

# Trail Blazer Lighting Up Research Path in Singapore



Physician-scientist Dr David M Virshup's research on cancer treatment targeting the proliferation of cancer stem cells spells new hope for cancer patients.

Dr Virshup who is from the US, came to Singapore a year ago to join the newly opened Duke-NUS Graduate Medical School Singapore where he is Director of the Cancer and Stem Cell Biology programme.

Prior to his arrival here, Dr Virshup was involved in research targeting the proliferation of cancer stem cells as a potential treatment for many common cancers such as colon, liver, breast cancers and leukaemia. Research in this area is still very new and there is much more that needs to be done before the drugs make it to the patients.

Given his expertise and experience, Dr Virshup is one of the awardees of the newly introduced **Singapore Translational Research Investigator award (STaR)**. For this award, he will receive a generous S\$5 million grant over five years for his research on cancer treatment. Dr. Virshup feels that stable multi-year funding is key to encouraging the strongest research, by allowing higher risk and higher yield projects to be undertaken.

For his research under STaR, Dr Virshup will be working on developing small molecule inhibitors of Wnt signalling - which is a complex network of proteins well known for their role in cancer. Wnt signalling is also important in cell proliferation and stem cell maintenance.

Dr Virshup completed his clinical training in Paediatrics and Paediatric Haematology/Oncology at Johns Hopkins. He was most recently an Investigator at the Huntsman Cancer Institute at the University of Utah before moving to Singapore.

On his decision to come to Singapore, Dr. Virshup said: "I was very attracted by the opportunity to help establish a pioneering graduate medical school in Asia." And, he is looking forward to helping train physician-scientists like himself.

## Reach for the STaRs

**The Singapore Translational Research Investigator Award (STaR)** is a programme under the Singapore's Biomedical Sciences Initiative Phase II to boost the pool of clinician scientists and translational researchers in Singapore.

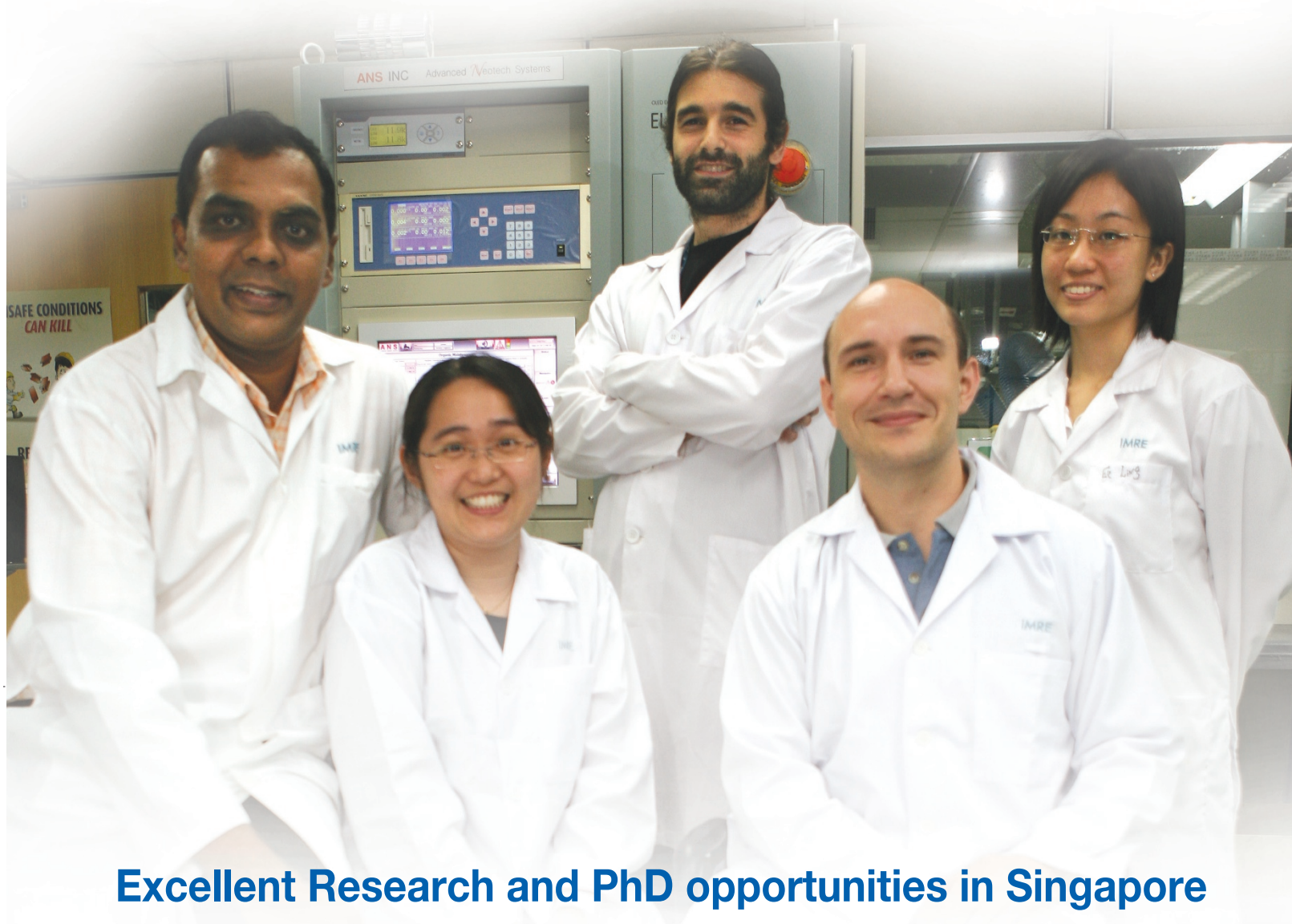
This prestigious award aims to recruit and nurture world-class clinician scientists to undertake cutting edge translational and clinical research (TCR) in Singapore. Some will also lead or contribute to the development of national flagship research programmes which are oriented around strategic disease areas.

