Science Diplomacy through International Fellowships - A Reflection

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Imagine stepping out of your comfort zone and entering a realm of exciting scientific possibilities. This was my reality when my TWAS-CSIR fellowship journey kicked off in 2016. As a PhD student in Analytical Chemistry specialising in materials chemistry, which focused on geopolymers, I knew that collaboration was imperative.

I was immersed in my laboratory, grappling with intricate experiments that demanded cutting-edge instruments, some of which were unavailable in my country. Hence, I applied for a six-month sandwich programme to collaborate with an engineering Institute in India to carry out the experimental aspects of my PhD research.

The journey to securing this opportunity was no walk in the park. After rigorous proposal writing, document submissions and screening, I received the prestigious The World Academy of Sciences and Council of Scientific and Industrial Research (TWAS-CSIR) Sandwich Postgraduate Fellowship. My destination? The CSIR-Structural Engineering Research Centre (SERC) in Chennai, India.

It was a moment of joy as I prepared to leave my country for the first time. The thought of international collaboration brimming with potential benefits for me, my supervisor, and my home university was electrifying.

My stay at CSIR-SERC, Chennai, opened me to a new world of experimental possibilities. I got hands-on experience with cutting-edge instruments and software, which elevated my analytical, problem-solving, and





critical thinking skills. These tools weren't just abstract concepts from papers or the internet anymore – I was interacting with them directly.

But it wasn't just about equipment. I found myself embraced by a community of structural engineers and fellow researchers. Guided by mentors like Prof. Santosh Kapuria, Dr Bharatkumar BH and Dr Hemalatha T, I delved into PhD experiments with zest. I was operating the instruments and interpreting the results. Interacting with the institute's Post-doctoral, PhD and MSc students broadened my research network. Attending seminars provided an insight into how academics from developed countries carry out cutting-edge research, which CSIR-SERC had keyed in to make India stand among global giants in research.

But it didn't stop there. My paper-writing skills blossomed during my time at the Institute, leading to a research article in a Springer journal. It further enabled me to improve the capacity of my colleagues back at my university.

The TWAS-CSIR fellowship added another feather to my cap – the chance to peer-review for an International journal. This opportunity aligned with my material chemistry expertise, demonstrating how international science fellowships amplify one's professional reach.

As I touched Chennai International Airport, my arrival in India was filled with excitement. I experienced a cultural shock relating to the vegetarian diet at the Institute and took some time to acclimate to an unfamiliar environment. Thankfully, a guiding hand was there to assist me, helping me bridge the cultural gap.

Though it took a few weeks to register my research visa at the Foreign Regional Registration Office (FRRO), Chennai, eventually, it got sorted out. Reflecting on my experience, I see opportunities for improvement. The FRRO can address the visa challenges experienced by foreign students in India by raising awareness among all CSIR Institutes. This way, when new international students arrive, they will be well-informed about the appropriate steps to follow upon arrival in the country.

A few critical strategies, as mentioned below, can be enacted to ensure a more inclusive landscape in international science fellowships:

- Generating greater awareness about the importance of these fellowships in developing countries.
- Implementing university programs dedicated to honing proposal and grant writing skills among aspiring participants.
- Fostering research collaboration by increasing quotas for developing countries. To enhance gender parity, increasing award quotas for women from developing nations may be included.
- Providing relocation support to their families throughout the fellowship can enhance greater participation and inclusivity for women in science.

Investing in international fellowship programs isn't just about sending students abroad; it's about fostering lasting collaborations that enrich the scientific community. Continued investment in these programs is vital, strengthening scientific collaborations and enabling scientists from developing nations to conduct research of international standards through hands-on experiences and transfer the acquired knowledge back home.[1] Research excellence and innovation thrive through international collaboration, sustaining access to advanced equipment and expert researchers across various fields. Furthermore, the link between the citation impact of publications and international collaborations suggests that providing broader access to international science fellowships enhances individuals' capacity to publish papers with increased citation levels.[2]

Studies reveal that impactful research often emerges from cross-border collaborations and internationally

co-authored papers. Chances for multidisciplinary research, as in my case, are easily achieved when international science fellowship programs are sustained.[3] To cap it all, international science fellowships can serve as catalysts for science diplomacy, uniting students and experts from different countries to address common problems, thereby nurturing global relationships collaboratively.[4] As I look back on my journey, I see not only personal growth but also the potential for scientific harmony on a global scale.

References

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