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Women in Entrepreneurship & Research



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Biotechnology Industry Research Assistance Council
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In this issue

Leader's Message	3
Chief Editor's Take	4
BIRAC Feature	
BIRAC's 7 th Foundation Day	5
BIRAC Cover Story	
BIRAC-TiE WInER Awardees	12
BIRAC Reports	
National workshop on regulatory compliances	14
BioNEST Town Hall Meet	16
Biotechnology Conclave	18
TiE-WInER workshops	18
Visit organized for international women delegates	19
BIRAC Activities	
HR & Admin Activities	21
Partnerships	
Grand Challenges India	22
VINNOVA	28
National Programmes	
National Biopharma Mission	29
Make in India	32
Call launches	20, 27, 35

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Leader's Message



Dr. Renu Swarup
Secretary DBT
& Chairperson BIRAC



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Message

India is seventh largest Country by geographical area and the most populous democracy in the world. Women constitute about fifty percent of the human resource and contribute immensely to the socio-economic growth of the country.

Women are on the path of progress. Today we are seeing the important role being played by women in driving scientific development. 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.

In the Indian scenario, a great sensitization towards inclusion of women in Science and Technology has been there. 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. India is the 3rd largest start-up hub in the world and there are about 33% women entrepreneurs in biotech compared to other industries, these are very encouraging statistics to call for future actions in this direction. We have several success stories of women entrepreneurs who have created a niche in the biotech space.

Department of Biotechnology through its various programmes and schemes promotes capacity building for women scientists to enter biotech entrepreneurial space. BIRAC has played a crucial role in flourishing this ecosystem where equal opportunities exist for women in STEM to take up entrepreneurial activities. BIRAC'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. The Start Up India and Make in India initiatives empower women entrepreneurs both at the initial stages of their business and later on. A strong foundation of the country arises from strengthening and empowering its women across the spectrum. BIRAC is committed to harness the talent of women in our country focussing their capacity building and skill development, besides providing funding and mentoring to guide them in their operations.

Women scientists and entrepreneurs are today's game changers who drive the growth of the Indian economy. I am hopeful to see more women joining the mark of successful entrepreneurs and we stay committed to empower them through creating many newer opportunities

(Renu Swarup)
Secretary, DBT & Chairperson, BIRAC

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Chief Editor's Take



Dr. Mohd. Aslam

Advisor DBT
& MD BIRAC

The empowerment of women continues to be an essential feature to address the various socio-economic challenges across the globe. Women in recent times have been achievers in various disciplines of science, technology, engineering and medicine. It is however important to recognize that scientific strength when combined with entrepreneurship has the potential to create technologies and products that can be transformational for the economy and the country. BIRAC celebrates the spirit of women entrepreneurship and has made concerted efforts to support early stage and aspiring women entrepreneurs through its various schemes such as BIG, SBIRI, BIPP, PACE, SPARSH etc. BIRAC has been working aggressively to nurture and vitalize the entrepreneurial ecosystem in the country. BIRAC has devised mechanisms to accelerate and promote the equitable representation of women in the biotech entrepreneurial space.

In view of common objectives, BIRAC has partnered with TiE (The Indus Entrepreneurs) to strengthen the biotech entrepreneurial start-up ecosystem including healthcare and medical technology. BIRAC-TiE has created a special program called Biotech WInER awards for women entrepreneurial research. Through this initiative 15 selected women entrepreneurs receive seed money of INR 5 lakhs each, get access to an expert mentor network and the opportunity to go through an intensive accelerator programme. Three final winners subsequent to completion of the accelerator program would also be awarded INR 25 lakhs each. Besides this, two incubators supported by BIRAC have been established to specifically cater to women entrepreneurs. BIRAC through its BioNEST program on incubation has supported creation of bioincubators at Golden Jubilee Biotech Park, Chennai and the Sri Padmavathi Mahila Visvidyalayam (SPMVV), Tirupathi to provide opportunities to professionally qualified women to take up a career of remunerative self-employment via biotech enterprises.

BIRAC has supported more than 120 women entrepreneurs till date and BIRAC would continue its efforts towards promotion of women in entrepreneurial research and in creation of a favorable ecosystem for women entrepreneurs to grow and thrive.

Dr. Mohd. Aslam
Advisor DBT & MD BIRAC

BIRAC's 7th Foundation Day



The 7th Foundation Day of BIRAC was celebrated at Hotel Pullman, Aerocity on 19th-20th March, 2019. The theme for this event was 'Nurturing Innovations: Empowering India'. The event witnessed a confluence of around 300 scientists, entrepreneurs, academicians, hospitals, industry and national and international experts.

The event was inaugurated by Dr. Rajiv Kumar, Vice Chairman, NITI Aayog, Govt. of India and attended by Dr. Chris Karp, Director, Discovery & Translational Sciences, BMGF; Dr Ted Bianco, Former Director, Wellcome Trust, UK; Dr. Renu Swarup, Secretary, DBT & Chairperson, BIRAC and Dr. Mohd. Aslam, Advisor, DBT & MD, BIRAC.

BIRAC announced 15 winners of 2nd edition of BIRAC TiE WinER (*Women in Entrepreneurial Research*) Award. The Award was launched jointly by BIRAC and TiE Delhi on 29th November 2019. As the name suggests, the award is to recognize and reward women entrepreneurs in Indian biotech ecosystem. A total of 127 applications were received and after rounds of evaluation, 15 women entrepreneurs were selected. These winners would be awarded INR 5 lakhs each and will get:

- Access to expert mentor network of BIRAC & TiE
- 1-year complimentary membership of TiE Delhi NCR
- Access to TiE Startup Accelerator Programme
- Opportunity to go through a customized intensive Accelerator Programme at Golden Jubilee Biotech Park, Chennai
- Three final winners from Accelerator programme will be awarded 25 lakhs each

The winners were:

- Anuya Nisal, BioMed Innovations Pvt. Ltd.
- Renuka Karandikar, Bioprime Agrisolutions Pvt Ltd
- Vanita Prasad, REVY Environmental Solutions Pvt. Ltd.
- Sukhada Mohandas, SM Plant Production Technologies Pvt Ltd
- Sumona Karjee Mishra, Pranate Solutions Private Limited OPC
- Suphiya Khan, D-Flo Aqua Remedies & Company
- K M Vani, Swagene Private Limited
- Akitha kolloju, Heamac Healthcare Pvt. Ltd.
- Ranjana Srivastava, Nextec Lifesciences Pvt Ltd
- Neha Rastogi, Agatsa
- Dr. Swapnil Sinha, BioAptagen Laboratories Pvt. Ltd.
- Bhumika Patel, SynerSense Pvt. Ltd
- V V Satyavathi, Panacea Biotherapeutics Pvt Ltd
- Ritu Malhotra, Eventuate innovations Pvt Ltd
- Yogeeswari Perumal, Yogee's Bioinnovations Private Limited



Lamp lighting ceremony



15 WinER awardees with Dr. Ted Bianco, Dr. Mohd. Aslam, Dr. Rajiv Kumar, Dr. Renu Swarup, Dr. Chris Karp & Dr. Manish Diwan

BIRAC's 7th Foundation Day

BIRAC also felicitated the winners of BIRAC Innovation Challenge Award, SoCH, i.e., Solutions for Community Health on its 7th Foundation Day. SoCH Award was launched in association with myGov with an aim to develop viable solutions to address certain challenges in the Community Health Sector. The following two themes were identified for the SoCH award through an open discussion on My Gov Portal:

1. Platform technologies for reducing disease burden (Communicable & Non-Communicable Diseases)
2. Sanitation and Waste recycling

The winners were:

1. Bodhisattwa Sanghapriya, developing a Smartphone Based Low Cost Point of Care Device for Early Screening of Breast Cancer
2. Ajinkya Dhariya, developing an Eco-Sanitary Pad Disposer

One winner was identified from both the themes. The award includes a sum of Rs 50 lakhs to each winner and technical & business mentorship opportunity at one of BIRAC's BioNEST-incubators.

Dr Rajiv Kumar, Vice Chairman NITI Aayog, while handing the awards stated, "BIRAC has done excellent work in being able to connect and communicate with upcoming innovators. It is important to not just function as the fund provider, but to handhold and aid young innovators to develop and scale their innovations for improved health outcomes in India".



SoCH awardees with Dr. Mohd. Aslam, Dr. Rajiv Kumar, Dr. Renu Swarup, Dr Ted Bianco, Dr. Chris Karp & Dr. Manish Diwan



Dr. Ted Bianco, Dr. Mohd. Aslam, Dr. Rajiv Kumar, Dr. Renu Swarup & Dr. Chrip Karp releasing BIRAC Publications

Dr. Rajiv Kumar also launched BIRAC supported products.

Their details are as follows:

1. Dr. Pawan Mehrotra from Aarna Biomedical Products Pvt. Ltd, a Delhi based startup introducing a post-mastectomy rehabilitation kit named "Poorti" comprising of silicon breast prosthesis, covers and post mastectomy brassieres of different sizes together with patient information forms and brochures. The development of this product was supported through BIG scheme.
2. Mr. Habib Ali from BeAble Health Pvt. Ltd, a Hyderabad based startup introducing a Gamified Arm Rehabilitation Device named "ArmAble". This device is aimed towards neuro-rehabilitation of stroke victims and motor rehabilitation of victims with upper motor deficit due to conditions such as cerebral palsy, multiple sclerosis, traumatic brain injury, fracture, frozen shoulder. The development of this product was supported through BIG scheme.
3. Mr. Vishal Kataria from BonAyu life sciences pvt ltd, a Bhuvneshwar based startup introducing mouth-dissolving, **thin-film platform**. It is a better alternative to tablets, capsules, liquids syrups for the delivery of Food supplements, medicines. The development of this product was supported through BIG scheme, From BonAyulife sciences, is with us to launch this product.



Product launch of "Poorti" kit



Product launch of "ArmAble"

BIRAC's 7th Foundation Day



Product launch of a thin-film platform developed by BonAyu Life Sciences Pvt. Ltd.

- Mr. Amitha & Madhukar from Innaumation Medical Devices LLP a Bangalore based startup introducing voice prosthesis named "AUM". This is a low-cost speaking device for throat cancer patients who have lost their voice to surgical removal of voice box. The development of this product was supported through BIG scheme



Product launch of "AUM"

- Dr Priyangshu Manab Sarma from Innotech Interventions Private Limited, a Guwahati based startup introducing a process for Enhancing Vitamin D content of mushrooms through a natural organic process, **Mush D+**, that can enhance vitamin D in mushrooms to a concentration so that it can be used as a fortified food to meet the recommended daily dose of Vitamin D. The development of this product was supported through BIG scheme.



Launch of Mush D+

- Dr. Rachna from MicroGO LLP, a Hyderabad based startup introducing GOsteri on-the-go surgical sterilization solution. It disinfects via gaseous form of surgical sterilant chlorine dioxide.

