

News in focus

photovoltaic retina implant microarray – was originally developed by the Paris-based company Pixium Vision, and was acquired by Science Corporation last year. It is wireless, unlike previous retinal devices. And, being photovoltaic, the photons that activate it also provide the energy source for generating its electrical output.

It is used in combination with glasses that contain a camera that captures images and converts them into patterns of infrared light that they transmit to the retinal implant.

The system, which allows users to zoom in and out on target objects, and adjust contrast and brightness, does, Holz says, take months of intensive training to use optimally.

In the current study, 38 individuals were treated at 17 clinical sites across 5 European countries, and 32 of the participants were tested a year after implantation. Twenty-six of them had a clinically meaningful improvement in their vision – which, on average, amounted to being able to see two lines further down a standard eye test chart of letters. Overall, most participants' vision came close to the resolution achievable with PRIMA.

By the study's end, most recipients were using PRIMA at home to read letters, words and numbers. Of the 32, 22 said that their user satisfaction was medium to high.

Slow reading

However, a questionnaire about users' daily quality of life revealed no significant overall improvements. A retinal-degeneration researcher working on treatments for vision loss who wished to remain anonymous to avoid retaliation, spoke to *Nature* and raised concerns that intensive visual training and the motivation of having received an exciting medical device might have led to improved test results. They said that the results would have been more robust if gains had been demonstrated relative to a randomized placebo group that had received the glasses and training protocols but no implant.

Holz, too, acknowledges that the current system has limitations, and says he expects future implants to be more effective. "With this first major breakthrough, it's a starting point for further improvement," he says.

Another concern is the current maximal acuity achievable with the device. The PRIMA system has only 381 pixels, each 100 micrometres square. And Holz concedes that users' reading is "not fast, fluid reading". The vision provided is also black and white, not colour.

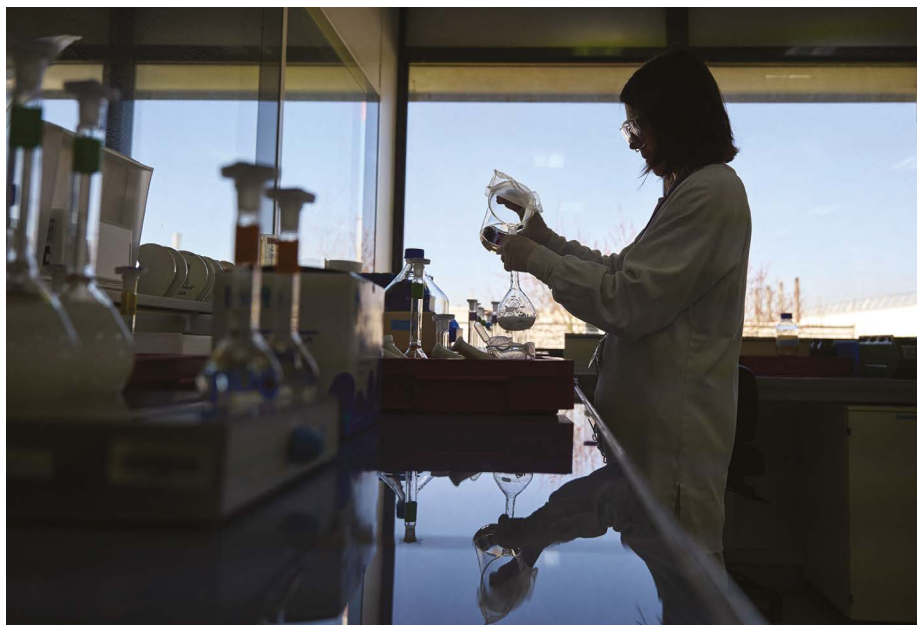
Holz says Daniel Palanker, a physicist at Stanford University in Palo Alto, California, who originally designed the device, has ideas about how to one day achieve colour vision. A next-generation device that is larger than PRIMA and filled with smaller pixels should enable better visual acuity, "It's the beginning of a journey," Holz says.

Although the device has been tested in people with AMD, it could also help to restore sight in people affected by other conditions in which photoreceptor cells die but other retinal neurons remain functional, such as retinitis pigmentosa.