Bringing along their research experience, STaR investigators will serve as catalysts to foster strong collaborations between research groups and institutions locally and internationally. They will also act as mentors for younger researchers.

The award is for a period of up to five years and includes funding for salary, an annual budget for research support and a one-time start up grant. The amount varies according to the proposals submitted by the Investigators. Four renowned translational and clinical researchers, including Dr Virshup, formed the inaugural batch of STaR. They were awarded in May 2008 in Singapore.

**Call for STaR is now open**  
Visit [www.nmrc.gov.sg](http://www.nmrc.gov.sg)





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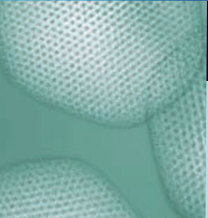
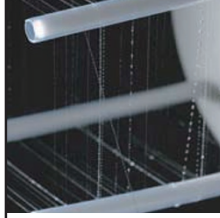

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# CAREERS IN BIOENGINEERING AND NANOTECHNOLOGY

The Institute of Bioengineering and Nanotechnology in Singapore is seeking highly motivated individuals who are interested in making an impact in advancing research and development in the following areas:


	<p style="text-align: center;"><b>Drug and Gene Delivery</b></p> <p>where the controlled release of various therapeutics involve the use of functionalized polymers and hydrogels for targeting diseased cells and organs, or for responding to specific biological stimuli.</p>		<p style="text-align: center;"><b>Pharmaceuticals Synthesis and Nanobiotechnology</b></p> <p>which encompasses the efficient catalytic synthesis of chiral pharmaceuticals, and new materials for sustainable technology and alternative energy generation.</p>
	<p style="text-align: center;"><b>Cell and Tissue Engineering</b></p> <p>where biomimicking materials, stem cell technology and bioimaging are combined to develop novel approaches to regenerative medicine and artificial organs.</p>		<p style="text-align: center;"><b>Biosensors and Biodevices</b></p> <p>which involve nanotechnology and microfabricated platforms for the detection and treatment of diseases, and the synthesis and screening of biologics.</p>

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**Prof. Jackie Y. Ying, Executive Director**  
**Institute of Bioengineering and Nanotechnology**  
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*(Please refer to our website for the complete list)*

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Biomolecular, Chemical, Computer, Electrical, Environmental, Manufacturing, Mechanical, Materials, Nanotechnology, Robotics

#### Information Technology

Bioinformatics, Computational Science, Info-communications, Interactive Digital Media

