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Empowering Women in Science & Technology



Biotechnology Industry Research Assistance Council
(A Government of India Enterprise)



October-December 2022

No. 3 Vol. 9



birac

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(Dr Rajesh S Gokhale)

Secretary DBT
& Chairperson BIRAC

Science and technology are the key drivers of any economic and developmental change and women need to be firmly grounded in this whole area of science and development. Over the years, Indian women are making an impact across sectors. More women are taking up leadership positions. The upswing has been even better in the biotech space in the country.

Department of Biotechnology and BIRAC have implemented a number of dedicated schemes and programs to promote women researchers and entrepreneurs across the country.

DBT and BIRAC have played a crucial role in flourishing this ecosystem where equal opportunities exist for women in STEM to take up entrepreneurial activities. DBT's consistent efforts to strengthen the biotech ecosystem, through funding opportunities and setting up of bio-incubators are some of the factors that have given a fillip to the cause of women entrepreneurs.

DBT launched the BioCARE program to enhance the participation of women scientists in biotech research and for building capacities. The programme so far has supported more than 400 women scientists providing an opportunity for unemployed Women Scientists and also to those who are not in regular positions or had a break in their careers to get first independent research grants including fellowship and thus a chance to get back to the mainstream of science, as Principal Investigator.

BIRAC, PSU of the Department of Biotechnology has also been playing a significant role in promoting **“Women Entrepreneurship”** in the country. BIRAC-TiEWInER (Women In Entrepreneurial Research) Award: BIRAC has a dedicated award to promote and recognize woman entrepreneurs in Biotech sector. This award is in partnership with TiE-Delhi NCR. This initiative of BIRAC along with the Women Specific Bio-incubators has been very helpful to all women start-ups to excel in their field.

BIRAC has also supported two Bioincubators, which provides incubation space and mentoring (business, IP, legal) specifically to women students/scientists/entrepreneurs. These include Golden Jubilee Biotech Park, Chennai and Sri Padmavati Mahila Visva Vidyalayam, Tirupati.

The annual Women Leaders in Global Health (WLGH) conference is being co-hosted by the DBT and WLGH along with Grand Challenges India to bring together established and emerging leaders from across the global and national health community to advance gender equity in health leadership. This year's WLGH conference in Dec 2022 highlighted and promoted the importance of women's leadership in health and science and identified attainable pathways and goals to strengthen the representation of women in leadership positions in India and Global health.



Dr. Alka Sharma

Senior Advisor, DBT &
Managing Director-BIRAC

Women entrepreneurs are playing an important role in society by generating employment opportunities in the country through their business enterprises and inspiring the next generation of women founders. The primary enabling technology driving the bio-economy, which has been identified as a sunrise industry, is biotechnology.

In the past years, the number of female-led Start-Ups and female-led Biotech companies has witnessed an exponential rise, and this can be seen heralding in India an era of women-led empowerment, rather than just women empowerment. Women are on the path of progress as in biotech women's have created a firm foundation for Indian women in the field of science. The market conditions, access to varied business opportunities, and female entrepreneurs' readiness to jump into the world of business ownership create a winning trifecta.

Today, India is looking at a growth of the Biotech sector from USD 70 billion to USD 150 billion in the next four years and this cannot be established without the active participation of women. In this endeavor, collaboration between the government, industry and academia is key to making quick progress towards the equal participation by women in the field of biotechnology.

In recent years, a matrix of forward-thinking policies and interventions aimed at empowering more women to realize their aspirations in science and technology has been implemented. To increase the participation of women scientists in biotechnology research, the Department of Biotechnology (DBT), and its PSU Biotechnology Research Assistance Council (BIRAC) launched several initiatives to change the status quo.

BIRAC has expanded its footprint over the decades in providing and strengthening the platform for talented women entrepreneurs. BIRAC has built a curated network of programs to extend all possible support and encouragement to women across the country. BIRAC is promoting "women entrepreneurship" in the country by supporting close to 350 women entrepreneurs and researchers across its various schemes.

The increasing presence of women as entrepreneurs has led to a change in the economic growth of the country. Through entrepreneurship, women in India help transform the lives of their families and their communities by creating income and employment opportunities. At BIRAC we are catalyzing women entrepreneurship and tapping into the immense economic potential with their effortless practices towards the biotechnology sector. Women may have a long way to go, but I am confident that the future for women entrepreneurs will be bright.

