



**BHARATI VIDYAPEETH  
(DEEMED TO BE UNIVERSITY)  
PUNE**

**INSTITUTIONAL DISTINCTIVENESS**

**Interactive Research School for Health Affairs (IRSHA)**  
**A Central Research Unit of Bharati Vidyapeeth Deemed to be University**  
**(BVDU), Pune**

**Introduction**

BVDU has many unique and distinctive features namely, innovative new programmes, number of value added courses, number of interdisciplinary research projects, number of patents and start-ups, early adoption to NEP, strong industry-academia connect, ICT enabled infrastructure, hi-tech simulation lab, its green initiatives, and many more. However, for the purpose of NAAC we have identified our **Interactive Research School for Health Affairs (IRSHA)**, a dedicated research facility involved in different areas of bio-medical research and human health. It is contributing significantly in promoting worldclass research in BVDU that has major impact nationally and globally.

IRSHA was established in 2001 with a purpose of fostering high quality research in university. The university fully supports IRSHA by providing them with independent infrastructural facilities, scientists, researchers, Ph.D. scholars, technical staff, equipments, and financial support for research. Recently, it has been declared as “**Centre of Excellence by ICMR**”.

**Research Areas:**

IRSHA has identified the following thrust areas and is involved in doing deep research in them.

**Virology** research with focus on Dengue / Chikungunya viruses, MMRV (Measles/Mumps/Rubella/Varicella), SARS Corona 2 virus, developing anti-viral vaccines, and its diagnostics.

**Mother & Child Health** - research on pregnancy complications like preeclampsia and gestational diabetes mellitus and their influence on the risk of disease in adult life.

**Nutrition, Health & Disease** - in this thrust area, the main focus is on studying nutritional deficiencies and enriching food with omega-3 fatty acids with its outcomes.

The other areas for research are **Integrative Medicine, Obesity-Diabetes, Cancer, and Herbal Medicine.**

## **I. Flagship Programs**

### **1. National Immunogenicity and Biologics Evaluation Centre (NIBEC)**

NIBEC is a flagship mission program “Innovate in India (i3)” of the DBT/BIRAC was established in 2020, with initial funding of Rs 16.0 Cr. Subsequently, the program got additional funding of Rs 14 Cr under the Covid Suraksha program of BIRAC. This facility fills a critical gap in the immunogenicity evaluation of viral vaccines in clinical trials, which was earlier done abroad and was cost and time-intensive.

Under this program, a state of art Biosafety facility having BSL2 and BSL3 has been created. Many tests have been developed, validated, and accredited by NABL. Services were provided to Dengue and Chikungunya vaccine developers in the country and international clients including the International Vaccine Institute, South Korea.

Following the emergence of the COVID-19 pandemic in India, several strains of Corona-2 viruses were isolated and characterized. Developing critical tests like PRNT, Micro neutralization, IgG & IgM ELISA, NIBEC acted as a central laboratory for the evaluation of immunogenicity in clinical trials for most of the COVID-19 vaccines.

#### *Quality Standards*

- ISO 17025 quality standard
- All tests are either NABL accredited or validated following ICH (R2) guidelines.
- Biosafety compliant- BSL2 and BSL3 laboratories (DBT certified)
- Good clinical laboratory Practices (GCLP)
- Environment, health, and safety compliance- strict adherence to Waste Disposal protocols, 2016
- Laboratory Information Management System (LIMS), fully automated robotic liquid handling system, electronic notebooks, etc

## 2. Centre for Advanced Research in Preeclampsia

The Centre funded by ICMR developed ICMR-REVAMP cohort. In this cohort, mothers were followed across pregnancy, and infants are followed for 3 years to investigate the key biochemical and molecular mechanisms contributing to preeclampsia. Clinical, anthropometric, and biochemical data have been generated on these women and children. The group **identified 3 biomarkers** [Delta 6 desaturase index, Soluble Endoglin/ Placental growth factor (sEng/PlGF), Soluble fms like tyrosine kinase -1 / Placental growth factor (sFlt-1/PlGF)] for early prediction of preeclampsia. A large ICMR-CAR biorepository is available at IRSHA. In recognition of the commendable achievements in the field of Biomedical Research done by this group, IRSHA has been recognized as a **Collaborating Centre of Excellence by ICMR.**

## 3. Linseed Value Addition Centre

This Centre supported by ICAR works to attain omega-3 fatty acid nutritional security through value addition and product diversification. This Centre established the forward linkage with industries and is also linked to 15 Linseed ICAR Centres. This Centre has been rated as the **Best Oilseed Centre** in Linseed by the ICAR for a period of 5 years.

## II. Infrastructure & facilities

- Well-equipped research laboratories to carry out work in biochemistry, molecular biology, and cell biology
- Central animal house facility
- BSL 3 facility (first time in a University setting)
- High-end equipment such as Flowcytometry, GC, HPLC, HPTLC
- 100% backup power supply from dedicated DG set, UPS, and stabilizers
- NABH approved Human Ethics Committee
- Animal Ethics Committee

### **III. Collaborations**

#### *International:*

University of Southampton (UK); University of Toronto (Canada); International Vaccine Institute (South Korea); Augusta University (USA); University Medical Center Groningen (The Netherlands); NIBSC (UK); Institute Pasteur, Dakar, Senegal (West Africa)

#### *National:*

National Center for Cell Sciences (Pune); Center for Cellular & Molecular Biology (Hyderabad); National Institute of Traditional Medicine (Belgavi); National Chemical Laboratory (Pune); National Institute of Immunology (New Delhi); Central Ayurveda Research Institute (Bangalore); Savitribai Phule Pune University (Pune)

#### *Industry:*

- Serum Institute of India; Bharat Biotech; Zydus Cadila; Reliance Life Sciences; Genova
- Dabur India; Shri Dhootpapeshwar; Charak Pharmaceutical; Baidyanath Bhavan

#### *BVDU institutes:*

- The uniqueness of IRSHA lies in its 'interactive' nature. It works closely with the constituent units of BVDU such as Medical, Dental, Ayurveda, Homeopathy, Pharmacy, and Biotechnology colleges & affiliated hospitals to develop joint research projects for funding. The institute also shares resources and technical expertise, fostering a thriving research environment across the university.

### **IV. Academics**

- A vibrant PhD program with 47 students awarded PhD so far and 30 students enrolled at present
- Provision of short-term studentships and internships for MSc life sciences students from different institutes and universities
- Mentoring and facilitating research of MD and PhD students from other constituent units of BVDU.

## V. Outcomes

- More than 80 funded projects in the last 5 years by DBT, DST, ICMR, DHR, Ministry of Ayush, Wellcome Trust, and Industries worth Rs. 43.11 Cr
- Revenue generation of Rs. 30 Cr through consultancy & contract research projects
- Published 183 research papers with an average impact factor of 3.2 (**Highest impact factor of 82.9** for a paper published in Nature Medicine)

## VI. Achievements/Recognitions/Honors

- Nomination of scientists on various committees e.g. National Authority of Containment, Polio Containment-GAP IV auditor (WHO), GCTM Evidence Task Force (WHO), Food Safety & Standards Authority of India (MHFW), Multiple Micronutrient Design Expert Group & Project Screening Committee (ICMR): Reproductive and Child Health and Nutrition (ICMR), Gestational Diabetes Mellitus group (DBT)
- Fellowships and travel grants to PhD students from ICMR, DBT, and DST
- Selection of PhD students for higher studies at prestigious institutes such as NIH, Oxford University