



Biotechnology Industry Research Assistance Council

(A Government of India Enterprise)

About BIRAC

BIRAC is a not-for profit section 8, schedule B, 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.

Vision

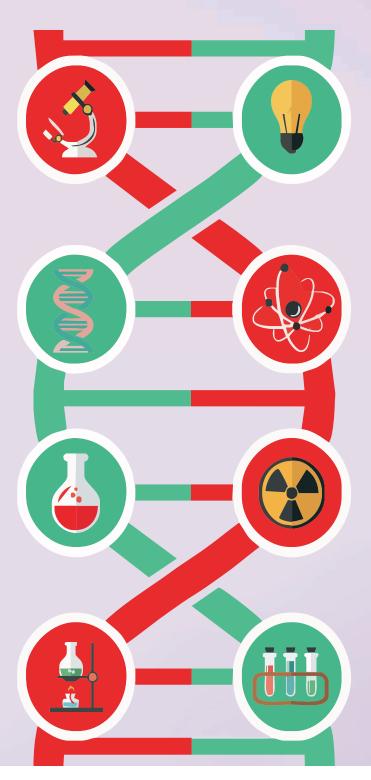
To stimulate, foster and enhance the strategic research and innovation capabilities of the Indian biotech industry, particularly start-ups and SMEs, for creation of affordable products addressing the needs of the largest section of society

Key strategies

- Foster innovation and entrepreneurship
- → Promote affordable innovation in key social sectors
- → Empowerment of start-ups & small and medium enterprises
- → Contribute through partners for capability enhancement and diffusion of innovation
- → Enable commercialization of discovery
- → Ensure global competitiveness of Indian enterprises

BIRAC's aim is to play a transformative and catalytic role in building a US\$100 billion Indian bioeconomy. We believe that the agents of change for building the Indian bioeconomy would be biotech start-ups & SMEs and hence our focus is on raising their capabilities, connecting them to global and local stakeholders such that they achieve global excellence.

BIRAC's Role & Activities



Supporting early and late stage innovation research

- → Ignite new Ideas Biotechnology Ignition Grant (BIG)
- Support early stage research for proof-ofconcept validation - Small Business Innovation Research Initiative (SBIRI)
- Partnership with industry for high risk discovery led innovation - Biotechnology Industry Partnership Programme (BIPP)
- → Facilitating technology validation and development - Contract Research Scheme (CRS)

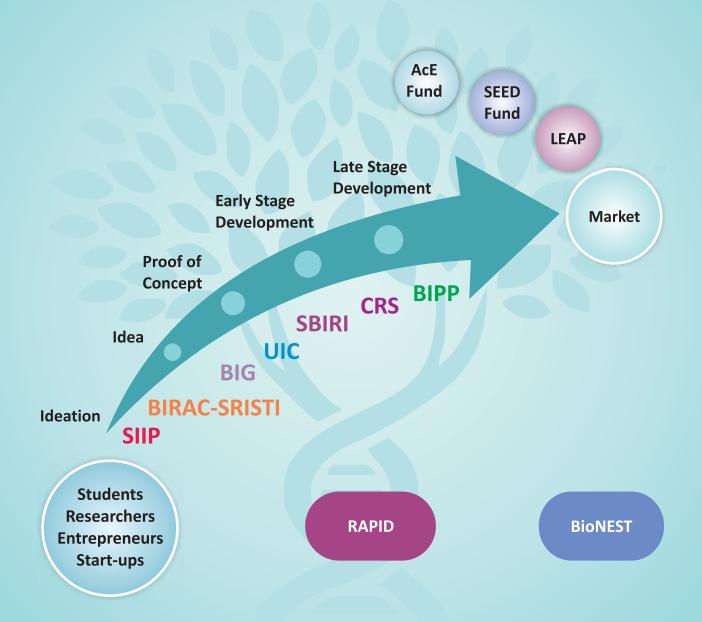
Product innovation and commercialization for addressing challenges of national relevance

- → Through National and International Strategic Partnerships
- → Grand Challenges India, BIRAC-DBT-BMGF
- → SPARSH Social Innovation
- Research Alliance for Product Innovation and Development (RAPID)
- → Product Commercialization Fund LEAP
- → Equity Funds SEED Fund, AcE Fund