Retinal implants are not the only approach being developed for this problem. Other investigators are exploring the

use of stem-cell therapies to regenerate photoreceptors; optogenetic therapies, in which light-sensitive proteins are introduced into the remaining retinal cells; and even implants that are inserted into the brain's visual cortex.

"It's a huge dynamic space, and there are lots of approaches now," says Holz. "Which will pan out in the end, nobody knows."



GUILLAUME SOUVANT/AFP VIA GETTY

Scientists are facing increasingly stiff competition for funding.

IS ACADEMIC RESEARCH BECOMING TOO COMPETITIVE?

Applications for European research grants increased in 2025. Scientists say they're feeling the competition.

By Miryam Naddaf

Success rates for Europe's leading research grants are declining – some to single percentage points – as a surge in applications far outweighs the funds available. Data gathered by *Nature* show that researchers, especially those at the start of their academic journeys,

"If you don't have external funding, you can't really do anything. You have a salary, but that's it."

are facing increasingly fierce competition to pursue research careers (see 'Funding competition').

Last month, the European Commission said that the European Union's research and innovation framework programme had received the highest number of funding proposals in its four-decade history this year.

There were more than 17,000 applications for the 2025 Marie Skłodowska-Curie Actions (MSCA) Postdoctoral Fellowships – an increase of nearly 65% compared with 2024. The MSCA scheme has a proposed budget of €404.3 million (US\$471 million) to fund around 1,650 projects, and the success rate (the proportion of awards granted) is expected to drop below 10%, down from nearly 17% last year.

The European Research Council (ERC), Europe's premier funding agency for basic research, has reported similar surges in applications across its schemes. For its Starting Grants – open to early-career researchers with two to seven years of experience after completing a PhD – the ERC has received 13% more proposals so far compared with 2024. Only 12% will be funded, down from 14% last year.

Applications for the ERC's Advanced Grants – which fund established researchers – have also risen, by 31% and 82% compared with 2024 and 2023, respectively. Yet only an estimated 276 projects (8%) will be funded, down from 11% last year.

"We're extremely pleased that there is such a high demand for ERC grants. It shows that people have ideas for fundamental science, for frontier science, that there's a need for it, there's a desire for it," says Maria Leptin, president of the ERC. "The flip side is we don't have more money. And so, the success rates will go down, and there will be frustration in the community," she adds.

Europe's life-sciences organization, EMBO, has received "a record number" of applications for its postdoctoral fellowships this year, says Karin Dumstrei, head of the programme.

The result is that many researchers are fighting to stay in an increasingly competitive academic system. "You can work as hard as you want, but at the end of the day, it's down to numbers. It's down to luck," says Christina Carlisi, a cognitive neuroscientist at University College London, who has been applying for grants this year and feeling the strain. "It's mostly out of your control. And I think that's sometimes difficult to grapple with in terms of keeping the motivation going."

Declining success rates

National funding bodies across Europe are experiencing similar increases in applications. The German research foundation (DFG) – the country's largest independent research funding organization – told *Nature* that applications for its early-career grants between January and August were up by 20% compared with the same period in 2024.

