CAREERS

EUROPE Transferable pensions for researchers may soon be a reality **p.125**

Q&A ETH Zurich's president explains the appeal of Switzerland **p.126**

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ACADEMIA

The changing face of tenure

Although still highly desirable, tenure is not as prevalent as it was in some places — and that may not be a bad thing.

BY KAREN KAPLAN

B iologist Rafael Carazo Salas doesn't have tenure — nor is he expecting to pursue the tenure-track system any time soon. As a faculty member at a UK institution, he doesn't have that option — academic tenure per se in the United Kingdom was abolished more than 20 years ago.

But Carazo Salas, a group leader at the University of Cambridge, UK, isn't lying awake at night trying to dream up ways to manoeuvre himself into a tenured or tenure-track research position. Funded by a portable five-year grant from the European Research Council, he is pleased with what he calls a high level of scientific independence conferred by the grant, even though he's well aware that he has no guarantee

of a continuing position at Cambridge at the end of the next four years.

"Everyone would like to have job security," says Carazo Salas, who moved this year from ETH Zurich in Switzerland after his partner secured a Cambridge post. But Carazo Salas is fine with his current position. He may not have job security in perpetuity, but he has autonomy, few administrative duties, and no teaching obligations. "If I secure funds to continue paying my own salary, I can conceivably stay here as long as I want," he says.

Although most academics strive for tenure, experiences such as Carazo Salas's suggest that it is not the only satisfying career course. Early-career academic researchers in the United States, the European Union (EU) and elsewhere are wrestling with major shifts in tenure's definition, availability and value. Seen for decades as the only route to long-term job security and academic freedom, its long-standing symbol as the ultimate prize for academic researchers has been eroding on many fronts. Tenured and tenure-track positions, already hard to secure, have become rarer in some areas because of budget concerns. Other regions are seeing increased interest, as governments and institutions try to attract top talent. Tenure is no longer what it once was, and young scientists might want to survey the features of a changing landscape.

TENURE'S DECLINE

At most North American institutions, tenure is typical for senior faculty appointments such as professors and associate professors. Achieving tenure generally requires a strong record of published research and administrative work including committee membership (see 'How to get tenure'). Most tenure systems allow junior tenure-track faculty members a period of several years to establish such a record. In addition to job security, academic tenure aims to protect academic freedom; faculty members can disagree with popular opinion, express negative views about their institution, or research unpopular topics.

Nevertheless, tenure is receding in the United States, where tight budgets have prompted universities to hire more adjunct faculty members. In 1970, roughly three-quarters of all faculty members were in the tenure stream in the United States, according to figures amassed by the American Association of University Professors (AAUP). By 1975, that number had dropped to 56%, and it continued to fall. Only 42% received tenure in 1995, ►

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► and this had dropped to 30% by 2007. In the EU, tenure's availability varies widely depending on the state and institution, and it doesn't always confer the same benefits on scientists that it does in the United States.

Given the odds, is tenure still worth the struggle in today's competitive academic environment? It depends on what the researcher wants, says Marc Bousquet, an associate professor at Santa Clara University in California and a member of the executive council of the AAUP. "A lot of people think that tenure is the gold standard for job security, and it's often defined as lifetime job security," says Bousquet. "But tenure is a status marker," he says. "What the tenure system offers is a guarantee that the people doing the work are doing it at the highest possible level."

Tenure-track and tenured faculty members often become part of departmental governance and activities. They receive start-up packages, office space and financial support from the university; for example, they often get a bridge grant to tide them over until their first external funding award. Non-tenure-track faculty members in the United States and in Europe are generally ineligible for such grants from their institution and have to seek 'soft' money from individual research grants instead.

Critics of tenure in the United States and Europe say that it effectively bars junior faculty members from getting hired at institutions filled with senior tenured faculty members, and allows senior faculty members to become unproductive and complacent. Contingent faculty members — contract employees usually lacking benefits — lament the lack of financial and peer support and interaction typically associated with non-tenure-track positions. A May 2010 report on contingent faculty members by the Center for the Education of Women (CEW) at the University of Michigan in Ann Arbor found that many feel shunned by their tenured colleagues, often working in isolation and barred from departmental activities and governance. "They don't get the chance to see

other research faculty," says Jean Waltman, senior associate at the CEW and lead author of the study, adding that there is often no institutionalized way to bring together contingent faculty members.

Contingents in the CEW study also reported that they were at the mercy of their department chair. Those with good chair relationships found that they could function in much the same way as

a tenure-track faculty member — attending and speaking at department meetings, voting on governance issues and contributing to the university's science community. Poor chair relationships, however, meant that the non-tenure-track researcher was apt to flounder and more likely to be told that his or her contract would not be renewed — whether there was financial cause or not.

