



REPORT

BIRAC Innovators Meet 2016

BIRAC organized its 5th Innovators Meet at New Delhi on 22nd-23rd September 2016. The Innovators Meet witnessed the confluence of around 300 Scientists, Entrepreneurs, Industry experts and Policy-makers. Theme of the Meet was “*Biotechnology Innovation Ecosystem: Strategizing for the Next Leap*”.

The **Inaugural Session** started in the evening with lighting of lamp by the dignitaries. The dignitaries included – Dr. Harsh Vardhan, Union Minister of Science & Technology & Earth Sciences, GoI as Chief Guest; Shri Y.S. Chowdary, Minister of State for Science & Technology and Earth Sciences, GoI, as Guest of honour; Prof. K. VijayRaghavan, Secretary DBT & Chairman BIRAC; Ms. Yigal Erlich, YOZMA Group, Israel; Dr. Renu Swarup, Senior Adviser, DBT & MD, BIRAC; Mr. Sujay Shetty, PwC.



Dr Renu Swarup, delivered the Welcome Address, wherein she set the context of the meet by highlighting BIRAC’s role in providing ecosystem to the innovators and emphasizing on the future strategies to further nurture biotechnology ecosystem, eventually contributing to economy. She outlined the role of national and global partnerships in nurturing this ecosystem across the nation.

Guest of Honour, Sh. Chowdary talked about the gap between industry and academia and highlighted the need for translational research to bridge this gap.

Dr. Harsh Vardhan, started his valuable talk by congratulating all the successful innovators. In his speech he suggested all the entrepreneurs, not to be demotivated with failures, rather, see it as another opportunity. He also conveyed that Government has pipelined best possible programmes to support passionate innovators with promising and innovative ideas or technology. He cited the example of passion by story lining the polio eradication programme.

Mr. Sujay Shetty, PwC, gave a brief presentation on “Make In India for Biotechnology- The way Forward” report, prepared in collaboration with BIRAC. The report covers opportunity areas for growth and manufacturing related to biotechnology, regulatory landscape and comparative analysis of global policies and strategies to identify gaps in existing Indian Policies and suggested possible take aways for making India a startup economy.

Delivering the keynote lecture, Mr. Yigal Erlich, Founder, The Yozma Group, Israel spoke about the journey of Israel becoming a startup nation and his vision of accelerating start-ups and have maximum number of Entrepreneurs in every field. He elaborated about the funding scenario in Israel from seed funds to venture capital and success ingredients including university education, research oriented labs and Industry-academia partnerships contributing to Israel Growth. He mentioned that around 85 startups spurs every year with major contribution through Medical devices and Biopharma. He also envisioned bilateral partnership between India and Israel for conditioning startups.

Prof. K. VijayRaghavan, Secretary, DBT and Chairman BIRAC, in his theme address highlighted the need of regulations to be aligned with innovation ecosystem with great emphasis on Tax and Patent regime. He also underscored the example of Israel start-up ecosystem’s key strategies which may help in developing India’s Biotech Innovation Ecosystem. He also mentioned that the gap between startups, industry and academia needs to be bridged through partnerships.

The innovators meet for the first time experimented two initiatives-

- (a) Session on *Conversion with Investors*
- (b) Innovation Market Place

(a) In conversation with Investors

Keeping in view the dire need of startups for securing funds for their companies, BIRAC organized an interaction session between a group of high level investors and 20 startups. The investors having area specific expertise contributed to the session. The investors included Ms. Padmaja Ruparel, IAN; Mr Aditya Sharma, Unitus Seed Fund; Mr. Krishnan Neelkanthan, Ankur Capital; Mr. Ashwin Raghuraman, CIIE; Mr. Ramesh Byrapaneni, Endiya.

This interaction was intended to bring startup entrepreneurs and investors to a platform where startups can discuss their business models and understand investors’ perspectives about their business plans. This was an open discussion forum amongst investors and startups. This event was facilitated by Dr Satya Prakash Dash, BIRAC and Dr. Taslimarif Saiyed, C-CAMP.

The conversation concluded with few recommendations:

- Entrepreneurs were suggested to take ownership of Business model (Finance, Management & Marketing) by themselves.
- Key points of Investors' Interests, that an Entrepreneur or a Startup should consider upon while pitching:
 - Return on Investment
 - Exit Strategy (Time and Type)
 - People (Team Competence)
 - Science
 - Business Strategy/Plan
- Funding from Investors is available at all stages (Early Research to Late stage Commercialization).
- It was suggested that access to Investors can be coordinated through BIRAC website/portal





(b) Innovation Market Place

BIRAC for the first time created “Innovation Market Place” for highlighting the products/technologies developed through BIRAC support.

