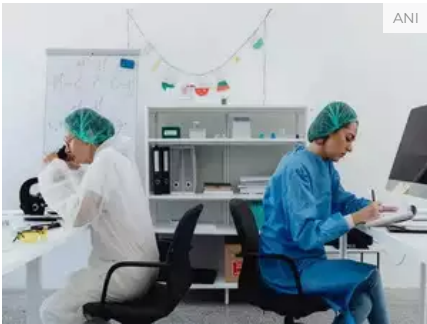


National Research Foundation, A dream come true for academics

By R Subrahmanyam, ET CONTRIBUTORS Last Updated: Jul 01, 2023, 12:23 AM IST

Synopsis

The government has announced the creation of the National Research Foundation (NRF) to address the lack of funding for research in the country. With India's investment in research and innovation (R&I) steadily dropping and the number of researchers per population significantly lower compared to other countries, the NRF aims to improve these numbers.



The NRF must address challenges and promote a transparent and fair approach to awarding research projects.

The government has made the big-bang announcement of approving the creation of a [National Research Foundation \(NRF\)](#) with a reasonably sizable investment, four years after the first note for this was prepared by the department of higher education. It is a dream come true for the academic community which has suffered due to lack of adequate funding for research.

Prime Minister Narendra Modi personally pushed the agenda of promoting research, that too a socially relevant one. I remember how he cleared, in just a few minutes, the creation of the Prime Minister Research Fellowships (PMRFs), which committed large funds for grooming the best young minds into the frontiers of

research. Then came the proposal for creating NRF, which was also brought into the National Education Policy 2020. The announcement, though delayed, could not have come at a better time — when the whole world is looking at India to stand up to the Chinese juggernaut in science and technology. The prime minister's recent visit to the US has emphasised the need for de-risking supply chains and achieving technological advancements with cross-sector application, thereby opening increasing technical, scientific and defence cooperation on the one hand, and attracting investments in critical sectors like semiconductors.

The realisation of this aspiration needs a truly functional research ecosystem in the country. India's investment in research and innovation (R&I), as a percentage of GDP, has steadily dropped—from 0.84% in 2008 to about 0.69% in 2018; whereas it was 2.8% in the US, 2.1% in China, 4.3% in Israel and 4.2% in South Africa. The number of researchers per lakh of population is only 15 in India, compared with 111 in China, 423 in the US and 825 in Israel.

As a direct consequence, India lags in the number of patents and publications produced. According to the [World Intellectual Property Organisation](#) (WIPO), China made as many as 1.538 million patent applications (with just 10% being made by nonresident Chinese), the US made 605,571 patent applications, while India made a mere 45,057, of which over 70% were by non-resident Indians. In terms of publications, India has done somewhat better, with a steady growth in its output, although a 2018 compilation of science and engineering indicators by the US National Science Foundation showed that both the US and China published at least four times as many articles as India in 2016.

The National Research Foundation arrives on the scene in this desperate situation. It has put in a resolute effort to rewrite these numbers. While the task ahead is clear, what is to be seen is how the foundation gets organised.

Funding is only one of the constraints which troubles the scientific community. The other challenges include (1) inconsistent funding stream (uncertainty of when the funds would come), (2) complex application processes (multiple guidelines, rules, regulation, expenditure regulations), (3) bias towards established researchers and institutions (IITs get the lion share of all research funding), (4) straight-jacketed themes (which allow little intellectual freedom), and (5) university bureaucracy and procedures (invariably result in delays in decisions). To address these challenges, there is a need for a de novo approach to awarding research projects which is transparent, fair and quick. Research has to begin in the higher education institutions, which are mandated to create new knowledge.

Currently, most of the research funding in the country is brought in by the private sector in their own labs, customised to their requirements. While we should not grudge this, it is essential that the educational institutions, which prepare the next generation of researchers for the country, should get a substantial share in the NRF funding. However, not everything goes well at the institution level. There is a temptation to use the research funds on buying new equipment, even when the existing equipment lies unused or underutilised.

The [Indian Institute of Science](#) (IISc) has started a national portal to facilitate sharing of labs with all institutions, with the aim of optimising the utilisation of the existing equipment. NRF will have to support such efforts and ensure that existing equipment is used fully before funding new purchases. The research culture has to permeate into the colleges and universities, in the classrooms and discussion forums.

The current trend of promoting research in [premier](#) institutions should not be at the cost of exclusion of research in other institutions of higher education. This needs a separate effort of mentoring and joint research between the premier institutions (like the IITs) and other institutions of higher education. Although funds have been committed by the government, the task ahead for NRF is hard and expectations are high. The nation waits for it to take a firm root under able leadership for realisation of its dreams of becoming a knowledge super power in the near future.

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