At European institutions, academic researchers who work under fixed-term contracts face many of these same problems, says Marja Makarow, chief executive at the European Science Foundation (ESF), headquartered in Strasbourg, France. "We really lack clear career pathways in Europe for young investigators," says Makarow, who is a former vice-rector for research at the University of Helsinki. "Universities need to create attractive positions for this generation and assure them that there are viable career possibilities for them in the academic environment."

"We really lack clear career pathways in Europe for young investigators."

Marja Makarow

Tenure does not, however, provide a respite from the rigours of a researcher's duties — in some ways, it heightens them. "The pressure isn't over," says Matthew Ames, chair of the department of molecular pharmacology and experimental therapeutics at the Mayo Clinic in Rochester, Minnesota. "Having tenure has never made me sleep better at night." Non-tenure-track research faculty members who participated in the CEW study said that their tenured colleagues often face significant administrative pressures and obligations that stymie their research. "They are so down in the trenches, researching the nitty, nitty, nitty, nitty gritty," reported one respondent. "I don't have so many strings, and I'm not tied up in meetings and all those other obligations, so I have the time to think more creatively and to step back and take some risks."

AN ACADEMIC AND ECONOMIC ELITE

Tenure is also, in a sense, very expensive. In the United States, the increasingly lengthy time to tenure, during which scientists earn relatively low wages as graduate students and postdocs, means that tenure often becomes the province of the financially privileged, according to Bousquet. "The tenured have always been an academic elite, but they have not always been drawn only from our economic elite," he says. "For many decades, we made it possible for persons of middle, lower-

TIPS FROM ACADEMICS

How to get tenure

- Develop a strong, clear research profile. Link your name to your specific research focus by publishing often, attending conferences and speaking about your work, giving talks, creating poster presentations and providing synopses and discussion on your website. Also, line up two or three senior collaborators who can help to broadcast your work. Don't always collaborate with one particular person, as that may create the impression that you can't do the work on your own.
- Be a good citizen in your department. Portray yourself as a department member who gets along with all colleagues, who will advocate for other department members and make sure that things get done. Attempt to collaborate with a senior department member and, ideally, name him or her as a co-author on your papers.
- Network. Contact several colleagues — whom you might have met at conferences or elsewhere — who are experts on your research topic. Develop a continuing exchange with them about your work. Such contacts may help to write letters to the tenure-review committee about

your research.

- Develop two mentors. One, more senior than you, will help you to build your research programme and prioritize your work in accordance with your institution's tenure criteria. The other, more junior than the first mentor, can work with you 'on the ground' and help you to understand your institution's tenure requirements and expectations. For example, if you're in the fourth year of your tenure clock, you can't go back to teach a second undergraduate class if you thought you had to teach only one. This younger mentor can help you to keep these requirements straight.
- Teach. Yes, it takes away from your time at the bench. But in the United Kingdom, there are only two paths to positions that resemble tenure, and one requires teaching. In the United States, if you're not on the tenure track but want to be, teaching duties will help.
- Maintain confidence. Trust that you're going to make it. Keep focused on your research and don't lose sleep worrying. Anxiety and sleepless nights will do little but make you work less effectively. **K.K.**

"If I secure funds to continue paying my own salary, I can conceivably stay here as long as I want."

Rafael Carazo Salas

middle and lower-class backgrounds to find their way into the professoriate.”

But it is not clear whether the other options are any better. Most alternative proposals call for some variation of the mid- to long-term contracts already in place at non-university institutions such as the Howard Hughes Medical Institute's Janelia Farm Research Campus in Ashburn, Virginia. Picking up on this trend, several universities have created similar arrangements, adopting provisions for improved job security or inclusion in governance. The California State University system, for example, offers fixed-term contracts to adjuncts and requires exploring alternatives to layoffs. The City University of New York offers eligibility for ‘continuous employment’ to contingent faculty members who have completed six years of service.

Some suggest that a contract system is better than existing European-style tenure. Natalie Sebanz, a tenured associate professor at Radboud University in Nijmegen, the Netherlands, says that earning tenure in the EU is often not transparent or straightforward, even for tenure-track faculty members who have done all the requisite work. “The decision is not always fully based on scientific merit,” says Sebanz. “You need to know the right people and say particular things and not say other things. It has a lot to do with the old existing network.” Nor does tenure in the EU always offer the same advantages that US researchers take for granted, such as scientific independence and autonomy. Junior faculty members at some institutions, even if they're on the tenure track, often have to defer to the department chair or a more senior faculty member for approval of their research topic or for the right to be an adviser to PhD students.