Enabling services for promoting the innovation ecosystem

- → IP Management
- Technology Transfer & Acquisition
- Access to Research Resources
- Mentoring and Capacity Building

Driving Product Development



Empowering the Enterprise



Incubation Space:

3,20,000 sq.ft.
of incubation
space for more
than 200 start-ups,
access to
high-end
instrumentation



Access to Research Resources:

Several facilities
have been
established
such as for protein
characterisation
and cGMP
compliant
bioprocessing



IP & Technology Management:

Services ranging from IP protection, evaluation, valuation to technology licencing and acquisition like
Banana
Biofortification from QUT, Australia



Mentoring:

More than 20 workshops and meetings per year organised and facilitated partners provide one-on-one mentorship. Access to 600 domain experts

Creating Impact Across Sectors



BIG is flagship programme of BIRAC, which provides the right admixture of fuel and support to young start-ups and entrepreneurial individuals. BIG is the largest early stage biotech funding programme in India. Funding grant of upto INR 50 Lakhs to best in class innovative ideas to build and refine idea to proof-of-concept

- Bio Medical Devices & Diagnostics 56%
- Agriculture 5%
- Biosimilars & Stem Cells 4%
- Industrial Biotechnology and Secondary Agriculture 20%
- Drugs (including drug delivery) 13%
- Others 2%

BIG HIGHLIGHTS



- >50 products/technologies developed
- 80 New Start-ups created
- Focused interaction with investors
- 3 BIG Conclaves organized for networking
- >700 High skilled manpower supported
- >50 Women entrepreneurs
- 100 IPs generated
- 60 Start-ups have secured Partnered Funding amounting to more than 150 crore
- Pan India outreach across all states
- 24 BIG grantees attended "IGNITE" at JBS, University of Cambridge, UK











Exocan-Exosome isolation kit



Spectrosmart-World's small spectrophotometer



EZCLAMP: Surgical Instrument for Vascular Anastomosis



TJay- Prediction and management of epilepsy



SphinX – Ostomy Management Device



Anaerobic Granulated Sludge -REVY S / REVY D





Transforming the Indian Biotech Start-up Ecosystem



BIRAC-Bioincubation Nurturing Entrepreneurs for Scaling Technologies: Nesting grounds for big take-offs

BIRAC has supported 30 Incubators under "Bioincubators Nurturing Entrepreneurship for Scaling Technologies" (BioNEST) programme. BioNEST has created an infrastructural and entrepreneurial ecosystem where start-ups access incubation, technical, marketing and business mentoring support.

Focus

- World class infrastructure & laboratories for start-ups and entrepreneurs
- Well established research facilities
- Entrepreneurship development
- Interfacing the incubatees to international scientific communities
- Training programs in emerging technologies
- Accelerating innovations and discoveries
- Creation of state-of-the-art mentoring support, IP, technology management & legal support
- Translate research leads through faculty entrepreneurship
- Industry & academia interactions

Achievements

- Total Space supported 3,20,000 sq.ft
- Total number of incubatees ~355
- **2 Biotech Clusters**
- **6 Universities**
- 8 Stand Alone Incubators/Bio Parks
- 5 Indian Institutes of Technology
- 9 Research Institutes

































Germinating Ideas of Innovation

Student Innovations for Advancement of Research Explorations (SITARE)

BIRAC-SRISTI Gandhian Young Technology Innovators

- An initiative launched by BIRAC in collaboration with Society for Research and Initiatives for Sustainable
 Technologies and Institutions (SRISTI), a voluntary organization at IIM Ahmedabad aiming at supporting
 the innovations and creativity at grassroot level among the university students, including
 individual innovators
- 2 categories of awards BIRAC-SRISTI GYTI Awards (Mini-seed funds of INR 15 Lakh to 15 ideas to carry out R&D) and BIRAC-SRISTI Appreciation Awards (INR 1 Lakh each to 100 nascent ideas)
- A total of 35 innovators have been awarded the BIRAC-SRISTI GYTI Awards

Encouraging Youth for Undertaking Innovative Research through Vibrant Acceleration (e YUVA) University Innovation Clusters (UIC)

