

Fact Sheet on CREATE

I. Background

1. The **C**ampus for **R**esearch **E**xcellence **A**nd **T**echnological **E**nterprise (CREATE) is the manifestation of an idea to bring together in one location research centres of a few selected world-class research universities and institutions in Singapore and for the researchers of diverse background to interact readily to generate greater innovation. The universities and institutions to be considered would be those that are not only well known for their research capabilities, but also their ability to translate their research outcomes into economic or societal impact.

2. These research centers will host inter-disciplinary research programmes involving faculty, researchers and students from their home institutions collaborating with their counterparts from Singapore's universities and research institutions as well as researchers from other countries. Such global research talent would be attracted by the presence of similarly qualified talents but with different cultures and disciplines in this complex of research centers from top universities and institutions, augmented with corporate research laboratories, incubators for high-tech start-ups and other shared infrastructure and services.

3. CREATE aims to host a couple of research centres from each of the regions in the world. It expects to house some 1,000 researchers at steady state, as well as a larger churn of scientific talent coming through Singapore to work with the best minds from all over the world gathered here.

Design of CREATE

The CREATE building complex is designed with the following considerations:

(a) Pioneering environmental sustainability technologies in the tropics

CREATE will pioneer the use of environmental sustainability and energy efficient technologies in buildings in the tropics. The laboratory core spaces and corridors will be located at the perimeter to introduce maximum daylight and reduce significantly the need for artificial lighting. The dependence on municipal water will be reduced by the collection, storage, treatment and re-use of rainwater and grey water from showers and lavatories. The use of photovoltaic panels on the building is also being explored and provides an opportunity for the test bedding of the latest solar technologies.

(b) Strong interaction & collaboration

The campus will house a multi-cultural and multi-disciplinary research community. CREATE will be designed to maximize the interaction among these diverse individuals.

(c) Flexible Configuration

CREATE laboratories will be built with flexibility to cater to the different needs of researchers. Laboratories would be reconfigured quickly in response to the dynamic requirements and varied needs of the research groups.

(d) Magnet for global research talent

Through the presence of world class research universities and research facilities, and the proximity of the National University of Singapore, the Science Parks and the One-North developments of Biopolis and Fusionopolis, CREATE will be a magnet for attracting scientific talent from all over the world



Figure 1: Artist's Impression of the CREATE campus, due to be completed by mid-2011

II. CREATE Research Centres and Programmes

Singapore–MIT Alliance on Research & Technology (SMART) Center

4. Started in Jul 2007, the SMART Center is MIT's first such research centre outside its home campus in Cambridge, Massachusetts. It is also MIT's largest international research endeavour ever. MIT's decision to partner with NRF in this new venture reflects tremendous interest and enthusiasm on the part of MIT's faculty.

5. The SMART Center serves as an intellectual hub for interactions between MIT and global researchers in Singapore at exciting frontier areas of science and technology. Headed by a full time Centre Director based in Singapore who is also a

tenured senior faculty member of MIT, the SMART Centre will house a continuous cohort of MIT professors, post-doctoral fellows and PhD students working side by side with researchers from other institutions. At steady state, the Center plans to have five inter-disciplinary research groups (IRGs). To date, four IRGs have been approved – the Infectious Disease IRG, the Center for Environmental Sensing and Modeling (CENSAM) IRG, the Biosystems and Micromechanics (BioSym) IRG and the Future Urban Mobility IRG.

6. The SMART Centre also started an Innovation Centre in 2009, whose mission is to assemble and manage activities that foster the growth of an innovative and entrepreneurial culture both within the SMART Centre and the wider business, entrepreneurial and research community in Singapore.

The Singapore-ETH Center for Global Environmental Sustainability (SEC)

7. The Swiss Federal Institute of Technology, Zurich (ETH) is establishing the Singapore-ETH Centre (SEC) for Global Environmental Sustainability. The SEC's first IRG focuses on Future Cities Laboratory (FCL). The FCL programme will undertake cutting-edge research in disciplines ranging from material science, engineering, environmental technologies to communications technology and architecture. It aims to research and develop solutions and guidelines directed towards the sustainable development of buildings, cities, districts and regions.

Technion –Israel Institute of Technology

8. The Technion's research programme focuses on Regenerative Medicine in Cardiac Restoration Therapy. Collaborating with the Nanyang Technological University (NTU) and the National University of Singapore (NUS), it addresses the clinical need for cardiac restoration therapy using a tissue-engineering based approach.

Technical University of Munich (TUM)

9. TUM will establish the TUM-CREATE Centre to carry out research relating to Electromobility in Megacities. TUM-CREATE aims to develop competencies in battery technologies and management systems, power electronics, embedded systems, car-to-x¹ communications and vehicle telemetry. It would provide new concepts that would fuse functionality, safety and energy efficiency in electric vehicles.

Hebrew University of Jerusalem (HUJ)

10. HUJ's research programme focuses on "Cellular and Molecular Mechanisms of Inflammation". The goal of this initiative is to accelerate the development of

¹ Communication between a car and other entities in a transportation system such as other vehicles, stationary or moving objects

diagnostic/prognostic indicators and novel therapeutics for common inflammatory diseases in Asia and elsewhere.