

# Is science's dominant funding model broken?

**Should research funds continue to be given to a small number of principal investigators to distribute, the dominant model today? Participate in *Nature's* survey and reader poll.**

It's a well-trodden path for most people who aspire to a career in academic research: you first earn a PhD, then take a succession of fixed-term contract jobs. For a small minority, this eventually leads to the coveted role of principal investigator (PI) and the chance to set up your own research group. Many of the postdoctoral researchers you hire will harbour the same ambition. An increasing supply of talent chasing a relatively static number of permanent positions inevitably results in a tortuous route to professional status.

The process of becoming a PI is stressful and precarious, and, in many ways, not reflective of the increasingly collaborative nature of science today. Nor is it healthy for the long-term interests of the research enterprise, which, according to some scientists, is struggling to produce disruptive discoveries and innovations<sup>1</sup>.

These observations are hardly new. Researchers at all career stages have described them in *Nature's* pages. This week, our careers team has launched its first global survey of hiring managers and research leaders, hoping to capture their experiences of the recruitment process.

Research leaders have previously proposed solutions (see, for example, ref. 2), but these have had little success. Could at least part of the answer lie outside academia? In January, a team of researchers at the Tony Blair Institute for Global Change (TBI), a London-based think tank established by the former UK prime minister, came up with a proposal that some academics might call radical.

## Creative block

The team delved into the structure and outputs of academic research. To their horror, the researchers uncovered a system that, in their words, “ends up rewarding administrators and empire-builders, not creative scientists actively engaged in research and mentoring”. They have much more to say in their report, *A New National Purpose: Leading the Biotech Revolution* (see [go.nature.com/3vvnp5](https://go.nature.com/3vvnp5)), but this quote demonstrates their shock over how academia is structured and how it operates.

The structure of academia is also attracting attention from high-level policymakers because science is increasingly seen as a way to boost economic growth. Growth is barely above 1% in many countries that are home to some of the world's leading universities and science-based

industries, such as aerospace and pharmaceuticals. Political leaders want to know how better partnerships between academia and industry, coupled with the potential of artificial intelligence, can accelerate growth. To reliably answer their questions, advisers need an understanding of how universities work and what the impediments to improvement might be.

One of the suggestions in the TBI report is to organize research and development (R&D) in some parts of academia similarly to how it is structured in some R&D-intensive corporations. Instead of distributing funding through a single PI, money and decision-making would be shared between senior leaders. According to this vision, pay and conditions would be better than in the current model, and there might also be more permanent roles available. A similar approach, called the Focused Research Organization, was described earlier this year in a commentary in *Cell* by Samuel Rodrigues, a researcher at the Francis Crick Institute in London<sup>3</sup>.

Such models are not exclusive to corporations; they also exist in some government-funded national laboratories. These are devoted mainly to applied research, and their scientists' employment status is similar to that of civil-service workers. However, this makes external collaboration harder.

Another model is seen in the US Defense Advanced Research Projects Agency (DARPA) and its increasing number of counterparts around the world. In this system, grant managers – picked from a pool of some of the most successful PIs – wield considerable power and influence. It could, therefore, be argued that this offers no real improvement over the PI model.

There are other models, too, and many associated issues to unpick. The current system, in which funders award large grants to one individual, who then employs 5, 10, 20 or more people, all with the ambition of becoming a PI, has served academia well, but will inevitably lead to an oversupply of researchers. Some might say that creating more highly qualified people is a good thing, regardless of whether they choose research careers, because their knowledge and skills will benefit them regardless of their occupation. Others might disagree, arguing that research should be subject to the kinds of recruitment limitations that exist in professions such as medicine. Another argument is that society would be better off taking resources that are going into research training and investing them in programmes, such as apprenticeships, that help people to develop more targeted skills.

We would like to hear your thoughts. Take part in our survey of hiring managers (see [go.nature.com/3zq1x2z](https://go.nature.com/3zq1x2z)) or participate in our poll (see [go.nature.com/linkedin](https://go.nature.com/linkedin)). Do you agree that the PI model is broken? If so, what would you change and why? If you disagree, or can see downsides to the alternatives, what are your reservations? Your thoughts will inform our future coverage of this issue.

**“The current system will inevitably lead to an oversupply of researchers.”**

1. Park, M., Leahey, E. & Funk, R. J. *Nature* **613**, 138–144 (2023).
2. Alberts, B., Kirschner, M. W., Tilghman, S. & Varmus, H. *Proc. Natl Acad. Sci. USA* **111**, 5773–5777 (2014).
3. Rodrigues, S. G. *Cell* **187**, 3–7 (2024).