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Entrepreneurship: The Business of Science



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



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Chief Editor's Take



Wishing you all a very happy 2018 !

The Indian biotechnology industry has been able to achieve an exponential growth phase due to a range of positive trends including demand for healthcare services, food & nutrition, intensive R&D activities along with strong government initiatives. BIRAC, through consistent efforts, has integrated capabilities of individuals across a broad spectrum of scientific and technological knowledge bases.

BIRAC has launched a number of successful initiatives which have led to both Technology and Product Development. These have captured the attention and aspirations of policy makers, business people, and investors. This in turn has further propelled the growth of biotechnology sector by supporting initial enablers responsible for entrepreneurship activity, productivity, and sustainability.

BIRAC recognizes the necessity for entrepreneurship development among the youth in the country and hence has taken initiatives for instituting several schemes and partnerships, so as to further boost 'Make in India' initiative by the Government of India. BIRAC has recently announced 'Biotech WInER Award' for women in entrepreneurial research in partnership with TiE, a global entrepreneurship organization, thus providing an encouraging platform for all the women entrepreneurs in the country. BIRAC has also supported more than 1000 Start-Ups, entrepreneurs and small companies till date.

Moving forward to encourage the entrepreneurial instincts among the potential innovators, BIRAC will continue to work towards improving the current portfolio of schemes such as equity funding (SEED, ACE), ideation technology and product development programs (SITARE, E-Yuva, BIG, SBIRI, BIPP, CRS), social innovation programs (SIIP, SPARSH) and the incubation program (BioNEST) along with more and more partnerships between industries and academic organizations. Looking forward to working together to build a greater impact in the Entrepreneurial ecosystem in 2018.

Dr. Renu Swarup

Senior Adviser/Scientist 'H', DBT, Govt. &
Managing Director, BIRAC

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Leader's Message



The Government in the last few years has consistently demonstrated its commitment to promoting innovation and entrepreneurship. In the area of biotechnology, the Department of Biotechnology (DBT) was tasked with promoting these ideas in the then fledgling biotechnology sector, which it did through the establishment of industry oriented organization BIRAC.

Today, India ranks amongst the top 12 biotechnology destinations globally while it stands 3rd in Asia-Pacific region. The biotechnology industry today comprises of 800 companies whose estimated value is USD 11 billion.

It was the results of joint efforts of DBT and BIRAC that Indian biotechnology start-ups were able to attract investments worth USD 2.8 billion during the last five years. The vision of BIRAC is to grow numbers of bio-entrepreneurs by supporting start-ups and Small and Medium Enterprises (SMEs); and

does this by bridging the gap between academia and industry as well as helping research institutes to focus on translation of research and technologies.

Thirty bio-incubators have been established and supported, in addition to several schemes and funding grants that cater to the needs of current demands of biotechnology industry. BIRAC was envisaged as a flexible and nimble organization, one which would remain dynamic and respond to the varying demands of the innovation landscape with the larger aim to innovate to improve the lives of our people and then to take Indian innovation to the rest of the world.

Entrepreneurship and innovation are two sides of the same coin; one cannot exist without the other. Therefore, the Government remains committed to creating a conducive ecosystem, one which will enable the convergence of cross-cutting disciplines to achieve the goals for 'Make in India' and 'Start up India' initiatives.

We at BIRAC will keep moving forward with the aim of strengthening and empowering the emerging biotechnology enterprises to undertake strategic research and innovation, with the larger goal of achieving Indian biotechnology sector's shining stature on a global platform.

Wishing you all a very happy 2018 !

Prof. K. VijayRaghavan
Secretary, DBT, Govt. of India
& Chairman, BIRAC

BIRAC Innovators Conclave 2017

The 6th Innovators Conclave of BIRAC was held at Indian Habitat Centre, New Delhi on 21st-22nd September 2017. The theme for this conclave was “BIRAC Innovations: Propelling the Bioeconomy”. The Innovators conclave witnessed the confluence of around 300 Scientists, Entrepreneurs, Industry experts, Policy-makers and Investment Heads. The conclave was inaugurated by the Hon’ble Union Minister for Science & Technology, Earth Sciences and Environment, Forest & Climate Change, Dr. Harsh Vardhan, attended by Guest of Honor, Mr. YS Chowdary, Hon’ble Minister of State (MoS), S&T and Earth Sciences.

Inaugurating the conclave, the Chief Guest, Hon’ble Union Minister for Science & Technology, Earth Sciences and Environment, Forest & Climate Change, Dr. Harsh Vardhan said, “BIRAC led by the DBT is playing a catalytic role in building a USD 100 billion Indian bioeconomy. We are now effectively leveraging the research and entrepreneurial capabilities of this sector to address the needs of our people by creating affordable products that have the potential to change lives and catapult India into a brighter future. Our Government is focused on making India a global hub for innovation and BIRAC is playing a crucial role in shaping the biotech innovation ecosystem of India.”



The Guest of Honor, Shri YS Chowdary, Hon’ble MoS, Science & Technology and Earth Sciences said, “Over the last 5 years, a foundation has been laid for making India a global leader in biotechnology research and development. We are ensuring that our innovators and indigenous products receive the encouragement and support to make their mark on the international biotech stage. We are very proud of the impact that BIRAC has generated in such a short span and this Innovation Conclave is testament to it.”

Prof. K. VijayRaghavan, Secretary, DBT and Chairman, BIRAC during the event said, “The country’s Biotech startup landscape has shown immense growth over the last five years. BIRAC was created to bridge the space between policy, industry and academia in the biotech sector and bring all stakeholders together on one platform. Our impact on the biotech innovation landscape is clearly visible.”

Dr. Anil Kakodkar, Former Chairman, Atomic Energy Commission of India, delivered his keynote address emphasizing on use of biodegradable product such as bamboo for meeting our daily needs. He also applauded the effort of BIRAC in propelling Indian Bioeconomy.

Dr. Renu Swarup, Senior Advisor, DBT and Managing Director, BIRAC said, “BIRAC has transformed the biotech innovation ecosystem in the country. Our investments in the Indian innovation ecosystem are bearing fruit and our innovations are now showing real impact and producing tangible benefits for society. This Innovation Fair is the perfect occasion for us to showcase what our upcoming investigators are working on and how they hope to transform India. This fair also gives us the opportunity to showcase the potential for scale up of these innovations to relevant stakeholders and decision makers.”

Newsletter of BIRAC

BIRAC Innovator Awards

BIRAC Innovator Awards were given out by the dignitaries. The awards were given in five different categories as follows:

Category	Winner
Healthcare (Therapeutics)	Viravecs Labs LLP
Healthcare (Devices & Diagnostics)	Tuscano Equipments Pvt. Ltd.
Agriculture	ATGC Biotech Pvt. Ltd.
Industrial Biotechnology (Product Development)	Vivira Process Technologies Pvt. Ltd.
Industrial Biotechnology (Technology Development)	Openwater.in Pvt. Ltd.



BIRAC Innovator Awards 2017

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Bio-innovation Fair

The Bio-innovation Fair played host to more than 65 innovations supported under various schemes of DBT and BIRAC. The Fair was inaugurated by the Guest of Honor, Shri YS Chowdary (Hon'ble MoS, Science & Technology and Earth Sciences) and Dr. Anil Kakodkar (Former Chairman, Atomic Energy Commission of India). The Fair was visited by distinguished dignitaries from the Government of India, entrepreneurs, academicians, investors, innovators and the general citizenry of the nation. This Fair served as a suitable platform for exhibition of innovative products and networking amongst the stakeholders.



