Welcome!
The webinar will start shortly
Agenda

- The Indian & Swedish innovation system in Healthcare and Life Science and why collaboration between India and Sweden makes sense

- Success stories of current bilateral collaborations, including overview of the India Sweden Healthcare Innovation Centre and possibilities to engage

- Presentation of the current joint calls in Healthcare and AI
Advancing Healthcare through AI across Sweden and India
Sweden India Innovation Initiative

Fanny von Heland
Innovation and Science Counsellor
Embassy of Sweden,
Office of Science and Innovation

Christofer Littorin,
Senior Project Manager
Business Sweden
The Swedish Trade and Invest Council
The Indian & Swedish innovation system in Life Science - why collaboration between India and Sweden makes sense
DBT, India-Sweden Biotech Partnership

Dr. Alka Sharma, Advisor, DBT
May 5, 2020
Where are we today?

- 600+ core biotech companies
- 2500+ biotech start-up
- 200+ biotech products available in market
- 100+ biotech incubators (another 170 tech incubators in public research institutes)
- 200+ biotech teaching & research institutions

Global Biotech Industry Growth 5.1% - past 5 yrs;
India contributes 3% of its market share to Global Biotech Industry

- 12th position globally
- 3rd position in Asia
- Largest Vaccine Manufacture
- Strong Research Foundation
- A separate organisation to spur Innovation - BIRAC

Government Efforts: Laying strategy; Creating ecosystem to facilitate end-to-end processes;
Developing critical mass of desired skills; Addressing regulatory issues
India’s Innovation Landscape - At a Glance

Nurturing Innovation & Entrepreneurship - Key Component

Whom do we support?
• Entrepreneurs
• Start-ups
• SMEs and
• Biotech companies

What do we support?
All stages of the product development value chain including:
• Discovery to proof-of-concept
• Early and late stage development
• Validation and scale-up
• Pre-commercialization
Biotech Science Clusters

**Mandate:** To nurture & promote innovation and exploit Biotech Sciences towards accelerated technology and product development

**Significant Achievements:**
- High-end national facilities established
- > 300 manpower trained;
- 9 companies incubated at RCB’s Bio-incubator;
- 250 supported through C-CAMP;
- Bridge the gap: Bringing Universities and industries into mainstream of innovation, translation & commercialization - Proposes to establish ‘Biotech University Research Joint Industry Translational Cluster- (URJIT)’

**An enabling ecosystem:** Inter-institutional & Cross disciplinary linkages: *Universities, academic researchers, National laboratories, incubators, technology management units, Industry, SMEs, Start ups & Entrepreneurs.*
Biotech Parks for Promoting Entrepreneurship

Platforms designed to provide ready-to-use infrastructure and business support services to nurture biotech enterprises & minimize their financial burden

- **Industrial Biotechnology Parks (IBTPs) Jammu & Kashmir**
  - 21 common instrumentation facilities. 18 resident incubates and 3 graduated incubates

- **Biotech Park, Lucknow**
  - 26 Incubatees

- **Chhattisgarh Biotech Park**

- **Biotechnology Incubation Centre, Cochin**

- **Biotechnology Incubation Centre, Hyderabad**

- **TICEL Biotech Park, Chennai, Women Biotech Park**

- **Biotech Park, Bangalore**
  - 22 Incubatees

- **Guwahati Biotech Park**
  - 8 Incubatees

- **On-going parks**
  - 14 pilot plants;
  - 8 analytical facilities and 9 common facilities;
  - 6 Incubatees were graduated out of 11
Biodesign Programmes — An Example of an Inclusive Med-tech Innovation
Indigenous Innovative Medical Technology - 3Is process: Identify, Invent and Implement

- 124 innovators
- 42 technologies
- 12 start-ups
- 5 products in market
- Sustainable in biomedical training
- Foreign students

