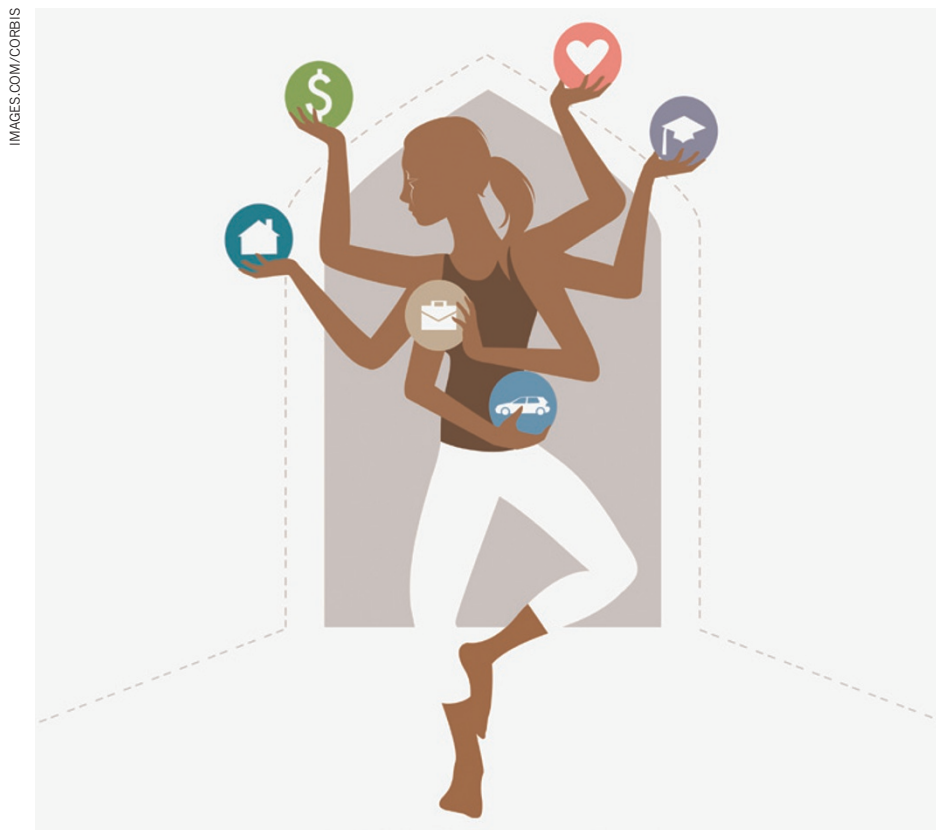


CAREERS

TURNING POINT Physiologist relinquishes major grant to return to former post **p.301**

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joy of doing science is tarnished by heavy workloads and excessive demands. Personal interests — and maybe even a family life — are often sacrificed for the sake of producing the papers and grants that pave the way to permanent jobs in academia. And yet a healthy work–life balance can be more fruitful than endless hours in the lab or in front of the laptop. Scientists — and their work — can benefit from setting aside time for hobbies, travel or just about anything else that does not directly intersect with lab activities.

A HARD DAY'S NIGHT

The working habits of scientists are poorly monitored, but an analysis of download patterns of scientific literature across all fields suggests that many researchers work after hours or at weekends (X. W. Wang *et al. J. Informetr.* **6**, 655–660; 2012). Using a tool devised by Springer publishing, the researchers tracked when people downloaded papers from the publisher across five weekdays and four weekend days in April 2012. Working late into the night is particularly widespread among scientists in the United States, whereas Chinese researchers work many hours on the weekend, they found (see ‘Literature searches around the clock’).

“Scientists are generally under great pressure, and most young scientists are spending much more time working than they initially expected when they were undergraduate students,” says co-author Shenmeng Xu, a master’s student at the Dalian University of Technology in China.

At Chinese universities, she says, even master’s and PhD students are expected to dedicate some 60 hours a week to their studies. Constantly working overtime is exhausting, physically and mentally, and limits students’ social life. “I do some swimming for exercise,” she says. “But other than that I can’t afford any entertainment and I can go home no more often than twice a year to see my parents. I like what I’m doing but I do wish I could have a more balanced life.”

