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Translational & Clinical Research

Singapore's Biomedical Sciences Initiative

In the year 2000, Singapore's Biomedical Sciences (BMS) initiative was launched as a focused effort to develop this sector as the fourth pillar of Singapore's economy. The first phase of the BMS initiative (2000-2005) sought to build up core capabilities in human capital, industrial capital and intellectual capital.

The Singapore Economic Development Board (EDB) has worked closely with other agencies, such as the Agency for Science, Technology and Research (A*STAR), the Ministry of Health (MOH) and our universities, to build up scientific and clinical excellence.

Singapore's Focus on TCR

In 2006, we launched phase II of the biomedical sciences initiative, which will focus on building up strong translational and clinical research (TCR) expertise, while strengthening our basic science capabilities. This enables us to bring discoveries from the bench to the bedside and the marketplace, and ultimately improve human healthcare.

TCR Flagship Programme

Along with the launch of phase II of the biomedical sciences initiative, Singapore also introduced the Translational & Clinical Research Flagship Programme, which presents a platform for researchers and clinician-scientists to collaborate in solving scientific problems and translate their research into quality healthcare solutions for patients.

Five TCR flagship programmes with a five-year budget of S$25 million each were launched. They focused on five key disease areas where Singapore has unique strengths and healthcare relevance: cancer, eye diseases, neuroscience, metabolic diseases and infectious diseases.

Bench to Bedside Infrastructure

In 2007, Singapore established two academic medical centres to facilitate integration of research laboratories and clinical units as well as training of clinicians/ scientists:

- Kent Ridge Campus: National University Hospital and National University of Singapore Yong Loo Lin School of Medicine, which are now managed under one entity – National University Health System

- Outram Campus: Singapore General Hospital, Duke-NUS Graduate Medical School Singapore, and national disease centres

In 2009, two Investigational Medicine Units (IMUs) were opened at the Outram and Kent Ridge campuses. These facilities will focus on early stage clinical research, including Proof of Concept, Phase 1 (including First in Man) and Phase 2a clinical trials for novel drugs and diagnostics, research on biomarkers and disease mechanisms as well as bio-imaging studies. Additional clinical research units focusing on specific disease areas are found at various medical centres around the island.

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Besides the IMUs, Singapore has also launched the Singapore Clinical Research Institute to be a one-stop coordination site for later stage multicentre clinical research projects in Singapore and the region.

Growing our Base of Clinician Scientists

Duke University Medical Center in the U.S. has partnered National University of Singapore to establish Singapore's first graduate medical school in 2003. The Duke-NUS Graduate Medical School Singapore (Duke-NUS GMS) offers an innovative and rigorous medical education programme with a distinctive focus on developing our new generation of clinician scientists.

In 2008, Singapore also launched the Singapore Translational Research (STaR) Investigator Award. This prestigious award is designed to recruit and nurture world-class clinician scientists to undertake cutting edge translational and clinical research in Singapore. Each award includes funding for the researcher's salary, an annual budget for research support and a one-time start-up grant. The funding runs for three to five years.

The StaR awardees include:

1. Prof Michael Chee
   (Duke-NUS GMS)
   Area of research: Cognitive Neuroscience

2. Prof David M. Virshup
   (Duke-NUS GMS)
   Area of research: Cancer

3. Prof Daniel G Tenen
   (National University of Singapore)
   Area of research: Leukaemia, stem cells

4. Prof Wong Tien Yin
   (Singapore Eye Research Institute/ National University of Singapore)
   Area of research: Retinal diseases, imaging, ophthalmology, cardiovascular risk prediction

Clinician Scientist Award (CSA) 2009

In June 2009, six medical doctors received the Clinician Scientist Awards (CSAs), and joined the growing pool of clinician scientists in Singapore to drive translational and clinical research.

First introduced in 2004, the annual award provides research funding and salary support to clinician scientists working in public hospitals and national disease centres. Under the scheme, the clinician scientists spend at least 70% of their time doing research that is relevant to their areas of specialty, in addition to seeing patients. This enables them to stay in touch with medicine and at the same time, explore and expand new research grounds by bringing insights from their clinical work to the laboratories.

The CSA awardees include:

1. Dr Joseph Wee
   (National Cancer Centre Singapore; Duke-NUS GMS)
- Area of research: Nasopharyngeal Cancer (NPC)
- Phase 3 trials to test effectiveness of treating NPC with a combination of new chemotherapy drugs.

2. Dr Tai E Shyong
   (National University Health System)
- Area of research: Risk factors for heart diseases
- Study of genes involved in metabolic and cardiovascular diseases, and how high density lipoprotein (HDL) protects individuals from heart diseases.

3. Dr Mahesh Choolani
   (National University Health System)
- Area of research: Prenatal diagnosis
- Developing non-invasive diagnosis of fetal abnormalities.

4. Dr Ling Khoon Lin
   (Singapore General Hospital)
- Area of research: Pathogenesis of *Helicobacter Pylori Gastritis* and gastric cancer
- Studies the immune response to *H.pylori*, and identifies immune targets.

5. Dr Dan Yock Young
   (National University Health System)
- Area of Research: Liver Cancer
- Developing cellular therapy to treat liver cancer.

6. Dr Chen I-Cheng Mark
   (Tan Tock Seng Hospital; Duke-NUS GMS)
- Area of Research: Epidemiology and Modelling the Transmission of Infectious Diseases
- Use of simulation models to design intervention strategies that can address outbreaks of infectious diseases.

Contact Us

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