It does not require continuous use of power or steam. The development of this product was supported through BIG scheme.



Product launch of Gosteri

- Dr. Devlina Das from N-Science Sustainable Solutions Pvt. Ltd, a Bhuvneshwar based startup Introducing "**PurVital Minis**" a miniaturized water treatment and fortification system. The fortification system is made out of biopolymers crosslinked to natural molecules, vitamins and antioxidants which are slowly released in water. On adding PurVital to water, the shell melts in water slowly releasing vital molecules to fortify the water. The tablet sinks below and adsorbs harmful heavy metals. The development of this product was supported through BIG scheme.



Product launch of "PurVital Minis"

- Ms. Veena Muktali from Periwinkle Technologies Pvt. Ltd, a Pune based startup Introducing **Smart Scope®** for doctors to perform routine cervical health check-up's in women. The clinical validation of the device has been done by Tata Memorial Center Mumbai and Deenanath Mangeshkar Hospital & Research Center Pune. The development of this product was supported through BIRAC-MEITY-IIPME scheme.



Product launch of Smart Scope®

BIRAC's 7th Foundation Day

9. Mr. Mohammad Gulebahar from Pro Biokem pvt Ltd is a Bhuvneshwar based startup introducing microcrystalline cellulose (**RICEL**) and silica gel (**RISIL**). These products being used as specialty chemicals and fine chemicals in diverse industrial sectors (food, pharma, petrochemicals, textiles, rubber, specialty paper, composite materials, construction materials etc.). The development of this product was supported through BIG scheme.



Product launch of RICEL and RISIL

Dr Renu Swarup, Secretary, Department of Biotechnology & Chairperson, BIRAC, speaking on the occasion said “Biotechnology holds enormous potential for impacting economic growth of the country, which has been successfully demonstrated by BIRAC over these 7 years. Today across the country we have witnessed a growing demand for new innovation and these are technologically empowering the country. I am confident that India which has taken on a very strong leadership position will be a front runner in the global ecosystem. The key to success is scalability and sustainability”.

The inaugural ceremony ended with a vote of thanks by Dr. Shirshendu Mukherjee, Mission Director, PMU-BMGF. He explained that, “We cannot just innovate for the sake of innovation. We need to understand the gaps and needs of the beneficiaries and then create innovative solutions to address those issues. Thus, ensuring an inclusive dialogue allows for successful last mile delivery of innovations from the labs to the land.”

On its 7th Foundation day, BIRAC signed a tripartite agreement with UDSC and five Indian companies namely, Metahelix Life Sciences Limited, Bengaluru; Hytech Seed India Pvt. Ltd., Hyderabad, Tierra Agrotech Private Limited, Hyderabad; Rasi Seeds (P) Ltd., Coimbatore, and Ganga Kaveri Seeds Pvt. Ltd., Hyderabad for transfer of UDSC technology on non-exclusive, and non-transferable basis for use within India. Under the agreement, know-how and the seeds of hite Rust Resistant Mustard lines namely Varuna WRR-2, Pusa bold WRR-2 and Rohini WRR-2 containing two white rust resistance conferring loci would be transferred by the developer to the companies for pre-commercial development and commercial use as such and/or to develop new varieties/hybrids by incorporating the two white rust resistance conferring loci into their respective proprietary varieties/hybrids. The commercialization of the technology would help the Indian farmers in reducing field losses on account of white rust disease in oilseed mustard.



MoU signing

An exhibition for the demonstration of Products/Technologies developed by BIRAC funded projects was also organized during the event. 20+ exhibitors showcased their products/ technologies of various themes such as Devices & Diagnostics, Industrial biotechnology (including secondary agriculture), Biopharmaceuticals and Agriculture. The stalls were visited by Dr. Renu Swarup, Secretary DBT and Dr Mohd. Aslam, MD BIRAC.



Secretary DBT interacting with exhibitors

BIRAC's 7th Foundation Day

A visit was organized for international women delegates to CIAB, NABI, BioNEST-PU at Mohali and NIFTEM, Sonapat 18th and 19th March 2019.

A high-level representation from the SAARC countries focusing need identification, roadmap creation and networking to facilitate women entrepreneurship in partnering nations was taken for a visit to Secondary Agriculture Entrepreneurship Network created by BIRAC. This knowledge exchange trip was organized on 18th and 19th March 2019. Under this, DBT Institutes NABI and CIAB along with BIRAC supported BioNEST-Panjab University were visited.

Day 2 of the BIRAC 7th Foundation Day started with a special session on women entrepreneurship **"Biotech powered Women entrepreneurs creating Regional and Global solutions: Vigyan Se Vikas"**. Session attendees were:

Dr. Renu Swarup, Secretary, DBT & Chairperson, BIRAC : Dr. Mohd Aslam, MD, BIRAC and Advisor DBT : Ms. Shidhatha Shareef, Ministry of Gender and Social Services, Maldives : Ms Pramila Acharya Rijal, President, South Asian Women Development Forum (SAWDF), Nepal : Ms Damchae Dem, Founder and CEO, Bhutan Association of Women Entrepreneurs, Vice President, SAWDF Chapter, Bhutan : Ms Nasreen Awal Mintoo, President, Women Entrepreneurs Association of Bangladesh, Vice President, SAWDF Chapter, Bangladesh : Ms Sheeza Imad, Vice President, SAWDF Chapter, Maldives : Ms Parwarish Oryakhail, Director Business Services, Afghanistan Women Chamber of Commerce & Industry, Afghanistan : Ms Shirley Jayawardene, President, Women Chamber of Commerce and Industry, Central Province, Vice President, SAWDF Chapter, Sri Lanka

Dr. Mohd. Aslam stated that DBT-BIRAC is committed towards woman empowerment through entrepreneurship. Awards and fellowship schemes for woman entrepreneurship with a special focus on north-east region will be helpful to empower woman. Establishing north-east network for providing strategic connect and nurturing eco-system for woman entrepreneurship in partnering countries is DBT-BIRAC's aspiration.

Dr. Swarup stated that woman empowerment is the common requirement of the region and entrepreneurship is the way forward to achieve this goal. She emphasized on the need of enabling policies to create and sustain nurturing ecosystem for woman empowerment. She suggested that bio-resource based start-ups will be helpful as it complements the need of the region. Dr. Swarup reiterated the DBT-BIRAC's aspiration to work closely with the participating members from the region to achieve this common goal.

A panel discussion was held on **Women Entrepreneurship: Opportunities, Challenges and Inspiration**. The panelists were Dr. Sudha Nair (Golden Jubilee Biotech Park), Dr. Sheela Bhide (WITH), Dr. Rama Devi (ALEAP), Ms. Deepanwita Chattopadhyay (IKP), Dr. Mousumi Mondal (Mallipathra Nutraceuticals), Dr. Renuka Diwan (BioPrime Agri Solutions) and was moderated by Ms. Geetika Dayal (TIE – Delhi NCR).

The panelists expressed their opinion on promoting the women entrepreneurship in India.

Key excerpts from the panel discussion are:

- Need of awareness about the government schemes for promoting women entrepreneurship.
- There is an established ecosystem with incubators and Ignition grants to provide necessary support Infrastructure.
- Need to identify newer areas with translational potential.
- More work is required for skill development of aspiring woman entrepreneurs.
- Need of exposure to entrepreneurship promoting program.



SAARC Nations' women delegation at CIAB, NABI, BioNEST-PU at Mohali and NIFTEM, Sonapat



International women delegation with Dr Rajiv Kumar & Dr Renu Swarup

BIRAC's 7th Foundation Day

- Mudra (GTMSME), ATAL innovation and other schemes from Government have been instrumental in creating enabling environment.
- More skill development program like VANDE MATRAM are must to promote entrepreneurship. Handholding will provide essential support to entrepreneurship.
- Necessary standardization and contemporary techniques are must for business.
- Acquaintance to trading laws and updated knowledge in the field is essential for economical sustenance, access to larger markets. International tie-ups are essential for modern technology transfers.
- Identify the local business capacity like phyto-medicines, nutraceuticals and potential to take traditional knowledge to market. Essential support system and ease of business is mandatory for start-ups and business development.
- Skill development is an essential component for technology-based business. Job-oriented educational programs and technology management will accelerate woman partnership in entrepreneurship.
- DBT-BIRAC's role in promoting translational research in science has been instrumental.
- There is currently 20 % partnership of women which needs to be increased.
- Start-up India and Start-up India Karnataka cell has been instrumental.
- Aspiring women entrepreneurs should take a leap towards their aim, enough support infrastructure is available to take them further.
- Identify the technologies which can be easily adopted and can be expanded from there.
- Updated technology and technology management is must. Awareness among funding schemes should be increased.

The Panel concluded that the support infrastructure and ecosystem is available in the country to support woman entrepreneurs. Awareness about funding schemes and skill development training program would be very useful for the woman entrepreneurs.

A special session, **Lab 2 Market: Pitching to Stakeholders**, on outcome-oriented interaction between Stakeholders and BIRAC supported commercialized Startups to facilitate their next level engagement was conducted on Day 2 of the Foundation Day event on 20th March 2019. During this session, 12 BIRAC grantees with projects under the category of medical devices and diagnostics presented their innovative products to the panelists.

Twelve BIRAC supported companies who presented their innovative products to the panelists:

1. Perfint Healthcare Private Limited.
2. Arno Biomedical System.
3. Windmill Health Technologies Pvt. Ltd.
4. Nanoclean global Pvt. Ltd.
5. Turtle Shell Pvt Ltd
6. Be Able Health.
7. Oncosimis Biotech Private Limited.
8. DSS Image Tech Ltd.
9. Biosense Technology Ltd
10. Innaumation.
11. Micro Go LLP.
12. Ayu Device Pvt Ltd



Panelists of Lab to Market session, namely, Dr. PKS Sarma, Mohammad Ameer, Avinash Shejale, Aman Singh, Nita Sachal, Paul Salin and Dr. Manish Diwan

BIRAC's 7th Foundation Day

Recommendations from the session:

- The devices and diagnostics products should be validated as per Medical Devices Rules, 2017.
- Technology management and supply chain should go hand in hand. One cannot stay independent of other.
- The start-ups should take clinical inputs at every stage of the product development cycle.
- The market generation and business strategy should be developed by all the Companies.
- The information on distribution network, user experiences and user interface missing in all the start-ups pitching. The start-ups should consider these factors from the very beginning.
- The companies should access the market shelf life of their technologies to stay ahead of the competitors. They should also be aware of the pipeline products of the competitors.
- The products developed by the start-ups should be cost effective for direct inclusion in the Government procurement system.

A panel discussion on Investor's Perspective was also conducted on day to. The panelists were: Padmaja Ruparel (IAN), Ashwin Raghuraman (Bharat Innovation), Chandershekhar K (Stakeboat Capital) and Pushpa Vijayaraghavan (Sathguru). The session was moderated by Srikant Sastry (Crayon).

