

From Classrooms to Cosmos

Targeted Schemes Bridging Gender Gaps in S&T Research



INDIA is addressing the STEM gender gap, where women form a minority of the R&D workforce despite strong representation in higher education through multi-ministry programmes involving the Department of Science and Technology (DST), Department of Biotechnology (DBT), Indian Space Research Organisation (ISRO), Ministry of Earth Sciences (MoES), Council of Scientific and Industrial Research (CSIR), etc. They distribute scholarships, fellowships, and labs that have helped increase female enrolment by 15-20% in the targeted regions and have reached millions annually.

The MoES along with its institutes, such as the National Institute of Oceanography (NIO), run ship-based student on-board student exposure programmes on research vessels like INS Sagar Nidhi. Through these programmes, school and college students including the girls from coastal and fishing communities can get to know the oceanographic work such as collecting marine biology samples and climate data besides communicating with scientists. This type of first-hand experience not only gives them the opportunity to learn about the research vessel but also presents them oceanography as a potential career and increases their self-esteem in using instruments and handling data.

Vigyan Jyoti is DST's main school-level initiative to address the gender imbalance in STEM, mainly in the underrepresented areas of engineering and physical sciences. Imagine a Class 10 girl from a rural part of Rajasthan who

draws rockets in her notebook while the world of STEM labs is still dominated by boys. Then, through Vigyan Jyoti, she joins one of 25,000 girls from 250 districts who get to explore real labs, hear inspiring stories from women scientists like missile pioneer Dr Tessy Thomas, and tinker hands-on with experiments in Atal Tinkering labs and come out from laptop screens into real scientific dreams.

Shift to Jharkhand, where a young boy with a love for outer space joins ISRO's YUVIKA, a fortnight full of rockets, telescopes, and satellite tours in Bengaluru. Many of the thousands who returned day after day, getting inspired later, went on to do their degrees in aerospace. ISRO's YUva Vigyani Karyakram (YUVIKA) is a residential programme designed for school students that aims to give them a very practical introduction to space science and technology lectures, hands-on experiments, lab and facility visits at ISRO centres. Usually, it focuses on students who have just finished Class IX.

ShaktiSAT, a student-built satellite led by women faculty/students (e.g., from Tamil Nadu) and launched aboard an ISRO PSLV mission, is a strong emblem of girls in space tech that you can connect to global training or outreach spinoffs for girls. ShaktiSAT is currently running an initiative to train 12,000 girls in the world via Indian leadership.

Now, picture a biotech mother who has taken a career break for family. DBT's BioCARE gives her 60 lakh in