

CAREERS

CHOICES Don't get stuck on the academia treadmill **p.177**

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WORKPLACE HABITS

Full-time is full enough

Some scientists are fighting a toxic belief that a 50-hour working week is 'slacking off'.

BY CHRIS WOOLSTON

Meghan Duffy, an ecologist at the University of Michigan in Ann Arbor, has a confession to make. When 5 p.m. rolls around, she's usually ready to head home. She would rather spend her evenings with her husband and three children than with microscopes and water samples.

Duffy first exposed herself as a 'merely full-time' scientist on a popular group blog called *Dynamic Ecology*, and she's been spreading the message ever since. The 2014 post, headlined "You do not need to work 80 hours a week to succeed in academia", quickly became the most popular piece in the blog's history, and no article has yet surpassed it. In the post, Duffy estimated that she works 40–50 hours in a typical week.

It was a risky confession. "The post came out while I was up for tenure, and I wasn't really sure that I should be admitting it," she says. The reception was immediate, and almost entirely positive. A university dean shared the post on Twitter, the first clear sign that her admission wouldn't hurt her chances of tenure — which she got. Other scientists said that it made them feel validated. "A woman came up to me in the park and said it changed her life," Duffy says. "She had been feeling really guilty. The idea that you have to put in long hours is pervasive. If you're not working 60 or 80 hours a week, you're not doing enough. It makes people insecure."

Duffy gets plenty done in those 40–50 hours, and with much success. Earlier this year, she won a coveted Yentsch-Schindler Early Career award from the US-based Association for the

Sciences of Limnology and Oceanography.

Some scientists might complain of — or even boast about — insane work schedules, but many others are quietly putting in near-normal hours. Duffy and others make the most of their working hours and avoid unnecessary time drains (see 'Check your efficiency'). They balance priorities and stand up for themselves, which gives them more time to lead a life outside the lab.

Science can be unpredictable, and some days are longer than others. But at no stage do scientists need to constantly burn the midnight oil — or even the 6 p.m. oil. "Everyone benefits from time away from work," Duffy says. "You have to think about the whole person."

Long hours are still the norm in many corners of science. In a 2016 *Nature* poll of early-career researchers worldwide, ►

► 38% of respondents reported working more than 60 hours each week — 9% of whom claimed more than 80 hours (*Nature* 538, 446–449; 2016). A survey published in 2013 of academic work habits in Europe found that senior academics in Germany reported working an average of 52 hours per week, more than researchers in any other country canvassed¹ (see ‘Academic hours’). In a 2014 occupational-stress survey of university lecturers and professors in the UK University and College Union (UCU), 41% of employees with full-time contracts said that they worked more than 50 hours a week (go.nature.com/2q8abi9). And a similar UCU survey in 2012 found that nearly half of all respondents often or always felt pressure from colleagues and supervisors to put in many hours (go.nature.com/2qt7xdw).

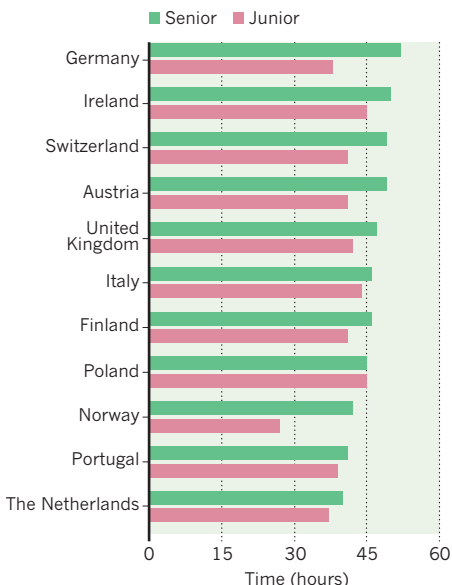
FAMILY OR FUNDING

Not all scientists and academics have direct control of their schedules — one more consideration to keep in mind when looking for a lab. “There are labs where the principal investigator is a workaholic, and nobody else in the lab is allowed to have a life,” says Anthony Ryan, a chemist at the University of Sheffield, UK.

The spectre of long working days can be especially discouraging for scientists with children and family responsibilities. Jess Vickruck, an ecology postdoc at the University of Calgary in Canada whose son was born in early 2014, says she still worries that being a mother will put her at a competitive disadvantage for jobs and promotions. Others can regularly put in 60-hour weeks, but she can no longer do the same.

ACADEMIC HOURS

Working hours for academics vary across Europe. In this survey, senior academics in Germany reported working 12 hours more per week, on average, than their counterparts in the Netherlands.