#### Life Sciences

Biochemistry, Cell and Molecular Biology, Developmental Biology, Genetics, Genomics, Lipidomics, Proteomics, Immunology, Pharmacology, Physiology, Regenerative Medicine, Stem-Cell Research

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Located in the exciting Singapore Biopolis, LSCDD's multi-disciplinary and multi-cultural team is working to redefine the leading edge. We are looking for outstanding individuals with demonstrated industry experience in Biotech/Pharmaceutical/Drug Discovery to fill the following positions:

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- Group Leader, Diabetes Biology
- Senior Scientist, Diabetes Biology
- Senior Scientist, Diabetes (in vitro) Biology
- Research Associate, Diabetes (in vivo) Pharmacology
- Research Associate, Diabetes (in vitro) Biology
- Research Associate, Oncology (in vivo) Pharmacology
- Research Associate, Oncology (in vitro) Biology
- Group Leader, Cancer Biology
- Senior Scientist, Cancer Biology
- Senior Scientist, Cancer Biomarker Discovery
- Senior Biosafety Officer
- Staff Scientist, Assay Development
- Senior Systems Analyst
- Software Architect
- Group Leader, Epigenetics
- Senior Scientist, Systems Biology (Computational)
- Senior Scientist, Systems Biology (Experimental)
- Associate Bioinformatics Scientist, Systems Biology
- Associate Director, Bioinformatics (ICS)
- Senior Software Engineer (ICS)
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## Singapore's Science & Technology University

### Top-ranked university

- Among the world's top 100 universities today\*
- First Singapore business school to break into the top 50\*\* in the world

### Culture of innovation

- Strong innovation ethos with a well-developed ecosystem for technology transfer and commercialization
- Attracts substantial worldwide funding due to its research investments and high-impact research

### Nobel boost

- 10 Nobel Laureates and a Fields medallist on NTU Institute of Advanced Studies' panel of International Advisors
- Promotes regular high-level meetings with Nobel Laureates

### First-class infrastructure

- Home to some of the best facilities, including a US\$17.8 million Research TechnoPlaza and more than 70 research centres

### Globally-relevant

- Cosmopolitan hub for 30,000 students and 4,000 faculty and staff from over 40 countries
- Partner of choice for many leading academic and research institutions

### Industry-academic partnership

- Extensive research collaborations with industry, including technology-based partners such as EADS, Thales, Rolls-Royce, Robert-Bosch and Infineon

### Interdisciplinary approach

- Strong emphasis on interdisciplinary approach to research and education
- Combines science and technology with business, arts, humanities, and social sciences

### Preferred choice of international graduate students

- 85% of PhD students from Asia, Europe and the United States
- Offers generous scholarships

### Research excellence

- Earth Observatory of Singapore, the region's flagship institute for earth sciences research and innovation
- Nanyang Environment and Water Research Institute, a one-stop centre for industry and research partners to access NTU's capabilities in environment and water technologies

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- Brings together culture and technology, bridging the best of East and West

\* *The Times Higher Education Supplement 2008*

\*\* *Financial Times 2008*

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- Nanyang Business School
- National Institute of Education

- College of Science
- College of Humanities, Arts, & Social Sciences
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Earthquakes, tsunamis, volcanic eruptions, sea-level rise, tropical storms, changes in patterns of precipitation and temperature and other natural hazards are increasingly challenging human aspirations and well-being. Research at the Earth Observatory of Singapore (EOS) will focus on understanding Southeast Asia's dynamic oceans, atmosphere and tectonic plates and characterizing the tectonic, volcanic and climatic processes responsible for these hazards. These scientific characterizations will promote forecasts of natural processes that will aid governments, communities and businesses to anticipate and adapt creatively to these environmental challenges, as well as develop and implement visionary policies.

The EOS was recently funded by Singapore's National Research Foundation (NRF) and Ministry of Education (MOE) as a Research Centre of Excellence and an autonomous institute at Nanyang Technological University (NTU). Through a new School of Earth Science (SES) at NTU, EOS scientists will also work to integrate research and teaching into education of future generations.



We plan to make about 15 tenure-track appointments over the next few years. Most will be at the assistant-professor level, but a few will be more senior.

