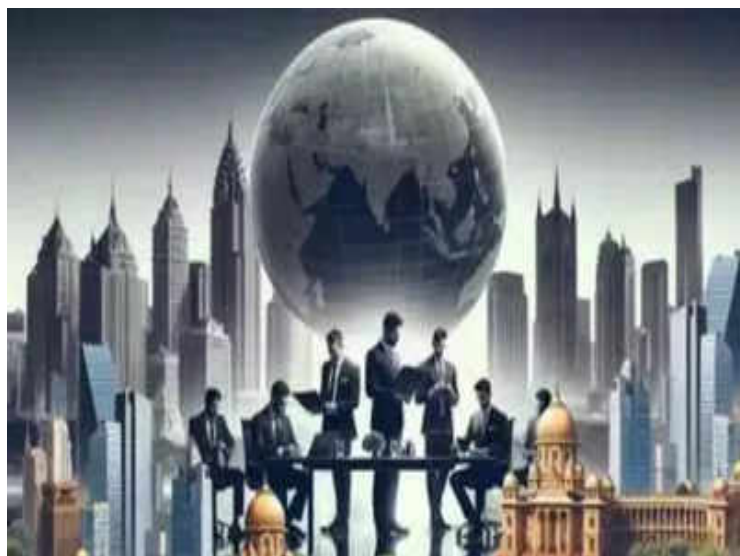


# Transforming public univs into R&D engines

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Indian R&D is set to receive a huge boost with the setting up of the Anusandhan National Research Foundation (ANRF). According to reports, Indian public universities will be linked to nationally funded higher educational institutions (HEIs) or national labs in a hub and spoke model under the Partnerships for Accelerated Innovation and Research (PAIR) programme. This is a fundamental shift in our R&D policy that has so far identified only the nationally funded HEIs and national labs as engines of R&D.

Indian public universities have a legacy of world-class R&D. GN Ramachandran of the physics department at the University of Madras discovered the triple helical structure of collagen in 1955. This paved the way for the analysis of conformations of proteins

using the 'Ramachandran plot', which is among the most outstanding contributions to structural biology. Unfortunately, somewhere along the latter part of the 20th century, our public universities missed becoming leaders in science and technology R&D. How can we transform our public universities into R&D engines?

## Start with governance

Strengthening R&D in Indian public universities starts with addressing their foundational governance and administrative challenges. We should learn from recent studies like NITI Aayog's 'Improving the culture of R&D in

state universities and institutes,' UGC's 'Guidelines for establishment of research & development cell in higher education institutions', and programmes like DST's 'State university research excellence'.

Selection processes for leadership positions in public universities need to focus on the candidates' ability to bring about positive change in promoting responsible autonomy and creating a conducive environment for R&D.

Leadership development programmes covering various aspects of R&D and innovation are important to ensure that the leaders are well prepared to embrace the ANRF era.

Once robust governance and administrative mechanisms are in place, ANRF with an outlay of Rs 50,000 crore over five years will potentially remove the R&D funding challenge for public universities. But the agenda for transforming public universities into R&D engines will require a sharper R&D strategy, faculty training programmes on deepening R&D capabilities, mentorship especially with respect to translational R&D, and establishing the right incentives for R&D.

Have clarity on funding

On the funding front, ANRF must have a plan to break the chicken and egg problem of 'funding only a well-equipped lab...absence of well-equipped lab because there is no funding'. We should learn from the successes and challenges of past programmes like TIFAC's Centres of Relevance and Excellence (CORE). The criteria to set up labs should focus on the intent and action of faculty and university leadership to embark on a world-class research journey, rather than just their prior R&D record.

Basic and translational R&D

A good R&D strategy must focus on how to ramp up R&D capabilities in both basic and translational R&D. It must dovetail into the public university's vision and mission, the social and economic policies of their respective districts and states, and with national policies like ANRF, NEP, etc. The strategy must include organisational upgrades in terms of people, processes, and systems.

### Structured training programmes

Public universities require structured training programmes with the objective of transforming faculty into worldclass researchers. The training should include research methods, setting up or using lab equipment, choosing research problems in their domains, research ethics, writing good quality research papers, communicating research to various stakeholders, domainspecific R&D best practices, etc. The trainers and mentors from the nationally funded HEIs and national labs must be sensitised to the current context in public universities.

Ideally, mentors should spend a semester in public universities and mentee faculty from these universities should spend a semester in their mentor's institutions. This will help in the transfer of critical tacit knowledge about R&D that is often difficult in formal classroom or seminar room settings and foster stronger R&D partnerships. As a short-term measure, as recommended by BITS Pilani vice chancellor Ramgopal Rao in another context, the ANRF can create a common cadre of young research faculty who can jumpstart R&D in public universities.

This cadre will have a similar background to those recruited by nationally funded HEIs and national labs. These faculty members must be encouraged to take up permanent positions in public universities.

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