For those seeking autonomy and independence, a contract post is the way to go, agrees Moritz Daum, head of a research group on infant cognition at the Max Planck Institute for Human Cognitive and Brain Sciences in Leipzig, Germany. Daum has a six-year contract, which is standard at Planck institutes, none of which offers tenure to researchers. As a contract scientist, Daum says he defers to no one. “You don't have a director or professor telling you what to do,” he says.

Still, for many young scientists in any location, autonomy and independence can trump job security for only so long. The ESF report found that the missing combination of job security, good pay and mobility is a major reason for Europe's dwindling academic research workforce. To boost recruiting efforts, some universities in the EU — including the ETH, the University of Helsinki, and Aalto University in Helsinki and Espoo, Finland — are piloting the tenure-track concept. Despite the criticisms levelled against it, many consider US-style tenure to be superior

“Having tenure has never made me sleep better at night.”

Matthew Ames

ment in research and development to 3% of its annual gross domestic product by 2020 as part of an economic-growth strategy. To achieve that target, the commission has estimated an additional 1 million researchers would be needed in the next ten years — no paltry number.

It is not clear whether the EU will offer new models of tenure or whether the United States will produce acceptable, viable alternatives. But researchers can take heart from the fact that global change is afoot, slow though it may seem, says Beate Scholz, former chair of the European Science Foundation's member organization forum on research careers and lead author of the January 2010 report *Research Careers in Europe: Landscape and Horizons*. “This,” says Scholz, “is a system in transformation.”

Scholz says tenure may gradually appear more consistently throughout the EU within the next decade or so. Like Makarow, she also believes that the creation of transparent tenure-track and tenured positions at universities would be an effective recruitment tool, and calls for them in the ESF report. “A research career in Europe is very insecure. Researchers are not able to tell what the next step is, whether their contract will be renewed,” says Scholz. “Many people would rather drop out.”

Reports of tenure's demise — at least in some regions — may turn out to be greatly exaggerated. “What else besides extraordinary job security is going to attract someone willing to put in more than ten years of post-graduate study?” asks Bousquet. Despite tenure's drawbacks, Ames says that it has allowed him to conduct better research because he knows his job is secure. “I could have a vision and long-range plan, and build my research programme based on my understanding that I would be here the following year and the year after that and the year after that,” he says. “Research, to me, is not a one- to two-year cycle. It requires stability and continuity.” ■

Karen Kaplan is the assistant Careers editor at Nature.

to tenure and tenure track at most European institutions, if only because of its transparency, says Makarow. The motivation to make European institutions more attractive to researchers is more than just a general aspiration. It is, in part, an outgrowth of the European Commission's plan to boost the EU's invest-

EUROPE

PhD improvements

To improve the quality of Europe's academic research, its higher-education institutions must upgrade doctoral programmes, says the European University Association (EUA). Representing some 900 institutions, the EUA adopted a series of recommendations on 21 October. These include: developing a variety of research programmes in different fields at individual institutions; creating supervisory guidelines and training programmes for areas such as project management; and giving PhD researchers supervision, career support and the opportunity to develop their own research topics. “A good part of the research that goes on in Europe is done by doctoral students,” says Thomas Jørgensen, head of the EUA's council for doctoral education. “We cannot waste this resource.”

EQUAL OPPORTUNITIES

Transcending disability

Students with disabilities will learn how to conduct biomedical experiments independently, at a new Institute for Accessible Science at Purdue University in West Lafayette, Indiana. A \$2-million National Institutes of Health grant will support at least six students when it opens in 2012. Principal investigator Bradley Duerstock, who uses a wheelchair, says there aren't enough resources for young disabled researchers, and challenges such as reaching into a fume hood often discourage students from pursuing science. Online mentoring topics will include lab modifications and remotely accessing equipment. The grant is one of six NIH awards supporting diversity.

EUROPEAN UNION

Progress on pensions

The European Commission (EC) could decide on how to set up transferable pensions for researchers by 15 November, an EC spokesman says. Meanwhile, the EC will accept public comment on previously proposed changes to the pensions framework (see go.nature.com/nbqfcy). Solutions under consideration include the creation of a pan-European pension fund for researchers, a step that European legislation would allow, according to EC spokesman Mark English. “The commission would be prepared to do everything within its power to facilitate such a move,” he says.

CLARIFICATION

The text for the second tip in Box 1 of the Feature 'The changing face of tenure' was ambiguous and did not mean to imply that tenure-track researchers should simply name a senior scientist as a co-author on their paper, but rather that they should seek out such scientists as collaborators and thereby hopefully gain them as a co-author. *Nature* does not condone guest authorship (see go.nature.com/uzgbki). The text has been corrected to reflect this.