Vickruck says that two women in her graduate programme at Brock University in St Catharines, Canada, dropped out after having children — a commonality that underscores the challenge of balancing science and family life. Vickruck decided to stay in science, but parenthood forced her to abandon her lackadaisical approach to time. “I wasn’t thinking about how I was using my time because I had so much of

it,” she says. Now, she maximizes productivity by, for instance, trying to avoid too much office chit-chat — but she can’t disengage completely.

Despite the challenges, many researchers find that it is possible to make time for life outside the lab. According to data from a *Nature* survey in 2016 of nearly 6,000 researchers (see *Nature* 537, 573–576; 2016), 19% of those who responded said that they were dissatisfied with their work–life balance, but 46% said they were satisfied. The same survey found that 63% of respondents were satisfied with the amount of time they had off, including vacation days, personal days and maternity or paternity leave.

Richard Primack, an ecologist at Boston University in Massachusetts, spends many hours studying climate change at sites with a long history of ecological observations, including Walden Pond in Concord, Massachusetts. He notes that Walden’s most famous resident, author Henry David Thoreau, would fill his days with observing his environment and reading and writing about the things he saw. “You could say that he was a workaholic, but for him it was very relaxing,” Primack says.

Primack honours that legacy by sticking to work that he finds personally rewarding. He has the luxury of being able to delegate some less than fulfilling tasks. “I hire professional editors to help me polish my articles, grant proposals and reports,” he says. “I can do this myself, but it’s more efficient for me to pay someone to help.” Working too long on something unpleasant is not a recipe for a successful career, he says. “A lot of colleagues tell me that they have to work extra hours to write that paper that will get them promoted,” he says. “If I’m writing in the evening, it’s because I enjoy doing it. You can’t do it because someone is telling you to do it.”

After many years of listening to colleagues complain about exhaustion and long workdays, Primack decided to take an empirical look at what biologists were accomplishing outside normal working hours. In a 2013 study in *Biological Conservation*², Primack and his co-authors analysed the timing of submissions to the journal from 2004 to 2012. More than one-quarter occurred either at weekends or on weekdays between 7 p.m. and 7 a.m.. The weekend submission rate increased 5–6% every year, suggesting increasing erosion of personal time.

The study found clear geographical differences. Researchers in India and China were about five times more likely than those in Belgium and Norway to submit over the weekend. In Japan, 30% of manuscripts were submitted after working hours on weekdays. Scientists in North America showed only an average tendency to submit papers beyond working hours. “Americans think they work harder than average, but the study didn’t show this,” he says.

Primack acknowledges that he worked nights and weekends to finish this particular study, further evidence that science doesn’t always fit neatly into a schedule. He also recalls gruelling days of fieldwork in Borneo,

HOW TIME FLIES

Check your efficiency

As a principal investigator with more than a dozen people in her lab and three children at home, ecologist Meghan Duffy of the University of Michigan in Ann Arbor has become an expert in time management. She gives her lab members an important rule: to manage time well, know where it goes.

As a postdoc, Duffy began tracking her hours and found she was frittering away more time than she’d realized. “I would just take a break to check *The New York Times*,” she says. “When I started logging time, I saw that I was actually taking a half hour. Obsessively reading the news is my weakness.”

Here are more management tips:

- Get a handle on e-mail. Instead of reading and responding to messages as they arrive, Duffy uses BatchedInbox, a service that collects her messages for the day and delivers them in a single bundle towards the end of the workday. Paul Marsh, director of Lightbulb, a UK management consultancy in London, says that an ideal inbox contains

a maximum of 40 e-mails. The rest should be deleted or archived. He also suggests switching off audible e-mail alerts.

- Limit multitasking. Ecologist Richard Primack of Boston University, Massachusetts, says that he works most successfully by focusing on one project at a time.

- Break it down. Marsh suggests dividing important tasks into blocks of 30–50 minutes with no distractions (including opening and answering e-mails). Log larger tasks at the end of your diary as they come up.

- Make the most of short chunks of time. That 20-minute gap between meetings can be productive. “I’m not going to be able to figure out an introduction to a paper in 20 minutes, but I could probably write the methods section of a field study,” Duffy says.

- Identify when you are most energized. Marsh says that you should focus on important tasks during this period, and do ‘maintenance’ work in the lowest-energy part of your day. **C.W.**

and a frantic 16-month period writing his textbook, *Essentials of Conservation Biology*³. “Even when writing the book, I took time off to play with my children,” he says.

Principal investigators should reassure lab members that they don't have to give up their lives to get ahead, says Stephan Wenkel, a plant scientist at the University of Copenhagen. “I tell people it's not about the hours, it's about efficiency,” he says. “I don't track my own hours, and I don't track the hours of the people in my group.”

The ‘9–5’ culture is very much alive in Denmark, says Wenkel, who is from Germany. “The institute empties in the evening,” he says. He adds that the Scandinavian region is renowned for promoting a healthy work–life balance. At his institute, scientists have the flexibility to deal with personal issues. “It's accepted here that people might have to leave in the afternoon because of a call from day care,” he says. The *US News & World Report* ranked Denmark third worldwide in quality of life in 2017, in part thanks to the country's family-friendly attitudes.