The session envisaged getting the Investor's perspective on the following:

- Expectations which they have from Biotech Startups
- What would be an interesting investment proposition
- Are there enough Angel and VC investors to support Biotech Startup Ecosystem in the country? Gap analysis.

Key discussion points:

- Many Indian based companies who have raised funds in the market were initially funded by BIRAC.
- Handholding is needed for value creation/addition of their initial Idea. The idea should be made which are monetizable (by making a strong business plan) which would open up new markets and new revenue land.
- Ways need to be found to enter corporate market, to run with the international players and reach the global benchmark for breeding innovations.
- There is a need for a focussed-on evaluation of value proposition (since idea to venture is a multidimensional path). In this regard there is a requirement for a strong advisory board
- Emphasis may be placed on non-healthcare areas also.
- Identification of early stage Intellectual property (IP) driven start-ups.
- A thorough market analysis of the market and competition as a must for a start-up (entrepreneur) so as to understand the possible future challenges and a plan or strategy to address the same.
- It is also important to assess the exit plan and work backwards while mentoring the start-ups. (Best team to make money statement may catch the investor's eye than best team to make the product).
- Need for next level of funding (Investors (taking from 1 crore to 10 crore).

BIRAC - TIE WInER Awardees



Anuya Nisal

Dr. Anuya Nisal is the Co-Founder of BioMed Innovations. BioMed is an innovation-driven medical products company. They develop and manufacture bio absorbable implants (tissue regeneration) and wound dressing products. The flagship product of BioMed Innovations is a bone replacement material called Serioss TM. Serioss TM can be used to fill defects or voids in the bone that could be due to trauma, infection, cancer, ageing etc.

BIRAC has efficiently played the role of a catalyst in the journey of BioMed. The most important support BioMed has received from BIRAC is financial. BioMed has been the recipient of three BIRAC funding schemes/awards—BIG, SBIRI and BIPP. BIRAC has provided BioMed with an important platform to present their work and bring them immense visibility.

Dr Renuka Karandikar is the founder of Bioprime Agrisolutions Pvt Ltd. For farmers who are battling crop loss in changing climatic conditions their SNIPR technology (Smart Nanomolecules Induced Physiological Response) offers next-gen biological products based on metabolites that simulate the defense/adaptation system evolved and perfected by nature. Dr Karandikar mentioned that it would not have been possible to develop the technology, had it not been for the support from BIRAC and incubation at Venture Center, NCL Biotech Business incubator, Pune. BIRAC's BIG (Biotech Ignition Grant) is perhaps the first of its kind funding that gives grant in aid for developing proof of concept for high risk, innovative biotech-based technologies in India. They have received BIRAC BIG Grand, SEED fund & were also given opportunity through BIRACs "IGNITE" Programme.



Renuka Karandikar



Suphiya Khan

Dr Suphiya Khan is presently a Chevening Fellow at University of Oxford, Associate Professor and Director of Drumlins Water Technologies Pvt Ltd. She is a scientist/Professor by passion and Bioentrepreneur by choice to nurture women scientist to become an entrepreneur. She is the recipient of many national and International awards for contribution in science and innovation. She got TIE-BIRAC WInER award and innovation grant from BIRAC-BIG for the development of affordable Defluoridation Technology. She has attracted several crores of funding from different funding agencies viz MHRD, DST, DBT etc but BIRAC-BIG grant specially to boost her career in innovation. She has successfully run the MHRD Centre for Excellence on water and energy. Her vision is to develop technologies for affordable and safe water and create employment for women. She is following the new path nurturing women scientist to become an

entrepreneur, the path which is less travelled.

Dr K.M. Vani is founder of Swagene Private Limited. Swagene means "My Gene" is successfully in the fourth year of its growth. Swagene is a DSIR registered, DIPP certified R & D lab, and have diagnostic molecular tests for oncology, gastroenterology, infertility, cardiology, nutrition and fitness. Swagene has received prestigious awards from the industry like the CII and from academia like BITS Pilani, IIT Kharagpur and IIM Ahmedabad. BIRAC has honoured and bestowed the woman entrepreneur award to Dr Vani.



K.M. Vani



Valluri V Satyavathi

Dr. Valluri V Satyavathi is the founder of Panaceja Biotherapeutics Pvt Ltd. Dr. Satyavathi started a company Panaceja Biotherapeutics Pvt Ltd in collaboration with her colleague Dr. Kommineni with a mission to translate their power and potential of 20 years research experience into practice for the benefit of society. Dr Styavathi and team plan to use plants as factories for the production of expensive therapeutics on a rapid, scalable and economical platform. The viral replicon directs the production of large amounts of target protein in plant tissues within two months at half the cost. This technology is applicable to many other proteins like monoclonal antibodies, vaccines like anti-Ebola, and diagnostic proteins. Dr. Satyavathi is grateful to BIRAC-TIE for the woman entrepreneurial research award that helped her get incubated at BioNEST, University of Hyderabad.

BIRAC - TiE WinER Awardees



Ranjana Srivastava

Dr Ranjana Srivastava is the co-founder of Nextec Lifesciences Pvt Ltd. She started her entrepreneurial venture at the age of 62, but seeds were sown in late 70s during her postdoctoral research in USA drawing inspiration from the first Biotech company Genentech and subsequent research in CSIR-CDRI. Nextec received first grant-in aid Biotechnology Ignition Grant from BIRAC for development of a DNA based kit for early and rapid diagnosis of Tuberculosis (2015-2017). The grant gave firm foundation to the company this product became the first product of Nextec Lifesciences. The kit contains IPR protected primers and probes which amplify Mycobacterium tuberculosis specific DNA in clinical specimens and measures the amplification by fluorescence detection in an online format using an isothermal enzyme-based Recombinase Polymerase Amplification (RPA) technology. The whole reaction is completed within 20 minutes at 39oC. The next step involves clinical validation of the kit on larger no of samples before it goes for commercialization.

Bhumika Patel is a co-founder of Synersense Pvt. Ltd that works for people suffering from orthopedic and neurological disorders. Bhumika is passionate about bringing the solution through portable and wearable gait analysis device that helps to study and make clinical decisions faster and accurate to provide effective treatment strategies in Orthopedic, neurological and physical therapy.

They have developed a proprietary medical device that provides lower limb balance and walking analysis. Their device leverages gait data analysis platform which assists orthopedists, neurologists, and physiotherapists to make clinical assessment decisions.

BIRAC was instrumental in providing her with all the mentoring support and guidance. BIRAC-TiE Delhi NCR provided them opportunity at the right time where being excellent catalysis in the phase of the prototype to minimal viable product development. BIRAC supported much more beyond just fund and facilitated their product from "LAB TO LAND".



Bhumika Patel

Ms Ritu Malhotra is the Co-founder & CEO of Eventuate Innovations Pvt Ltd. She has been the Forbes India 30 Under 30 & Forbes Asia 30 Under 30 honouree, for driving positive change worldwide. Ms Malhotra is a technology enthusiast who strongly believes that solutions to the biggest problems that our society faces can be found in the implementation of simple technologies. The technology is EzySpit - World's first spit pack & world's first liquid disposal bin, we are converting waste to value

It solidifies the spittle/liquid/vomit and converts it into a material in 10 sec. Made up of bio-degradable material (food grade & Environmental Protection Agency verified) after use it gets converted into hybrid fertiliser.

Eventuate Innovations provide these hybrid fertilisers to farmers for agriculture use at a cost of 4Rs/kg. Ms Malhotra considers the support from BIRAC and the recognition from TiE BIRAC as very prestigious. She believes that getting honoured by BIRAC would elevate their company's aim to reconcile and ameliorate the relationship between humans and nature, restoring beauty and health to the ecosystems on which we depend for our survival and wellbeing.



Ritu Malhotra



Yogeeswari Perumal

Prof. Dr. Yogeeswari Perumal is the founder of Yogee's Bioinnovations Private Limited. She is presently working in the capacity of Professor, Department of Pharmacy, Birla Institute of Technology and Science, Pilani, Hyderabad Campus. She conceptualized and launched a startup as a spin-off of their drug discovery lab in the Institute which is currently incubated at the Technology Business Incubator of BITS-Pilani, Hyderabad campus.

Yogee'S Bioinnovations Private Limited currently has Indian and International Patent applications. It is evident that, early detection of cancer is the key to save lives of millions of people. To save these lives they started working on early detection methods of cancer. After years of research, they came across a set of novel biomarkers through which they can detect 6 different kind of cancer at different stages. The project named as "iCanO", is to detect cancer non-invasively saliva. They are developing a cheap, portable, efficient and user-friendly oral cancer detection device (iCanO meaning I can Know). Dr Perumal believes that BIRAC has provided her with the funds and visibility to take her innovation forward.

National workshop on regulatory compliances

This National workshop was third in the series of the six workshops sponsored by BIRAC, DBT, CDSCO and CDSA which was organized by CDSA and hosted by C-CAMP, Bangalore on 9 April, 2018. A total number of 89 participants registered and attended the workshop. The workshop saw representation from Industry, start-ups and academia. Workshop was intended to provide updates on the current regulations in the country, updates in the application process and address specific queries from the participants in the areas of Medical Devices, New Drugs and Phyto-pharmaceuticals. Three parallel sessions dedicated to each of the three areas followed the inaugural session.

The Inaugural session at Instem Auditorium started with welcome address from Dr. Sucheta Banerjee Kurundkar, Director Training, CDSA followed by brief background of the workshop by Dr. Taslimarif Saiyed, CEO, C-CAMP. This was followed by a brief presentation about BIRAC and BIRAC's efforts to sensitize the ecosystem regarding the current regulations and in mitigating the regulatory challenges by Dr. Saishyam Narayanan, Dy-Manager, BIRAC. Dr. Alka Sharma, Adviser & Scientist G, DBT addressed the gathering via skype and highlighted DBT's continuous efforts in providing training and support to stake-holders on regulatory front.

Following the inaugural session, Dr. B. Kumar, Deputy Drugs Controller General (India), CDSCO, Sub Zonal Office, Bangalore and team presented an overview of regulatory pathways highlighting the rules, regulations, forms and processes for making regulatory applications for import, test and manufacturing licenses. Shri. Amaresh Tumbagi, Drugs Controller, Drugs Control Department, Government of Karnataka, as a special invitee to this session, addressed few queries from the participants connected with the State-DCGI and extended his constant support to the vibrant bio-based start-up ecosystem.

The session on regulations in Medical devices was held in Instem auditorium itself. Dr. Malay Mitra, former Deputy DCGI, India oversaw this session. Dr. Dhananjay K. Sable Assistant Drugs Controller (India), CDSCO, in his talk gave a detailed presentation on regulatory pathway of medical devices highlighting the amendments to Medical Devices rules 2017 and new forms and processes. Dr. Reba Chhabra from NIB gave an overview of NIB along with the regulatory routes for in vitro diagnostics. Shri. Praksh Bachani, Head, Medical Equipment, BIS gave updates on the standards applicable and available with BIS for medical devices. Shri. M. G. Sathyendra, Technical Expert, QCI gave a presentation on certification for new medical devices under IC-MED.