Hon'ble MoS for S&T Shri YS Chowdary and Dr. Anil Kakodkar, Former Chairman, Atomic Energy Commission of India inaugurating the Bio-innovation Fair

Innovation Marketplace Elevator Pitches

On Day 1, Dr. Renu Swarup, Sr. Adviser DBT & MD BIRAC delivered the Opening Remarks, wherein she set the context of the conclave by emphasizing on the need for organizing such conclave and highlighting BIRAC's role in propelling the Bioeconomy in the country. She outlined the role of national and international partnerships in fostering the Bioeconomy across the nation.

Prof. K. VijayRaghavan, Secretary DBT & Chairman BIRAC congratulated and talked about the various achievements of BIRAC so far. However, he warned against complacency, which might lead to inertia and thereby calling in a lag phase. He emphasized on quality innovations impacting the lives of the countrymen.

Continuing with the tradition, BIRAC organized the "Innovation Marketplace Elevator Pitches" for highlighting the products/technologies developed through BIRAC support 23 Innovators were selected.

A panel of Jury was appointed for evaluating the innovations. The dignitaries in the Jury included- Ms. Deepanwita Chattopadhyay, IKP Knowledge Park; Dr. Sarvajana Dwivedi, Pearl Therapeutics; Dr. Ramesh Byrapaneni, Endiyya



Jury and Participants of the Innovation Market Place

Newsletter of BIRAC

Partners; Shri Manoj Kumar, Social Alpha; Dr. Arun Venkatesan, Villgro; Dr. Premnath Venugopalan, Venture Centre; Dr. Anil Wali, FITT, IIT Delhi; Dr. Taslimarif Saiyed, C-CAMP.

Panel Discussions

Innovators Conclave provided a podium for knowledgeable and thoughtful discussions on possible strategies and implementation plan. The panelists pointed out possible paths to realize next transition for the Indian biotechnology enterprise with the support of industry, academia and government.

Panel I:

Seeding, Budding, Scale & Impact: The Entrepreneurial Journeys of BIRAC Startups

Dr. Premnath Venugopalan from Venture Center chaired the session and introduced the speakers: Dr. Pawan (Arna Biomedicals), Ms Veena Moktali (Periwinkle), Shri Vinayak Nandalike (Yostra), Ms. Geethanjali (Adiuvo), Dr. Shibichakravarty (Theranos Life Science) and Dr. Nusrat (CyCa OncoSolutions).



The salient points of the panel discussion were:

- Speaker shared the individual lessons learned, key challenges faced and achievements attained during their journey.
- IP creation, revenue generation and global exposure
- Help in making strategic partnerships
- Major role played by BIRAC in making a very strong impact in their Entrepreneurial journey

Panel II:

Accessing International Markets: Lessons for Indian Biotech Companies

Dr. Taslimarif Saiyed (C-CAMP) moderated the session. The panelists were Mr. Richard Samuels (Australian High Commission), Dr. Sarvajana Dwivedi (Pearl Therapeutics), Shri Mainak Chakraborty (GPS), Dr. Atul Aslekar (Novalead) and Dr. Markandeya Gorantla (ATGC).



The key recommendations emerged out of the panel discussion were:

- A strong foothold in the native market should be established before exploring the international market.
- A good business plan is the key to success. The right timing and stage of entry are important parameters to consider before venturing into the international market.
- There should be the right exit points in the business planning.
- International collaborations and partnerships with elite academic institutes can increase market reach.
- The International Governments also proactively look for partnerships and collaborations. Hence, approach the different Consulates for exploring global opportunities.

Panel III:

Solving the Last Mile Conundrum: Critical Issues for adoption of Biotech Products

The session was moderated by Shri Sujay Shetty (PwC). The other distinguished participants of this panel discussion were Dr. Jagadish Mittur (KBITS), Dr. Sarvajana Dwivedi (Pearl Therapeutics), Shri V Sashi Kumar (Phoenix Medical Systems), Ms. Padmaja Ruparel (IAN), Dr. Dhananjaya Dendukuri (Achira), Dr. Avijit Bansal (Windmill) and Dr. Taslimarif Saiyed (C-CAMP).

Cover Story

The suggestions that surfaced in the discussion were:

- Learning from and emulate models that work.
- Traditional technologies are not going to work with new marketplace pressures and companies must look at innovating new solutions based on the possibilities created by new technologies.
- Customization of the policy as suitable for the biotechnology ecosystem to flourish.
- Market viable product should be the approach to tap funding from Venture Capitalist/ Angel Investors.



Panel IV:

The Startup Conversation: Gaps, Opportunities & the Way Forward

The panelists for this session were Ms. Syna Dehnugara (CNBC), Shri Ajay Bhardwaj (Anthem), Shri Vinay Konaje (Navya Biologicals), Dr. Arun Chandru (Pandorum), Dr. R. Rajkumar (cellzyme), Shri Arun Venkatesan (Villgro), Shri K L Mukesh (Unitus) and Ms. Rema Subramaniam (Ankur Capital). Ms. Syna Dehnugara chaired this session.



The recommendations of this plenary discussion were:

- Need of industry and target customers should always be kept in mind. Regular conversations with buyers and customers are very important for the success of an enterprise.
- The start-up should take customer insights/ deep market insights for penetrating the market.
- The product development should go hand in hand with target clients and customers.
- Business mentorship is a major challenge for start-ups.
- Completion with established players can only overcome by uniqueness in the product.
- Focused branding and marketing of the product is very important for success
- BIRAC to create parallel program which can fund high risk products with low commercial potential and large time to market.

Panel V:

Pathways to create impact through Biotech Innovations to the Power of Infinity

Dr. Renu Swarup (Senior Advisor DBT & MD BIRAC) moderated the session. The other dignitaries participating in the session were Prof. K VijayRaghavan (Secretary DBT & Chairman BIRAC), Prof. Anil Gupta (IIM Ahmedabad), Dr. Sanjay Singh (Gennova), Ms. Deepanwita Chattopadhyay (IKP Knowledge Park) and Shri Rakesh Rewari (GIIN).

The suggestions from this discussion were:

- BIRAC should start training programmes for the innovators for fine tuning them to the market scenario.
- Policies must be drafted to fill in the loopholes towards leveraging entrepreneurship.
- Attempts must be made towards reducing risks for grass root level innovators
- Innovators should be directed towards designing innovations to address chronic disease

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- Instead of reclining on the past glories, the innovators, entrepreneurs, funding agencies, policy makers and investors must be on a constant move for better innovation and for bringing the innovation to the doorstep of the masses.
- High impact funds should be directed towards commercialization of innovation products.
- Focus should be on finding solutions for taking innovations to the power of infinity
- Solutions for rural settings need to be developed keeping a fine balance between affordability and specificity. If the products can be made affordable by compromising a little bit of specificity, it may still work out much better for rural areas.
- Statistics and Big data should assist entrepreneurs



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

1. Government and all stakeholders must join hands to help the start-ups beyond seeding stage.
2. The innovators with scientific temperament must be trained with business techniques in order to propel bioeconomy in India.
3. Regulatory facilitation should be worked out with a sense of urgency.

