Clarke says that Community Action Publishing is a "shrewd scheme". Instead of collecting revenue from one-off transactions to publish individual papers, the partnership model locks institutions into longer-term financial agreements that give PLOS a predictable income across several years, which could put its journals in profit. "While 10% may be a modest profit margin, if the journals are operating at a loss now, the 10% target represents a substantial margin swing," he says.

Acceptable profits

As science grapples with how publishing will look in the future, there has been much debate about acceptable profit margins for publishers.

Lisa Hinchliffe, a librarian at the University of Illinois at Urbana–Champaign, which is a member of the Community Action Partnership, says that if lots of institutions sign up to the PLOS scheme, it could indicate that a 10% profit margin is considered acceptable. She also cautions that, because the scheme takes into account all authors on a paper, it will be complicated to manage. "I believe that this complexity makes uptake by other publishers less likely," she says.

O'Connor and her team are already thinking about how they can improve access to research without reinforcing existing hierarchies that exclude researchers in low- and middle-income countries. On 12 May, PLOS announced a partnership with a centre that teaches communication skills to scientists, which is based at the University of Nairobi. The link is designed to ensure that the interests and values of African researchers are represented in the publisher's policies and services.

"After a period of quiescence, it is good to see some long-overdue innovation."

"Our next phase of work is not just about being able to read or share an article: it's about building a framework for equitable participation and distribution of knowledge," O'Connor says.

PRESTIGIOUS EUROPEAN GRANTS MIGHT BE BIASED

Panellist affiliations seem to skew European Research Council decisions — especially in the life sciences.

By Diana Kwon

Funding panels are more likely to give European Union early-career grants to applicants connected to the institutions of some of the panellists, a study of the 2014 funding round suggests.

The effect seems to be limited to the life sciences, social sciences and humanities, and the results have not yet been peer reviewed. But given the high profile of the grants administered by European Research Council (ERC), "the findings should be taken seriously", says study co-author Peter van den Besselaar, a social scientist at the Free University of Amsterdam.

Although previous studies have found evidence of favouritism in funding in various European countries, "I was surprised that the phenomenon has been recorded at a level as high as the ERC grants", says Giovanni Abramo, the technology research director at the National Research Council (CNR) of Italy in Rome.

The preprint was posted on 9 March on the academic networking platform ResearchGate (C. S. Mom and P. van den Besselaar Preprint at https://www.researchgate.net/publication/344461606; 2021).

ERC 'starting grants' are among the most prestigious early-career funding schemes in academia, providing up to €1.5 million (US$1.8 million) over five years. Van den Besselaar and Charlie Mom, a research consultant based in Amsterdam, conducted the latest study as part of a broader ERC-funded project to assess bias in funding allocations. It focused on the 2014 cycle, during which there were 3,207 applicants, of whom 375 received starting grants.

Close to home

The authors examined what they called the 'nearby panellist effect' — the influence of a panellist from an applicant's 'home organization', the university or research institution where they are currently based, or the 'host organization' where they plan to carry out the research.

Van den Besselaar and Mom discovered that applicants who shared both a home and a host organization with one panellist or more received a grant 40% more often than average. These were mainly cases in which an applicant planned to use the grant at the institution they applied from. The effect seemed to be discipline-specific: the success rate for connected applicants was approximately 80% higher than average in the life sciences and 40% higher in the social sciences and humanities, but there seemed to be no discernible effect in physics and engineering. It was also limited to certain countries, including Finland, Sweden, Italy, Germany and the United Kingdom, and benefited men more often than women.

The presence of a nearby-panellist effect might not be evidence of favouritism, says Van den Besselaar, because the best applicants tend to be concentrated at certain institutions. To test this, the researchers evaluated whether applicants with an institutional connection to a panellist scored better on measures such as previous grants, citations and number of publications. Their analysis showed that successful and connected applicants scored worse on these performance indicators than did funded applicants without such links, and even some unsuccessful applicants. "This nearby-panellist effect cannot be explained away by pointing at the performance of the applicants," says Van den Besselaar.

By contrast, the connected applicants did seem to publish more often in high-impact journals and had more collaborations with researchers from high-ranking institutions. However, the authors classified these two measures as markers of reputation rather than performance.

According to ERC policy, if a panellist works in the same organization as an applicant, the ERC bars them — with some exceptions — from reviewing the proposal and requires them to leave meetings during which it is discussed. Van den Besselaar and Mom did not directly observe panels to monitor compliance with this rule.

In an e-mailed statement, the ERC said that it is unable to comment on the study, because it has not yet been peer reviewed.

Differences by discipline

One limitation of the authors' method, Abramo notes, is that they lumped applicants from broad disciplines together, even though factors such as number of publications can vary drastically depending on subfield. For example, he says, blood-disease specialists publish much more frequently than vascular surgeons, so if you measure performance in these groups by the same factors, "you introduce an enormous bias".

Another shortcoming, according to Natalia Zinovyeva, an economist at the University of Warwick, UK, relates to how Van den Besselaar and Mom interpreted some of their performance measures. In some fields, journal

impact factor is a clear indicator of research quality, she says. "From my perspective as an economist, this evidence seems to indicate that connected applicants are much better."

Zinovyeva adds that it is important to look not only at the past success of grant recipients, but also at their future outputs.

"Measuring the quality of an applicant is extremely difficult," Zinovyeva says. These findings are "a warning that we should pay attention to", she adds, "but I think it requires deeper analysis".

MIXING COVID VACCINES TRIGGERS POTENT IMMUNE RESPONSE

Preliminary trial results show the benefits of combining different vaccines.