- The UIC initiative was launched by BIRAC in 2013 to create the culture of innovation and entrepreneurship within the universities
- BIRAC innovation fellowships for 2 postdoctoral and 4 post M.Sc. fellows in addition to innovation grant to conduct R & D
- Industry participation for training, mentoring, sponsored research, networking opportunities and IP & Technology Management
- Currently, 15 fellows are pursuing translational R&D under UIC programme

Five UICs have been initiated at:











Solutions for Community Health (SoCH)

BIRAC launched an Innovation Challenge Award, SoCH i.e., Solutions for Community Health to support innovative ideas from individual entrepreneurs, academia and companies under two themes through an open discussion on My Gov Portal:

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









The shortlisted applicants will be mentored by Domain Experts and will be provided resources to develop crude prototype in just 2-3 days.

The 10 early winners from Ideathons & Hackathons will be awarded with INR 15 Lakh each to develop Minimal Viable Prototype (MVP).

Transformation through Social Innovation



Social Innovation Programme for Products
Affordable & Relevant to Societal Health



Social Innovation Programme for Products Affordable & Relevant to Societal Health

BIRAC launched SPARSH in 2013 with an aim to promote the development of innovative solutions to society's most pressing social problems.

- 6 Calls have been launched till date to solve different social issues with innovative ideas. The first 2 calls focused on Maternal & Child Health. The third & the sixth calls sought technology solutions for sanitation, waste to value and allied problems. The Fourth & Fifth calls focused on Ageing & Health and Innovative Diagnostic tools for Soil & Plant Health, respectively.
- The range of projects included micro-fluidic based on chip Real Time PCR for Neonatal & Maternal Health to a POC device for detection of antibiotic sensitivity of uropathogens in human urine. Other projects include anaerobic & co-digestion of MSW and faecal waste and development of rapid efficient, specific, low cost diagnostic tools for plant disease detection to increase the produce and decrease losses due to different biotic & abiotic factors.
- 14 projects supported under SPARSH scheme have successfully completed.

Social innovation immersion fellowship (SIIP)

SIIP is 18 months immersion fellowship scheme under SPARSH which intends to create a pool of social innovators in the biotech arena which can identify specific needs and gaps in the healthcare sector.

- SIIP is implemented by SIIP partners. SIIP partners for ageing and health are Venture Centre Pune, C-CAMP-Bangalore, KIIT-Bhubaneswar and SC-TIMED.
- 35 social innovators supported under SIIP are trying to develop solutions for most pressing problems in the field of "Ageing and Health" and "Waste to Value".
- 10 SIIP fellows have received follow-on-funding from either BIRAC or other agencies.
- A till date "Maternal and Child Health", "Ageing and Health" and "Waste to Value" clusters have been created.
- TISS is engaged as a knowledge partner.
- 50 novel solutions identified
- 12 prototypes developed

Prototypes developed:

- Low cost and rapid point-of-care diagnostic for detecting neonatal sepsis
- A topical application of micro-nutrient supplementation required for women during pregnancy as per the Recommended Dietary Intake
- Belt prototype for measuring uterine contractions
- A predictive diagnosis kit for detection of pregnancy induced hypertensive disorder-preeclampsia



No. of beneficiaries :

Prototypes, 3 Products and Two Technologies Developed





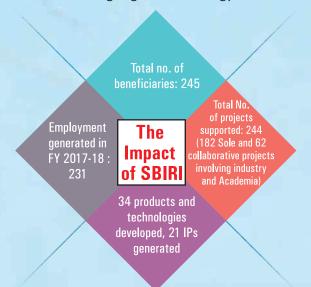




Invigorating Industrial R&D through Innovation: SBIRI & BIPP

SBIRI:

- Since its inception in the year 2005, the SBIRI scheme has played a vital role in fostering public-private partnership for innovative product development.
- The scheme promotes and facilitates companies, especially the small and medium companies, to take their established proof of concepts towards early stage validation.
- Support has been extended to 244 companies in multitudes of innovative projects spanning all areas of cutting edge biotechnology.



BIPP:

- BIPP is an Advanced Technology Scheme for high risk, transformational technology/ process development.
- BIPP supports the development of appropriate technologies in the context of recognized national priorities.
- Support to 186 companies to accelerate high risk discovery right up to late stage/precommercialization research in biotech industry and commercialization of new indigenous technologies





India's first 2G or cellublosic ethanol plant at India Glycols Ltd.



