

engaging, building trust, listening and acting on concerns. This must be seen as a necessary part of genomics research, and will be key to its future.

Commitments are also needed to improve the standards for data repositories. The repositories must be made more accessible and less onerous to contribute to. Moreover, their governance needs to better reflect diverse perspectives, not only of the global genomics research community, but also of those whose data are being accessed.

As has been seen repeatedly during the pandemic, rapid data sharing can provide massive benefits to science and, through science, to all of society. It's time to shore up that foundation and improve sharing practices – but always with equity and respect.

## India must protect its landmark science agency

**The new funding agency will allow thousands of researchers to develop their talents. Its architects must ensure it is independent.**

**I**n a groundbreaking change, India's neglected university and college researchers are getting a new funding agency. The National Research Foundation (NRF), announced in last week's budget, will distribute 100 billion rupees (US\$1.37 billion) annually for its first five years, starting this year. It will have a particular focus on interdisciplinary work, and research in colleges and universities. The launch of the NRF comes on top of plans to invest more than 40 billion rupees over 5 years for deep-ocean research; a pledge to set up 4 new virology institutes; and a commitment to developing hydrogen energy (see page 189).

These funding boosts will hopefully start to reverse the steady decline that has blighted the country's investment in research and innovation as a percentage of national income. In 2018, India spent 0.69% of its gross domestic product on research and development, compared with 0.84% a decade earlier. This compares with China's 2018 spending of 2.1% and South Korea's of 4.2%. But the stellar budget news for India's researchers comes as academics continue to voice concerns about government interference in their affairs. The benefits of the changes will be fully realized only if the NRF is allowed to function independently.

The importance of creating the NRF cannot be overstated – it is the most significant development in India's research-funding policy in at least a decade. For more than 70 years, researchers at India's many thousands of colleges and close to 1,000 universities have had few sources of large grants. Most of India's research and development

funding has been concentrated in government laboratories and a network of prestigious institutes of science and technology, whereas the focus of universities has been on teaching. As a consequence, India had just 255 researchers per million people in 2017 – a fraction of that in many other countries. For example, Israel had 8,342 per million, Sweden 7,597 and South Korea 7,498 in the same year.

Generations of university-based researchers have wanted access to resources on a par with those provided to their better-funded colleagues, and there have previously been discussions in government about creating an agency like the NRF. That this ambition is now being realized is, in part, down to the foresight and diplomatic skills of biologist Krishnaswamy VijayRaghavan, who is the principal scientific adviser to the Indian government. Challenges such as eliminating poverty and providing clean drinking water, sanitation, quality education and health care will need a “deep understanding of the social sciences and humanities and the various socio-cultural dimensions of the nation”, VijayRaghavan told *Nature*.

The government has not yet provided full details on where the NRF will sit in the nation's public administration. It could be attached to a government ministry – as the United Kingdom's largest science-funding body is – or it could report to parliament, in a model closer to that seen in the United States. The Indian government has pledged that the NRF will operate autonomously, regardless of where it finds a home. This will be crucial. VijayRaghavan and his colleagues need to work with the government to ensure that both grant recipients and those who run the agency can make decisions – such as appointing staff or peer reviewers – without interference from government officials, as is the convention in international science-funding policy.

India's researchers have been voicing concerns over the state's undermining of research autonomy for some time. In 2017, around 12,000 researchers participated in a march for science across 40 cities. In 2019, more than 100 economists wrote to Prime Minister Narendra Modi, urging an end to political influence over official statistics – particularly economic data. And just last month, the Ministry of Education told universities they must obtain permission from the government when organizing online events with international speakers on topics that relate to the country's security or internal affairs.

The government says this last move is no different from universities seeking permission when inviting international scholars to visit India for certain academic purposes, but researchers have told *Nature* that it is unnecessary because universities already have procedures in place for vetting conference speakers. They say that adding another bureaucratic hurdle will simply result in fewer international speakers attending online events being hosted in India.

India's NRF has been a long time coming. Its creation is an achievement of great vision. Enabling new generations of scholars to realize their potential will be its architects' most important legacy to their nation. But it needs to start with the right foundations. That means giving it protection from undue influence – not only from the current government, but from its successors, too.

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