

CAREERS

RESEARCH COMMUNITY European expat scientists band together abroad **p.629**

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ACADEMIA

Off the tenured track

The desires to pursue personal goals, escape university pressures or get off the grant-writing treadmill convince some US professors to leave the security of a tenured post.

BY KENDALL POWELL

At the beach in Mantoloking, New Jersey, in summer 2011, the possibilities of Colin Purrington's sabbatical year stretched out before him. Purrington, then an evolutionary biologist at Swarthmore College in Pennsylvania, intended to stay on campus and was almost giddy thinking of all the undergraduate research projects he had planned, with no teaching or service duties to interrupt them. And then it hit him like a 600-page textbook. When the year was over, he did not want to return to those duties — duties that had led to miserable all-nighters and family strain.

The next day, he asked his wife, the family's

main breadwinner, what she thought of him resigning his post to become a stay-at-home father to their two children. Looking up from a Sudoku puzzle, she replied: "Whatever you'd like." Purrington's on-campus misery made the decision easy. He walked away from his tenured position, and his 14 years at Swarthmore.

For many scientists in the United States, where tenure is most common, the decision comes with much more angst. Leaving a position that they worked for decades to attain, and that is often coveted as the pinnacle of academic achievement, is a huge step. It can also leave colleagues mystified, jealous, hurt and sometimes thinking the worst — imagining research misconduct or even a scandalous affair with a student. In interviews with

professors who have left their tenured posts in the past decade, *Nature* found that the reasons for such moves ranged from the very personal — no marital prospects in a small college town — to the loftiest goals of shaping national educational or science policy.

Almost all wanted to live in a more desirable location — an indication that the age-old view that academics must 'go where the jobs are' might not lead to long-term career satisfaction. Some tenure-leavers sought to improve the balance between work and family life, or wanted a better environment for research. Most emphasized that their colleagues did not drive them away: on the contrary, talented, passionate departmental comrades were treasured. But the evidence is clear: 'giving up' ►

hard-won tenure is indeed the right move for some. Here, four researchers explain why they are happy that they relinquished those coveted posts.

CREEPING TEACHING LOADS

Purrington's thoughts of leaving Swarthmore sprouted from discussions about how to keep up with the teaching and mentoring demands of a department in which the number of students was rapidly growing. "Our department prided itself on transforming our students into loving biology for the rest of their lives," he says.

At the start of 2011, faculty members from other universities delivered a ten-year review of activities in Swarthmore's biology department. It showed how much job creep had occurred as student's demands rose — resulting in a proliferation of lab and lecture courses, requests for letters of recommendation and meetings with students, hours of summer research mentoring and extra time taken to accommodate students with special needs.

Purrington, a fastidious lecturer, also spent hours on interactive course-organizing websites such as Blackboard and Moodle. He loved teaching, but the associated preparation and paperwork was drowning him. (This year, Swarthmore actually elected to reduce its faculty teaching load from five courses per year to four.)

Purrington's wife is a physician and safety-data analyst for global pharmaceutical company Johnson & Johnson in Horsham, Pennsylvania. She has a one-hour commute, and her high-ranking position means that she is 'plugged in' almost around the clock. That makes Purrington the main on-call parent for their daughter, now 12, and son, 14. As his wife climbed the corporate ladder and his own departmental and teaching responsibilities grew, the situation became untenable. "It was doable, but it was not enjoyable," says Purrington.

When he resigned from Swarthmore last autumn, many colleagues reacted with disbelief. When they cross paths, some still ask him when he is returning 'from leave'. Purrington says that many people in academia can find a "happy, sustainable balance", but that they usually have to have a spouse with more flexibility, live-in domestic help, no children or grown children. "It was hard for me to find that balance in a department where everyone was on the edge of going insane even when most

of them had more accommodating situations than mine at home," he says.

He warns young scientists that tenured positions require personal sacrifices, especially for dual-career couples. "No one at Swarthmore had those big blocks of time in the lab to get updates on projects, look at data, make a graph," he says. "A lot of faculty members choose to come in on weekends or at night. I did that, too, when my kids were too little to care."

SCALING UP

Christof Koch, a leading scientist in the study of consciousness, spent most of the past 25 years thinking that he would have to be carried out of his Pasadena office at California Institute of Technology (Caltech) boots first on a stretcher. He adored the pure academic lifestyle, working with sharp students and brilliant scientific minds, leading a group of 25 people and publishing high-impact papers.