Innovation Marketplace Elevator Pitches and People's Choice Awards

Based on the jury decision for Innovation marketplace pitching session, the following awardees were awarded with Bio-Innovation Fair Awards:

First Prize : Mr. Nachiket Deval (Coeo Labs)

Second Prize : Dr. Pawan Mehrotra (Poorti) and Dr. Pankaj Parashar (Cutting Edge)

Third Prize : Dr. Rajkumar Rajagopal (Cellzyme) and Mr. Vinayak Nandalike (Yostra Labs)

Based on public voting, two innovators were awarded with People's Choice award and the awardees were:

1. Dr. P. M. Murugesan (Rope Production Centre, Madurai)
2. Mr. S. V. Midhu (Eram Scientific Solutions)

**Team
BIRAC**



Entrepreneurship: A personal perspective from the world of R&D funding

In my experience, entrepreneurs are busy people. So for any entrepreneurs reading this article, I do not feel I should delay you unnecessarily. If you are in a rush, the take-home message of my piece is presented in the text box below.

Should this have grabbed your attention, however, I hope you will read on. I will tell you about what has shaped my views on entrepreneurship and how this influenced me at the time I worked for a funding organization. It is of particular significance to organizations like BIRAC to know how to assess the risks and benefits of working with entrepreneurs in order to harness their potential. Only through this can India build on the excellent science base the country is renowned for.

The bottom line

Entrepreneurs are generally bold and unashamed individuals, with well-managed egos. Whilst they can be thoughtful, they are usually single-minded. Their goal is to bring change to whatever aspect of life they have set in their sights on. For those of you starting out in product development, let me offer you some advice. I have summarised it in 3 pointers. Given that 'pointers' seems rather feeble, I have taken a leaf out of physics and given my proposals the status of 'laws'.



Dr. Ted Bianco

Ted Bianco is the former Director of Innovations at the Wellcome Trust. He now works as an independent advisor in life sciences R&D and sustainability research (correspondence address: tedbiancoconsulting@gmail.com).

Bianco's Laws of Entrepreneurship

Bianco's first law: Focus on success

No distractions, no hesitancy, no delusions

Bianco's second law: Don't be proud

Hire in missing competencies; license-in missing technologies

Bianco's third law: Be urgent

Good ideas attract competitors; Not-so-good ideas need ditching

Formative influences

For 16 years, I had the very great pleasure of working for a charitable foundation called the Wellcome Trust, that is headquartered in London. Named after its founder, Sir Henry Wellcome, this is a medical research charity with sufficient resources to operate as a fully independent philanthropy. Henry was born into the humblest of circumstances in nineteenth century North America. Yet he got himself an education, went on to train as a pharmacist and emigrated to England, where he became a highly successful businessman. He achieved this through a combination of boldness, application and vision. In short, he was a consummate entrepreneur. At the age of 27 he had already founded his company (with his business partner, Silas Burroughs) and by 30 he was manufacturing a product. Three years after that he was operating on 2 continents (Europe and Australia). As Henry matured, he broadened his interests. He added research laboratories to the business and became an enthusiastic patron of the arts. His collection of books, paintings and objects (of which many were from India) became the cornerstone of one the leading repositories cataloguing the history of medicine.

When I joined the Wellcome Trust, I discovered that a number of its most admirable traditions reflected the character of Henry. It had a strong sense of purpose and, importantly, it was highly flexible in the way it approached realising its objectives. That is, it saw itself as focusing on achieving success rather than on the mechanisms by which that success would be delivered. Thus it was that I came to see the role of funder as entrepreneurial, because only by constantly adapting could we ensure that we were staying true to the mission and not getting lost in the process.

I quickly learned that the best way to promote research and development is often context-specific. For example, it may be necessary to accommodate research support requests of variable magnitude, duration and location. The work very often requires the input of diverse types of people, organisations and disciplines. With all the possible permutations involved, why would the best research opportunities arise within a small sub-set of these options? It is quite apparent that one needs room to manoeuvre. It is all too easy to create rules and

eligibility criteria that hamper the funder more than the funded, owing to the phenomenon of unintended consequences. So I tried to keep hard-and-fast rules to a minimum.

The next thing I learned was the error of creating a proliferation of schemes. Certainly, it was one way to address the variability in who and what it was we wanted to fund. But, inevitably, it led to money being in the wrong places: too much here, too little there, when the demand and quality of what was coming forward from the research community was so difficult to predict.

Finally, I discovered the limitations of peer-review in pursuing certain goals, in particular product-development R&D. Granted it is better than an omnipotent individual, or cabal, believing they have the wisdom to take all of the decisions. But peer-review is exceedingly conservative, leading to the same, successful individuals getting most of the funding and the same, familiar approaches being endorsed by experts that feel most comfortable with mainstream methodologies.

It was with these considerations in mind that I set out to play my part in the Wellcome Trust's efforts to support innovative R&D through the funding of healthcare entrepreneurs.

The entrepreneurial funder

Most R&D projects are destined to fail. They are either technically intractable, unattractive to consumers, or simply insignificant in terms of medical progress. With the odds stacked against a good outcome, funders need reasons to believe that they have maximised the chances of backing a winner. Three fundamental conditions seem to predict a higher than average chance of success: a great team, a convincing idea, and timing that favours the market introduction of the product. With so much to get right, it can compromise the quality of what gets funded if one specifies too many other criteria. But funders tend to have schemes that do exactly that: typically these are focussed on a particular disease, or on a class of technologies. That is fair enough if one has no choice (e.g. you are set up as a foundation to deliver a specific product). But if one has the freedom to choose, I believe one gains a major advantage if one can decide what to fund on excellence alone, taking into account that the therapeutic area must have significant merit.

It is with these considerations in mind that the Wellcome Trust launched the 'Affordable Healthcare' scheme in India, lead by the indomitable Dr Shirshendu Mukherjee. Dr Mukherjee had the job of filtering proposals brought forward by the community and shortlisting those that fulfilled our 3 criteria for predicting success. The R&D that was supported covered a great span of medical science, from ophthalmology to infection and from small molecule therapeutics to devices. It was a highly productive scheme.

So, what was it that impressed me the most about researchers we encountered through this process. First, was their enthusiasm to engage the problem on the ground and the patients affected. And second was their desire to

address the technical challenges of the R&D, since Indian business could be wary of technical risk, having succeeded historically through the manufacture of generics.

Working with entrepreneurs

One of the most gratifying aspects of my work was meeting the people we funded. In the case of Affordable Healthcare, these came in many shapes and sizes, from highly experienced scientists in multinational companies to bright young things starting out in brand new, small businesses. Others worked in academic institutions or not-for-profit organisations. In each of these quarters, the real entrepreneurs stood out. But how was a funding organisation to spot them? And what, precisely, was it that singled them out?

The only way I know for a funding committee to make the necessary judgement is by presentation and interview. That takes time, but is absolutely necessary because it is so informative and revealing. Even an intense, 20 minute questions/answers session can be enormously helpful. It is one of the few ways to assess the merits of an individual with a limited publication record, such as a young investigator, or a senior scientist who has been long-term in industry. You may say why take the chance with someone that has not yet published extensively, but I believe that would be a serious mistake. Of course, one should back the experienced scientists, but it can be at the early stages of one's career that exciting ideas for disruptive technologies are first conceived. Look at the ages when many Nobel Laureates first embarked on the research that was ultimately to win them their recognition.