Empowering Women in Science and Technology

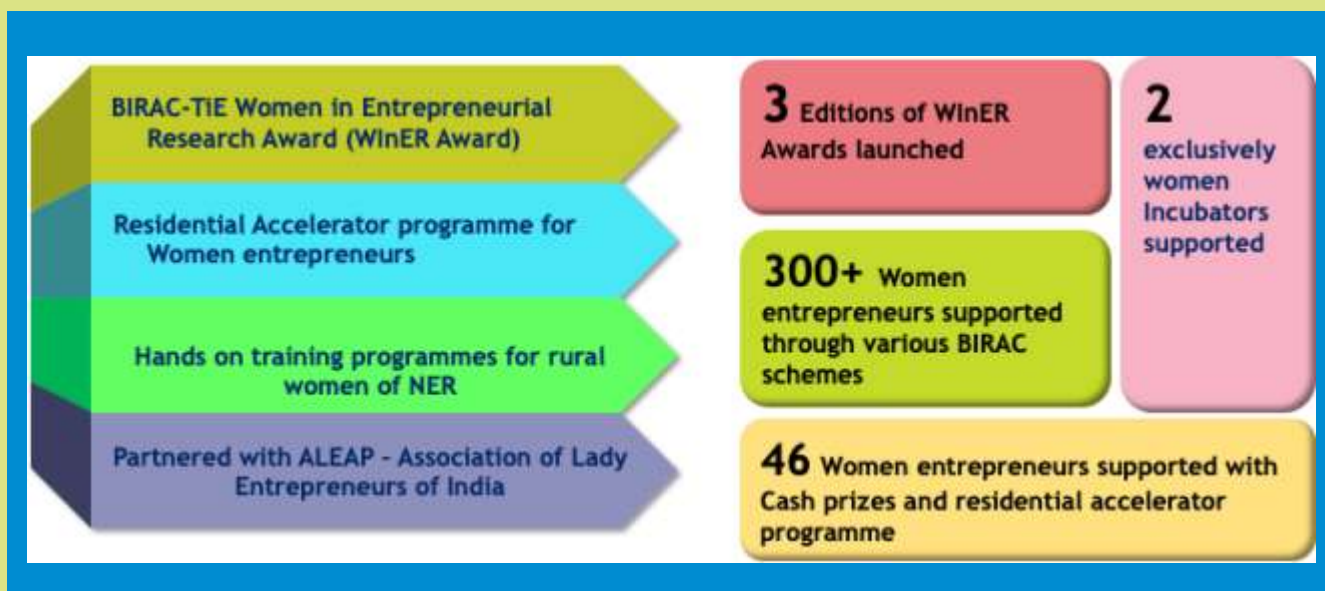
BIRAC as a Biotech ecosystem enabler has expanded its footprint over the decades in providing and strengthening the platform for talented women entrepreneurs. BIRAC has built a curated network of programs to extend all possible support and encouragement to women across the country including tier two and tier three cities to undertake entrepreneurship in the field of biotechnology.

BIRAC is playing a significant role in promoting “women entrepreneurship” in the country. Major initiatives undertaken for boosting women entrepreneurship in biotechnology are as follows:

- **BIRAC-TiE WInER (Women in Entrepreneurial Research) Award:** BIRAC has a dedicated award to promote and recognize woman entrepreneurs in Biotech sector. This award is in partnership with TiE-Delhi NCR. Under this national annual award program, 15 women entrepreneurs working on ideas that impact large sections of the society are awarded INR 5 lakhs each along with mentoring, handholding, an opportunity to participate in an intensive accelerator programme. After the accelerator program, the 15 contestants compete through Business Pitching for the award of INR 25 lakhs each to 3 final winners. So far, in the three editions of WInER Award 46 women entrepreneur awardees have been felicitated.
- **Bioincubators for Women Entrepreneurs:** BIRAC has also supported two Bioincubation and one Pre-Incubation center, which provides incubation space and mentoring (business, IP, legal) specifically to women students/scientists/entrepreneurs. These include Golden Jubilee Biotech Park, Chennai, Sri Padmavati Mahila Visvavidyalayam, Tirupati and PSGR Krishnammal College for Women, Coimbatore.
- **Maternal and Child Healthcare and Reproductive, Maternal, Newborn and Child Health (RMNCH):** BIRAC runs specific funding programs for entrepreneurs such as SPARSH which has supported 20 projects with this focus.
- **Grand Challenges India** under the **DBT – BMGF partnership** has funded the following programs under Maternal & Child Health with women-centric focus:
 - a) **Multi-Omics for Mothers & Infants Consortium (MOMI):** The Grand challenge PTB program - GARBH-Ini – (interdisciplinary Group for Advanced Research on Birth outcomes, a DBT India Initiative being coordinated by an interdisciplinary research group to join the Multi-Omics for Mothers and Infants (MOMI) Consortium, which is an international leading expert on maternal, newborn, and child health, and innovative ‘omics’ technologies ((genetics, metabolome, proteome etc.) GARBH-Ini ((interdisciplinary Group on Advanced Research on Birth outcome - DBT India Initiative), established at the civil hospital at Gurugram, with funding support from the DBT and GCI, supports the electronic clinical record repository for ultrasound images, and a biospecimen repository.
 - b) Another study, the **WINGS trial**, an intervention trial, analyzes the impact of mothers' improved nutrition in the pre-conception, conception and the first three years of the baby's life to better design policies for nutrition and care of mothers in this important time. The sub-study -