MiRYTHM-an ECG system



Fibroheal for burn wound management manufacturing facility



Ballon catheter



AINA-for measuring blood glucose, lipids and haemoglobin



Scale-up technology for production of recombinant lipase

Equity Funding

AcE Fund

Biotechnology Innovation Fund - AcE (Accelerating Entrepreneurs) Fund, operates as "Fund of Funds" aims to foster R&D and innovation in healthcare, agriculture and sanitation etc. are being promoted by DBT through BIRAC, under the aegis of Make in India initiative. AcE Fund shall act as a catalyst to attract private investors, corporates and LPs to invest in SEBI-registered AIFs, it will, in the process, enrich the intellectual property in the country and encourage more entrepreneurs to work towards product and technology development of high quality at affordable economies in sustainable manner.

AcE Fund intends to plug the gap of the "Valley of Death "encountered by the Biotech start-ups during their product development cycle and growth phase. The assistance to each of the start-up will be up to INR 7 Crore against equity held by the Partner.



SEED Fund

Sustainable Entrepreneurship and Enterprise Development Fund ("SEED Fund") primarily aims to provide capital assistance to start-ups with new and meritorious ideas, innovations and technologies through existing bio-incubation facilities which will harness the entrepreneurial potential of start-ups by providing access to infrastructure, mentoring as well as networking platforms that the start-ups could use during their fledgling days.

Seed support is positioned to act as a bridge between start-ups to graduate to a level to raise promoters' investment and Venture/Angel investment or loans from commercial banks /financial institutions.

Eleven incubators and 15 startups have been supported till date.

Promoting Academic Research Conversion to Enterprise (PACE)

The programme was launched to encourage/support academia to develop technology/product (up to PoC stage) and its subsequent validation by an industrial partner.

The Programme has two components as below:

a) Academic Innovation Research (AIR):

- Launched in 2017, it promotes development of Proof-of-concept (PoC) for a process/product by academia with or without the involvement of industry
- IP rights may be with academia alone or jointly shared between academia and industry (if academia establishes PoC with industry) as per the understanding between the two partners.

b) Contract Research Scheme (CRS):

- The Programme aims at validation of a process or prototype (developed by the academia) by the industrial partner.
- Although the IP rights reside with the academia, the industry partner has first right of refusal for commercial exploitation of the New IP.

The Impact of PACE Scheme

Employment IP, Tech./ No. of No. of Total no. generated **Products** companies academic/research of beneficiaries: (2017-18): Development: 7 supported:25 institutes: 32 57 85

Early Translation Accelerators (ETAs)

Early Translation Accelerators (ETAs) focuses on catalyzing transformation of young academic discoveries (publications/patents) with possible commercial and societal impact into economically viable ventures and technologies in collaboration with academic investigators, will engage industry and will leverage international translation ecosystems. A total of three projects were selected and supported under the health care ETA at C-CAMP.

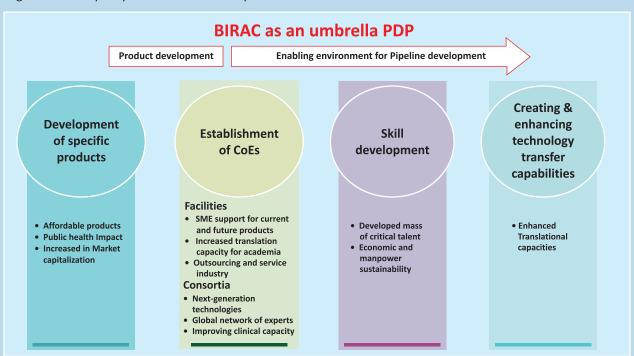
First project has been successfully completed and C-CAMP is in talk with few companies for taking up the technology. Other two projects are progressing well. Second ETA in the area of Industrial Biotechnology has been started at IIT Madras which has identified 5 projects in the said area.



The National Biopharma Mission is an Industry-Academia Collaborative Mission of Department of Biotechnology (DBT), to be implemented by Program Management Unit, BIRAC for Accelerating Early Development for Biopharmaceuticals. The mission was approved by the Cabinet for implementation in May 2017, with a total cost US\$ 250 million which is 50% co-funded with by World Bank assistance.

