https://doi.org/10.1038/s41587-023-01924-3

Tenure time loopers

Say, "I'm tenured," and most people think you have a lifelong job guarantee. It is a rare luxury; you would be hard-pressed to find the security that tenure promises beyond academic walls. However, as a mid-career (N.Y.) and junior professor (N.S.) in biotechnology, we challenge academic institutions to rethink the existing tenure model. In short, we are ready to leave the perceived safety of tenure to become 'tenure time loopers' who instead undergo tenure renewal every five years throughout their career. This proposed model would focus more on the long-term evolution of research programs and include peer reviewers at all career stages.

In many institutions in academia, tenure-track junior scientists who start their independent research groups as principal investigators are typically evaluated for tenure several years after they start. Tenure is said to secure their lifelong research vision and contributions to science. In most universities, faculty usually begin as assistant professors, and tenure accompanies promotion to associate professorship. However, if a tenure request is denied, that faculty member generally leaves the institution. In some European research institutions, the tenure model is different: junior principal investigators may be expected to leave after a certain period of time, but are generally secure in finding a tenured position elsewhere—a community-level tenure track system. Regardless of the tenure model, this first career stage is not easy. Junior scientists must develop vital research programs, acquire grants, produce research papers, train personnel and build collaborative networks, which will then be collectively evaluated to determine whether they can continue their science.

In the 1980s, the Fred Hutchinson Cancer Center implemented the tenure time looping model soon after it was launched as a small, free-standing institute to keep departmental affairs and the environment open, transparent and collegial. Forty years later, given the problems and systemic frictions catalyzed by the current tenure track model, we believe that it is time to explore the possibility of expanding the tenure time looping model to alleviate these issues and encourage the scientific community to value the long-term development of a research program more than its short-term output. This would also provide an opportunity to formulate a modern interpretation of academic freedom, meritocratic models and the societal responsibilities of scientists. While the migration from the existing tenure track system to the time-looping model presents a challenge, there are several proposed scenarios to achieve this. Our view, outlined below, is mainly rooted in our experience in the field of biotechnology, but similar ideas might also apply to other academic disciplines.

Reconsidering the protection of academic freedom

Tenure has been touted as a protector of academic freedom, allowing researchers to pursue their desired lines of inquiry and heterodoxies. But the reality is that research programs, especially in the life sciences, are secured and propelled by funding rather than by tenured positions. As scientists at all career stages, we need to convince our peers that our ideas are valuable and feasible to gain funding. If academic tenure is a means to protect academic freedom, the tenure track system is undermining the freedom of junior scientists, sowing inequality that does not encourage collegiality.

Today's world is more open than that of the early twentieth century when modern tenure came to be, and the idea of academic freedom is now well entrenched in academia. If the danger of removing tenure is the loss of freedoms, then we have lost trust in our fellow scientists' good will to protect it. Just as grant reviewers are entrusted to fund our collective science, so too can we review one another's long-term visions while removing tenure time loopers who exhibit harmful or unethical behavior. It is difficult to believe that we who define the boundaries of the tenure gate cannot exert the ability to value the science of peers reasonably.

Pushing beyond academic hierarchies

Tenure review is predicated on a hierarchy: senior colleagues are the gatekeepers who review junior ones. Five to seven years after launching their laboratory, if senior colleagues approve, tenure is granted to junior scientists, and they are then awarded academic freedom and job security. By this point, junior scientists have a well-established research program. Next, these newly tenured scientists move to the other side of the gate and help to guide and review the development of their junior colleagues, sometimes making difficult decisions to disqualify some from entry. In many institutions, junior scientists are not invited to engage in the review of peers until they have passed the tenure gates themselves. The tenure model at these institutions excludes intergenerational perspectives. Not only would inclusion of these individuals bring valuable diversity to the peer review discussion, but it would help to mitigate the possibility of conflict of interest among senior colleagues. We propose that junior scientists could match their senior colleagues by maintaining the dynamic competencies necessary to evaluate emerging science throughout their careers. The modern world moves rapidly, with highly accessible intellectual resources on the internet. We can easily look at the technology world and the individuals who have seeded new industries to realize that seniority is not a necessary ingredient for innovation.

Addressing inequities

It is no secret that the tenure pipeline has contributed to creating a two-tiered society: those who have and those who have not. Women and other underrepresented groups are more likely to have not[1]. In other words, these groups see inequities in gaining tenure-level positions. We propose to replace the two-tier system with an even playing field where no scientist is forever tenured and all are tenure loopers.

With the belief that intergenerational perspectives bring valuable diversity to tenure review, we propose that renewal evaluations be conducted by peers of all career stages. Most academic institutions have developed equity, diversity and inclusion policies, which are considered especially when hiring junior scientists. At the same time, the current tenure system provides job security for senior scientists who were hired before these policies were implemented, and it is well documented that the degree of diversity in faculty representation sharply declines by career stage[2,3]. Including junior faculty in these committees would increase the number of underrepresented groups in peer review, helping to battle the biases that exclude minorities from tenure without waiting for more members of

these groups to balance the pool of tenured faculty over the next couple of decades. Those who become complacent and lose track of their long-term vision can also be weeded out to make room for junior scientists, who are spending increasingly long periods in the training pipeline as they eagerly wait for spots to open up at institutions. It is also hard to deny that younger members who belong to particular demographic groups that are dominated by senior scientists are unfairly treated and given lower priority for opportunities. For example, in Canada, white male junior scientists are not eligible to apply for certain awards so as to balance out the diversity bias of the past and current awardee cohort, which already has many senior white males. By making all generations tenure time loopers, we challenge junior and senior faculty alike to be responsible for describing the evolution of their research program and their contributions to inclusive, impactful science.