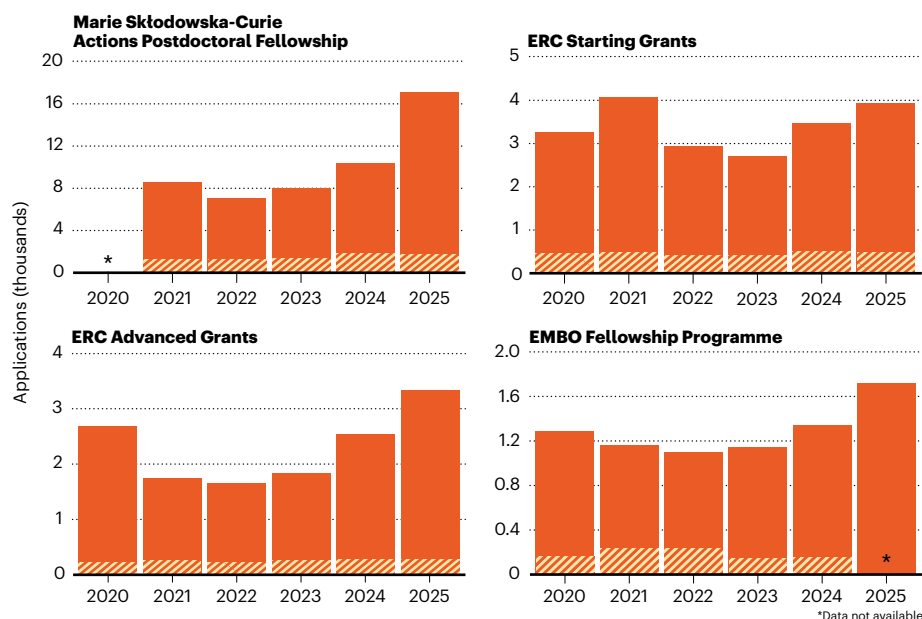
Another major funder in Germany, the Alexander von Humboldt Foundation, has received at least 20% more postdoctoral applications so far this year than in the same period last year. Applications from India and China make up the largest share of this increase, a representative of the foundation told *Nature*, and applications from the United States have also risen, although to a lesser extent.

Grant applications received by the United Kingdom's central research funder, UK Research and Innovation (UKRI), have almost doubled since 2017–18, according to a report published this year. But over the same period, the success rates have nearly halved – from

FUNDING COMPETITION

More researchers are applying for Europe's major research grants. But the high demand means only a fraction of proposals are funded.

Applications approved Applications received



36% in 2017–18 to 19% in 2024–25, the lowest in the decade. Data shared with *Nature* by the UKRI's Medical Research Council show that two of its grant schemes recorded the highest number of applications since 2020 this year.

The Swedish Research Council told *Nature* that it has also observed a significant rise in applications in the past three years, but the Research Council of Norway said that it has not seen any major changes.

European competition

Researchers and officials say it is too early to know what is driving the spike in applications. Cuts to science budgets and political instability are prompting US researchers to look for jobs in Europe. Academics in the United States can apply for EU grants provided that they carry out the research in institutions in Europe. European scientists who have built careers in the United States might also be seeking opportunities to return home.

Data from the MSCA programme show that the vast majority of the large influx of applications – 15,820 of 17,058 – came from the EU and associated countries, including 21% from the United Kingdom. The remaining 1,238 proposals came from 48 other countries that are not associated with the EU's flagship research programme. Nearly half of them were submitted by researchers in the United States.

The decline in success rates "is absolutely not satisfactory, because it sometimes borders on a lottery", says Marek Kwiek, an academic-career researcher at Adam Mickiewicz University in Poznań, Poland. "Science is becoming extremely competitive."

"It does feel disheartening," says Carlisi. "There are all of these amazing people

putting in amazing applications for things and there just isn't the funding to support them," she adds.

Funding pressures

With the rising competition for funding, securing a grant has become less about advancing science and more about staying in science (S. Meirns *Sci. Eng. Ethics* 30, 6; 2024). External funding – by national, regional or international agencies – has become central for researchers, not only to enable them to run laboratories, but also to allow them to remain in employment. "University funding is increasingly under pressure," says Carlisi. "If you don't have external funding, you can't really do anything. You have a salary, but that's it," she adds.

Restoring core institutional budgets would allow researchers to have more sustainable long-term research, Kwiek says. Another issue is that some applicants get caught between the career stages that are defined in grant schemes. Carlisi suggests that funders adjust their eligibility ranges or introduce targeted programmes to better support those researchers.

The European Commission has proposed nearly doubling its spending on research programmes in its next funding cycle in 2028 – a move Leptin said "would be a good step towards dealing with that problem". If approved, the budget will allocate €44 billion to programmes such as the ERC and the MSCA. "How that will be administered is still unclear," adds Leptin, who notes that the ERC's grants have not been adjusted for inflation since 2007.

Researchers also say that even with a larger budget, discussions will be needed on how to reduce the cost of applications and optimize the distribution of resources.