Innovation Market Place was one of its kind initiative with an endeavour to promote innovative ideas in the Biotech sector. 23 Innovators were selected to showcase their technologies/prototype to investors and audiences. It provided innovators a platform not only to showcase their prototype/technology to investors, but also to network with participants from Industry and academia. Innovations were also evaluated on the basis of following parameters:

Maturity of the technology/product: Is this product/technology best in class? Is the underlying technology a re-purposed technology? How cutting edge is the product/technology? What is the key differentiator of the product/technology?

Unmet need/Market Demand: What is the size of the unmet consumer need that this product/technology is hoping to leverage? Are there competing products?

Adoption Challenges: What are the hurdles for market adoption that the product/technology, being showcased, has to overcome, such as affordability, accessibility, IP Issues.

Is the primary market being targeted by the entrepreneur is through public procurement, private procurement or elements of both. What are the regulatory hurdles/issues if any in India as well as in other geographical areas.

Growth Strategy including exit plans: Is the innovator strategic about his/her thinking regarding the growth strategy for product/innovation for customizing the product according to the consumer needs. What is the exit strategy of the innovator in terms of

business expansion, partnerships (including technology partners), marketing and distribution channels etc. Has she/he identified potential risks and mitigation strategies?

Clarity of communication to the Investor: How effectively the company communicated regarding its long term plans? How was the ability of the entrepreneur to communicate salient aspects? The clarity of their thought about strategic direction etc.

Dr. Shirshendu Mukherjee, Mission Director PMU-BMGF, BIRAC, introduced the session to all the innovators, mentors and investors. Each innovator was invited to pitch for 1-2 minutes about their innovation to audiences.

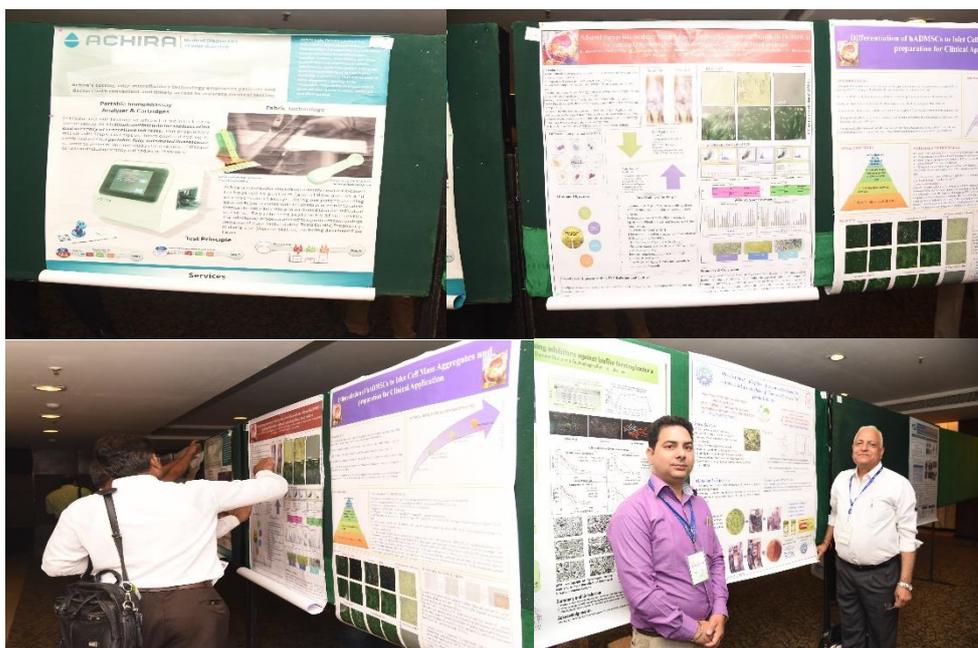
The 2 hour session culminated with very knowledgeable and guiding notes by eminent investors. The investors applauded the innovations for the novelty which would help the biotechnology to blossom in India. They touched upon the challenges faced generally in the early phase of establishing ventures, and suggested innovators to strategize their commercialisation plans in advance to avoid the gap between product readiness and launch. They urged innovators to do market analysis in advance, focusing on future perspective for their business plan.



Poster Session

Parallel to the Innovation Market Place, there was a poster session for innovators. 45 posters from applicants from all scheme viz. BIG, SBIRI, BIPP, CRS, SPARSH, IIPME and Grand challenges India were presented in this session.