Nutritional Interventions to improve Linear Growth during Infancy in India “(IMPRINT Trial)” is exploring to answer the role of improving maternal nutrition in promoting linear growth during in infants. The studies have been done in approximately **3300+ children and 13000+ pregnant women**.

- c) **Data Science:** GCI has funded initiatives deploying data science to use new innovative data analytics and modelling approaches applied to **independent clinical trials**, randomized control studies and national surveys for data-driven decisions designed to answer critical scientific questions related to **maternal and child health** and that may help **predict pregnancy outcomes, birth outcomes and childhood health** and development patterns development outcomes. These initiatives have utilized data from over **3,80,000+ women and children**.
- **BIRAC has supported close to 350 women entrepreneurs and researchers across its various schemes:** Several Startups, entrepreneurs supported by BIRAC (under schemes such as BIG, SBIRI, BIPP, PACE etc.) are led by women, either as founders or as the lead investigator.
 - **International and National Showcasing, mentorship programs:** BIRAC has also provided several showcasing opportunities to women entrepreneurs at national level conferences such as IGNITE, UK Cambridge University; Lattitude59, Estonia; SLUSH, Finland; Global Bio-India; Boot camps with international faculty; FIRST Hub, New Delhi, several others.



National Conference on Akash for Life

To shape the solutions to the challenge of climate change and associated environmental concerns based on the synergy of Indian philosophical tradition and modern science, a National Conference on "Akash for Life" was organised by Vijnana Bharati in association with various science Ministries/Departments and Uttarakhand State during November 4-7, 2022, at Uttarakhand University, Dehradun, Uttarakhand. The event was inaugurated by Dr. Jitendra Singh, Union Minister of State (Independent Charge) Science and Technology, Minister of State (Independent Charge) Earth Sciences, MoS PMO, Personnel, Public Grievances, Pensions, Atomic Energy and Space.

The curtain raiser event was felicitated by Principal Scientific Advisor, Prof Ajay Kumar Sood, Chairman ISRO, S.Somnath, Secretary Science & Technology, Dr. S Chandrashekhar, Secretary, Earth Sciences, Dr. M Ravichandran, Secretary Biotechnology, Dr. Rajesh S Gokhale and DG CSIR Dr. N. Kalaiselvi.



The Union Minister of State of Science and Technology, Dr. Jitendra Singh visiting the DBT-BIRAC Stall.



Dr. Rajesh S. Gokhale (Secretary-DBT and Chairman-BIRAC) and Dr. Alka Sharma (Sr. Advisor DBT and MD-BIRAC) along with DBT and BIRAC officials at the DBT-BIRAC stall.

Eminent scientists, thought leaders, academics, traditional knowledge experts, practitioners, industry leaders, social and field workers, and students actively participated in the conference. The event ensured an excellent opportunity to interact and initiate collaborations at the academic, industrial, and social levels.



BIRAC officials in interaction with delegates, scientists, and students in the DBT-BIRAC stall.

Partnering with CBT-IIT Delhi for organizing training workshop/course series

BIRAC had partnered with CBT-IIT-Delhi as a part of mentoring support for enhancing the research and innovation capabilities of the Indian biotech industry, particularly start-ups and SMEs. CBT-IIT Delhi conducted a training workshop/course series during 12th-15th December 2022, on different modules for industry, academia, and regulatory agencies to facilitate the creation of an ecosystem that delivers affordable biotech therapeutics to India and to the world. There was a total of 12 modules running in this course like QbD, PAT, Chromatography, DoE, MVDA, MAM, Mass Spec and AI/ML etc.