But in 2011, a divorce coincided with the desire for a challenge and a change of scenery. "As a mountain climber, I would say, I'm looking for a new Annapurna," he says, referring to a notorious 8,091-metre peak in Nepal.

"It was a very difficult decision to leave academia and I'm still grappling with it," says Koch. But the Allen Institute for Brain Science in Seattle, Washington, needed a chief scientific officer to head up a 250-researcher, ten-year effort to define the inner workings of the mouse visual cortex, funded with an initial US\$300 million. Koch felt that the organization offered him a new way to do neuroscience.

"That's something you can't do at a university," he says. Neuroscientists in academia, he suggests, tends to tackle questions in small units of investigator-driven labs, not big team projects. As Koch sees it, that method rewards individual discoveries but provides few paths for integrating findings into comprehensive models.

"This shift happened 50 years ago in physics. It's a huge challenge. It could fail [in neuroscience]," he notes. Novelty, after all, is what provides a publication, a PhD, grant funding and tenure. "I don't actually think the academic system is broken — it produces spectacular answers. It just needs to be complemented when dealing with unimaginable complexity," he says, referring to the brain in particular.

Koch's last day in Pasadena is on 8 April. "Caltech will take my Superman cape away from me. I'll be a mere, untenured mortal like most people on the planet," he jokes. He says that universities could benefit from greater accountability to deadlines and milestones, such as those he will have to meet for online data releases at the Allen Institute. "I'm a risk-taker," he says of leaving tenure. It was time to push up a new ascent.

TIME FOR RESEARCH

When she took a competitive teaching position at Lawrence University in Appleton, Wisconsin, straight after finishing her PhD,

mathematician Eugenie Hunsicker underestimated how much she would miss her research. Five years later, when she was up for tenure at Lawrence, Hunsicker realized that she actually wanted a position at a research-focused university. "As teaching jobs go, it was quite a good job," she says. "But I wasn't able to work on my research as much as I wanted because there were no graduate students" — a requirement for her work on difficult partial differential equations, which can model the evolution of processes or particles in physical or biological systems, but are notoriously hard to solve.

Hunsicker knew that tenure would give her better leverage on the job market. But, she says, what she had to do to get tenure at a liberal arts college versus apply for a research position were "diametrically opposed". So she focused on her tenure application at Lawrence first. As soon as it was in, and her tenure had been granted, Hunsicker began gathering her research materials for a job search.

In 2005, while on a honeymoon tour of England, Hunsicker spied an advertisement for a job at Loughborough University, UK. (When she asked British friends about the university, they replied with what every mathematician wants to hear: "It's known for sport!") She applied almost on a whim and was surprised when an interview and then an offer followed — all before her US applications had even been processed.

The teaching load was lighter than at Lawrence, similar to that in US research univer-

sity positions. But there was one key difference. "I knew in the United States, I would have to go through tenure again. In the United Kingdom, there is just a three-year probation period and the expectations are really clear." Hunsicker would be hired for a permanent position providing that she published roughly one paper per year, received good teaching evaluations from students and carried



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Jackie Ying

her share of departmental duties such as serving on search committees.

Hunsicker has no regrets about snapping up the post at Loughborough. She is currently doing her own research and advising three PhD students.

"I'm quite happy here. Given an equally good job, why would I go through the tenure process a second time?" She says that the ambiguousness of the requirements for getting tenure in the United States made her



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Christof Koch

very uncomfortable. “I worried about any little thing that might go wrong and sway that decision.”

TIRED OF CHASING GRANTS

Jackie Ying became a professor of chemical engineering at Massachusetts Institute of Technology (MIT) in Cambridge at the age of 26. By 35, she was a tenured full professor, a rising star in the field of nanomaterials, and flush with funding. But because her research group was large and diverse, she spent most of her energy simply applying to continue her grants. She spent 75–80 hours per week at work and still struggled to find time to prepare journal manuscripts or to help students to finish dissertations. But she loved academia, and wasn't looking to move — until an unusual opportunity popped up.

In 2002, Philip Yeo, then chairman of Singapore's Agency for Science, Technology and Research (A*STAR), asked her to lead the new Institute of Bioengineering and Nanotechnology (IBN). Ying had lived in Singapore as a child. She knew it was a cosmopolitan city with a population of 5.3 million people, 38% of whom are transplants from other parts of the world.

