department, so I had people around who could answer my seemingly never-ending questions about legal, accounting, purchasing, human resources, teaching, safety and computing matters.

But even so, when I look back on everything that has happened in the past year, the word that comes to mind is “rollercoaster”. There was so much I did not know about running a laboratory, and especially about how to find the all-important balance between my desire to do everything to the highest scientific standards, and my desire to do, well, something. What follows are some of the most important lessons I learned in that first year – and many that I am still learning now.

### Bring in the money

If you have never been exposed to lab finances before, you will be endlessly amazed at how quickly small purchases can eat up vast sums. If you are lucky, your start-up package will cushion the blow. If not, your first task is to get writing. Your ideas must be converted into specific and measurable objectives to convince your peers that you are going to change the world – or at least your research field – within the timeline of the grant. Your first grant application will never be perfect, and neither will your second, third or even *n*th. But with time, care

and the constructive criticism of as many people as you are brave enough to ask, it will be fundable, and that is what matters.

### Develop your workspace

Can you actually perform your research in the lab space you’ve been offered? Bear in mind that building a functional laboratory infrastructure takes a lot of time, is often frustratingly out of your hands, and requires careful communication between numerous parties who talk very different languages: builders, contractors, project managers and scientists. In addition, buying high-value items of equipment requires often lengthy and headache-inducing tender processes. Delays can be frustrating, but you can make them less painful by, for example, getting started on other tasks (risk assessments and standard operating procedures, anyone?) in small pockets of otherwise “wasted” time.

### Get to grips with teaching

In this respect I was well prepared: I enjoy teaching and have actively sought out teaching experience throughout my career. But even so, I significantly underestimated the time required to develop new lecture and practical material (about two days per hour of contact time in my case), and in the teaching labs, I struggled to stay one step ahead of the students and their instrumentation niggles, blips and failures. I also chose to offer practical projects for undergraduate students, including some from outside my university. While this was very rewarding and added a new dimension to our small lab, it again placed demands on my limited time and resources. Balancing these responsibilities with research is a chal-

lenge, but carving out at least some “thinking time” each week can help reassure you that the science is still moving forward.

### Build your team

The prospect of recruiting talented people to your research team is exciting; the process itself turns out to be rather difficult and depressing. Finding people who are truly interested in your science, who will share your passion for the subject and your intellectual curiosity can be a challenge for a new leader; meanwhile, sifting through piles of applications from candidates who desire to “work at your eminent institution”, but have no idea who you are or what you do, is a huge time sink.

With perseverance and good luck, I have brought together a truly engaged group of people. They range from undergraduate interns to experienced postdoctoral fellows, and as we work in an interdisciplinary field, they have expertise not only in physics, but also in engineering, chemistry and biology. With time, I hope we will reach our “critical mass” of scientific ability and camaraderie.

### Maintaining focus

Formulating research questions can seem easy when you are the one doing the experiments. But now that you have a team actually working on the questions you have conceived, they will put their own spin on things, which raises a number of questions. Does the project still fit into your overarching research direction? Is there synergy between these different projects? If so, is that synergy clear to the other members of the team? In my first year, I often made the mistake of not communicating the com-

mon goal – which seemed so obvious to me! – to new members of the lab.

### Delegate

You have to manage time, people, resources, finances and e-mail. You will have done some of this before, but now the volume of work has increased exponentially and you are often legally responsible for the outcome. No pressure! Under the circumstances, delegating tasks to other team members is both a necessity and a privilege. On the other hand, you cannot delegate everything. There is a careful balance to be found between having the confidence to act yourself, and acknowledging when someone else is actually better qualified than you to do the job.

### Understand who you are as a leader

Initially, your primary focus will be on ensuring you have the people and infrastructure to drive towards your scientific goal. But it was important for me to take the time to ask the questions: what sort of lab do I want to run? How do I want people to work within my lab? What will provide the “glue” for my team?

The answers to these questions will depend on who you are as a leader. It might sound like management-speak, but I think it is really important to “be yourself” as a group leader, and that means figuring out your own needs and boundaries. For example, I need regular exercise to stay sane, and eight hours of uninterrupted sleep to do creative science the next morning. I also hate being micromanaged (which means I am sometimes too “hands off” with others). It is unlikely that anyone who works with me will have the same needs and preferences because diversity in a research team is crucial. I think that identifying your basic needs and productive periods, as well as those of your team, is the beginning of understanding your leadership style.

### Talk to people

Interdisciplinary research between physics and biology is very exciting right now, so our work is attracting some attention. I am starting to tell the world what we are doing through interviews and invited talks, and we are also kicking off a number of new collaborations. All of this is incredibly stimulating, but it also requires significant

travelling and a need to balance the long-term benefits of networking with actually being around to do the science.

### What next?

There are three qualities that I think have helped me get to this point. One is persistence, by which I mean pushing to get things done, sometimes “no matter what”. Another is courage to say “no”, or to ask “what am I getting out of this?”. Finally, resilience. The most stimulating science is often also the most risky, and this means you will fail. Repeatedly. But occasionally, you will succeed, and it will be immensely rewarding. Would I do it again? Actually, I already am: I have recently been appointed as a group leader in a second department within Cambridge, which means I am starting up a second lab. Let’s see if I learned anything from my first year.

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