Workshop sessions held during different modules

3rd Call for applications under Fund of Funds – AcE for Biotechnology Innovations

Biotechnology Innovation Fund - AcE (Accelerating Entrepreneurs) is a Fund of Funds scheme of BIRAC that is being promoted by DBT under the aegis of Make in India initiative. The fund aims to foster R&D and innovation in Biotechnology domains by plugging the gap of the "Valley of Death" encountered by the Biotech startups during their product development cycle and growth phase. AcE Fund invests and partners with SEBI-registered Alternative Investments Fund (i.e. Venture Funds and Angel Funds), which are professionally managed and desirous of investing in biotech & related sectors.

So far, BIRAC has 10 daughter funds supported under AcE Fund. AcE Fund partnered funds are called Daughter Funds.

In order to expand the number of daughter funds, the 3rd national call for applications was rolled out from 20th November 2022 till 5th January 2023.

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Biotechnology Industry Research Assistance Council (BIRAC)
(A Govt. of India Enterprise)

3rd call for applications under
Fund of Funds - AcE
for Biotechnology Innovations

Who can apply?

SEBI registered category I and II Alternative Investment Funds :

- Keen to invest in Healthcare, Life Sciences, Pharma, Biopharma, Med-tech, Diagnostics, Industrial-Biotech, Agri-tech, Bio-IT/Services and allied areas
- Support Startups and SMEs

See guidelines at <https://www.birac.nic.in>

So far, INR 733 Cr investment done in 65 Biotech Startups, SMEs by 10 AcE daughter funds

Submit before 5th January 2023 by 5.00 PM

Email for submission/ queries:
user-27@birac.nic.in & sped.birac@gov.in

Workshop on Prevention of Sexual Harassment at the workplace [POSH]

As per the provisions of "Sexual Harassment of women at work place (Prevention, Prohibition and Redressal) Act, 2013", BIRAC organises workshops and awareness programmes at regular intervals for sensitising officials

In-house Workshop on Prevention of Sexual Harassment at Workplace has been organised on 07th October 2022.

The workshop equipped officials with necessary skills to combat sexual harassment faced in their daily working life and create a stress-free work environment conducive for higher performance. It also helped to understand the legal framework for addressing sexual harassment at the workplace.



Vigilance Awareness Week

BIRAC observed Vigilance Awareness Week from 31st October to 6th November, 2022. On account of Vigilance Awareness Week 2022, "Integrity Pledge" was administered by the workforce of BIRAC in the presence of Managing Director, BIRAC at BIRAC Office. BIRAC also disseminated the information by displaying e-banners at prominent locations in office.





Clinical Trial Network

Scientific Advisory Group (SAG) Meeting

- Scientific Advisory Group (SAG) meeting conducted for Clinical Trial Network DRIVEN field sites under National Biopharma Mission on 16th December 2022 @ Scope complex, New Delhi. 12 Proposals were reviewed by the committee for progress updates on the seroprevalence study of COVID and newly established Demographic, Development and Environmental Surveillance System (DDESS).
- **Governing Body Meeting at NIBEC facility, IRSHA, Pune.**

GBM was conducted on 20th Dec 2022, to review the progress of the immunogenicity evaluation facility supported under the National Biopharma Mission. Committee members included senior officials from Industry, NCCS, Pune, Bhartiya Vidyapeeth University and BIRAC. The committee appreciated the progress made and the infrastructure built in line with international quality standards and also guided the team to further increase the outreach and enhance the business to ensure sustainability going forward.



Capacity Building Program:

- Training of Trainers program conducted by Clinical Trial Network: DBT's Resource of Indian Vaccine Epidemiology Network (DRIVEN) – 11 field sites supported under National Biopharma Mission on 15th December 2022 @ Scope Complex, New Delhi. The objective of this program was to share the field experience of seroprevalence study of SARS-CoV-2, Dengue and Chikungunya across the network and way-forward for study protocol discussion of Acute Febrile Illness (AFI) incidence study of Dengue and Chikungunya. Total of 128 (42 in person and 86 online) project personnel including Principal Investigators, Co Investigators and Lab technicians participated in the training.





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