When one uses interview as a tool, it is also surprisingly easy to evaluate a team. Is the leader in charge, but inclusive; do the team members seem to be on top of the questions; are they their fiercest critics, or do they seem complacent; do they sound competent to trouble-shoot their way through the problems they will inevitably face? These are just a few of the characteristics one looks for in a team. When I advise teams today in my role as a consultant, it is these same qualities that I impress on the group.

In the end, quality shows, and no more so than in the entrepreneur. So, let me leave you with this. Much attention is paid to the individual when it comes to research funding. But I believe that is an error when it comes to product development R&D. The great entrepreneurs are almost always charismatic characters and there is a reason for that. They need to surround themselves with really smart people that complement the leaders abilities, challenge each other, and pull together so as to ensure each others success. Ironically, in academic science, one is encouraged to see those in your peer-group as competitors rather than colleagues. After all, there are only so many grants to give out or promotions to be won. But when it comes to achieving success in product-development R&D, it is the team that is king. So I say, long live the entrepreneurs with all that they bring to our progress in healthcare, just so long as they remember who they need with them to realise their ambitions.

National Entrepreneurship Day, 9th November

National Entrepreneurship Award 2017 under Mentor (Government) Category awarded to Dr. Renu Swarup, Senior Adviser, DBT & MD BIRAC

Dr. Renu Swarup, Senior Adviser in the Department of Biotechnology, Ministry of Science & Technology and MD BIRAC has been awarded with National Entrepreneurship Award, 2017 under Mentor (Government) category in the Recognition Track. Union Finance Minister Shri Arun Jaitley presented the award at the National Entrepreneurship Award Ceremony, 2017 in New Delhi.



National Entrepreneurship Day Celebrations -Workshop organized at Miranda House

BIRAC celebrated National Entrepreneurship Day on 9th November 2017 by organizing a workshop for young students based around the theme "Catalysing a cultural shift in youth entrepreneurship" at Miranda House, Delhi University. The event was aimed at imparting further momentum to the thrust laid on entrepreneurship by the government and to encourage more youth to become entrepreneurs and job creators. Inaugural session was initiated by the welcome speech of Dr. Pratibha Jolly, Principal Miranda House. She welcomed the participants and introduced the objective for celebrating National Entrepreneurship Day. Dr. Renu Swarup, Senior Adviser, DBT and MD, BIRAC highlighted BIRAC's role in nurturing entrepreneurship. She gave a brief overview of BIRAC's programmes and its journey over the years and how it has been able to transform the Indian Biotech landscape.



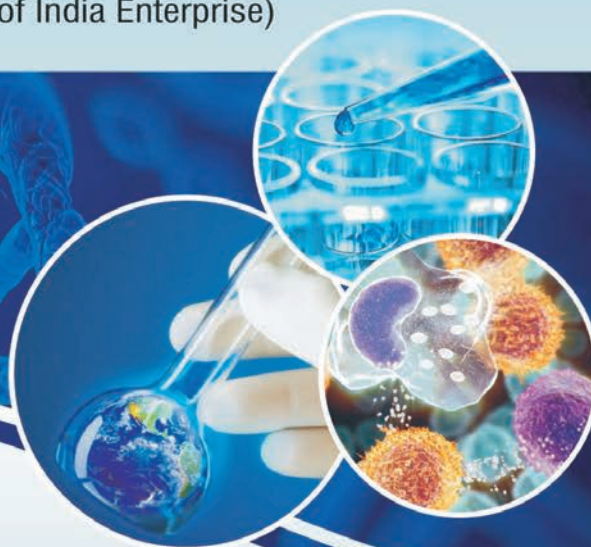
Dr. Sanjay Saxena, Head Investment, BIRAC apprised the participants about the different programs available for startups and entrepreneurs. Ms. Kriti Taneja from FITT Delhi talked about the role of incubators in boosting entrepreneurship. Ms. Geetika Dayal, Executive Director, TiE-Delhi NCR gave an interesting talk on how entrepreneurship can be taken up as a career choice. Towards the end of the workshop, two of the BIRAC supported start-ups, i.e., Dr. Tripti Bhatnagar from Codon Biotech and Dr. Sudeshna Adak from OmiX Research and Diagnostics Laboratories, shared their wonderful journeys as start-ups with the students. The event concluded with the vote of thanks and was successful in truly inspiring and bringing out the real spirit of entrepreneurship.



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



12th Call for Proposals under
**BIOTECHNOLOGY
IGNITION GRANT (BIG)**
For Igniting New Ideas
1st Jan - 15th Feb 2018



**BIG Scheme supports Biotech Entrepreneurs
to establish Proof-of-Concept for innovative and impactful ideas**

BIRAC invites proposals from

Biotech Start-ups and Individual Entrepreneurs with innovative idea having potential for commercialization. Eligible entities include:

- **Start-ups having a registered company/ LLP incorporated on/after 1st January, 2015**
- **Scientists, Faculty, Research Scholars, Graduates in any discipline incubating/ intend to incubate at a Bioincubator**

Scope

- BIG Scheme supports high level innovation in the Biotech sector and is not meant for basic research projects
- Grant-in-aid upto INR 50 lakhs for a maximum period of 18 months
- Implementation and Mentoring through BIRAC's BIG Partners

In addition to regular themes (refer BIG Scheme Guidelines), BIG12th call encourages innovations in Special Focus Areas (SFA) as well which include Internet of Things, IoT Sensors, Big Data Analytics, Cloud Computing, Machine Learning and Artificial Intelligence, Automation, Robotics and related disciplines in transforming healthcare, agriculture and other bio-based industry/ markets in general.

How to Apply

BIG scheme allows only online submission of proposals. Please register on BIRAC website under "BIG User". User registration is open round the clock. For further details log on to www.birac.nic.in

Note: Prior recipients of BIG grant are not eligible to apply

BIRAC's BIG Partners



www.ccamp.res.in



www.fit-iitd.org



ikpknowledgepark.com



www.kiitincubator.in/



www.venturecenter.co.in/



www.iitk.ac.in/sic/d

**Proposal
Submission**

**Opens
1st January 2018**

**Closes
15th February 2018 (23:59 hrs)**

For queries, contact: sped.birac@gov.in; biracbig.dbt@nic.in



Annual Grand Challenges Meeting, Oct. 2017

The Annual Grand Challenges Meeting and Funders Forum were held from 1st to 4th October, 2017 in Washington DC. Dr. Renu Swarup, Senior Advisor DBT and MD BIRAC, Dr. Shirshendu Mukherjee, Mission Director, PMU-BIRAC and Ms. Anjana Seshadri, Senior Policy Analyst, PMU-BIRAC, participated as part of the Indian and Grand Challenges India delegation.

This annual event brings together Grand Challenges partners, funders and grantees from across the world, together to assess their progress and chart their future direction while exploring and cementing new partnerships and old alike.