The programme intends to fill the missing link between the discovery and development with amalgamation of private sector, government and academia to spur biotechnology industry and increase India's Global biopharmaceutical market share. The initial focus will be within three verticals,1) Vaccines for HPV, Dengue and Pneumococci; 2) Biosimilars for cancer, diabetes and rheumatoid arthritis; support establishment of Process Development Labs, CMC, GLP validation and Cell Line Repository for biotherapeutics3) Medical devices and diagnostics.

The overall goal is to support of development of specific products by de-risking and accelerating product development. Together with experts from around the world, the most promising candidates through the pipeline would be selected based on scientific merit/technical feasibility, unmet medical needs, stage of development and alignment with the target product profiles. Through this detailed and rigorous assessment, bringing the product closer to the market within program timelines would be made possible. In the process, the Program would enhance the institutional and organizational capacity needed to successfully conduct clinical trials.



BIRAC Regional Entrepreneurship Centre at C-CAMP



OBJECTIVES

- Foster and facilitate bio-entrepreneurship including imparting necessary knowledge and skills for transforming innovative biotech ideas into successful & sustainable ventures which create national and global impact.
- Create and inculcate a spirit of bio-entrepreneurship.
- Facilitate and catalyse the journey of biotech ideas of bio-entrepreneurs towards commercialization.
- Enable and empower bio-entrepreneurs through business and technology advice and mentorship covering all aspects of business-finaical, legal, IP, business model & planning, market understanding.

Geographies covered - Gangtok, Guwahati, Vellore, Bangalore, Hyderabad, Delhi

BIRAC Regional Innovation Centre (BRIC)



BIRAC in partnership with IKP Knowledge Park (IKP) set up the BIRAC Regional Innovation Centre (BRIC) in 2013, to further BIRAC's mandate of building a deeper understanding of the capacity and gaps in innovation, commercialization and technology absorption ecosystems.

Mandate of BRIC:

Mapping of Southern, Western and Eastern Innovation systems to understand the current status of innovation and identify the gaps that hinder innovation

Build IP awareness and provide IP services to start-ups and innovators

Promote Entrepreneurship in academia and R&D Institutes by creating awareness about entrepreneurship

BRIC IMPACT

Engagement with ~500 innovators directly, 155 innovators indirectly and about 150 Key Opinion Leaders (KOL)

50 workshops and networking meeting on IP, Regulatory and Technology Management

Chennai and Mumbai - maximum number of publications

Hyderabad cluster is dominated by the pharmaceutical sector

Mumbai and Chennai have large number of IP firms

CLUSTERS COVERED:

Southern Clusters:

Hyderabad, Bengaluru, Chennai & Vellore, Thiruvananthapuram, Kochi

Western & Eastern Clusters:

Mumbai, Pune, Ahmedabad, Bhubaneswar, Vizag, Bhopal and Indore

Extramural Research

Industry Innovation Programme on Medical Electronics (IIPME), a partnership between the Ministry of Electronics and Information Technology, Government of India and BIRAC aims to fund a portfolio of Indian led pilot projects targeting innovations in the multi-disciplinary areas comprising of electronics, engineering, medical devices, healthcare, software, algorithms and information technology.

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Achievements

• 289 applicants applied for grants

- 25 Individuals/Companies supported
- Outreach workshops across India organised
- One to One Mentoring to around 60 Individuals/ Companies/Start-up
- ~ 20 Products are expected to be developed through the programme
- ~ 6 products are expected to be commercialised by the end of programme
- Network/ Database of Start-up/ Entrepreneurs created
- Provided platform for few applicants to showcase their technologies
- Selected few has received guidance on Regulatory Requirements for Medical Devices and Diagnostics



A portable transvaginal digital colposcope with smartphone interface for single visit cervix cancer screening



Affordable Bi-Phasic Defibrillator with a built-in power generator

Trainings and Workshops

Within BIRAC, a specialised service group analyse the intellectual potential of emerging projects in all programmes of BIRAC, hand-hold emerging IP & Technologies to be secured, map the potential technologies in public sector institutions including facilitating technology transfer and create dedicated IP & Technology Transfer awareness through workshops.

BIRAC conducted several 'Hands on Training' and 'Regulatory' workshops for capacity building & organised networking platforms for young entrepreneurs for exchange knowledge and share best practices. Total no. of beneficiaries were 278 including students, researchers, Entrepreneurs/Start-ups, Technology/IP Managers.