Demands on scientists have greatly increased as research has become more data-intensive in the past few decades, says Julie Overbaugh, an HIV researcher at the Fred Hutchinson Cancer Research Center in Seattle, Washington. Generating and sifting through large amounts of data takes time, and using specialized equipment — which is often shared between groups of researchers — can mean reserving time slots and thus working at odd hours. Striking a healthy balance between work and a personal life is difficult, she says, but more important ▶

LAB LIFE

Balancing act

Many researchers struggle to take time off from the lab. But scientists should try to improve their work–life balance.

BY QUIRIN SCHIERMEIER

As a PhD student and later a postdoc at the University of California, Berkeley, Axel Meyer almost had to force himself to have a life outside the laboratory. Wanting to experience the arts, he worked the odd evening as an usher at Zellerbach Hall, Berkeley’s on-campus performance theatre. If time allowed, he would also play in the university’s field-hockey team. But on most days, his leisure activity was limited to riding his motorcycle to campus early in the morning and back home late at night.

Working long hours and at weekends was

common in Berkeley’s zoology department, from which Meyer received his PhD in 1988. As an evolutionary-biology postdoc, Meyer says, 80-hour working weeks were the rule rather than the exception.

“You might think we were brainwashed to work so much, and in a positive sense I guess we were,” says Meyer, now chair of zoology and evolutionary biology at the University of Konstanz in Germany. But, he adds, the research was so exciting and he felt so privileged to be part of his supervisor’s group that it never crossed his mind that he might be working too hard.

Still, for many early-career researchers the

► than many hard-working young scientists and their supervisors will admit.

“Prioritizing the things that are most important for you is key, as is evaluating whether you are using your time wisely,” says Overbaugh. “If you feel you’re missing out on things that are really important for you — family, friends or hobbies — something is wrong.”

TAKE A BREAK

For Daniel Mietchen, a biophysicist and web-tool developer who earned his PhD in 2006 from Saarland University in Saarbrücken, Germany, that important something outside science is playing in a band. A singer in a traditional Central Asian song and dance group, he took pains to organize his doctoral research on mapping brain structure with nuclear magnetic resonance imaging so as to allow him sufficient time for rehearsals and gigs with his Berlin-based music collective. He even managed to persuade his supervisor to grant him four weeks of educational leave in 2004 to improve his Uzbek language skills in Samarkand. “I’d strongly recommend that anyone complement their research work with at least one non-scientific activity that you really enjoy,” he says. “As for me, I get my best ideas in unfamiliar surroundings, often while travelling, but rarely in the lab.”

Fearing disapproval from colleagues and superiors, few early-career scientists treat themselves to such out-of-office time. But time off should be part of any sensible research schedule, says Sabine Lerch, an independent soft-skills instructor who frequently coaches German PhD students on time management.

Young scientists, she adds, should rid themselves of “imaginary demands” such as working extra hours in the lab. “You will achieve more in one productive day than on a series of days in poor mental and physical condition,” she says. “Students tend to think about recreation last when they structure their research work — if they structure their time at all — but everybody needs breaks.” Lerch suggests that

scientists keep at least one weekend day clear of any professional duties and set aside time on work days for exercise and hobbies.

Even short breaks from intense work help recharge creativity, agrees Overbaugh. In science, she says, success is not necessarily a function of the amount of time spent in the lab or at the computer. Scientists are more likely to produce new ideas and insights when they are not under deadline pressure, she suggests.

Time-management guidance from advisors can be invaluable. When HIV researcher Jennifer Kerubo Maroa first arrived in Seattle from Kenya to do a PhD at the Hutchinson Center, her supervisor, Overbaugh, told her more than once that getting herself and her family settled was more important than the lab. “At first, I didn’t quite believe her, but I eventually accepted she was being truthful with her advice,” says Kerubo Maroa. “When I arrived in the United States I thought all that counts is work. Knowing that I could leave whenever I needed to take care of my family’s needs in turn allowed me to organize a balanced schedule between the lab and my kids.”