Valuing long-term vision

The tenure track system urges junior scientists to showcase their independent ability to conduct science and build their track records in a short period of time. These scientists enter their institutes brimming with talent, fresh energy and ambition. However, the lead-up to tenure, like some grant review committees, often discourages these scientists from embarking on high-risk challenges or pioneering new research fields that demand a multi-decade vision and instead rewards them for short-term, incremental discoveries. Some talented junior scientists may understand the rules of this game and pursue grand visions while securing milestones to demonstrate scientific output, but this strategy only applies to some types of research. The pressure of tenure is also a common issue for young scientists who postpone time-sensitive life decisions, such as growing their families, until the sprint to tenure is over[3].

Building a short-term track record is important for any generation of scientists, but so is building a foundation of long-term research. The tenure time looping model replaces a one-time tenure assessment of a short sprint with a system to encourage the continuous development of a research program with scientific vision and progress. At each evaluation checkpoint, every scientist is evaluated for their proposed research program, vision, academic and educational achievements, and university and community service by peers, who also undergo the same evaluation process. The pressure of review is therefore distributed along a scientist's career, with room to take risks and experience natural ebbs and flows in research productivity between reviews.

Practically, tenure time looping would not affect the ability of most scientists to continue their academic careers, but it would encourage them to take societal responsibility for their past and future contributions. This will also give committees an opportunity to provide constructive feedback to guide their peers between tenure time loops, providing the ingredients and opportunity to evolve their research programs.

Addressing the academic power game

The issues in the current tenure track model have also been accelerated by recent changes in the publishing industry. High-throughput experimental and computational technologies have enabled us to test many hypotheses from different angles. While there are benefits, this trend and the peer review system have created a capitalism-like, unstoppable cycle where top-tier journals tend to accept data-rich papers[4]. Scientists who discover core phenomena or develop innovative technologies rooted in creativity are required to spend time accumulating data (even if it is unnecessary for the main claim). The tenure track system has rewarded a subset of scientists who have become skilled in satisfying the data-hungry publishing process. The time-looping model would instead require scientists to show in the renewal process that their research program has remained on track with their growth vision, supporting the alignment of their scientific contributions more than track records. This model would encourage us to collectively shift the resources we currently spend on publishing papers in high-profile journals toward pursuing research projects that are guided by the intellectual curiosity of our teams. We also urge high-profile journals to take the lead in decoupling the requirement for data-dense publications en route to selecting high-quality works.

Transitioning to tenure time loops

Transitioning all current tenured scientists to tenure time looping might seem like a herculean task. It may require each scientist to serve on a renewal committee more times than in the current tenure system. However, most institutions already conduct annual merit reviews, and this committee could be leveraged to conduct renewal assessments. Nevertheless, a gradual transition may be possible by reflecting on the allure of tenure in the first place. Tenure offers lifelong job security, incentivizing researchers to stay in the academic realm in exchange for lower pay than their industry counterparts receive. In offering the option to transition from the tenure system to time looping, scientists could be compensated with higher pay. Institutes would need to rethink their budgets and the number of scientists in the pool. Additionally, equity-promoting practices can be implemented to meet the diverse needs of scientists at different career stages and incentivize them to transition to the new system by offering benefits in the form of relief from teaching or service duties, as well as bridge research funding during parental, elder care or medical leave. By balancing economic and socially oriented incentives that allow faculty to foster their competing priorities, the risk–benefit trade-off of the tenure time looping system can be tilted for the better. After all, the lifelong tenure model may not be as risk-free as we think.

Life in academia is exciting and fast-paced. We may be focusing too much of our collective time on pushing the boundaries of science while assuming that the academic system is rigid and settled. However, as academics, we need to take responsibility for continually evolving our systems to best serve us and the next generations. Continuous recruitment, education and training and the support of creative, motivated and talented scholars underlie academia and societal growth. The tenure time looping system is at least good food for thought to reflect on aspects of today's academia and to weigh our options strategically and mindfully as we collectively strive for high-impact, inclusive science.

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Published online: 25 August 2023

References

1. Rennane, S., Acheson-Field, H., Edwards, K. A., Gahlon, G. & Zaber, M. A. *PLoS One* **17**, e0267561 (2022).
2. Institute of Education Sciences National Center for Education Statistics. *Digest of Educational Statistics*. Full-time faculty in degree-granting postsecondary institutions, by race/ethnicity, sex, and academic rank: fall 2018, fall 2019, and fall 2020. https://nces.ed.gov/programs/digest/d21/tables/dt21_315.20.asp (2021).
3. Williams, W. M. & Ceci, S. J. *Proc. Natl Acad. Sci. USA* **112**, 5360–5365 (2015).

4. Abdullaeva, M., Bromfield, J. J. & Sheldon, I. M. Preprint at *bioRxiv* https://doi.org/10.1101/2022.05.06.490896 (2022)

Acknowledgements
We sincerely thank Carl de Boer, Anna Blakney, Samuel King and Carolina Tropini of the University of British Columbia, Dayag Sheykhkarimli of the University of Toronto, and Toshio Tsukiyama and Robert Eisenman of the Fred Hutchinson Cancer Center for shaping our view.

Author contributions
N.Y. conceived the idea of this piece, with content shaped by N.Y. and N.S. Both N.Y. and N.S. led the writing of the piece, with edits and input from individuals listed in the Acknowledgements.

Competing interests
The authors declare no competing interests.