A 2 Days Workshop on "Taking Med Tech Startups beyond Prototyping: Regulations, IP monetization & Funding" was unitedly organized by BIRAC and Venture Center, Pune (9th - 10th February 2018).

Contributing to National Programmes

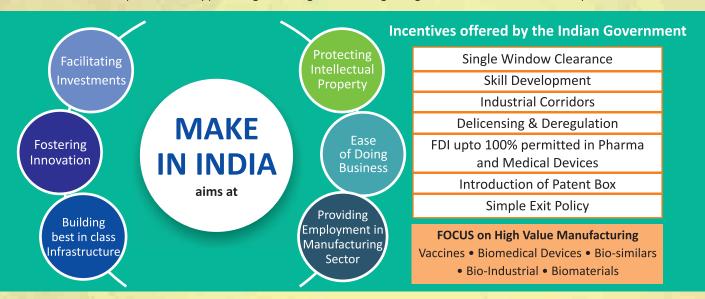


Make in India

The Government of India with an aim to promote manufacturing in India launched the 'Make in India' initiative in September 2014.

Department of Biotechnology has established Make In India Facilitation Cell for Biotechnology at BIRAC, aiming to:

- Coordinate activities of Make of India for Biotechnology
- Contribute to Make in India growth through identifying new areas in Biotechnology
- Foster start-ups and SMEs by providing knowledge and data regarding Make in India Facilitate start-ups and SMEs



#startupindia

START-UP INDIA - Strategizing the Next Leap

ACTION PLAN FOR BIOTECHNOLOGY 2016-2020

2000 startups by 2020

5 new Bio Clusters & 50 Bio-Incubators

150 Technology Transfer Offices

Launch of Biotechnology AcE Fund

5 Regional Centers

Advantage India

- Among the top 12 biotech destinations in the world
- 3rd biggest Biotech Industry In Asia Pacific region
- 2nd highest number of USFDA approved plants
- Leader in Global supply of DPT, BCG and Measles Vaccines
- Largest Cotton producers in the world, contributed by Bt cotton
- Expected to be USD 100 Billion Industry by 2025

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Swacch Bharat Mission - Bio-toilets in Schools in North East India

Aligning with Swachh Bharat Mission of Government of India, BIRAC has supported, The Energy and Resources Institute, North Eastern Regional Centre, Guwahati for installation of 100 toilets in schools in North Eastern Region of India.

A total of 50 toilets have been installed in four states i.e. Assam- 35, Tripura-15, Mizoram-10, Manipur-10. 10 units under installation.

Aligning Partnerships for National & Global Impact

BIRAC partners with a range of allied organisations. Different models of partnerships have been established such as Co-Funding Partnerships & Partnerships for Networks, Platforms and Market Access.



































































Grand Challenges India

Program Management Unit at BIRAC

Grand Challenges India (GCI) is the Indian arm of Global Grand Challenges, launched in 2012 and was launched with the aim of directing funding and research to address some of the most daunting health and development challenges we face today. It does this by fostering Indian-led innovation to develop affordable and sustainable solutions to these challenges, both in the country and across the globe.

Program Management Unit at BIRAC

Since its inception, Program Management Unit at BIRAC (PMU-BIRAC) has been instrumental in managing the jointly funded programs and projects of the partnership of the Department of Biotechnology, Govt. of India, BIRAC and the Bill & Melinda Gates Foundation, Wellcome Trust and USAID.

In 2016, Wellcome Trust UK joined PMU –BIRAC as a partner and the unit provides support in managing the Trust funded Innovator Awards and the Affordable Healthcare in India portfolio.



Co-Funding Partnerships



BIRAC-Wellcome Trust, UK: Catching Infectious Diseases Early

BIRAC has collaborated with Wellcome Trust, a global charity organization of UK, to scout and support innovations in translational medicine in the domain of diagnostics for infectious diseases. Two proposals have been funded and are ongoing from the first call. The proposal on "A Bench side molecular assay for the detection of Carbapenem Resistant Gram Negative.

Bacteria" under VITAS is progressing well and will get complete in March 2018. The other proposal on 'High Sensitivity Multiplex point-of-care assay systems for the detection of blood borne infections in emergency setting' is being pursued by THSTI-Designinnova-University of Turku-Kaviogen and will get completed in March 2019.