- 30 Ph.D
- 3 tech transferred
- More than 50 publications, 6 technologies
- 124 innovators
- 42 technologies
- 12 start-ups
- 5 products in market
- Sustainable in biomedical training
- Foreign students

- 30 Ph.D
- 3 tech transferred
- More than 50 publications, 6 technologies

**School of international Biodesign**
Focus: Medical devices & Implants
AIIMS & IIT-D
Stanford University

**Centre for Biodesign & in-vitro diagnostics**
Focus: In-vitro diagnostics
THSTI, ICGEB & AIIMS
University of Turku

**DBT-IITM Centre for Health Technology innovation**
Focus: Health technology
IIT-Madras

**Biodesign-Bioengineering initiatives**
Focus: Medical devices, implants & bioengineering
IISc., Bangalore

- 4 products in public health impacting
- Social impact-14000 surgeries, over 2.5 million screenings
- 20 crore industry funding

- 10 technologies in pipeline
- > 20 publications

2020-21 Establishment of new inter-institutional biodesign centers
Biodesign Programme: Impact

- Technologies developed, licensed & commercialized;
- Startups created; developing innovative products

### Med-Tech StartUps

- **Created by the Fellows of Biodesign Programme**
  - Customised Cast for Immobilization of Fractured Limb
  - Ostomy Management Appliance
  - Fecal Incontinence Management Device
  - Neonatal Resuscitation Device
  - Musculo-Skeletal Management
  - Soft Tissue Biopsy Device
  - A Portable Device for Hand Sanitization
  - Fetomaternal Monitoring System
  - Auxiliary Impairment Screening Device
  - M/S. Crimson Healthcare Pvt. Ltd., New Delhi
  - M/S. Consure Medical Pvt. Ltd., Delhi
  - M/S. Windmill Health Technologies Pvt. Ltd., Delhi
  - M/S. Sohum Innovation Labs Pvt. Ltd., Bhopal
  - M/S. Indiolabs Pvt. Ltd., Bangalore

### Technologies Licensed:

- AIS
- Flexioh
- Noxeno
- Neo breathe
- Sphinx
- FI Device
- Neobreathe
- LI Device
- Sohum
- Noxeno

### Technologies Commercialized:

- FI Device
- Neobreathe
- LI Device
- Sohum
- Noxeno
- AIS
- Flexioh
- Noxeno
- Neo breathe
- Sphinx
- FI Device
- Neobreathe
- LI Device
- Sohum
- Noxeno

- BRUN
- BIOSCOOP
- Parasafe
- Accufeed
- Thorashield
- Stethoscope
- FL Device
- Inochicare
- Patient Transfer Sheet
- Hansure
- FL Device
- Fluid Delivery device

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**Outcomes**

**Technologies Licensed:**

- FI Device
- Neobreathe
- LI Device
- Sohum
- Noxeno

**Technologies Commercialized:**

- FI Device
- Neobreathe
- LI Device
- Sohum
- Noxeno
Biotechnology Industry Research Assistance Council (BIRAC)
A Govt. of India Enterprise, Section-8 Not-for-Profit Company under DBT

- To promote PPP for discovery and innovation in biotech industry;
- Nurturing Innovation & Promoting Entrepreneurship: Ideation to Commercialization
- Supports StartUps, Entrepreneurs & SMEs: Innovative Affordable Products/Technologies

Driving Product Development

Creating and building an ecosystem-ideation to manufacturing for promoting entrepreneurship;

Enhancing capabilities for technology and product development;

Discovery, early & late stage support: SIBRI, BIPP, SPARSH, BIG, etc.

Start-ups; bio-incubators;

Regional Innovation Centres; Regional Entrepreneurship-connect point with innovators;
Making India a hub for design and development of novel, affordable and effective biopharmaceutical products and solutions
Policies and Schemes: Building enabling ecosystem for Startups
India’s Biotech StartUps – At a Glance

Biotech Sector is challenging: Investment Heavy | Long Gestation | High Risk | High Reward

Enabling policies & ecosystem – GoI; nurture innovation & entrepreneurship

>1732 Biotech Startups -5 yrs.