In the post lunch session participants had the opportunity to present the regulatory challenges before the regulators for their recommendations. Some of the important discussion points were regulations of radiation and non-radiation based diagnostic devices, surgical navigation software, AI based technologies, Patient data protection etc.

The second session was focused on Regulatory pathway of new drugs and phyto-pharmaceuticals in India and clinical trials which was mainly covered by Sh. Rajshekhar, Assistant Drugs Controller (India), CDSCO, Sub zone, Bangalore and Dr. B. Kumar, Deputy Drugs Controller General (India), CDSCO, Sub Zonal Office, Bangalore. The session discussed the new rules published by Govt. of India as drugs and clinical trials rules, 2019 which is effective from March 2019. It was stated that the new rules will be applicable to all new drugs, ethics Committee and investigational new drugs intended for human use, clinical trial, and



Group Picture of all the participants at the National workshop on regulatory compliances for accelerating innovations, C-CAMP, Bangalore April 09, 2019

bioequivalence study. It was informed that the regulator will now have 90 days to decide whether to approve global clinical-trial applications and 30 days for domestic trials. Previously, such decisions could take up to six months.

These rules state that the drugs and indications approved by the regulatory authorities like Food and Drug Administration, European Medicines Agency, etc, would not require a phase III to test the efficacy and safety in India and can directly skip these to a phase IV, to be promoted to the Indian population. Compensation in cases of death and permanent disability or other injuries to a trial subject will be decided by the Drug Controller General.

For the first time, orphan drugs have been defined as a drug intended to treat conditions which affects not more than five lakh persons in India. In addition, no fee shall be chargeable in respect of application for conduct of clinical trial for orphan drugs for rare diseases in India.

Regulators informed that revised definition of phytopharmaceuticals which stated that “Phytopharmaceutical drug” means a drug of purified and standardized fraction, assessed qualitatively and quantitatively with defined minimum four bio- active or phytochemical compounds of an extract of a medicinal plant or its part, for internal or external use on human beings or animals, for diagnosis, treatment, mitigation or prevention of any disease or disorder but does not include drug administered through parenteral route.

It was informed by regulators that the new rules aim to promote clinical research in India by providing for a predictable, transparent and effective regulation for clinical trials and by ensuring faster accessibility of new drugs to the Indian population.

The third session of the workshop was Regulatory pathway of Biopharmaceuticals in India for Biosimilar, Vaccines, and Regenerative medicines and Blood products. The session was chaired by Dr. Rubina Bose Deputy Drugs Controller General (India), CDSCO, West Zone, Mumbai. The session covered updated the regulatory rules in the area and discussed the experience and regulatory challenges sharing by participants.

The workshop ended with distribution of certificates.

BioNEST Town Hall Meet

BioNEST meet was organized by BIRAC to enhance the interaction among BioNEST community. It was a focused event that was carved out to understand and create awareness about the challenges and opportunities of growing BioNEST fraternity in order to strengthen the same. 41 representatives of BioNEST community attended the event. The meeting involved, recognition of BIONEST Cluster based on geographical location.

The meet was chaired by Dr. Renu Swarup, Secretary DBT & Chairperson BIRAC and attended by BioNEST committee members- Dr. D. Yogeswara Rao, Former Adviser O/o PSA to GoI, Dr. Harkesh Kumar Mittal, Member Secretary, NSTEDB, New Delhi; Dr. Gayatri Saberwal, Faculty Scientist and Dean (Academic Affairs) at IBAB, Bangalore; Dr. Ambuj Sagar, Professor of Policy studies, IIT Delhi; Dr. Ajith Kamath, Executive Director, Mitra Biotech Pvt. Ltd, Bangalore; Dr. Dinesh Awasthi, Former Director, EDI, Ahmedabad. Dr. Manish Diwan, Head - Strategy Partnership & Entrepreneurship Development, BIRAC moderated the panel discussions. The meet was coordinated by Mr. Utkarsh Mathur, Manager - Business Development, BIRAC & Dr. Varsha Sirohi, Officer- Make in India Facilitation Cell, BIRAC.

Dr. Renu Swarup, Secretary DBT & Chairperson BIRAC addressed the queries of the BioNEST Community members in an open house Town Hall discussion. She emphasized on the need of building up of a conducive environment in Tier II/ Tier III cities. The mature incubators may take the lead to support new & emerging incubators to facilitate their learning curve. Dr. Renu Swarup also suggested the need of training & mentoring incubation managers for facilitating further incubation support to the start-ups/ entrepreneurs. She specifically mentioned that start-ups and incubation centers should not only focus on government grants, but on other model systems too should be considered that can be sustainable. Some way of harmonization among equity models, venture models and mentoring models need to be devised. 6 BioNEST Clusters were recognized connecting existing regional Incubators as follows:

Regional Cluster I:

FITT, IIT Delhi (Lead Incubator); **Panjab University**; **TIDES** Business Incubator, IIT Roorkee; **ZTM-BPD, IARI**; **Delhi Pharmaceutical Sciences & Research University**, Delhi; Clean Energy International Incubation Center (**CEIC**); **RCB**, Faridabad; **SIDBI** Innovation & Incubation Centre (**SIIC**), IIT Kanpur. **FITT** to lead incubator partner.

Regional Cluster II:

Venture Center, NCL, Pune (Lead Incubator partner), Gujarat State Biotechnology Mission (**GSBTM**); B. V. PATEL **PERD** Centre; **SRISTI** Innovation, Ahmedabad; **Ahmedabad University**; **BITS Pilani K K Birla Goa campus**; **RiiDL** (Research Innovation Incubation Design Laboratory Foundation), Somaiya Vidyavihar; Society for Innovation and Entrepreneurship (**SINE**) as co-lead partner.

Regional Cluster III:

IKP Knowledge Park, Hyderabad (Lead Incubator partner); **University of Hyderabad**; **a-IDEA, NAARM-TBI**, Rajendar Nagar, Hyderabad; **LV Prasad Eye Institute**, Hyderabad; **ICRISAT**, Hyderabad; **SBTIC**, Hyderabad; **AMTZ**

Regional Cluster IV:

C-CAMP, Bangalore (Lead Incubator partner); **IIHR**, Bangalore; Bangalore Bioinnovation Centre (**BBC**); Mazumdar Shaw Medical Foundation (**MSMF**), Bangalore; **IKP Eden**, Bangalore; **PSG-STEP**, Coimbatore

Regional Cluster V:

Women Bio Park, Chennai and HTIC, Chennai A Lead Incubator partner; IIT Madras Research Park as co- lead partner, B.S. Abdur Rahman Crescent Institute of Science & Technology; VIT-TBI, Vellore; SPMVV- Women Biotech Incubation facility (SPMVV- WBIF); Shanmugha Arts, Science, Technology & Research Academy (SASTRA) Tamil Nadu

Regional Cluster VI:

KIIT-TBI, Bhubaneswar (Lead Incubator partner), Mizoram University; Andhra Pradesh MedTech Zone (AMTZ); National Institute of Pharmaceutical Education and Research (NIPER), Guwahati; Institute of Advanced Study in Science & Technology (IASST), Guwahati

In a peer-to-peer learning & experience sharing session of emerging incubators with mature incubators, the issue of pipeline creation was raised by emerging incubators. It was suggested that now an emerging incubator should pro-actively promote and outreach the benefits of their incubators on various platforms.

BioNEST supported Agriculture Sector focused incubators shared their experiences and discussed the gaps faced by Agri-entrepreneurs. Agriculture sector is witnessing the culmination with digital space, such as precision agriculture and block chain technology. Agri-incubators also mentioned that they are facing challenges regarding regulatory issues, business models, etc. It was mentioned that a policy intervention is required in this sector.

BioNEST supported MedTech focused incubators shared their experiences about challenges & opportunities in this sector. Medical technology impact is increasing as is clearly evident from the success stories of BIRAC supported startups. The bottlenecks faced by MedTech startups were also discussed.



BioNEST Town Hall Meet at IHC, Delhi



SPED Team at BioNEST Town Hall Meet at IHC, Delhi



Dr. Renu Swarup, Secretary DBT & Chairperson BIRAC addressing BioNEST community at BioNEST Town Hall Meet at IHC, Delhi



BioNEST Community at BioNEST Town Hall Meet at IHC, Delhi

BIOTECHNOLOGY CONCLAVE 2019

Uttarakhand State Council for Science and Technology (UCOST), organized Biotechnology Conclave on 27th Feb 2019 with the theme “Pragmatic approach to foster Uttarakhand Biotech policy 2018-23 from an entrepreneurial opportunities perspective “Action framework to achieve goals”. The event included keynote address from Dr. Purnima Sharma, Managing Director, Biotech Consortium India Limited followed by several other lectures by representatives from academia, industries, Startups and entrepreneurs.

DR Bhuvnesh Shrivastava, Manager Industry Facilitation Cell of BIRAC represented BIRAC at the event and elaborated (i) BIRAC’s Role in creating Start-Up Culture through various funding opportunities (ii) How Industry Facilitation Cell at BIRAC catalyzing the transformation of Biotech startup ecosystem in country. This was followed by a technical sessions of the conclave and officials from GOUK, academicians and representatives of the industries discussed on the present scenario of biotechnology in Uttarakhand and entrepreneurial opportunities for young innovators as well as startup enterprises.



Biotechnology Conclave 2019

TiE-WInER Workshop

BIRAC in collaboration with TiE-Delhi NCR organised 6 Entrepreneurship Conclaves in various tier- 2 cities in India including Jammu, Dehradun, Jaipur, Shimla, Indore & Patna. The initiative aimed to spread awareness about entrepreneurship among students and young entrepreneurs of tier 2 cities in India. The conclaves brought together several prominent leaders from the industry and successful startup entrepreneurs to share their stories and experiences with students and young entrepreneurs. The young minds were also made aware of BIRAC’s role in bolstering the Indian start-up culture and examining two corresponding case studies, as well as exploring avenues for a smoother transition from a university environment to the real world. The speakers addressed various important factors in the start-up creation process – from ideation to venture creation and funding – and an introduction to legal compliances for start-ups, among other things, during the sessions.

Approx 400 Students and young entrepreneurs from various educational institutions benefitted from panel discussions on pertinent topics, interesting case studies and introduction to various aspects of entrepreneurship.

With the Entrepreneurship Conclaves planned across cities, BIRAC provided a knowledge-sharing platform to young entrepreneurs to be inspired and empowered, by listening to and learning from the experiences of the masters in the entrepreneurial domain.