The posters were evaluated by a team of 4 Experts – Dr. Amulya Panda (NII), Dr. CM Gupta (CDRI), Dr. Robin Mukhopadhyay (Ex-ACTREC) and Dr. Rita Mulherkar (Ex-ACTREC).



The best poster award was given to **'3D Prosthetic Technologies'** for *“Developing and testing certain 3D printing technologies to produce innovative limbs at affordable costs for the disabled in India”*.

Two appreciation awards were given: **'Saver Biotech'** for *“Commercial Scale production of Nanopesticides and Nanofungicides for Indian Agro-Industry”* and **'Windmill Technologies'** for *“Novel Integrated Newborn Resuscitation Solution to Empower Front-line Health Workers to Resuscitate Newborns Effectively”*.

BIRAC Innovator Awards

The inaugural session included the announcement of the prestigious BIRAC Innovator Awards. The awards were presented to five companies with innovative projects and its implementation with successful outcome. The awards were given broadly in three fields including Agriculture, Healthcare and Industrial Biotechnology.

The awardees were:

1. AGRICULTURE -Nirmal Seeds Pvt. Limited, Pachora, Jalgaon for “Development of nutritionally improved mustard (*Brassica juncea*) varieties/hybrids”, in collaboration with The Energy and Resources Institute, New Delhi.
2. HEALTHCARE (Therapeutics)-Serum Institute of India Pvt. Limited, Pune for “Development of Polysialylated Erythropoietin”.
3. HEALTHCARE (Devices & Diagnostics)-Panacea Medical Technologies Pvt. Limited, Bengaluru for “Development of Flat Panel Computed Tomography (FPCT) machine”.
4. INDUSTRIAL BIOTECHNOLOGY (Technology Development)-India Glycols Limited, Kashipur for “Validation of technology for production of 3000 Litre ethanol/day”, in collaboration with DBT-ICT Centre for Energy Biosciences, Mumbai.
5. INDUSTRIAL BIOTECHNOLOGY (Product Development)-Aumgene Biosciences Pvt. Limited, Surat for “Scale-up & commercialization of recombinant lipase enzyme”.



The innovator meet was also an occasion for the unveiling of BIRAC publications by our Chief Guest and Guest of honour. These publications include:

- BIRAC Innovators Compendium
- Report on Make In India for Biotechnology-The Way Forward
- Success stories of BIRAC Innovators
- BIG booklet



Panel Discussion

Innovators meet provided a platform for knowledgeable and thoughtful discussions on possible strategies and implementation plan. The panellists outlined possible ways to achieve next transition for the Indian biotechnology enterprise with support of industry, academia and government.

In her opening remarks Dr. Swarup emphasized on BIRAC's role of mentorship and funding to number of innovators across the nation. She envisioned having opportunity to extend BIRAC's support by means of partnerships to innovators across the nation and connect them globally. The factors involved in nurturing the ecosystem were discussed and are highlighted below:

- ❑ Prof. K. VijayRaghavan emphasized on developing a unique model across the country suiting the Indian requirements, partnerships (global and national) and intervention by Government, providing the risk capital for technology development, infrastructure, facilitating tax incentives to promote and nourish innovation ecosystem and entrepreneurial development.
- ❑ Dr. Arun Chandavarkar, Biocon, talked about evolution of Biocon from a startup to a global company and strategies behind it. He said that there is requirement of identifying the areas in which Government can intervene such as healthcare and healthcare deliveries which needs immediate attention.
- ❑ Prof. Ashutosh Sharma, Secretary, DST, described the entrepreneurship development programmes by Government to support innovators of all ages and at all stages. He elaborated NIDHI (an initiative by DST) and its envisioned plan and need of quantum leap to create a turnaround number of 150, 000 start ups.
- ❑ Dr. Sarvajna Dwivedi, TiE Silicon Valley, suggested key points on strategizing as we cannot afford the western model for Indian patients. He mentioned that Startups should consider swadeshi patients and swadeshi needs and focus on Swadeshi BioPharma.
- ❑ Dr. Arjun Surya, Curadev Pharma, pointed out that Regulatory ecosystem needs to be strengthened and BIRAC should work with the states in a synchronized and sustained manner to continuously promote biotech ecosystem.

In conclusion, key strategies that came out of the brainstorming discussions are: strengthening every link of the innovation from people, to regulation/policy and funding, quality education of science at school and university level for strengthening grass root level innovations and entrepreneurship, Government intervention for funding and support, connecting through partnerships globally to build strong Biotechnology Innovation Ecosystem.