Sector-wise representation of Start Ups
Moving Towards $100 Bn Bioeconomy by 2025

GoI acting as a facilitator

Regulatory Reforms
Building a strong, transparent, efficient & single window regulatory system - Promote PPP

Innovation & Entrepreneurships
Discovery for Application
Product Development

Reshaping and building infrastructure
Facilitate translation and commercialization; Incubation space;
Translating research leads; Specialized Services; Research Resources;

Creating critical mass of innovators
Promote techno-entrepreneurship: fostering bed to bench side research;
training, workshops,

Public-Private Partnerships
CEPI; Bioclusters; Technology Transfer Offices; National Biopharma Mission;
Make-in-India; StartUp India

Boosting and Advancing Biotech Sector

Make-in-India: Facilitation Cell; set up at BIRAC in 2015; Facilitation & networking of entrepreneurs;

FIRST HUB: Facilitation of innovation & regulation; 1 yr. completed; ~350 entrepreneurs;
National Med-Tech Initiative

Promoting critical components research and indigenous manufacturing
Current Regulatory Reforms

➢ New Drugs and Clinical Trial Rules
   Notified by MoH&FW in March, 2019

➢ National Medical Device Rules-Rolled out in 2017  Operational from January 1, 2018
Global Bio-India 2019
November 21-23, 2019
Aerocity, New Delhi

<table>
<thead>
<tr>
<th>30+ Countries</th>
<th>275+ Exhibitors</th>
<th>3500+ Delegates</th>
<th>250+ Startups</th>
</tr>
</thead>
<tbody>
<tr>
<td>G2G Meetings</td>
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<tr>
<td>CEO Roundtable</td>
<td>Global Regulators Meet</td>
<td>Investors Roundtable</td>
<td>State Connect Roundtable</td>
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<td></td>
<td>Start-up Biotechnology</td>
<td>Workshops/ Bootcamp</td>
<td>Startup Pavilion</td>
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Why Sweden is a key partner in promoting innovation?
Decade-Long Partnership

• 2007: PoC between DBT, GoI & VINNOVA, Sweden;

• Feb 2009: Ist joint call: Biology, diagnosis and treatment of TB; 4 proposals implemented;

• Joint mid-term review in May 2012;

• Jan 2013, 2nd joint call: determinants of health & disease prevention, medical diagnostics, innovative food, antimicrobial resistance, medical devices, diagnostics & preventive strategies; 9 projects implemented.

• Sep 2016, 3rd joint call: medical diagnostics, medical devices, antimicrobial resistance, eHealth, health promotion & disease prevention; 4 projects are being implemented.

Summary
Joint calls : 3
Total projects sanctioned: 17
On-going projects: 5
Publications: 38; Patents: 4
Total budget (India): Rs 44 crores
(Sweden): 55 million SEK
New Initiatives

• Visit of Hon’ble Prime Minister of India to Sweden on 17th Apr, 2018;

• Joint declaration signed on innovation partnership for a sustainable future with thematic areas;
  ➢ circular and bio-based economy including biomaterials
  ➢ health & life sciences including biomedical devices

• 8th Apr 2019: Deliberation for possible areas of cooperation for “A Sustainable Society”.
  FOMRAS (Research Council for Environment, Agricultural Sciences and Spatial Planning), FORTE
  (Research Council for Health), VINNOVA (Agency for Innovation Systems) and Swedish Energy
  Agency;

• 12th Apr 2019: DBT-VINNOVA Workshop on “Digital Health & Artificial intelligence”;

• 3rd May, 2019: 6th meeting of India-Sweden Joint Committee on S&T in Stockholm, Sweden;

• Dec 2019: Swedish High level visit to India
BioNEST: Launchpads for Startups

➢ Provides incubation space to start-ups and entrepreneurs;

➢ Connects industry & academia for efficient exchange of knowledge as well as facilitate technical and business mentorship;