CEFIPRA & French Embassy: Detection of Chronic Health Conditions

BIRAC has implemented 2 partnership programmes with French continent: one with French Embassy (2014-2015) and another with Bpifrance financement (2015-2016).

The partnership launched three calls for proposals in Red Biotechnology area, especially in bridging common healthcare challenges that both France & India face. The call is implemented by CEFIPRA.







USAID and IKP: Joint Partnership in Rapid **Diagnostics for TB**

BIRAC is supporting new diagnostics for TB collaboration with IKP Knowledge Park and USAID. The joint call, launched in December 2015, for proposals aimed at supporting new and improved diagnostics for TB. The duration of the programme is for 3 years, with a funding commitment of INA 5 Crore, spread over two phases. 6 proposals were supported in the first phase of the programme.

Out of 6, 3 promising projects with demonstrated proof-of-concept selected for second phase in 2016-17. The proposals range from filter paper based method of MTB sample collection to detection of MTB infection by X-ray scattering of hair and nail.

Nesta...

BIRAC-NESTA, UK: Targetting **Antimicrobial Resistance**

BIRAC and Nesta, a charity organization in UK, have initiated the collaborative measures to populate the innovators' pipeline for competing in the coveted longitude Prize – a challenge programme having a prize fund of 10 million pound, to help solve the problem of global antibiotic resistance. BIRAC has committed an amount of £200,000 for the Discovery Awards to support the teams working in the AMR domain and this could eventually lead to their participation in the Longitude Prize. Nine teams have been supported on AMR under the Discovery Awards Programme to help progress their ideas for the Longitude Prize.

Partnerships for Networks, Platforms & Market Access



WISH – BIRAC-Lords Education and Health Society (LEHS), through its WISH Initiative : Scaling the Innovations

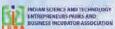
- BIRAC and LEHS have joined hands to scale up the BIRAC supported innovations through the SCALE initiative of LEHS which aims to scale up the innovations in primary healthcare sector through the route of State Governments
- BIRAC presented 17 innovative products having application at the Primary Health Centers. Out of 17 innovations, WISH has shortlisted 10 innovations for HTA Assessment and then the selected technologies will be presented to State Governments for inclusion in the State Procurement List



BIRAC-TiE (The Indus Entrepreneurs): A platform for Global Networking

Through BIRAC and TiE-Delhi NCR partnership, new initiatives to promote entrepreneurship were undertaken in 2017 - 2018.

- Winer Award to recognise and reward women entrepreneurs
- Entrepreneur's awareness workshops for students conducted at IIT- Roorkee and Lucknow Biotech Park.



BIRAC-ISBA

BIRAC partnered with ISBA to strengthen the entrepreneurship development initiatives with a special focus on the BioNEST (Bioincubators for Nurturing Entrepreneurship for Scaling Technologies) for:

- Capacity Building
- Awareness & Handholding
- Mentoring Services
- · Conferences / Events

TATA TRUST FISE -Foundation for Innovation and Social Entrepreneurship

BIRAC & Tata Trusts supported, Foundation for Innovation and Social Entrepreneurship (FISE) collaboration includes, but not limited to, cohosting innovation events, grand challenges, incubation and accelerator programs and investment evaluations.

Social Alpha, the 'ecosystem architecture' will help nurture start-up teams through their lab to market journey and to promote socially relevant innovations and entrepreneurship with a mission to create impact.



BIRAC-TISS:

Mentoring Innovators and Assessing Impact

BIRAC has engaged Tata Institute of Social Sciences (TISS) as SIIP knowledge partner to mentor the social innovators supported by BIRAC, so as to help them evolve in the social entrepreneurship arena. TISS will also support BIRAC in assessing the impact of its social innovation initiatives and strengthen the impact of the same.



BIRAC- Indian Council of Medical Research (ICMR) Clinical Validation platform

BIRAC-ICMR have partnered to establish a collaborative framework under which combined efforts will be made to enhance competitiveness of Biotech start-ups. Through the proposed platform Clinical validation studies for BIRAC supported products/technologies will be performed through ICMR clinical trial network. In addition it will help in deployment of products at primary health centres through NHM.