TiE-WInER Workshops

Visit organized for international women delegates to CIAB, NABI, BioNEST-PU at Mohali and NIFTEM, Sonapat

A high-level representation from the SAARC countries focusing need identification, roadmap creation and networking to facilitate Women Entrepreneurship in partnering nations was taken for a visit to Secondary Agriculture Entrepreneurship Network created by BIRAC. This knowledge exchange trip was organized on 18th and 19th March 2019. Under this, DBT Institutes NABI and CIAB along with BIRAC supported Bio NEST- Panjab University were visited. The delegation interacted with the incubate companies at BioNEST- Panjab University and shared their experiences on entrepreneurial ecosystem in India. Visit to NIFTEM was also organized with a view to showcase initiatives and technologies pertaining to food technology. The team comprised of women representatives from Nepal, Bhutan, Maldives, Afghanistan, Bangladesh and Srilanka. The team from Association of Lady Entrepreneurs of India (ALEAP) was led by Dr. Sheila Bhide, IAS (Retd.). ALEAP was established with an aim to bring Women Entrepreneurs trying to help each other. From the past 20 years ALEAP is striving to make the state of Andhra Pradesh empowered through promoting women entrepreneurship.

The delegation was quite impressed with the kind of work BIRAC is doing in promoting start-ups and Institutions. Along with the delegates Dr. Prachi Agarwal, Senior Manager and Dr. Prachi Kaushik, Deputy Manager went as the BIRAC secretariat.

The tour culminated with the focused discussion with Dr. Renu Swarup, DBT Secretary, during BIRAC's 7th Foundation Day. The partner countries showed interest in extending their association with BIRAC for technology transfer and support from the Indian institutions for training their women entrepreneurs. Some of the pictures clicked during the visit are as follows:



CIAB, Mohali



CIAB, Mohali



NABI, Mohali



NABI, Mohali



NIFTEM, Sonapat

Glimpses of the Visit to CIAB, NABI & NIFTEM

Action Points:

- Training of Entrepreneurs, Representatives from the anchor institutes of partnering nations.
- Future MoU collaboration can evolve through BIRAC between Indian institutes and participating nations.
- BIRAC can facilitate technology transfer and connect the entrepreneurs, stakeholders to Indian ecosystem.



Biotechnology Industry Research Assistance Council

(A Govt. of India Enterprise)

Invites proposals
for



Establishment of
SPARSH CENTRES
for
Social Innovation Immersion

SPARSH is the social innovation program of BIRAC aimed towards finding innovative solutions to society's most pressing social problems through biotechnological interventions.

SIIP (Social Innovation Immersion Program) is one of the components of SPARSH scheme under which a pool of "Social Innovators (SIIP Fellows)" is being created who could identify and address the social problems by biotechnological means. The program shall be implemented through SPARSH Centres.

Under the present call, proposals are invited from interested agencies for establishment of SPARSH Centres in following thematic areas:



Maternal and Child Health



Ageing and Health



Food and Nutrition



Waste to Value



Combating environmental pollution



Agri-Tech (including reducing post-harvest losses)

How to apply?

Proposals are required to be submitted **online only**. For RFP document and other details regarding submission of proposals, please log on to BIRAC **website** (www.birac.nic.in)

For Queries, Please Contact:

GM & Head (Investment), E- mail: investment.birac@gov.in
Sr. Manager (Investment), E- mail : sgandhi.birac@nic.in

LAST DATE FOR SUBMISSION OF PROPOSALS

15th August, 2019



HR & Admin Activities

Women's Day 2019

International Women's Day is observed on March 8th every year celebrating the social, economic, cultural and political achievements of women. BIRAC also celebrated Women's Day where Dr. Renu Swarup, Secretary DBT & Chairperson BIRAC and Dr. Mohd. Aslam, Advisor (Scientist 'G') DBT & MD BIRAC addressed employees.

BIRAC celebrated exceptional work done by Indian women by remembering how Indian Women have broken gender barriers and worked hard for their rights and made progress in the field of politics, arts, science, law etc.

Employees of BIRAC also actively participated in the event by singing inspirational songs and Poems.

Swachhata Pakhwada 2019

Swachhata Pakhwada was observed in BIRAC from 1st May to 15th May 2019. Swachhata pledge was administered by MD – BIRAC & all employees. All employees have taken a pledge to devote 100 hours in a year as 'Shramadaan' to ensure cleanliness of the work area & surroundings. E-banners on awareness about cleanliness and the observance of Swachhata Pakhwada were displayed at the Reception area. A cleanliness activity to clean the area near by electrical installations, stairs and glass doors was organized at the office premises.

During the programme, all the Employees of BIRAC performed "Shramdaan" and carried out a cleanliness drive by cleaning office corridor.

A slogan writing competition was also organised on the theme "Swachh Bharat" and all employees actively participated and contributed towards the mission.

Training & Development

Cyber security has been a major topic of discussion throughout the year, with no signs of cyber-attacks slowing down. Several organizations have lost sensitive data and money to cyber-attacks. Even with robust security infrastructure, all it takes for a successful attack against a Company is a careless action taken by an employee. In-house training on Cyber Security has been organised on 29th March 2019 by All India Management Association (AIMA) to provide learners with a baseline understanding of common cyber security threats, vulnerabilities and risks.

Various domain specific individual trainings are imparted to the employees which help them perform their duties with their maximum potential and work towards the development of the organisation..



Glimpses of various HR & Admin activities

Grand Challenges India



Grand Challenges Explorations: Data Science Approaches to Improve Maternal and Child Health in India, Brazil and Africa

Kick off meeting 14-16th March 2019

The first ever global convening was a three-day event of the Knowledge Integration Grand Challenges (Ki GC) partners: Data Science Approaches to Improve Maternal and Child Health in India, Brazil, and Africa was held in New Delhi India from 14-16th March 2019.

The goal of the meeting was to introduce the Grand Challenges (GC) and Knowledge Integration (Ki) teams that initiated the MNCH data-focused Grand Challenge programs, orient ki GC grantees towards successful delivery on their grant proposals – in particular, begin a

dialogue with key stakeholders in India and Brazil, who will be the ultimate consumers of the data products.

The agenda also worked to set the vision and provide tools and training to grow a community of public health data scientists from India, Brazil and Africa and also provide a day of ClinEpiDB HBGD data resource training and office hours to the grantees.

The meeting was attended by grantees and stakeholders from GC Brazil, HBGDKi-India Consortia Partners, GC Africa stakeholders and Grand Challenges India, Brazil, and Africa teams as well as the ki team from the Bill & Melinda Gates Foundation.

Day 1: 14th March 2019 (Thursday)

The workshops' inaugural address was by Dr. Mohd. Aslam, Managing Director BIRAC and Adviser, Department of Biotechnology, Ministry of Science and technology, Govt. of India on 14th March 2019. Dr. M. K. Bhan, Professor, IIT-Delhi, delivered insights and explained why data analytics innovation in public health is needed for India emphasizing that scientifically derived evidence is the most powerful instrument to design impactful programs and make enlightened policies. He briefed how the analysis and interpretation of the findings from the ki platform will help health planners in India for necessary informed health policy and programming at the state and district levels, which are prerequisites to improve population health based on local trends. He reiterated that the public health researchers and policy makers should discuss opportunities for multi sectoral collaborations and the need for building capacities for leveraging data analysis.

Dr. Balram Bhargava, Secretary, Dept. of Health Research (DHR) and Director General, Indian Council of Medical Research (DG, ICMR) provided key insights highlighting the importance of data and its analysis for India. Dr. Renu Swarup, Secretary, Dept. of Biotechnology (DBT) & Chairperson, BIRAC welcomed the members in attendance and spoke about importance of data collection and analysis through the HBGDKi platform and its important link with the KnIT platform and that collaboration is way forward to be able to accomplish much more.

The first Panel on Data to Decisions to Discovery discussed how data and data science could help in decision making in public health in India, Brazil and Africa. The panelists discussed the collection and standardization of many disparate data sets so that they could be explored together. Then, interdisciplinary teams could make new discoveries by examining this data in novel ways. Finally, these discoveries would allow researchers and practitioners to make more strategic decisions about interventions in the field and directions for further study, feeding the virtuous cycle by generating more data.

David Roos, introduced Clinical Epidemiology Database Resources, ClinEpiDB resources which is an open-access online resource enabling investigators to maximize the utility and reach of their data and to make optimal use of information released by others.

Dr. Maurício Barreto, Executive Director, CIDACS, The Center for Data Integration and Knowledge for Health, Brazil shared the experiences of Brazil in the field of big data and its contributions to health policy reform.



Data Science Approaches to improve maternal and Child Health in India, Brazil and Africa

Panel 2 discussed the data acquisition models by providing data management solutions to model-based algorithm development and meta-analysis through a full suite of algorithms for visual predictive checks with the flexibility to conduct all phase's relevant analysis with an intuitive tool.

Day 2: 15th March 2019 (Friday)

Dr. Suneeta Krishnan, Country Lead, Measurement, Learning and Evaluation, Gates Foundation briefed about the importance of using clinical, survey and administrative data for developing public health policies and shaping national health agendas. She stressed the importance of using research and administrative data analysis to identify policy priorities and suggest targeted use of available resources for improving health outcomes and the need for cross-functional collaboration. GC India's 10 grantees presented their projects goals, work plans and methodologies. Vishak Subramoney gave a brief overview on the compiled Indian data and briefly described the mechanism to access it.

Mark R. Cullen, Director, Center for Population Health Sciences, Stanford University highlighted the focus on social and environmental determinants of health; the physical and social aspects of work that contribute to disparities in health, function and mortality, and the development of new observational methods to study them. He pitched India as the AI/ML garage for the emerging and developing economies.

Day 3: 16th March 2019 (Saturday)

The ClinEpiDB Training introductions, Background, ClinEpiDB Overview, OpenData Rationale & Experience were briefed by Thea Norman, David Roos and Brianna Lindsay. There was preliminary Introductory Demonstration followed by the Hands-On Introduction. The interactive session I explored the GEMS enteric disease datasets, Interactive session II explored South Asian and global MAL-ED datasets and Interactive session III explored the Global malaria datasets where participants were provided the access to tools and were introduced to its working, and could follow it on their own laptops for a hands-on experience allowed the ki community an opportunity to understand the tools as well as address questions that they may have.

In the concluding discussion, Data access & release policies, Add'l datasets, Synergistic platforms, Future opportunities were discussed.

Thea Norman, Bill & Melinda Gates Foundation, summarized the three day convening with learnings, reflections, gratitude's and the next steps for future engagements for meaningful partnerships. Dr. Shirshendu Mukherjee, PMU-BIRAC concluded the convening by thanking all the participants and organizers.