➢ Provides enabling services & mentorship for IP & Tech. Management, legal & contract, resource mobilisation and networking platform;

➢ Provides access to world class infrastructure and high end equipment facilities;

➢ BIRAC incubator delegation visited Sweden on from 6th May to 9th May 2019.
Artificial intelligence for advancing healthcare across India and Sweden

A call for proposals under the Innovations partnership between India & Sweden
DBT Websites

www.dbtindia.org
www.dbtindia.gov
www.dbtindia.nic.in

BIRAC Website

www.birac.nic.in
The Swedish National Strategy for Life Sciences

Anna AX, PhD
The Office for Life Sciences, Ministry of Enterprise and Innovation, Government Offices of Sweden
The Office for Life Sciences

Ibrahim Baylan, Minister of Enterprise and Innovation
Matilda Ernkrans, Minister of Research and Higher Education
Lena Hallengren, Minister of Health and Social Affairs
“Sweden aims to be a leading life sciences nation. Life sciences contribute to improving health and quality of life of the population, ensuring economic prosperity, advancing the country as a leading knowledge nation and achieving the UN Sustainable Development Goals”
8 priority areas

- Structures for Collaboration
- Utilization of Health Data
- Policy Development
- Integration of Innovation in Healthcare
- Welfare Technology for Inclusive Health
- Research and Infrastructure
- Skills, talents and lifelong learning
- Attractiveness and competitiveness
Health and Life Sciences
Innovation Partnership:
ATMP Data Skills Covid-19
Thank you!

anna.ax@gov.se
SWECARE- UNITING THE SWEDISH HEALTH CARE SECTOR FOR INCREASED INTERNATIONAL COMPETITIVENESS AND COLLABORATIONS
Global Health Challenges

- Infectious diseases & pandemics
- Ageing population
- Increase non-communicable diseases
- Great strain on healthcare systems!
Support & facilitate cooperation & partnerships between:

- Public Agencies
- Research Institutions & Academia
- Private Sector
WHY COLLABORATION?

Sweden
• Strong healthcare system
• Excellent medical results
• Research (Karolinska Inst.)
• Innovative
• Life Science/ medtech sector
• Quality products

India
• Center of excellences (heart surgery etc)
• Investing in healthcare system
• Volumes of data
• Frugal innovation
• Open to new products/ methods
Success stories – current bilateral collaborations
India-Sweden Healthcare Innovation Centre
The Indian and Swedish governments have agreed for a closer collaboration in innovation and healthcare.

India-Sweden MoU in Healthcare and Public Health (2009)

Indian PM and Swedish PM signing a Joint Declaration on Innovation Partnership for a Sustainable Future covering healthcare (2018)

India-Sweden Healthcare Innovation Centre collaboration (2019)

This collaboration was set in stone during the visit of the Swedish King and Queen to India, in presence of Minister Mr. Harsh Vardhan, Minister Mr. Ashwini Kumar Choubey, Ministry of Health and Family Welfare, Government of India, in partnership with AIIMS Delhi and AIIMS Jodhpur
This collaboration is set up to identify and address challenges in the Indian healthcare system through innovation.

### Typical patient journey

<table>
<thead>
<tr>
<th>Step</th>
<th>Issues</th>
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<tbody>
<tr>
<td>Awareness</td>
<td>Poor awareness level about diseases</td>
</tr>
<tr>
<td>Screening</td>
<td>Late screening</td>
</tr>
<tr>
<td>Clinical diagnosis</td>
<td>No timely diagnosis</td>
</tr>
<tr>
<td>Patient Identification</td>
<td>Poor referral system</td>
</tr>
<tr>
<td>Treatment</td>
<td>Gaps in technology/protocols to address</td>
</tr>
<tr>
<td>Patient Follow-up</td>
<td>Poor patient management</td>
</tr>
<tr>
<td>Rehabilitation</td>
<td>Lack of patient counselling and support system to caregivers</td>
</tr>
</tbody>
</table>