The Funders Forum was held on 1st October, 2017 at the National Academy of Sciences, where the premier and largest funders of medical, public health and development, came together to discuss their current priorities in these areas and explore the possibilities of partnering with new organizations or exploring new areas to work in through panel discussions and interactions with the attendees.

Dr. Swarup was part of a panel on the Grand Challenges partner countries, with counterparts from Grand Challenges South Africa, Dr. Zoleka Ngcete and from Grand Challenges Africa, Dr. Evelyn Gitau, where they explained in detail and discussed their GC country work and priorities and

opportunities for cross-cutting collaboration. In an informally designed session following the panel, each funder was given one minute to talk about their current work and the areas where they would like to expand into with new partners. Dr. Swarup presented the priority areas for the Department of Biotechnology, Government of India and Dr. Mukherjee presented the priority areas for Grand Challenges India. This was followed by roundtable sessions where some new areas and themes were discussed in detail in smaller groups.

The Grand Challenges Meeting began on 2nd October 2017. The overall theme this year focused on pandemic preparedness where plenary sessions, panels and addresses from well-known experts in the field of pandemic preparedness spoke about what we have achieved so far and more importantly, how we can work to improve global pandemic preparedness capabilities.

A series of Spotlight talks, each day, had researchers and innovators from an array of themes, present short, engaging talks or presentations of their work.

There were eight scientific tracks, around Healthy Birth, Growth and Development, From Innovation to Impact, Crop Research, Vaccines and Global Health Technology, Accelerating Development through Breakthrough Global Education



The participants of the Funders Forum 2017.

Innovations, Optimizing Drug Discovery and Translation Strengthening African R&D: A dialogue with Global Partners & African Diaspora in the United States, Innovating for Adolescents.

Grand Challenges India also took part in a round table on antimicrobial resistance, with Grand Challenges South Africa, Brazil and Africa, where the session was designed to present each country partner's areas of interest in the broad topic of AMR and then take audience input.

There were also several meetings arranged between the Indian delegation and various organizations and stakeholders, such as the Bill & Melinda Gates Foundation Wellcome Trust, USAID, as well as other agencies/ bodies to explore new opportunities to partner.

The Closing Session included a keynote address from the Co-Chair and Trustee of the Bill & Melinda Gates foundation, Bill Gates spoke on the work that we need to do to make sure children don't die of preventable diseases any more among others.



Grand Challenges India team with Dr. Renu Swarup at the Grand Challenges Meeting in Washington DC.

Invention for Good Grand Challenges, D.C.

The Bill & Melinda Gates Foundation and Global Good-Intellectual Ventures organized a session chaired by Bill Gates on 4th October 2017, where the goal was to identify best practices for invention and product development targeted to low-resource nations and identify areas where similar organizations could collaborate to deliver impact. Here, six selected innovations from across the world were presented followed by a Commercialization and Scale panel, consisting of business and scientific experts. This panel discussed ways to take these innovations and others like them to scale to achieve the greatest impact on public health.

Dr. Renu Swarup, Senior Advisor DBT and MD BIRAC and Dr. Shirshendu Mukherjee, Mission Director, Program Management Unit at BIRAC and Dr. Diana Tay, Wellcome Trust attended the meeting.



Mr. Bill Gates speaking with Dr. Renu Swarup and Dr. Shirshendu Mukherjee

Keystone Symposium: Maternal-Fetal Crosstalk: Harmony vs. Conflict

The Keystone Symposium was held in Washington D.C. from 4 - 8th October 2017, immediately following the Grand Challenges Meeting.

The conference brought together investigators from diverse disciplines who investigate maternal and fetal factors that shape pregnancy outcomes by exploring how these systems work together or are at odds. The conference developed these concepts, illuminating developmental, genomic/epigenomic, immune, microbial and metabolic factors, as well as discussed how acute exposures during pregnancy, such as infection, shape maternal-fetal outcomes. The presentations addressed critical gaps in our

knowledge of maternal/fetal harmony and conflict, and target paths to improve understanding of issues related to social, economic and geographic inequality that predispose some groups to enhanced risk during pregnancy. The discussions led to a better understanding of the biology, and helped develop new collaborations and paths to improve clinical outcomes of pregnancy.

Dr. Shirshendu Mukherjee, Mission Director PMU-BIRAC and Dr. Arpita Gupta, Senior Program Officer PMU-BIRAC attended the Keystone Symposium.

Several Scientific Sessions were held over a period of 4 days with following topics (5th Oct -8th Oct 2017):

- The Placenta – Cells to Tissues
- The Rapidly Evolving Placenta
- The Establishment of Pregnancy – Tolerance and Rejection
- Crosstalk between the Maternal and Fetal Microbial Communities
- Epigenetics and Imprinting in Feto-Placental Harmony and Conflict
- Genomic Communication during Pregnancy
- From Uterine Quiescence to Parturition
- Epidemiology of Pregnancy Health and Outcomes
- Poster Sessions
- Workshop: Immunology of maternal fetal harmony vs conflict
- Panel: How to harness Basic and Translational Biology Research to Improve Pregnancy outcome in low and middle income countries.

PMU-BIRAC team was directly a part of one of the panels, which was:

How to harness Basic and Translational Biology Research to Improve Pregnancy outcome in low and middle income countries: The PMU-BIRAC

team (Dr. Shirshendu Mukherjee and Dr. Arpita Gupta) represented state of child morbidity and mortality in India and what Grand Challenges India is trying to achieve through its All Children thriving and HBGDki India (Healthy Birth Growth and Development knowledge integration India) programs. While appreciating the efforts of scientists for their forward looking research, the team also emphasized two prospective translational research works presented during the symposium, emphasizing their utility in Indian settings. These were: i) Progesterone Signaling in Human Parturition: Role of Progesterone Receptor Modifications; ii) Meta-Analysis of Vaginal Microbiome Data Provides New Insights and relation with predicting Preterm Births.