GRAND CHALLENGES INDIA: IMMUNIZATION DATA: INNOVATING FOR ACTION (GCI-IDIA)

The goal of the Kick off meeting was to introduce the relevant Ministries, State Immunization Officers, mentors' teams to facilitate conversations between the stakeholders, mentors and the grantees for effective implementation of the program to achieve the desired results:

The expected outcomes of the meeting were that grantees would get clarity on immunization programme and data, State programme leads would get clarity on the proposed project's scope and implications thereof and the setting of collaboration hygiene including data access, security and confidentiality to facilitate on-ground implementation.

The participants included stakeholders from the MoHFW, ICMR, DBT, Technical Advisory Group, State Immunization Officers / Representatives, the associated project Mentors, the IDIA Grantees with respective teams and the PMU-BIRAC team with the BMGF ICO team.

The meeting began with an Inaugural ceremony with the traditional lighting of the lamp and welcome addresses from the hosts and the dignitaries. Dr. Shirshendu Mukherjee, MD-PMU BIRAC welcomed all and provided a brief background of the IDIA program's genesis and also stated that the uniqueness of this program is also in that there is technical partnership and ownership from the MoHFW and ICMR. This was followed by an address from Dr. Arindam Ray, India Country Lead, New Vaccines and Immunization Systems, BMGF. Dr. Ray opined that the Grand Challenges India (GCI) mechanism has been effective in fostering innovations and coming up with high impact solutions that can be applied at scale for impact. He further added that the IDIA programme is a welcome opportunity for people to think of out of the box solutions for accomplishing India's immunization targets.

Dr. Liz Clyma, India Country Director, Health, BMGF, spoke about the importance of innovation and partnerships to achieve developmental targets. She was also of the opinion that the free flow of information and ideas is instrumental in promoting breakthroughs and allows for out of box thinking with regard to immunization in particular and accomplishing the global SDGs in general.

Dr. Pradeep Haldar, Deputy Commissioner, Immunization, MoHFW also addressed the audience and elucidated that on looking at the progress made under the immunization programme in India; there is a perceptible change in the immunization landscape, a marked improvement in healthcare delivery and a much-needed increase in the basket of vaccines available. He went on to add that currently a lot of immunization data is being collected, however it all exists in forms of different data sets in different places and accessible to different people. Dr. Haldar said, “the question is how can this data be harmonised and made easy to understand for the layman. The bottom line is that how can this data actually aid in improving coverage and maintaining stocks?”

The inaugural ended with an address from Dr. Renu Swarup, Secretary, Department of Biotechnology and Chairperson, BIRAC. Dr. Swarup opined that IDIA would be truly transformational under the GCI gamut of work as it exhibits the power of collaboration, where each stakeholder is taking ownership of the cause. She said that IDIA was an example of how connecting the dots is determining the fate of an initiative, i.e. the technical partnership of ICMR and MoHFW has led to propelling IDIA in the desired direction where on ground issues of immunization coverage are being targeted through innovations.

Dr. Swarup also stressed upon the importance of partnership with state governments and actors who are imperative to the successful roll out of any scheme in the country. She added that it was a great opportunity for the grantees to collaborate with state officials and work on the large expanse of existing immunization data sets. Collaboration with states would also allow for real time feedback and the tailoring of innovations to meet the demands of the ‘land’. Dr. Swarup ended by saying that it is time we use the power of Indian ingenuity to strengthen our public health systems and ensure health for all.



The participants of the GCI-IDIA Kick off meeting



Technical sessions at the GCI-IDIA Kick off meeting

This first technical session began with both the Co-Chairs of the TAG of GCI -IDIA who congratulated the grantees for their ideas and brought forward the importance of immunizations and data in improving the health of the nation. Dr. Pauline Harvey, Team Leader, NPSP, WHO of the achievements of the immunization sector in the country, with the Ministry and the partners who have been fortunate to assist the ministry with this important work. Dr. Sanjay Kapur, Managing Director, JSI, spoke of the advantages of working in a grand challenges model which is that grantees are encouraged to think out of the box, and be experimental and learn from success and failure which will challenge the grantees but it is a very satisfying experience. He deemed it imperative that all programme decisions around coverage, stocks and schedule adherences now move to becoming data driven and evidence based. Dr. Riya, Immunization Specialist, UNICEF highlighted the importance of partnerships was also brought to the fore by outlining UNICEF's work in cold chain and management, training front line workers and health system strengthening through ANMOL, CSO engagement, among many others.

Lastly the session ended with presentations about some of the major innovations in the field of immunization and their impact. The first two presentations looked at the immunization landscape from a coverage perspective, and the last looked at the supply chain logistics perspective which were on the ANMOL/RCH, immunization surveys and eVIN. Dr. Mukherjee and Dr. Arindam Ray concluded the event by stating that BIRAC would want to hand hold the grantees and help them achieve their desired milestones rather than just providing funding from a distance. He



Technical sessions at the GCI-IDIA Kick off meeting

also mentioned that a network of the innovators and state officials would be developed that would foster knowledge sharing, open communication and cross learning between all IDIA stakeholders.

Feedback from the grantees and stakeholders suggested that the meeting and the agenda was very welcome and had allowed greater clarity and had also inspired a lot of the attendees.

Grand Challenges Learning & Evaluation Meeting

The Grand Challenges Learning and Evaluation, 2019 (GCL & E) Meeting provides an opportunity for Grand Challenges program leads from around the world to come together to further develop 'public goods' (the systems and tools that are put in place to help one another and leverage combined resources) and explore the future of Grand Challenges as part of the broader innovation ecosystem. This years Learning & Evaluation Meeting was held from 17-19 March, 2019 in New Delhi.

The inaugural session began with an auspicious lighting of the lamp to mark the beginning of the two-day Grand Challenges Learning and Evaluation Meeting 2019.

Dr Shirshendu Mukherjee, Mission Director of the Programme Management Unit of Grand Challenges India, Biotechnology Industry Research Assistance Council (BIRAC), extended a warm welcome to all. This was followed by brief comments by Ms. Kedest Tesfagiorgis, Deputy Director, Discovery & Translational Sciences, Bill & Melinda Gates Foundation, who observed that L & E was truly a working meeting where partners come together to learn from each-other, support each-other and leverage each other's experiences.

The inaugural also included a riveting address from Professor M K Bhan, where he stated: "In the end all of us are trying to catalyze, to engage, to support, to inspire people who have talent, organizations that have talent and institutions that have talent to contribute to developing innovations for targeting challenges. GCI is a good format that is conducive to young people- As today's youth, give them a cause and they are inspired. That is what GC does. GC has brought together people to contribute to science and innovation and is hugely energizing. This energy is very important in difficult situations, where realism can kill all efforts, GC plays a huge role in energizing the efforts."

Dr. Chris Karp, Director, Global Health Discovery & Translational Sciences at Bill & Melinda Gates Foundation added that GC has in some ways changed the world. It has brought the problems of the world's poorest to the forefront and played a great role in making scientists focus on these to create inter-disciplinary partnerships. The challenge that this meeting needs to focus on is how the innovation agenda can change with this changing world and how GC can play a continued role in driving global impact.

Lastly, Dr. Renu Swarup, Secretary, Department of Biotechnology Ministry of Science & Technology, Government of India and Chairperson, BIRAC began with thanking the participants for being here to help build a global community that focuses on targeting global challenges. She further elucidated that learning will be a continuous process as with each new challenge there is new learning, and with each new partner there is new learning. So, the best part of the L & E format is that it allows for such continuous learning, allows for nimbleness of operations and flexibility- attributes that are key to collaboration. Lastly, Dr. Swarup ended with the hope of taking this learning and evaluation exercise to many other groups within India to further the growth and development agenda of the country.

A brief introduction of the program portfolio of Grand Challenges India was followed the journey of a grand challenges program. This session was divided into 4 sections, each chronological in the order that it occurs during the life of an open grand challenge.

The first section, "Defining the Challenge- Data Science Challenge" looked at the recent example of the ki Data challenge that had been launched in Brazil and India and had recently been announced in Africa. The discussion then looked to the panel members to talk about how they developed the challenge in discussions with their respective country partners and what the challenges had been in defining the challenge. Some of the discussions revolved around the data requirements, especially for the Indian grantees, where a resource such as the Brazilian 100 million cohort data is not available.

The second section looked at launching and publicizing challenges, and three partners, Canada, Africa and India walked the audience through how they each undertake publicizing of various challenges that they have run so far.

The third session looked at Creating the Award Portfolio – Coordinating Reviews Across Partners and Programs shared the experiences different organisations of how they manage their portfolio of grants with various agencies, exploring successes and failures in translating and fostering innovation for impact.

The final segment “Measuring Success – Surveying 40,000 Applicants briefed about the evolving Grand Challenges Explorations programs by sharing series of experiments that have been tried and found most effective for identifying success for social impact.

This was followed by a session on Managing Projects- Mentorship to Catalyze Collaboration and Impact, where program representatives shared how they managed their portfolio of grants, exploring successes and failures in translating innovation to action and was followed by a facilitated discussion of best practices that program management units have found in managing their grants.

The second parallel session ‘Measuring and evaluating impact’ looked to highlight the ways to measure short-term and long-term impact of the experiments that have been tried by the various programs. There is a need to understand what experiments have been tried and which are most effective for identifying success among Grand Challenges programs and projects, while they are ongoing and afterwards- all to evolve the programs and make them more effective at fostering innovation for impact.



Inaugural session of the GC L&E Meeting 2019

The second day of the Grand Challenges Learning and Evaluation Meeting began with an address by Ms. Kedest Tesfagiorgis. She spoke about the Annual GC meetings and milestones accomplished till date under the GC umbrella. Started in 2005 with a small set of Gates Foundation sponsored challenges, the GC initiative has grown in terms of partnerships, funding, innovations and the number of people associated with it.

The day progressed into breakout sessions. These included sessions on “Communications & advocacy – focus on Africa This session discussed

the ways to create a joint communications and advocacy strategy for the Grand Challenges Meeting in Addis Ababa this year in order to make the case to African governments to fund R&D work. the session discussed several case studies from GC Africa, South Africa and Canada. the session made the observation that these partners work to fund local innovators who were working in local priorities funded by national governments and supported by Global networks. The session also looked to the ways to bring each of their success stories under common themes such as public-private partnerships, agricultural innovation, wearables and Malaria

The session focused on how gender is becoming extremely important and how it affects the work environment, especially within the paradigm of scientific innovations. The session focused on three major topics of discussion –Social Norms, entrepreneurship, and mainstreaming gender from three organizations.

Post the addresses from the three speakers, the session was broken into three smaller group discussions with each speaker spearheading the discussion on respective tables.

Shared approaches to grand challenges implementation tactics.

This interesting session was intended for Global Grand Challenges (GC) Network Partners, actively pursuing GC programs and calls for proposals. The objective of the was to bring together GC Network partners, to share their approaches and partnerships. The meeting allowed the participants to introspect and reflect, as to how these strategic partnerships or collaborations are important and beneficial.