Wenkel warns lab members that long hours can actually hamper their work. “Efficiency has a bell-shaped curve,” he says. “Once you've reached that maximum,

“Everyone benefits from time away from work. You have to think about the whole person.”

things can start to fail because you aren't as focused.” He says that he has sent clearly fatigued lab members home to rest. Duffy says that she's personally

experienced the phenomenon of diminishing returns. “At some point, you make enough errors that you would be better off not working,” she says.

Duffy agrees that principal investigators need to stop policing the schedules of their staff. “That approach is not effective,” she says. She leaves working hours up to each of her own lab members, and expects them to allow time for non-scientific pursuits. “I've had multiple people in my lab who were endurance athletes,” she says. “They still get plenty of work done. If they hadn't told me, I never would have known that they were in the Iron Man [triathlon]. They have very good time-management skills.”

Science might not always fit into a schedule. But if done correctly, it can fit into a life. ■

Chris Woolston is a freelance writer in Billings, Montana.

1. Teichler, U. & Hohle, E. A. (eds) *The Work Situation of the Academic Profession in Europe: Findings of a Survey in Twelve Countries* (Springer Netherlands, 2013).
2. Campos-Arceiz, A., Koh, L. P. & Primack, R. B. *Biol. Conserv.* **166**, 186–190 (2013).
3. Primack, R. B. *Essentials of Conservation Biology* (Oxford Univ. Press, 2014).

COLUMN

Paths of glory

Look past the academia treadmill, says **Ushma S. Neill**.

It's a glorious time to be a researcher, as exciting discoveries — from immunotherapy to gene editing — energise the scientific community and society. But with threats to science funding looming worldwide, it's also a frustrating time to think about how to support yourself.

The thrill of being the first person to discover or corroborate a scientific concept can be a powerful impetus. And it is this exhilaration that keeps us going through years of apprenticeships as postdocs on low pay and few-to-no benefits, despite the repeated failure of experiments, the interminable administrative work and the time spent writing grant applications and papers.

But if this is what it takes to become an academic scientist, why do so many pursue that path, especially when so few faculty positions exist these days? Indeed, when colleagues and I recently polled 550 postdocs at our institution (Memorial Sloan Kettering Cancer Center (MSK) in New York City), 71% of respondents indicated that they intended to seek an academic appointment after their postdoc.

I don't want to dash any dreams, but national benchmarks indicate that only 15–20% of all scientific postdocs (closer to 20% at MSK) end up in tenure-track faculty positions.

You don't have to give up on science altogether if you decide against trying for an academic-research position. I am a poster child for ‘alternative’ careers in science: after my postdoc, I was an editor at two medical journals before moving to MSK, where I now oversee postdoctoral affairs and manage administrative details for our graduate-student programmes. I also teach classes in scientific communication and grantsmanship and coordinate computational biology, statistics and imaging courses.

And there are many like me working in universities in similar roles, or as bench scientists, core technologists, development administrators, clinical-trials directors or technology-development agents.

Biotechnology and pharmaceutical companies offer many rewarding roles at the bench (and beyond). Career positions abound in equity research, and in analysis and consultancy. There are also federal and other governmental positions, and innumerable non-profit foundations and professional societies are looking for programme officers, conference organizers and academic liaisons.

Which attributes of your next position



matter most to you? Salary? Opportunities for leadership or professional development? Geographical location? Intellectual engagement? Flexibility in work hours to accommodate family obligations? Do you have a strong desire to work for a mission-driven organization?

Few positions that are likely to be open to you directly after your training will offer everything on your wish list straight away. Frankly, you will probably need to sacrifice wages at the outset to achieve long-term job satisfaction.

So how do you qualify for one of these careers? Your PhD (and a stint as a postdoc, if that's your path) gives you critical and analytical skills, problem-solving proficiency, an ability to learn quickly and a laser-like focus. What's more, the ability to work as a high-functioning team member is welcome everywhere. Turn your CV into a less academically focused summary (known as a *résumé* in the United States and other countries), by dropping your list of publications and fleshing out your role and the skills you developed during your training.

Did you write a fellowship? Take specialist classes in grant writing, communication, statistics, programming or time management and conflict resolution? Mentor trainees? Note these in detail on your CV. A LinkedIn profile with these entries is likewise advisable.

If you want to be a scientist, you can and should be. But only you can decide what flavour of scientist you want to be, how you will achieve that goal and what will prompt you every day to think, “I get paid to do this!” ■

Ushma S. Neill is vice-president of scientific education and training at Memorial Sloan Kettering Cancer Center in New York City.