Grand Challenges India delegation at the Keystone Symposium

Immunization Data - Innovating for Action (IDIA) Call

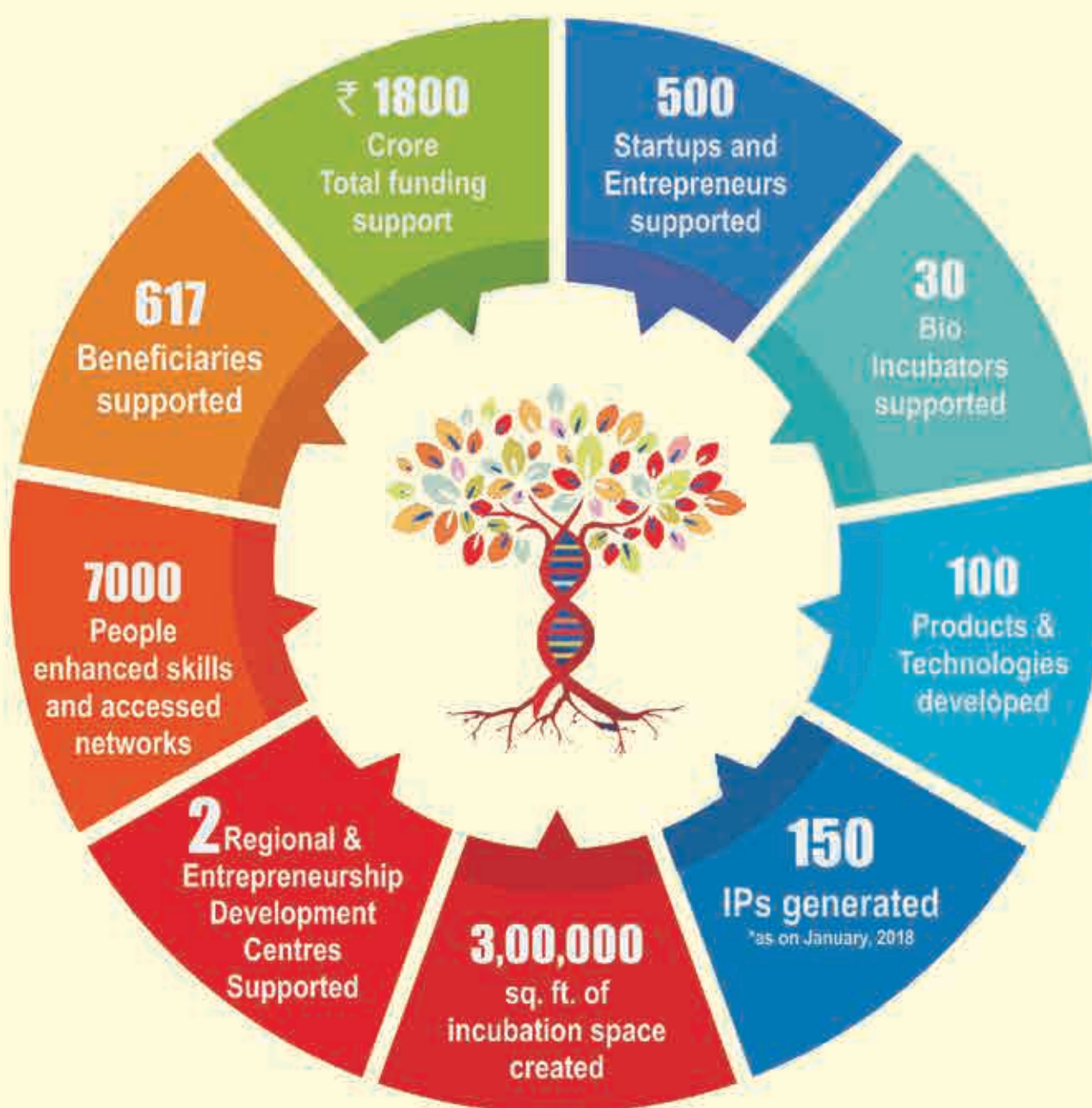
The Grand Challenges India and the Program Management Unit at BIRAC (PMU-BIRAC) have announced launch of the Grand Challenge call titled 'Immunization Data - Innovating for Action (IDIA)', a program directed at addressing challenges in collecting, analyzing and using data on immunization under Grand Challenges India (GCI).

This call, 'Immunization Data - Innovating for Action' is in technical partnership the Ministry of Health and Family Welfare, Government of India, the Department of Health Research (DHR) and the Indian Council of Medical Research (ICMR), who will be providing their valuable technical and practical inputs in selecting and reviewing projects.

This program aims to identify and incubate innovative ideas addressing various challenges in the data systems for immunization in India. The goal of the program is to find solutions that are different from current approaches and that stretch the frontiers of the programme. The solutions submitted to this GCI may deal with immunization data nested within health information, or may focus specifically on immunization only and should have the potential to be scaled up in multiple settings. Solutions that encourage translation of leading and best practices and solutions developed by the private sector as well as academic research, even from outside health sector could be supported. Any Indian individual or institution, can participate in this challenge, on its own or in partnership with other Indian or international entities.

The interested participants are required to submit the proposal online by January 15th, 2018. If selected, the proposals will be supported for up to 12-18 months, funded at up to \$200,000 USD per project. These awards require preliminary data and are meant to provide an opportunity to develop, refine, and rigorously test approaches that have previously shown promise in controlled or limited settings. There is also a potential opportunity for Phase II funding up to 1 million USD per project for the most successful projects from Phase I. For a complete understanding of the scope, please visit the site www.birac.nic.in/grandchallengesindia, where from the Request for Proposals can be downloaded.

BIRAC IMPACT



BENGALURU TECH SUMMIT

The Department of IT, BT and S&T, Government of Karnataka, organized Bengaluru Tech Summit from 16th to 18th November, 2017 at Bengaluru Palace. The theme for the summit was IDEATE, INNOVATE & INVENT.

Honorable Chief Minister, Shri Siddaramaiah launched the Bengaluru Technology Summit-2017 at Bengaluru Palace on 16th November in the presence of other dignitaries that included Guest of Honor, Ms. Anne Berner, Hon'ble Minister for Transport and Communications, Finland; Mr. R.V. Deshpande, Minister for LMI and Infrastructure Development,



Government of Karnataka, Mr. K.J. George, Minister for Bengaluru, Development and Town Planning Government of Karnataka, Shri Priyank Kharge, Minister for IT, BT and Tourism, Shri D. Sudhakar, Chairman KEONICS. Shri C.N. Ashwath Narayan, MLA Mallshwaram Constituency, Dr. Subhash C Khuntia, Chief Secretary, GoK, Shri S Gopala Krishnan, Chairman, VGIT & Co-Founder, Infosys, Ms. Vanitha Narayanan, Chairman, IBM -India, Dr. Omkar Rai, Director Technology Parks of India and Dr. Kiran Mazumdar Shaw, Chairman VGBT & CMD, Biocon.

The summit was host to an exhibition and featured a number of innovations. The expo brought together nearly 250 innovators and start-ups, scientists from industry and academia, public and private sector, and national organisations. The exhibition ended with the distribution of exhibitors awards.

The conference focused on Bio-Therapeutics, CRISPR, Infectious Diseases and Vaccines, Bio-Medical Devices, Diagnostics, Personalized - Predictive Medicines, Rare Diseases and Orphan Drugs, Artificial Intelligence, Robotics, Analytics, Block Chain Technology, etc.

Speakers at the opening plenary and parallel sessions included acclaimed voices from the global IT, BT and S&T community.

The tech summit had multi-track conference and agriculture was one of the key focus areas. The thought leaders discussed some of the key areas like overcoming the challenges of technology adoption, upcoming platforms of agricultural biotechnology, loopholes to be plugged in biodiversity and regulatory policies and IPR protection and use of CRISPR/Cas9 in genome editing and transcriptional regulation.

A team of two officers, Dr. Amita Joshi, BIRAC and Ms. Arshi Mehboob, PMU-BIRAC actively attended the sessions and represented in the tech summit. A joint stall was put up explaining all the BIRAC and GCI funding schemes & its partners through posters.

The new initiative of GCI 'Immunization Data - Innovating for Action (IDIA)', a program directed at addressing challenges in collecting, analyzing and using data on immunization under Grand Challenges India (GCI) was publicised during the event.

Dr. Shirshendu Mukherjee, Mission Director - PMU-BIRAC, was one of the panellists in Session 15- International partnering in Biotechnology and Pharma on 18th November, 2017, where he gave international perspective of mission directed strategic partnerships and collaborations.

