

Our research centres are home to our innovative researchers who conduct research in four thrust areas, namely environmental and population health, bioactive molecules and drug delivery, cancer and stem cell research as well as translational research.

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CENTRE OF  
**EXCELLENCE**



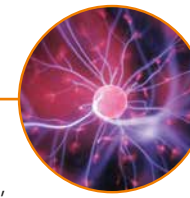
## Centre for Bioactive Molecules and Drug Delivery

### About the Centre

- Comprises of chemists, formulation scientists, biologists, pharmacologists, and pharmacists
- Facilitate and support a continuum of R&D activities from concept to clinical trials
- Identify molecular targets for bioactive compound

### Research Areas

- Identification and development of new bioactive compounds for any molecular target using AI and CADD techniques
- Isolation of bioactive compounds from plants
- Synthesis of organic & inorganic compounds
- Qualitative & Quantitative analysis of chemicals, elements, pharmaceuticals, cosmetics, etc.



- *In vitro* & *in vivo* pharmacokinetics
- Development of pharmaceutical, nutraceutical, naturaceutical, and cosmetic formulations

### Successful Initiatives

- Developed two herbal formulations which are in the European market
- Developed blood-free bacterial culture medium
- Developed herbal mouth ulcer gel
- One patent for the co-delivery of nutraceutical and pharmaceutical
- Two patents applied for the synthesis of new materials for drug delivery & antimicrobial coatings

## Centre for Translational Research

### About the Centre

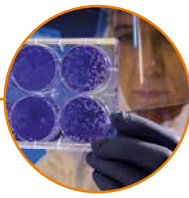
- Expedite scientific discovery for the benefit of patients and communities
- Foster better integration of basic science and clinical research at IMU
- Translate bench research into clinical practice by promoting sustainable multi-disciplinary research to promote educational and career opportunities



### Research Areas

- Population-wide association studies focusing on communicable and non-communicable diseases as well as co-morbidities on population phenotype
- Functional metagenomics incorporating functional redundancy theory in the human population
- Bioinformatics and network modelling to create robust integrative health system models to understand and predict the relationship between lifestyle and indicators of health status on population phenotype

## Centre for Cancer and Stem Cell Research



### About the Centre

- Conduct basic, translational and clinical research to prevent, cure or make cancer a manageable chronic disease
- Reduce the burden and eliminate the adverse outcomes of cancer by leading an integrated effort to advance fundamental knowledge about cancer across a dynamic continuum of discovery, development and delivery

### Research Areas

- Breast cancer
- Head and Neck Cancer
- Colon cancer
- Childhood cancer
- Gynecological cancer

### Successful Initiatives

- Functional roles of IKK alpha in pancreatic ductal adenocarcinoma
- Development of targeted therapies against metastasis which is responsible for most NPC-related death
- Delineating protein kinase pathways mediating immune resistance in pancreatic cancer

## Centre for Environmental and Population Health



### About the Centre

- Pursue research in the application of data science to healthcare across the entire continuum from the environment, health of individuals, populations, to the healthcare system itself.

### Research Areas

- Infectious Diseases
- Polar Research
- Water and Air Pollution
- Artificial Intelligence for Improved Health
- Toxicology
- Non-communicable diseases

### Successful Initiatives

#### HealthAI Lab

- Digital Pathology Congress - Dialogue for National Policy on Digital Pathology, Development of state-of-the-art AI diagnostic platform and formation of A4DP Research Consortium

#### Infectious Diseases

- Merck, Sharpe and Dohme (MSD) - Paediatric pneumonia research
- Dengue Mosquito Simulation from Satellites (D-MOSS) prediction model

#### Digital Transformation Initiatives

- EDUCORES - Faculty Management System and Grant Management System

#### Polar Research

- Medal for Excellence in Antarctic Research & Medal for Polar Education and Communication

### Establishment of Seremban Diabetes Cohort (SeDia)

IMU signed the **MOU with the Ministry of Health** to establish and conduct the SeDia Cohort study on **15 May 2022**. IMU has also secured a seed funding of **RM2 million** from the **IHH Group** and the agreement was signed on **2 August 2022**.

SeDia integrates a multi-pronged effort to address the complex challenges posed by diabetes, from dysfunctions in the most fundamental molecular and cellular processes, to the need for new approaches to translate scientific findings into improved patient health.

