Editorial

Global Contraction of Research Funding: Implications for Developing Countries

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Research has been a backbone of advancement in developed countries like United States of America (USA). In recent months, discussions in the scientific community have turned to the implications of substantial reductions in research funding in the United States (U.S.). Science News reported that about 5,300 grants from the National Institutes of Health and National Science Foundation were ended or suspended in 2025, drawing public demonstrations calling for restoration of funding.[1] The funding cuts caused widespread, profound disruption across the U.S. research system, affecting projects, people, and institutional operations simultaneously. A recent article in Chemical & Engineering News described the period as 'a huge rupture in everything,' documenting upheaval and staff layoffs across federal research agencies.[2] The result is significant proposed cuts and revised policies affecting grant allocations for both existing and future studies. These shifts have led not only to the suspension of numerous ongoing projects but also the cancellation of planned grants. Researchers are concerned about the sustainability of long-term biomedical, environmental, and technological research programs. This change in policy has disrupted many clinical trials and research initiatives, causing pause of hundreds of studies in different medical fields and impeded the flow of new medical data into the larger evidence base. Although the long-term outcomes of these budgetary adjustments remain uncertain, the immediate concerns raised by scientists and institutions speak to the centrality of sustained research support in maintaining a robust scientific ecosystem.

Although this change is unfolding within the United States, it will have repercussions far beyond its borders. The U.S. research enterprise has historically played a central role in global scientific collaboration. It has provided platform to several students from all over the world, shaping the knowledge networks and enabling cross-border partnerships. Moreover, it has provided foundational data and tools that researchers worldwide rely on and work to build upon. A recent article stated, “With the recent cuts to NIH (National Institutes of Health) funding, the fate of research projects, particularly those involving collaborations with researchers outside the U.S. has been thrown into question”. [3] Reductions in federal grant funding will not only affect the international collaborative networks, but will also hinder multi-institutional initiatives.The opportunities for early-career researchers, keen to engage in high-impact science, will be diminished and in the current era when world is a global village, contractions in one region's funding landscape can have indirect but meaningful consequences for scientific capacity and momentum elsewhere.

Pakistan is the country where research ecosystem faces severe structural and financial constraints. For years, students from this country, as well as from other devloping nations with limited grants and resources, have joined the research institutes in USA to pursue advanced research. Pakistan's investment in the field of research has historically been limited and it is relatively small when compared to the research-

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intensive developed countries. In addition to limited funding several other challenges such as lack of infrastructure and redundant advancement in the field of IT development have been reported.[4] These limitations discourage ambitious, long-term projects. All these challenges contribute to a cycle in which high-quality research is difficult to initiate and sustain, which in turn affects the ability of Pakistani scholars to compete for international recognition and collaboration. In the current situation, with reductions in research funding in major high-income settings, it will be furthermore challenging for global scientific participation. International collaborations will be reshaped by funding uncertainties, resulting in fewer opportunities for partnership and collaboration for the researchers in low-resource settings like Pakistan. The current situation compels the developing countries for proactive strategies to fortify their own research ecosystems.

Although recently a rising surge in research activity was reported by Hussain et al, reflecting a growing emphasis in the field of scientific inquiry and innovation in Pakistan[4,] there is a lot more to be done in this progressive field. A multi-layered approach might help to resolve the issue. It is essential and demand of this era that a resilient research ecosystem is built. This will require a sustained investment, systematic planning, and supportive infrastructure at national and institutional levels. The regulatory bodies should ensure transparent grant mechanisms and multi-year funding cycles. Moreover, a structured mentorship for early-career researchers, and investment in research training and ethics is essential. It is suggested that there should be regional collaborations and shared platforms by private and public sector institutes to help mitigate resource constraints.[5] With the recent shift in the funding landscapes, these efforts become crucial to ensure that developing countries like ours can adapt, innovate, and strengthen their scientific capacity despite external uncertainties. For Pakistan, the challenge lies in shaping internal frameworks that enable future generations of researchers to conduct sustained, impactful research.

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