The response of the entrepreneurial community to the BIRAC stall was phenomenal. Major enquiries were made on BIRAC supported schemes for young innovators and entrepreneurs. The interest in National Biopharma Mission was seen in medical devices and diagnostics experts. The entrepreneurial queries mostly consisted on topics of clean toilets, affordable enzymes, mechanical aids involved in elderly care etc.

Overall, the role of BIRAC as an igniter and facilitator was very much appreciated.



INDIA-CANADA TECH SUMMIT

The Technology Summit organized by Department of Science and Technology, Government of India and Confederation of Indian Industry was organized in partnership with Canada and was held at New Delhi from 14th-15th November, 2017. Various partners included world's largest automobile manufacturers, pharma companies, Export Development Canada (EDC), premiere institutions both from India and Canada (GITA, Alberta, British Columbia, CSIR), Digital India and Ministry of Agriculture & Farmer's Welfare, India, Ministry of Road Transport & Highways, Canada and many more. The inauguration was addressed by Hon'ble Union Minister for Science & Technology, Earth Sciences and Environment, Forest & Climate Change, Dr. Harsh Vardhan followed by a special address by the Guest of Honour Honourable Minister of Innovation, Science and Economic Development (Canada), Mr Navdeep Bains. The welcome remarks raised tremendous hopes towards a better engagement within the two countries with the scope of better businesses and opportunities to strengthen partnerships & pitch new ideas. The other esteemed speakers included a total of 90 speakers equally distributed from India and Canada from different Companies and Institutions. During the panel session, "Women in Science and Entrepreneurship", Dr. Renu Swarup, MD, BIRAC & Senior Adviser, Department of Biotechnology, Government of India, shared her experience about the positive impact in the field of Science and Technology in India due to the constant support provided to innovative women in this field.



The Exhibition comprised of both the Indian (28) and Canadian (22) delegates with the theme "Smart Technology", "Clean Technology" and "Smart Care". The Ministers visited different booths in the pavilion and interacted with the enthusiastic teams. The exhibitors received appreciative responses from various dignitaries of both countries.

BIRAC team met several visitors at the booth on both the days of the Technology Summit. The impact created by BIRAC in terms of Smart Technologies and Smart products, during the last 5 years to support the innovation was cherished by the visitors. The visitors appreciated the constant support provided to Indian Start-ups at different stages of innovation (right from the idea generation to the pre-commercialization) leading to the product development. Apart from the funding, the strong technical as well as IP support provided to the applicants was very well acknowledged.

3rd India International Science Festival (IISF)

The 3rd India International Science Festival (IISF) was held in Chennai from 13-16th October 2017, at various venues including Anna University, Central Leather Research Institute (CLRI), Structural Engineering Research Centre (SERC), National Institute of Ocean Technology (NIOT) and IIT-Madras. IISF-2017 was inaugurated by Hon'ble Union Minister for Science & Technology, Earth Sciences and Environment, Forest & Climate Change, Dr. Harsh Vardhan, in the presence of senior scientists, State and Central ministers, foreign dignitaries and numerous enthusiastic audiences. The prime objective of the festival was to bring scientific temper among the masses and to showcase India's contribution to Science and technology over the years. The goal of the festival was to build a strategy for rural India through the advancement of Science and Technology. Further, the science festival also intended to make innovation beneficial for the people and develop technologies affordable to the masses.

IISF-2017 had many parallel activities covering all the different levels of participation in Indian science, right from grass root innovation summit, Women Entrepreneur Conclave, Young Scientist Conclave to National Start up Summit and Mega Science technology Industry Expo. BIRAC participated in the IISF 2017 Mega Science and Technology Expo along with other Dept. of Biotechnology institutions and occupied a stall of 500 sq ft to showcase some of the successful technologies and products developed through BIRAC funding.



Two BIRAC officers attended the science festival. BIRAC innovators were chosen to showcase their products in the stalls for all the four days.

The product prototypes showcased by BIRAC were:

- Post Mastectomy Breast Prosthetics (Poorthi),
- 3D Printed below Knee Prosthetics (PSRP 3D Tech),
- Scintiglo (Cutting Edge Medical Devices),
- SYNC Integrated Glucometers (Biosense),
- Touch Hb (Biosense)
- MultiAnalyte Reader (Path Sodh Healthcare Pvt Ltd)

The BIRAC supported technologies or products showcased by the selected innovators were.

- MAXIO-Tumor Ablation and Biopsy Device by Perfint Health care Pvt, Ltd
- Malaria Rapid diagnosis kit by Genomix Biotech
- Synthetic Pheromone Technology by ATGC Biotech
- Banana Rope based Value added products from Rope production centre, Madurai
- Wearable Alternate Kidney from Padmaseeta Technologies Pvt. Ltd
- Below Knee 3D printed Prosthetic foot from PSRP 3D technology
- Thermo graphy based non-invasive Breast tissue imaging from Tuscano Pvt. Ltd
- E-Toilet from ERAM

BIRAC stall attracted a lot of young minds who were mainly interested in understanding BIRAC funding schemes and about BIRAC supported products. The dignitaries who visited the stall praised BIRAC's effort and congratulated the innovators on their achievements.

As a unique programme of IISF 2017, a Women Scientists & Entrepreneurs Conclave was also organized to promote and encourage science education and entrepreneurship among the women. The aim of this programme was to develop entrepreneurship and also explore new vistas of opportunities in the field of science and technology among the women. The event was graced with the presence of Hon'ble Union Minister for Science & Technology, Earth Sciences and Environment, Forest & Climate Change, Dr. Harsh Vardhan and Dr. M S Swaminathan who inaugurated the BIRAC Women Bioincubator. Other dignitaries such as Dr. Soumya Swaminathan, DG ICMR; Prof. K VijayRaghavan, Secretary DBT and Dr. Renu Swarup, MD, BIRAC were present at the inauguration of this event. Dr. Renu Swarup addressed the audience mentioning the consistent initiatives for instituting several schemes and partnerships, this providing an encouraging platform for all the women entrepreneurs in the country.

Events like IISF can usher in a pivotal role for developing scientific temper among the masses. The ambitious efforts like Digital India, Make in India, Start-up India and less cash economy can truly materialize only when science reaches the last mile which will strengthen the socio-economic fabrics of our country. The India International Science Festival is a dedicated effort in this direction.



SKOCH Order-of-Merit AWARD

50th SKOCH Summit was held on 20th-21st December, 2017 at the Constitution Club of India, New Delhi. BIRAC was awarded with SKOCH Order-of-Merit under "SKOCH Technologies for Growth" category for the project "Creating Biotechnology Innovation Ecosystem in India from Concept to reality". SKOCH Technologies for Growth Award is an initiative towards recognising top performing Technology Users, Technology Implementers & Technology Providers across sectors, organisations and departments. It is a step towards encouraging, recognising and promoting the best applications of technologies across sectors/domains.