“Of course there were many times after she got settled that she worked very hard on her science,” says Overbaugh. “But she also made sure to keep her family life in balance.” Kerubo Maroa has since received the distinguished student award from Hutchinson, produced a couple of papers, and accepted an offer of a postdoc position at the KwaZulu-Natal Research Institute for Tuberculosis and HIV in Durban, South Africa, a collaboration between the US Howard Hughes Medical Institute and the University of KwaZulu-Natal.

At the Hutchinson Center, students can get advice on work and work-life balance from mentoring committees that include three senior faculty members from across the spectrum of age, ethnicity and career level. The

committees are there to guide early-career researchers informally, as well as to formally evaluate PhD students’ annual progress.

POINT OUT PRIORITIES

If supervisors are not understanding about time pressures, making a specific plan can obviate conflicts. Lerch advises students to make a project plan, laying out what is to be done and by when, and to revisit it regularly. She suggests that they then make a shorter-term plan with more specific goals. If a supervisor asks for extra tasks, the student can point out what other aims, already planned, will have to fall by the wayside. And scientists should try not to take on too much, says Lerch — they should not be afraid to say no to taking on administrative tasks and other advisory roles.

Such measures — in conjunction with the support of trusted colleagues, friends and career coaches — can help to mitigate the stress created by demanding supervisors. In extreme cases, if there are misconduct issues or breaches of employment law, scientists should seek advice from an ombudsman or PhD organization, such as the European Council of Doctoral Candidates and Junior Researchers (Eurodoc) in Brussels.

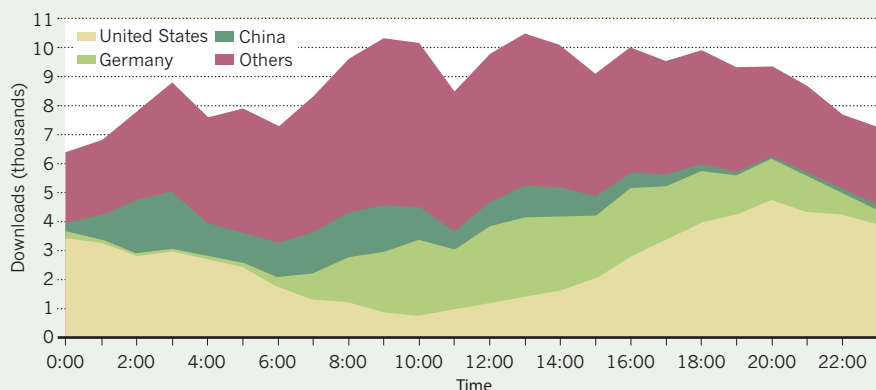
Even with scientists’ best efforts, progress is difficult. Many countries have been hit by the financial crisis, for example, forcing young scientists to fight even harder for jobs and funding — which means more demands on their time. “Across hard-hit southern Europe, most of those who do still have work are now doing a double job, including full-time teaching and full-time research, for one salary,” says Eurodoc president Slobodan Radičev, a doctoral candidate in industrial engineering at the University of Novi Sad in Serbia. Few young researchers, he adds, have anything resembling a healthy work-life balance. For Radičev himself, this balance is a pipe dream. Although his studies are in Serbia, he spends much of his time in Italy, where his wife has a science job. He says that his situation only works because his supervisor is sympathetic — and because flights are cheap. But when jobs are in short supply, it is tempting to prioritize career obligations over personal challenges.

However, not everyone agrees that working long hours is a bad thing. Meyer tries to convey to his students and postdocs the inexhaustible thrill that he experienced during his hard-working Berkeley years. Meyer is demanding, even elitist. He hopes that all his lab members will want to become researchers or professors, and sets high standards for his group. Those who really love what they do should not lament the long hours, he opines. “I can’t force anyone to work more than they want,” he says. “But it does hurt me when I come in to my lab on a weekend and find only a couple of people at work.” ■

Quirin Schiermeier is Nature’s Germany correspondent.

LITERATURE SEARCHES AROUND THE CLOCK

The number of research papers downloaded each hour on 12 April 2012 varied by country.



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