By Ewen Callaway

Vaccinating people with both the Oxford–AstraZeneca and the Pfizer–BioNTech COVID-19 vaccines produces a potent immune response against SARS-CoV-2, researchers conducting a study in Spain have found.

Preliminary results from the trial of more than 600 people — announced in an online presentation on 18 May — are the first to show the benefits of combining different coronavirus vaccines (see go.nature.com/2s62qst).

Because of safety concerns, several European countries are already recommending that some or all people who were given a first dose of the vaccine developed by the University of Oxford, UK, and AstraZeneca in Cambridge, UK, get another vaccine for their second dose. Researchers hope that such mix-and-match vaccination regimens will trigger stronger, more robust immune responses than will two doses of a single vaccine, while simplifying immunization efforts for countries facing fluctuating vaccine supplies.

"It appears that the Pfizer vaccine boosted antibody responses remarkably in one-dose AstraZeneca vaccinees. This is all around wonderful news," says Zhou Xing, an immunologist at McMaster University in Hamilton, Canada.

Prime and boost

Starting in April, the Spanish CombivacS trial enrolled 663 people who had already received a first dose of the Oxford–AstraZeneca vaccine, which uses a harmless chimpanzee 'adenovirus' to deliver instructions for cells to make a SARS-CoV-2 protein. Two-thirds of participants were randomly picked to receive the mRNA-based vaccine made by Pfizer, based in New York City, and BioNTech, in Mainz, Germany, at least eight weeks after their first dose. The 232 people in the control group have not yet received boosters. The study was led by the Carlos III Health Institute in Madrid.

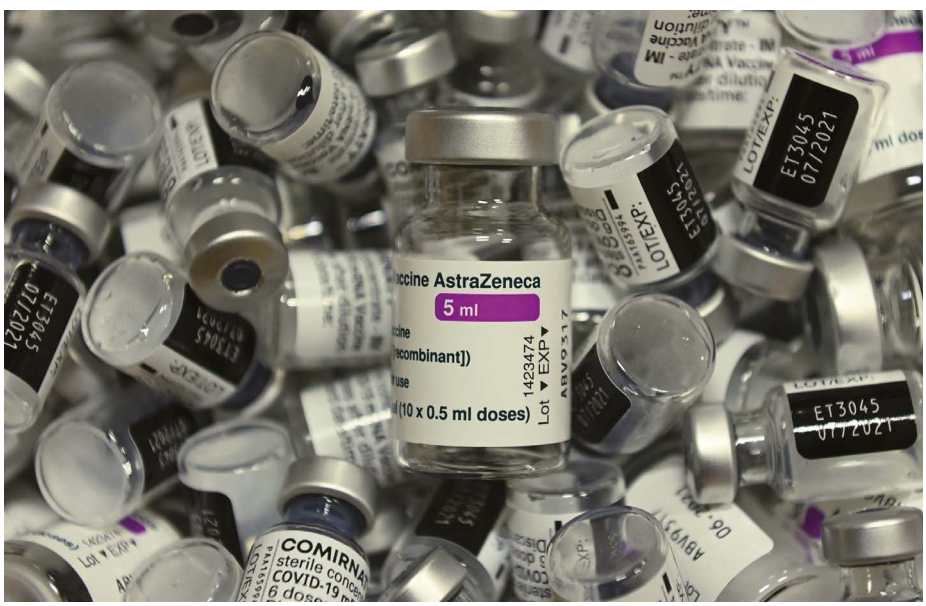
The Pfizer–BioNTech booster seemed to jolt the immune systems of the Oxford–AstraZeneca-dosed participants, reported Magdalena Campins, an investigator on the CombivacS study at the Vall d'Hebron University Hospital in Barcelona, Spain. After this second dose, participants began to produce much higher levels of antibodies than they did before, and these antibodies were able to recognize and inactivate SARS-CoV-2 in laboratory tests. Control participants who did not receive a booster vaccination experienced no change in antibody levels.

That is what researchers hoped for and expected from mixing different vaccines, a strategy known as a heterologous prime and boost, which has been deployed for vaccines against other diseases, such as Ebola. "These responses look promising and show the potential of heterologous prime–boost regimens," says Dan Barouch, director of the Center for Virology and Vaccine Research at Beth Israel Deaconess Medical Center in Boston, Massachusetts.

Xing says the antibody response to the Pfizer boost seems to be even stronger than the one that most people generate after receiving two doses of the Oxford–AstraZeneca vaccine, on the basis of earlier trial data. But it is not clear how the responses compare with those seen in people who receive two doses of mRNA vaccines such as Pfizer–BioNTech's, which can trigger an especially potent antibody response after a second dose.

Giving people first and second doses of different vaccines probably makes sense, says Daniel Altmann, an immunologist at Imperial College London. But he wonders what will happen if people need a third dose to prolong immunity or protect against emerging coronavirus variants. Repeated doses of virus-based vaccines such as the Oxford–AstraZeneca one tend to be increasingly less effective, because the immune system mounts a response against the adenovirus. RNA vaccines, by contrast, tend to trigger stronger side effects with added doses. "I do think there's a brave new world of vaccinology to be scoped in all of this," Altmann says.

Last week, a UK study called Com-COV, which analysed combinations of the same two vaccines, found that people in the mix-and-match groups experienced higher rates of common vaccine-related side effects, such as fever, than did people who received two doses of the same vaccine (R. H. Shaw *et al. Lancet* https://doi.org/gdb3; 2021). In the Spanish CombivacS trial, mild side effects were common, and similar to those seen in standard COVID-19 vaccine regimens. None was deemed severe.



CHRISTOF STACHE/AFP/GETTY

Vials of the Pfizer and AstraZeneca vaccines.