Day 2

The second day kick started with a Plenary Talk by Dr. Sarvajna Dwivedi, TiE, Silicon Valley and Chief Scientific Officer of Pearl Therapeutics. The esteemed guest in his plenary talk mentioned about his endeavour to establish Pearl Therapeutics and recent advancements of its existing products. He focused on spinning off Pearl Therapeutics from AstraZeneca to highlight the need of strategizing with passion for taking innovative idea to market.



Panel I- Injecting capital for the Next Leap: Investor's Perspective

The panel discussion focused on identifying various source of funding at different stages of entrepreneurship and emerging landscape of private venture funding in the country especially in the life science arena. The recommendation were:

1. Early stage companies and start-ups should look for investors with sector expertise.

2. Startup should have potential in their technology to bring the attention and confidence of investors in them.
3. Various fund raising (public, angel and VC funding) paths can be approached by startups.
4. Judicious utilization of Investor and Government capital.
5. Entrepreneurship is a problem solving approach and should be the primary aim with high global importance.
6. A common platform of networking approach should be followed for various funding.



Panel II- Boosting Technology Development and Translation from Academia- Bridging the gaps for Technology Transfer

The panel discussed the existing gaps between industry and academia and suggested possible solutions for bridging the gap between them and strengthen technology transfer in India. The key outcomes were:

1. Encourage Alumni start-up meets preferably at Incubator Centres to foster interactions between industry and academia; include academicians in these meets.

2. Encourage Government to have Technology Transfer Offices/Officers at Academic institutes to speed-up the agreement and transfer process.
3. Make industry aware of technology capabilities and facilities at Institutions.
4. Government should create favourable IP Policies so that more innovation friendly environment can be created e.g. provide exclusivity to specific start-ups or industry for some period of time.
5. To encourage management students to take-on research-outcomes of non-management faculty for their academic projects as live cases to build business plans.



Panel III – Disruptive Technologies for the Next Leap- how will emerging technology influence Indian biotechnology growth? (IoT, Personalised Medicine, Precision Agriculture)

The last panel comprised of brief presentations by key experts on disruptive technologies – Prof. Amaresh Chakrabarti, IISc presented on Internet of Things (IoT) followed by Dr.Jugnu Jain, Sapien Biosciences & Saarum Sciences on Personalised Medicine and Mr. Rajesh Urkude, TCS on Precision Agriculture. Mr. Rahul Prakash from CropIn, presented his company profile working on precision agriculture techniques and use of SmartFarm to estimate the yield per hectare area by analysing soil, weather and other farming conditions.



In closing remarks, Dr. Renu Swarup concluded the recommendations:

1. Focus on increasing Industry-academia interaction.
2. Every organization should set the timeline first to set the goals and then to complete the tasks accordingly.
3. Government and all stakeholders should come forward to take risks for developing Biotech Innovation Ecosystem.

Annexure I: Programme

5th BIRAC Innovators Meet 2016
Biotechnology Innovation Ecosystem: Strategizing for the Next Leap
22nd & 23rd September, 2016

Venue: Mapple Emerald, New Delhi

Programme

Day I: 22nd September, 2016

11:30AM-01:00PM: In conversation with Investors

4-6 high level investors spend an hour and a half with 2 groups of 15-20 start ups each

This interaction is intended to bring startup entrepreneurs and investors to a platform such that startups can discuss their business models and understand investors' perspectives about their business plans. This interaction is not moderated but the intention is to catalyse open discussions amongst investors & possible investees.

Investors:

Ms. Padmaja Ruparel, IAN
Mr. Krishnan Neelkanthan, Ankur Capital
Mr. Ramesh Byrapaneni, Endiya
Mr Aditya Sharma, Unitus Seed Fund
Mr. Ashwin Raghuraman, CIIE
Mr. Pradeep Jaisingh, HealthStart

Facilitators:

Dr Satya Prakash Dash, BIRAC
Dr. Premnath Venugopalan, NCL venture Center

01:00-02:30pm: Lunch & Registration

02:30PM- 04:30PM Innovation Market Place

Showcasing innovative products & technologies

Introduction: Dr, Shirshendu Mukherjee, PMU-BMGF, BIRAC

Investors & Mentors

Dr. Sarvajna Dwivedi, TiE
Ms. Padmaja Ruparel, IAN
Mr. Utkarsh Palnitkar, KPMG
Mr. Ramesh Byrapaneni, Endiya
Mr. Krishnan Neelkanthan, Ankur Capital