Yeo took Ying to Singapore and showed her the immense hole that would become Biopolis, a nine-building complex of public and private labs with more than 2,000 staff members including researchers. Singapore's government is ambitious and results-oriented. “When it wants to do something, it will devote the resources to make it happen,” says Ying. At the time of Yeo's offer, she could see the writing on the wall — US funding for individual investigators was dwindling as competition grew. “In the past ten years, it has become even clearer that my decision was correct. The batting average for a grant proposal has become very low.”

As executive director of the IBN, Ying spends more time working on journal articles and conferring with her research group than she did at MIT, despite her administrative work. She directs research projects such as developing paper-based diagnostic test kits that would work like home pregnancy tests to monitor glucose, cholesterol or infections. “The way we structure our research groups is problem-centric, instead of principal-investigator-centric.”

When she left MIT in 2003, people thought Ying was crazy, she recalls. “But I had a long career in front of me.” The assured funding at the IBN has allowed her to pursue interdisciplinary projects with real-world applications — and resulted in more than 120 patents. “I actually thought it was a very important career move that would change the way I do research and live my life.” ■

Kendall Powell is a science writer based in Lafayette, Colorado.

RESEARCH COMMUNITY

Expatriate scientists get organized

European researchers form support networks abroad.

BY MICHELE CATANZARO

The Portuguese government had an unexpected critic when it proposed austerity measures including cuts to fellowships that pay for researchers to do PhD studies abroad. In June, the Portuguese Association of Researchers and Students in the United Kingdom (PARSUK) filed a complaint with the Foundation for Science and Technology, Portugal's main public research funding body. PARSUK showed that university and tuition fees for graduate students at some UK institutions cost more than the Portuguese government would provide after austerity measures; the foundation's president told PARSUK that he would consider scaling back the cuts.

Organizations of southern European scientists working abroad have proliferated in the past few years. Expatriates founded the Society of Spanish Researchers in the United Kingdom (SRUK/CERU) in June 2011 and the Society of Spanish Researchers in the Federal Republic of Germany (CERFA) in June 2012; the Association of Italian Scientists in the United Kingdom (AIS-UK) will be registered soon. The groups aim to help expats with language barriers, advise on the best places to apply for PhD and postdoc positions and organize networking events. But they also want to make a difference at home by influencing policy, enhancing the visibility of people working abroad and improving funding and opportunities.

Financial strain has been one motivator: in 2010, total Portuguese science spending declined for the first time in almost a decade. The Spanish government has cut its science budget by 39% from 2009 levels. And this year, Italy approved major cuts to research-institute budgets, with more possibly on the way (see *Nature* <http://doi.org/jrn:2012>). Scientists often leave countries hit hard by recessions: Spain, for example, has seen net emigration since 2011 after years of net immigration, says its National Institute of Statistics. Expat groups can help scientists to find opportunities abroad.

PARSUK was founded in 2008, following Luso 2007, a networking meeting of Portuguese scientists in Cambridge, UK. Since then, the 450-member group has set up annual gatherings at which researchers, politicians and company representatives from Britain and Portugal discuss ways to collaborate and cooperate. “We want to use knowledge



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gathered abroad to implement new approaches to research in Portugal,” says David Tomaz, president of PARSUK and an immunology PhD student at Imperial College London.

Last month, representatives of SRUK/CERU met a delegation from the Spanish National Quality and Accreditation Evaluation Agency in London to discuss how Spain could optimize distribution of shrinking public funds using aspects of Britain's research-evaluation systems (see *Nature* 457, 624–625; 2009). The group has spoken to the media and politicians, says Francisco Hernández, a neuroscience PhD student at the University of Cambridge and one of 94 SRUK/CERU members. This year, one of Hernández's blog posts spawned a petition for Spanish tax forms to include an option to give 0.7% of a taxpayer's contribution to research; it has collected almost 300,000 signatures.

Associations also aim to provide practical help. CERFA offers “logistic and administrative advice to people moving to Germany: from finding a house to understanding a health insurance contract in German”, says Raúl Delgado-Morales, president of the group and a biology postdoc at the Max Planck Institute for Psychiatry in Munich. CERFA, which has 50 members, plans to draw up a list of Spanish researchers in Germany for collaboration opportunities.

The AIS-UK wants to compile a database of collaborations among Italian and British scientists to raise awareness of the “vast pool of highly skilled Italians trained in prestigious UK universities”, says Emanuele Cotroneo, a biology postdoc at Imperial who backs creation of the group. “Some Italian scientists in the United Kingdom may be willing to return to Italy if they are offered positions appropriate to their experience.” But Cotroneo does not advocate UK brain drain, he says: “We think that strengthening links between countries will facilitate both emigrating and going back.” ■