The closing plenary for the Grand Challenges Learning and Evaluation Meeting, as all partners agreed to work with a renewed focus to develop and foster innovative solution to the challenges faced by the globe in areas of health, sanitation, climate change, maternal and child mortality and conflict resolution, to name a few. The room reverberated with cautious optimism as participants from various countries shared best practices and plausible opportunities for resolution of the GCs. The closing discussion witnessed Dr. Karlee Silver, Co-Chief Executive Officer, Grand Challenges Canada (GCC) announce that the next L & E meeting shall be held in Ottawa, Canada in May. The two-day meeting ended with closing remarks by Dr. Shirshendu Mukherjee, who called the meeting to a close and took the opportunity to thank all associated with making the Grand Challenges Learning and Evaluation Meeting a resounding success.



GCL & E Meeting



Biotechnology Industry Research Assistance Council

(A Govt. of India Enterprise)

INVITES PROPOSALS

for

SUPPORTING AFFORDABLE PRODUCT/ TECHNOLOGY DEVELOPMENT

(Discovery to pre-Commercialization)

under



Promoting Academic Research Conversion to Enterprise (PACE)

Supports academia to develop technologies/products (up to PoC stage) and their subsequent validation towards commercialization through:

Academic Innovation Research (AIR) and **Contract Research Scheme (CRS)**

Small Business Innovation Research Initiative (SBIRI)

Supports industry for development of proof-of-concept and early stage validation of products/ technologies

Biotechnology Industry Partnership Programme (BIPP)

Supports industry for high risk, transformational technology/product development from early to late stage validation leading to product commercialization

WHO CAN APPLY?

For PACE

Academic institute, University, NGO, or Research Foundation, registered/accredited by a government body is eligible to apply either alone, or in partnership with academia or industry (*while involvement of industry is optional for AIR scheme, it is mandatory to have an industrial partner for CRS*)

For SBIRI & BIPP

A single or consortia of Indian company (ies) registered under "**The Indian Companies Act 2013**" with minimum 51% Indian ownership, and in-house R&D unit, are eligible to apply either alone, or in collaboration with another Company/ Institute/University

HOW TO APPLY?

Proposals for all the Schemes are required to be submitted **online only**. For scheme details and submission of proposal, please log on to BIRAC website (www.birac.nic.in)

Last date for submission of proposals
31st July, 2019

For queries, please contact: **Head - Investment, BIRAC. Email: investment.birac@gov.in**

VINNOVA

Incubator connect program, Stockholm, Sweden



BIRAC as a part of its effort to connect global ecosystem, entered into a strategic partnership with Sweden through Vinnova, a Swedish funding agency like BIRAC & DBT in India. Under this MoU, BIRAC and Vinnova would facilitate networking of Biotech Incubators, for Start-ups to gain an access to test beds, KOLs, experts, markets from the two countries.

The partnership would also involve match making of suitable start-ups to enable co-creation, co-development and scale. Incubators from the two countries would play a key role to help develop and expand the ecosystems. They are expected to share and learn the best practices, local challenges and guide the start-ups appropriately for the new opportunities. This visit gave incubator representatives a first-hand exposure to the Swedish ecosystem to identify actionable follow through and outcome-oriented activities. The Incubator connect program at (Stockholm) Sweden was from 6th May to 9th May 2019. BIRAC was represented by Mr. Utkarsh Mathur, Manager- Business Development, and representative from 6 incubators i.e. Dr. Premnath Venugopalan (Venture Center, Pune), Ms. Deepanwita Chattopadhyay (IKP Knowledge Park, Hyderabad), Dr. Taslimarif Saiyed (C-CAMP, Bangalore), Dr. Mrutyunjay Suar (KIIT-TBI, Bhubneshwar), Ms. Poyini Bhatt (SINE, IIT Bombay) and Dr Ganesh Das (Clean Energy International Incubation Centre, New Delhi).

On 6th & 7th May 2019, the delegation first visited the Uppsala University and the Innovation Centre there. Uppsala University is a large university around 70 km from Sweden. They have an incubator, which is working on various themes/areas supported by VINNOVA, Swedish Energy Agency, government agencies & also have partnerships with some good private organizations. They are ranked 4th Business Incubator in the World. Introductory presentations were made by the University representatives & 3 Start-ups. Incubator offers business development support, knowledge, networks to innovative start-ups and growth companies. The focus is to accelerate the time taken by the companies to nudge them to market & reduce the early risk. Among the 3 start-ups one was on Healthcare technology & other two on clean energy (one on solar films and the other on collecting water from atmosphere.)

Another Incubator in Sweden called Sting Incubator was also visited. They turn out 20-25 international growth company every year out of 40 every year. They take stake of 2% for accelerating a company and up to 6% for incubating a company. The period is for 18 months. They have an annual budget of 2.5 million euro every year.

On 8th & 9th May 2019, the delegation visited AstraZeneca Bio Venture in Gothenburg, Sweden. The Bio- Hub provides emerging biotech/MedTech companies along with academic groups a unique opportunity to co-locate and interact with big pharma, & advance research for the life sciences. Companies who all associate with bio venture become part of a unique, open and collaborative scientific community-with the same access to the facilities as AstraZeneca staff. The objective of setting hub is to be combining different value chains, ideas and perspectives in the same place, with vision is to generate a climate of open innovation that will help grow and nurture the Scandinavian life science ecosystem.

Meetings with other stakeholders of Sweden ecosystem such as Ministry of Enterprise and Innovation; Start-up Director, Government of Sweden, Swedish Energy Agency, Karolinska Institute (KI)- Innovation AB, Vinnova were also conducted and a visit to KTH Royal Technical University was made.

Incubator connect program gave exposure to BIRAC supported Incubators to meet and interact with their founders and other stakeholders of Incubation community from various parts of Sweden. Connect Program provided the opportunities for closer interaction between the two countries and look for opportunities like Exchange for Swedish & Indian Start-ups & facilitated by tech clusters, soft landing of start-ups, bilateral Innovation, exploring new areas & domains for partnerships which could possibly lead to synergies for speedy growth and learning from peer to peer ecosystem.



Incubator Connect Programme, Stockholm Sweden

National Biopharma Mission



Opening of a new 'Centre for Advance Protein Studies (CAPS)' facility at Syngene International, Bengaluru (5th April 2019)

Regulatory approval of complex biological molecules involves extensive and advanced analytics including assessment of physiochemical characteristics, efficacy, immunogenicity (antidrug antibody), contamination, strength and more. All these tests need to be performed in a GLP compliant analytical facility. Availability of appropriate certified facilities at affordable costs is a challenge that the start-ups, SMEs/MMEs and the academia in India often face.

On 5th April 2019, a new 'Centre for Advance Protein Studies (CAPS)' facility was opened by the hands of Dr Renu Swarup (Secretary DBT, Govt. of India) and Dr. Kiran Mazumdar Shaw (MD, Syngene International Ltd.) at Syngene International campus in Bengaluru. This Centre has been set up in collaboration with the Biotechnology Industry Research Assistance Council (BIRAC), being funded under the National Biopharma Mission of BIRAC. It will host a state-of-the-art GLP accredited analytical laboratory. CAPS will be a big boost in advancing biopharma research and product development in India. Spread across an area of 2000 sq. ft, the Centre will run under the 'Innovate in India (i3) Empowering biotech entrepreneurs & accelerating inclusive innovation" also referred to as National Biopharma Mission, announced by the Government of India.



Dr Renu Swarup (Secretary DBT) and Dr Kiran Mazumdar Shaw (MD, Syngene) at the opening of CAPS facility at Syngene International, Bengaluru. Also seen officials from DBT, BIRAC and Syngene.

Towards Strengthening the Clinical Research Capabilities in India and building Clinical Trial Networks: Discussion forum, BIRAC office, New Delhi (9th April 2019)

The National Biopharma Mission Program (NBM) was established to strengthen the emerging biopharmaceutical enterprise in India through focusing on enhancing product development capabilities in vaccines, biotherapeutics (including monoclonal antibodies) and medical devices to a level that will be globally competitive over the next decade. Towards this, a key area is to strengthen clinical research capabilities in the country for all the three types of products. For this purpose, a brainstorming session was held at BIRAC office on the 9th of April 2019, that had representation from academia, industry, tertiary hospitals and contract research organizations from India and abroad. The experts from India and across the globe deliberated on India's current needs and gaps in clinical research and the feasibility of the various strategies being proposed. The challenges faced by hospitals, academicians and researchers, and the CRO's were discussed in depth during the meeting. Dr Ann Ginsberg gave insights into the global perspectives based on tuberculosis clinical trial network and the NIH perspective on establishing clinical trial network in India was deliberated upon by Dr Barney Graham. Recommendations were made on finding solutions to the challenges in hospital & community-based trials, industry & academia led trials, treatment & prevention trials. This brainstorming session was fructiferous in identifying and addressing a number of problems pertaining to establishment of clinical trial networks in India and coming up with useful suggestions on addressing these problems.



Discussion forum with the theme "Towards Strengthening the Clinical Research Capabilities in India and building Clinical Trial Networks" held on 9th April 2019 at BIRAC office

DBT-NIAID NIH Vaccine Adjuvant Science Collaborative Meeting, National Institute of Immunology, New Delhi (10th-11th April 2019)

The Department of Biotechnology (DBT) and the National Institute of Allergy and Infectious Diseases (NIAID) jointly run a bilateral program known as the Indo-US Vaccine Action Programme (VAP). Major collaborative R&D programmes pertaining to vaccine development against communicable diseases is implemented through VAP via its Joint Working Group (JWG). Adjuvants were identified as one of the priority areas in the previous meetings of the JWG. Based on those inputs a meeting on capacity building in adjuvants-based R&D in India was proposed to be organized jointly with NIH. The DBT-NIAID Vaccine Adjuvant Science Collaborative Workshop was held under the National Biopharma Mission (NBM) at the National Institute of Immunology, New Delhi on 10-11 April, 2019. The Division of Allergy, Immunology and Transplantation (DAIT) which functions within NIAID provided consultation in this meeting on different aspects of Adjuvant Discovery Program, Adjuvant Development Program and Molecular Mechanisms of Combination Adjuvants Program. Discovery of vaccines through preclinical development, humoral protection, innate immunity for new generation vaccine development and PAMP (pathogen associated molecular patterns) based novel adjuvants were some of the areas that were deliberated upon in the meeting. An overview of the efforts made by DBT in the area of vaccine development were presented by Dr Alka Sharma (Adviser, DBT) while an insight into the National Biopharma Mission was given by Dr Kavita Singh (Mission Director, NBM, BIRAC). Dr. Wolfgang Leitner, Chief of the Innate Immunity Section NIAID, DAIT also gave an overview of NIAID's Adjuvant Science Programs. With active participation from academicians, industry participants and experts from India and abroad, the meeting aimed at identifying priority areas in the adjuvant discovery and development. Further discussions were done to generate a roadmap to achieve these goals through collaborative programs with NIH for advancement of the adjuvant program in India.