Mr Aditya Sharma, Unitus Seed Fund
Mr. Ashwin Raghuraman, CIIE
Mr. Siraj Dhanani InnAccel
Mr. Arun Venkatesan, Villgro
Mr. Pradeep Jaisingh, HealthStart

02:30PM-04:30PM Posters Display

04:30PM-5:00PM Networking Tea

05:00-06:30PM Inaugural Session

05:05-05:15PM Welcome Address and about the theme

Dr. Renu Swarup, Senior Adviser, DBT and MD, BIRAC

05:15-05:30PM Report on Make India in Biotechnology Sector by BIRAC

Presentation by Mr Sujay Shetty, PwC

05:30-05:55PM Keynote Talk

Mr. Yigal Erlich, Founder, The Yozma Group, Israel

05:55-06:05PM Theme Address

Prof. K. VijayRaghavan, Secretary, DBT & Chairman, BIRAC

06:05-06:25PM BIRAC Innovator Awards and Product Showcase

06:25-06:40PM Address by Guest of Honour

Shri Y S Chowdary, Hon'ble Minister of State for Ministry of Science & Technology and Earth Sciences, GoI

06:40-06:55PM Address by Chief Guest

Dr. Harsh Vardhan, Hon'ble Union Minister for Science & Technology and Earth Sciences, GoI

07:00-08:00PM Panel Discussion: Strategizing for the Next Leap

Over the last decade and especially in the previous five years, a foundation has been laid for an innovation driven biotech enterprise in the country. DBT's National Biotech Development Strategy (NBDS-II) for 2015-2020 has defined the policy outline to achieve the next transition for the Indian biotechnology enterprise. The panel will deliberate the possible strategies, implementation plan and future course of action.

Panelists:

Prof. K. VijayRaghavan, Secretary DBT & Chairman BIRAC

Prof. Ashutosh Sharma, Secretary DST

Mr. Yigal Erlich, Yozma

Dr. Sarvajna Dwivedi, TiE
Dr. Arun Chandavarkar, Biocon
Mr. Utkarsh Palnitkar, KPMG
Dr. Arjun Surya, Curadev Pharma

Moderator: Dr Renu Swarup, Senior Adviser, DBT & MD, BIRAC

Day II 23rd September 2016

09:30-10:00AM **Plenary Talk** by Dr. Sarvajna Dwivedi, TiE

10:00AM-11:00AM **Injecting Capital for the Next Leap: Investor's Perspectives**

The biotech startup landscape has grown in the country over the previous five years as the ecosystem has come to shape driven by several elements of the ecosystem such as public funding agencies, angel funding and VC funding. This panel will throw light on the emerging landscape of private venture funding in the country especially in the life sciences arena.

Panelists:

Ms. Padmaja Ruparel, IAN
Mr. Ashwin Raghuraman, CIIE
Mr. Krishnan Neelkanthan, Ankur Capital
Mr Aditya Sharma, Unitus Seed Fund
Mr Siraj Dhanani, InnAccel
Mr. Arun Venkatesan, Villgro

Moderator: Dr Ramesh Byrapaneni, Endiya

11:00AM-11:30AM **Networking Tea**

11:30AM-12:30PM **Boosting Technology Development & Translation from Academia**
- **Bridging the gaps for technology transfer**

Translation research is one of the key drivers of innovation. The pathways for translation from lab to the marketplace is not linear. How do academia and industry navigate technology transfer maze? The panel will discuss the existing gaps in India and suggest possible solutions.

Panelists:

Ms. Deepanwita Chattopadhyay, IKP
Prof. P Madhusudhan Rao, IIT Delhi
Prof Navkant Bhat, IISc
Dr. Shyam Vasudev Rao, Forus

Moderator: Prof Jayesh Bellare, IIT Bombay

12:30-1:30PM

Disruptive Technologies for the Next Leap- how will emerging technology influence Indian biotechnology growth? (IoT, CRISPR, Personalised Medicine)

Disruptive technologies such as Internet of Things (IoT), Personalised Medicine, and Precision Agriculture will transform the practice of S&T and impact societies globally? How can India leverage these emerging technologies? What issues (regulatory, ethical etc) should our policy makers be aware of? How can we leverage these technologies for boosting the Indian bioeconomy?

Three experts will speak about global and national trends in these disruptive technologies.

Speakers:

Prof. Amaresh Chakrabarti - IoT

Dr Jugnu Jain, Sapien Biosciences & Saarum Sciences - personalised medicine

Mr. Rajesh Urkude, TCS

Mr. Rahul Prakash, CropIn

01:30-02:00PM

Closing Session

02:00PM Onwards

Lunch