### Challenges in the healthcare delivery

- Poor awareness level about diseases
- Late screening
- No timely diagnosis
- Poor referral system
- Lack of well-defined protocols to diagnose
- Poor/No Visibility in patient’s health records
- No focus on outcome based healthcare
- Poor patient management
- Lack of patient counselling and support system to caregivers

### Our approach

Joint collaborative effort to identify areas to strengthen

#### Leverage India-Sweden Innovation Collaboration toolbox towards

- Co-development of processes and protocols
  - Live Centre of Excellence
  - Virtual Showcase
- Capacity building using skilling and education
  - Skill for Scale
  - Conference
- Fostering local innovations to fill the gap in the value chain (AI, IoT)
  - Innovation challenge
  - Incubation
  - Mentorship
- Developing local adaption of product and solution
  - Innovation challenge
  - Testing Environment

#### Funding connect

#### Global reach

#### Conferences

#### Showroom
The platform is built as an open innovation ecosystem

A high-level Governing Council is built on the quadruple-helix model, to support and enable scaleup of best practices/solutions emerging from the ecosystem.

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**Indian government agencies (Invest India, AIM)**

**Indian and Swedish startups**

**Mentor network**

**Indian-Sweden Healthcare Innovation Centre**

**Global innovation hubs**

**Swedish agencies**

**Swedish companies**

**Nasscom**

**Government**

- Joint Secretary, Ministry of Health and Family Welfare, Government of India

**Academia**

- Director, AIIMS, New Delhi
- Director, AIIMS Jodhpur

**Policy**

- Director General, Indian Council of Medical Research, Government of India

**Industry and start-ups**

- NASSCOM
- AstraZeneca

Driven under the G2G frame of the India-Sweden Healthcare MoU
How to engage with the India-Sweden Healthcare Innovation Centre?

**Technology solutions**
Start-ups with technology products and solutions towards affordable and accessible healthcare

**Partnerships**
Partnerships for further strengthening the innovation ecosystem from
- Educational institutions
- Companies enabling healthcare
- Innovation hubs

**Investors**
Investors and connect to the venture funding ecosystem
- Angel investors
- VC's
- Government innovation funding

**Vinnova & DBT call on AI**
Swedish ecosystem can apply for Vinnova & DBT call on AI
- Telephonic counselling & AI
- Genetic disorders with AI and facial recognition
- Covid-19. AI and digital imaging combined with clinical features

For further discussions on how you can engage with the India-Sweden Innovation Centre, contact:

**Amrit Hinduja**
amrit.hinduja@business-sweden.se

**Shubhang Vikas**
shubhang.vikas@business-sweden.se
Networking between innovation systems

Dr Manish Diwan, Head of Strategic Partnership & Entrepreneurship Development, Biotechnology Industry Research Assistance Council (Birac)
Presentation of the current joint calls in Healthcare and AI
Indo-Swedish bilateral call on AI and Health

MALIN PETERSEN
COUNTRY MANAGER FOR INDIA AT VINNOVA

VINNOVA
Sweden’s Innovation Agency

DEPARTMENT OF BIOTECHNOLOGY
GOVERNMENT OF INDIA
AI for advancing healthcare across India and Sweden – AI solutions that offer solutions for managing pandemics like Covid-19 are welcomed
Purpose

• Sustainable and equitable spread of technology in advancing healthcare access and affordability across India and Sweden

• Provide scalable and implementable innovative, sustainable and flexible public health solutions using AI-based technologies as a tool.
We wish to see solution which:

- For example, enables disease prevention, diagnosis, treatment, improved medicines and vaccines, nursing or more effective processes
- Add economic value either by:
  - bringing about new products and services, which can be commercialised,
  - by other means such as improved healthcare or streamlining of nursing or care.
- Are scalable and implementable during the lifetime of the project.
What can you apply for?