TiE con-Delhi, 2017

BIRAC has partnered with The Indus Entrepreneurs (TiE-Delhi NCR) with a view to promote and encourage entrepreneurship in biotech sector. TiE Delhi – NCR hosted its 16th annual flagship event TiEcon Delhi 2017 – Reimagining Success, one of Asia's biggest entrepreneurial conferences on 15th -16th December at Taj Palace, New Delhi. The 2 day mega conclave brought together entrepreneurs, industry leaders, top investors, senior corporate professionals and academia. BIRAC participated in the event by sponsoring the same. As part of the event, a session track titled, "In tune with tech-Empowering Women" was organized by BIRAC. The session's focus was to discuss various aspects of promoting women entrepreneurship in the biotech sector at a national level. The session was chaired by Dr. Renu Swarup, Senior Advisor DBT and MD BIRAC. The panel included Shri H. K. Mittal, Department of Science and Technology; Dr. Azam Ali Khan, TIDES Incubation Centre, IIT-Roorkee; Dr. Valli Kumari Vatsavayi, Andhra Pradesh Innovation Society; Dr. Sudha Nair, Golden Jubilee Women Biotech Park; Dr. Radha Rangarajan, Vitas Pharma BIRAC along with TiE announced a new initiative for rewarding women entrepreneurs called "Biotech WInER Award" (Women In Entrepreneurial Research). The details about the award are available at BIRAC website. BIRAC also showcased various products and technologies developed through its support at a large pavilion in the exhibition area. The pavilion attracted many visitors, including budding entrepreneurs, industry experts, angel investors, accelerators etc.



Dr. Renu Swarup, MD BIRAC along with other dignitaries announced the launch of BIOTECH WInER AWARD



Shri Ramesh Abhishek, Secretary DIIPP at BIRAC stall

(Continued from page 12) **Celebrations at BIRAC's BioNEST & UICs**

Several BIRAC Bioincubators across the country also celebrated the National Entrepreneurship Day on November 09, 2017 by organizing various events.



Entrepreneurship Open House at Venture Center, Pune



Celebrations BIRAC BioNEST at IIT Kanpur



Start-up pitch competition at BIRAC BioNEST BITS Pilani, Goa



Biotechnology Industry Research Assistance Council (BIRAC) is a Section 8, Public Sector Enterprise, set up by Department of Biotechnology (DBT), Government of India as an Interface Agency to strengthen and empower the emerging Biotech enterprise to undertake strategic research and innovation, addressing nationally relevant product development needs.

BIRAC-TiE announce the launch of



**BIOTECH
WinER
Award**
Women In Entrepreneurial Research

WHAT WE PROVIDE

- 15 selected women entrepreneurs will receive seed money of INR 5 lakhs each.
- Access to expert mentor network of TiE & BIRAC
- One year membership of TiE Delhi NCR
- Showcase opportunities at TiE
- Access to TiE Startup Accelerator Programme
- Opportunity to go through an Intensive Accelerator Programme at Golden Jubilee Women Biotech Park, Chennai

WHO CAN APPLY

A woman entrepreneur in the area of Life Sciences/ biotech/ pharma with an exciting entrepreneurial idea.

The woman entrepreneur should be:

- An Indian citizen (holding Indian passport)
- One of the promoters of the Indian company* working on the above idea and in existence for less than 10 years as on date of closure of call
- The Principal Investigator of the project/idea being pitched for

*A company is considered as Indian company if minimum 51% of the capital or if it is beneficially owned by resident Indian citizens and/or Indian Companies, which are ultimately owned and controlled by resident Indian citizens

HOW TO APPLY

To submit your application, please click on the link below:
<https://goo.gl/forms/C1wMffd3gMWzkOkz2>

3 FINAL WINNERS (POST ACCELERATOR PROGRAMME) WILL BE AWARDED

INR 25 LAKHS EACH

IMPORTANT DATES
Submission Starts | Submission Closes
15th DEC, 2017 | 31st JAN, 2018

Mentoring Partners



For any queries, please contact:
Upasana@tienewdelhi.org • spedo2.birac@nic.in

BIRAC PROGRAMMES

SITARE (Students Innovations for Advancement of Research Explorations)

BIRAC SRISTI GYTI AWARDS: Aimed at supporting the innovations and creativity at grass root level among the university students, including individual innovators.

eYUVA (Encouraging Youth for Undertaking Innovative Research through Vibrant Acceleration)

- **University Innovation Clusters (UIC):** UIC initiative seeks to create an entrepreneurial culture in the Universities and help students to take their novel ideas to proof of concept.
- **SIIP (Social Innovation Immersion Fellowship):** A fellowship programme that builds the next generation of social entrepreneurs by helping them 'immerse' and interface with communities to identify gaps and then work on bridging the gaps through an innovative product or service offering.

Discovery, Early and Late Stage Funding

- **BIG (Biotechnology Ignition Grant):** Biotechnology ignition Grant (BIG) is available to scientists, entrepreneurs from research institutes, academia and startups, to stimulate commercialization of research discoveries by providing very early stage grants to help bridge the gap between discovery and invention.
- **SPARSH (Social Innovation Programme for Products Affordable & Relevant to Societal Health):** SPARSH combines social innovation and biotechnology for the well-being of the society by helping, identify and support cutting edge innovations towards affordable product development with potentially significant social impact. SPARSH provides support in the form of impact funding and fellowships.
- **SBIRI (Small Business Innovation Research Initiative):** It is the early stage, innovation focussed PPP initiative to support incremental R&D in the area of Biotechnology to facilitate innovation and risk taking by SMEs
- **BIPP (Biotechnology Industry Partnership Programme):** BIPP seeks to provide support for early to late stage high risk biotech R&D by industry and/or accelerate commercialization of new indigenous technologies.
- **CRS (Contract Research Scheme):** CRS scheme supports academic institutes to take forward research leads through a validation and translation cycle by the industry. Funding is in the form of grant given to both the academic as well as the industrial partner.

BIRAC BioNEST (BIRAC – Bioincubation: Nurturing Entrepreneurs for Scaling up Technology)

- BIRAC's Flagship programme which has created 25 world-class bio-incubators to provide incubation space, mentor networks, instrumentation facilities, IP and technology management support.

Collaborative Funding

- **Indo-French Centre for the Promotion of Advanced Research (CEFIPRA):** Support high quality bilateral research, encourage and enable Indo-French collaboration between public, private research groups, industry, clinicians and end-users in the domain of red biotechnology.
- **Wellcome Trust, UK:** Support innovations in translational medicine in the domain of diagnostics for infectious diseases.
- **Grand Challenges India (GCI):** A consortium of DBT, Bill & Melinda Gates Foundation, Wellcome Trust, USAID, and BIRAC, focussing on supporting innovations in the areas of maternal and child health, agriculture and nutrition, sanitation and infectious diseases.
- **USAID and IKP Knowledge Park:** Support for new diagnostic tools for TB, with funding commitment of INR 5 crores for 3 years.
- **NESTA, UK:** BIRAC partnership with Nesta, a charity organization in UK, is aimed at supporting Discovery Awards Programme for innovators working for innovative diagnostics for anti-microbial resistance (AMR).
- **Industry Innovation programme on Medical Electronics (IIPME):** BIRAC in partnership with DeitY (Department of Electronics and Information technology) launched IIPME for supporting innovations in medical electronics and med devices sector.

Equity Funding

- **SEED (Sustaining Enterprise and Entrepreneurship Development) Fund:** Financial equity based support to start ups and enterprises through bio-incubators for scaling enterprises.
- **AcE (Accelerating Enterprises) Fund:** A Fund of Funds to scale-up R&D and innovation in biotechnology domains of sectors such as healthcare, pharma, medical devices, agriculture, sanitation and many more.

For further information please contact:

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