Cutting Edge Products & Technologies



Isite ocular lens for spectacle free vision



Agrogainagricultural biostimulant



Osteoconductive bone graft susbtitutes



Fibroheal for burn wound management



flexiOH- cast immobilization for fractured bone



Immunodiagnostic kit for detection of autoimmune diseases.



Balloon catheter manufacturing facility



Nitrifying bioreactor for clean aquaculture



Photo Dynamic Therapy (PDT) laser system for cancer treatment



Scale-up technology for production of recombinant lipase



Hand cranked Defibrillatoremergency care device for cardiac patients



anaerobic digestor



MAXIO device for tumor ablation



Hollow fibre membrane based low-cost oxygen concentrator



First indigenous & 2nd generation vaccine against JE



Plant vaccines against Bacterial blight of pomegranate



Rasburicase-recombinant uricase to control hyperuricemia in cancer patients



Scinglow-a portable urine protein analyzer device



Sohum-hearing screener



Autochem-chemical Analyser for early diagnosis



Nanosniff - for rapid detection of acute myocardial infarction by sensing cardiac markers



AINA-for measuring blood glucose, lipids and haemoglobin



Diagnostic kit for qualitative detection of malaria parasite in human whole blood.



Cardio pulmonary resusitation mannequin



ROTAVAC® - India's first indegenously developed oral Rotavirus vaccine



miRYTHM-an ECG system



Computer numerical controlled microscope for malaria diagnosis



Fundus on phone-eye imaging device



Orchid hybrids



First indigenous follicle stimulating hormone



FYVES1basetablet for networked critical care monitoring



ACIX 100-Microfluidics based point of care diagnostics



The 3D Mini-liver tissue/ organoid



anuPATH-multi-analyte point of care



PoC Diagnostic- disease detection system developed for Malaria, Dengue and Typhoid

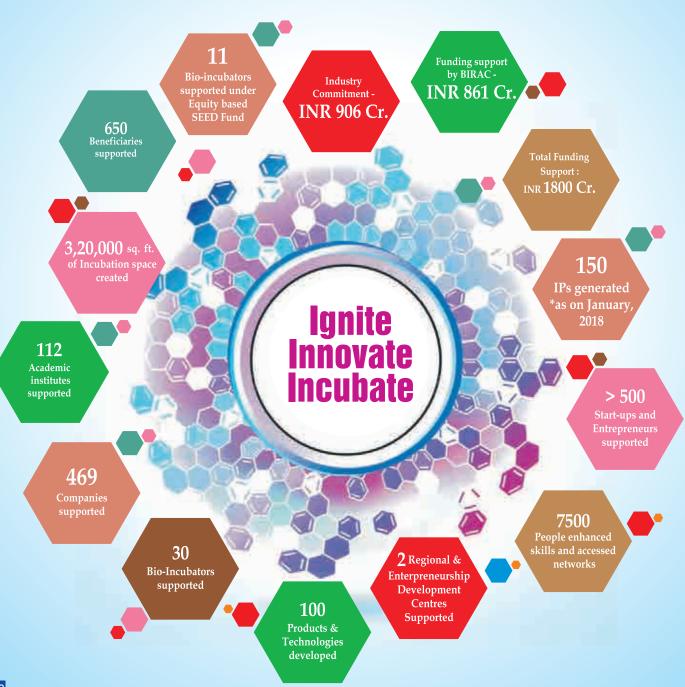


Fetal electrocardiogram



Cloud-based pre-surgical planning platform

The BIRAC Impact



The Future Roadmap



BIRAC nurtures innovation to reach its fullest potential and to maximize the benefits for those that need them the most. The emphasis of Make in India, Stand up India launched by the Government is creating a conducive environment that will inculcate and promote home-grown innovation and entrepreneurship and the Biotechnology industry would contribute immensely to the enhanced GDP and employment opportunities.

BIRAC focusses on creating the translation ecosystem through bio-clusters and connecting with Industry, Startups and Entrepreneurs through BIRAC.

BIRAC creates support through the market value-chain to ensure that ideas don't fail for the want of support. The Biotechnology Industry would be an important component of driving the change in the Making of a New India by 2022.





Biotechnology Industry Research Assistance Council

(A Govt. of India Enterprise)

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