- RnD-activities in Sweden and India
- Collaboration between India and Sweden
- Max 3 years, starting 15th Dec–26th Feb
- Project within Health with AI as enabling technology
- Tackle challenges
- Innovative, cost-efficient solutions
Whom can apply?

- Organisations in Sweden wishing to collaborate with organisations in India, or vice versa
- Groupings of at least two project partners of differing expertise; artificial intelligence plus healthcare, nursing or care
- Applicants might include start-ups, companies, incubators, universities, research institutes, hospitals, county councils, state municipalities, primary or tertiary care centres
- At least one requirement owner
How much can you apply for?

Swedish Applicants
- Up to EUR 230 000 per project
- Co-financing by enterprises
- Level of support depends on type of activity

Indian Applicants
- Please visit DBT’s website for info
  https://dbtepromis.nic.in/pi/frmOpenCallList.aspx
Please start your applications in time!

- Apply before: **28th of August** 2 p.m. Swedish time or 8 p.m. Indian time
- Swedish applicants, please submit your application at Vinnova’s eServices Portal:
  - [https://portal.vinnova.se/](https://portal.vinnova.se/)
- Indian applicants, please visit DBT’s web page
DBT's web page: https://dbtepromis.nic.in/pi/frmOpenCallList.asp

Indo-Swedish bilateral call on AI and Health

DR KALAIVANI GANESAN, DIRECTOR (SWEDEN)
INDIAN DEPARTMENT OF BIOTECHNOLOGY

VINNOVA
Sweden's Innovation Agency

DEPARTMENT OF BIOTECHNOLOGY
GOVERNMENT OF INDIA
Eureka GlobalStars call with India 2020
EUREKA is a pan-European network for market-oriented, industrial R&D&I
Scope

Key Enabling Technologies for Healthcare, Agriculture and Water…

…However, Vinnova only supports projects in the area of Health with AI as enabling technology

➢ The projects should address challenges in the healthcare system and deliver innovative and cost efficient solutions
Target Group

- **Swedish companies** in collaboration with organisations in India
- Participation of Swedish Universities, University hospitals, Research Institutes or other relevant actors are encouraged
- Multilateral project consortia involving participants from Austria, Belgium (Flanders Region), Finland, France, The Netherlands or Switzerland are welcomed
- Project partners from other Eureka countries can participate if they can secure their own funding
Project Requirements

When/How long? Project start in January 2021. Projects will have a maximum time limit of 36 months.

A balanced relationship: The amount of funding available per project partner is subject to national rules and regulations but no individual partner, or parties from one country, can undertake more than 75% of the eligible project costs.
Swedish funding criteria

➢ Grant up to 30% for large companies
➢ Grant up to 50% for SMEs
➢ Grant up to 100% for Universities and Research Institutes

Maximum Vinnova grant per project:
➢ 2.5 M SEK jointly to the Swedish project partners
Contacts

Vinnova, Sweden

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  +46 (0)8 473 31 93; peter.lindberg@vinnova.se

Department of Biotechnology, Ministry of Science & Technology, India

• Dr. Mohd Aslam, Adviser (Scientist 'G')
  +91 (0)11 – 2436 3057 aslam@dbt.nic.in

• Dr. Manish Rana, Scientist ‘E’
  +91 (0)11 - 2436 3012; manish.rana@nic.in
SUMMARY: Indo-Swedish Joint Calls on Health and AI

In Sweden, you can apply for funding in both calls, but receive funding from maximum one.

**Bilateral call Vinnova-DBT**
- Bilateral cooperation
- Different types of actors can coordinate
- EUR 1.4 Million over three years
- Max EUR 230 000 per project
- Apply before the 28th of August at 2 p.m.

**EUREKA GlobalStars Call**
- Bilateral or multilateral
- Projects coordinated by an enterprise
- EUR 0.5 Million over three years
- Max EUR 230 000 per project
- Apply before 30 June at 5 p.m.
Thank you!