Glimpses from the DBT-NIAID NIH Vaccine Adjuvant Science Collaborative Meeting, National Institute of Immunology, New Delhi

Incubator connect program, Stockholm, Sweden (6th May- 9th May 2019)

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Make in India

MEDinISRAEL 2019



MEDinISRAEL 2019 was organized from 25-28th March, 2019 in Tel Aviv, Israel for the Israeli and global (Digital) health ecosystem to come together and leverage each other's experience. Dr. Varsha Sirohi, Officer- Make in India Facilitation Cell at BIRAC represented BIRAC during the event. 3 BIRAC supported MedTech startups were nominated to understand the Israeli Startup Ecosystem and for collaborating with Angel Investors & Venture Capitalists.

In the course of four inspiring days, various national & international collaborations & present developments from new companies were facilitated, diverse investment opportunities were witnessed and best practices in medicine, health & care delivery were discussed. In addition, site visits to some of Israel's leading hospitals and disruptor hubs were organized for the Indian Delegation which was a wonderful opportunity to take a close look at cutting edge innovative technologies and solutions.

Dr. Varsha Sirohi visited the Startup Nation Central (SNC), an organization stationed in Tel Aviv. SNC is an independent non-profit organization that builds bridges for Israeli innovation. SNC facilitates the connections between business, government, and NGO leaders from around the world with Israeli innovation, offering Israeli innovators access to high-potential and previously inaccessible markets, through highly customized business engagements.



Indian Delegation at MEDinISRAEL 2019

Latitude59, Tallinn, Estonia

Latitude59 is the largest annual international start up event in Estonia's which brings together potential investors & start-ups for pitching, wooing and matchmaking activities. Latitude59 is an opportunity to demonstrate the product in front of the whole tech community in Estonia and many other relevant visitors including investors, media, potential customers and attending techies to get their direct feedback and support.

BIRAC along with 05 Startups participated in Latitude59, at Tallinn, Estonia on 15-17th May. BIRAC' delegation to the event was represented by Dr Manish Diwan, Head, Strategic Partnership & Entrepreneurship Development, along with representatives from following 05 Startups:

1. Aristogene Biosciences Pvt. Ltd.
2. J C orthoheal Pvt. Ltd.
3. Turtle Shell Pvt. Ltd.
4. Innaumation Medical Devices Pvt. Ltd.
5. Ayu Devices Pvt. Ltd.

BIRAC's all 05 Startups were provided complementary event passes and demo booths by the office of Indian Ambassador to Finland & Estonia.

The pre event activity **"LIFTOFF"** on 15th May evening was a focussed interaction with **Allan Martinson**, a serial entrepreneur and one of the key players in the Estonian VC and Startup system, with an objective to learn the best practices & lessons of his over 30 year experience in 10+ tech and media companies.

The event started on 16th May, 2019 with an opening remark by the **President of Estonia, Kersti Kaljulaid** followed by an opening discussion on entrepreneurial ventures and state fundings. All 05 BIRAC supported Startups put up demo booth for showcasing of their products/technologies. **Dr Poyini Bhatt**, SINE BioNEST participated in panel discussion on APAC investments and opportunities for Estonian Startups session organized by DeltaHeroes, Startup Estonia and Latitude59. This session provided an interactive perspective for Startups looking at investment opportunity in APAC region.

2nd Day of the event was mainly focussed on networking sessions, pitching competitions and sharing of several founder stories. This was followed by **Reverse Pitch session** for Investors in which 10 VC pitched their moneys, know-how & connections in front of Latitude59 audience and jury of Startup founders. Towards the closing of the programme, the keynote presentation on the **Global Startup Ecosystem Report 2019** (GSER) was made by **Adam Bregu**, Business Development Manager, Startup Genome. GSER is the world's most comprehensive and widely-read research on Startups based on data from thousands of Startup founders and research on millions of companies. The report outlined key success factors for Startups, constituting the new science for entrepreneurial ecosystem development and benefitted many.

BIRAC's all 05 Startups received a large number of visitors at their booths and queries from Startups, Investors & potential customers. Honourable Ambassador of Estonia Riho Kruuv also visited the Indian Startup demo booths and interacted with them.

The event gave Indian Startups an opportunity to meet EU Startups, international investors and industry leaders from Estonia as well the Estonian Startup ecosystem. Likewise this engagement brought awareness to Estonian/EU participants about the Indian Biotech ecosystem. It may be worthwhile to engage formally with Estonia under a strategic partnership.



BIRAC supported innovators participating at Latitude59 in Estonia

EU-India Innovation Partnership, Estonia

EU-India Innovation Partnership - 2nd networking event was held at Lift99 (Incubation Centre) in Tallinn, Estonia on 14-15th May 2019. Incubator representatives from 13 EU countries and 10 from India out of which 2 were from BioNEST Bio-Incubators (KIIT, Bhubneshwar and SINE IIT Mumbai) participated in Incubators and Accelerators Networking event. C-CAMP representative could not join the event. BIRAC was represented by Dr. Manish Diwan, Head, Strategic Partnership & Entrepreneurship Development. Visit of the Indian Incubators was sponsored by EU.

On day 1 of the event, opening remarks were made by Raido Lember, Deputy Head of Global Business Development, Enterprise Estonia and Dr Florent Bernard, Senior Policy Officer - R&I Cooperation with India, European Commission. This was followed by an introduction session, interests and experience sharing and pairing of Incubators for making joint plan of action. The afternoon session was focused on cooperation opportunities between Europe and India and Dr Diwan gave an overview of cooperation opportunities with BIRAC. Evening session was an expert talk on self-sustainability & collecting feedback on how to make the network sustainable by Dimmes Doornhein, an expert in entrepreneurship.

Day 02 of the event was focussed at having open breakout sessions for incubators to deepen their cooperation and discussion with Service Facility team for suitable matchmaking. This was followed by presentation of summary of interactions between the Service Facility team and corporates/investors. Parallel sessions were also held focussing on market access conditions in India with a focus on IPR for EU Incubators and Accelerators and discussion on soft-landing opportunities in the EU for Indian Incubators and Accelerators.

The event ended with plenary session for each pair/breakout group to present on outcome of their discussions at the event, joint reflection and recommendations for future



Dr. Manish Diwan providing insights about BIRAC activities



BIO-INDIA 2019

November 2019 • New Delhi, India



FOCUS SECTORS

Bio
Pharma

Bio
Energy

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Industrial

Bio
Agri

Bio
Services



AREAS

Bio Manufacturing	Clinical Trials and Drug Discovery	Human Resource Capacity Building	Market Access shifting and global supply chain	Industry Growth & Future Roadmap	Key Challenges & Opportunities
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STAKEHOLDERS/ATTENDEES

- Government agencies
- Venture Capitalists & Angel Investors
- Funding Agency
- Biotech industry leaders
- Philanthropy Organizations
- MNCs
- Academical Research Institute
- CROs/NGO's
- Hospitals and Healthcare centres
- Law Firms/Patent Organizations
- Startups/Entrepreneurs

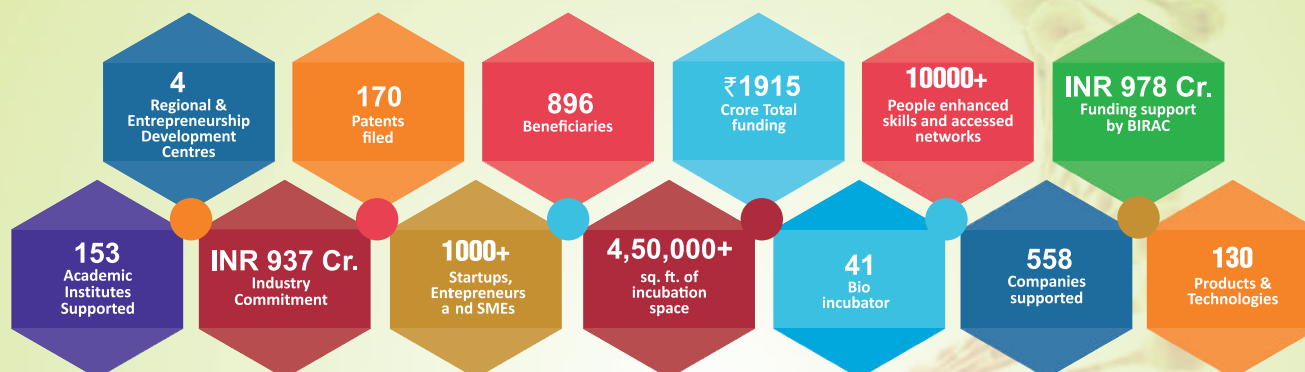


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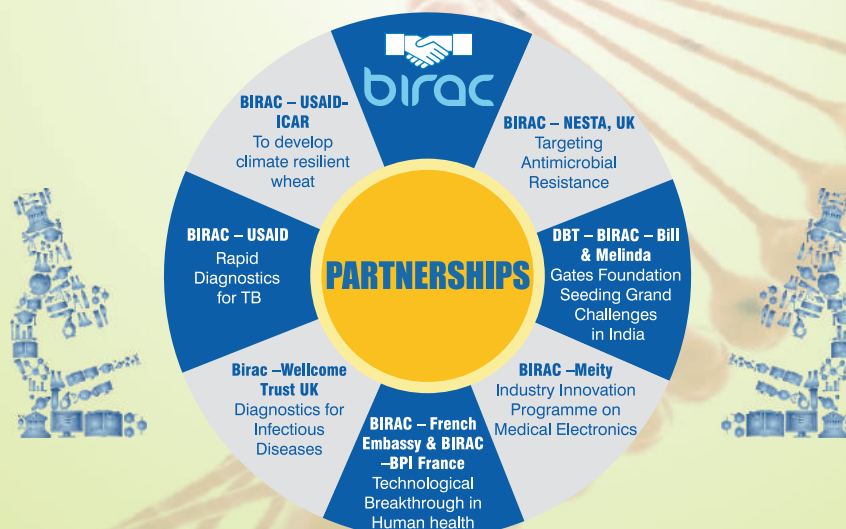


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BIRAC IMPACT



Aligning Partnerships for National & Global Impact



Partnerships For Networks, Platforms & Market Access

WISH – BIRAC – Lords Education and Health Society (LEHS), Through its WISH Initiative : Scaling Innovations through Testing Beds

BIRAC – Business Finland : Enhancing Competitiveness

BIRAC – TISS - (Tata Institute of Social Sciences) : Mentoring innovators and Assessing impact

BIRAC – ICMR (Indian Council of Medical Research) :

BIRAC AcE Fund Partners : Funding Oxygen for the Next Level

BIRAC – TIE (The Indus Entrepreneurs) : Platform for Global Networking

BioCubaFarma : Transfer of technologies and commercialization of innovative healthcare products

BIRAC – ALEAP, BIRAC – TIE : Promote Women Entrepreneurship

For further information please contact:

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