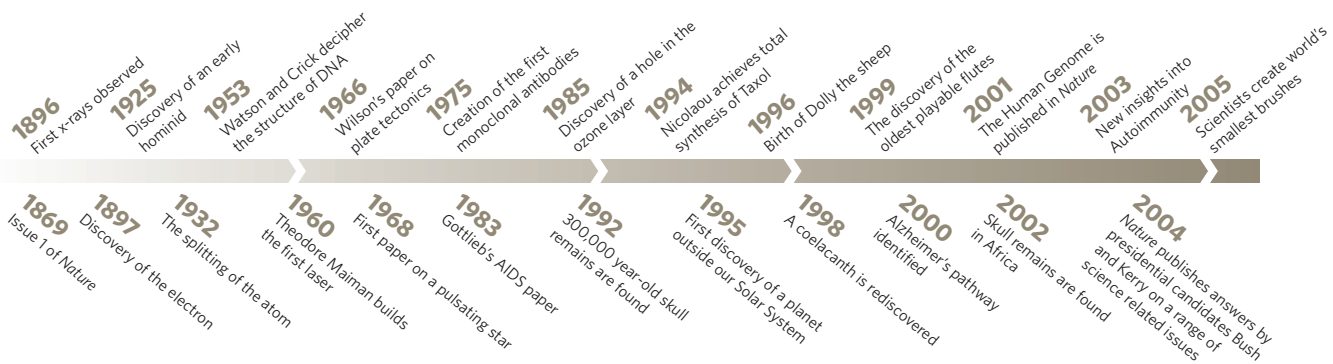
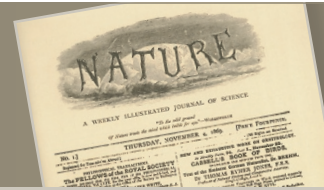
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For further information about the Earth Observatory of Singapore, please refer to <http://www.ntu.edu.sg/EarthObservatory>



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## **Novartis Institute for Tropical Diseases (NITD) Singapore**

Backed by one of the largest pharmaceutical companies in the world and major foundations, the Novartis Institute for Tropical Diseases is an established organization that intends to become a major force in fighting the spread of tropical diseases. In developing countries where these diseases are endemic, the Novartis Group intends to make treatments available to poor patients without profit. With over 100 researchers and support staff, the focus of the Institute's research activities is on Dengue, Tuberculosis and Malaria. The discovery technology is state-of-the art and the scope of activities ranges from target discovery, screen development and compound optimization, up to readiness for clinical testing, or Proof of Concept in man.

### **Director of Institute**

We are seeking a renowned scientist to join us as Director of Institute, in succession of the present Director who will retire in mid 2009. Reporting to the Head of Corporate Research of Novartis and the Chairman of the Board of NITD, the Director will promote the discovery of drugs with significant medical advantage and economic viability in the developing world, making the most efficient use of available resources.

Based in Singapore, one of the fastest-growing bioclusters in Asia, the Director will lead the organization to the next stage of its development and guide a motivated team of best-in-class researchers to accomplish the Institute's mission.

You will promote resource-sharing within Novartis' research organizations and manage a complex network of collaborations with internal and external Institutes/organizations. You will also be responsible for implementing the Institute's research strategy and be the key decision maker for our pipeline of programs, with the goal of maintaining an innovative and competitive program portfolio. In addition, you will represent the Institute within the international scientific community.

Ideally, you will be a senior scientist with a genuine passion for the advancement and application of medical science for the benefit of the society. You must have an M.D. or Ph.D. in Biology or a related discipline, with at least 10 to 15 years' relevant research experience in industry drug discovery, early stage drug development and academia. You must possess working knowledge of infectious diseases/anti-infectives, and be familiar with drug discovery concepts. Additionally, you should have proven leadership capabilities with excellent implementation skills, along with a strong command of the English Language. Experience in collaborating with multicultural teams across multiple functions will be a distinct advantage. An attractive remuneration will be offered to the right candidate, and relocation assistance will be provided as necessary.

**Interested candidates should email their CV and cover letter, stating details of current remuneration, to Berit Bretthauer or Charles Moore at [Novartis-ITD@heidrick.com](mailto:Novartis-ITD@heidrick.com). Closing date for applications is 21 November 2008.**



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## Master of Science Degree in Infectious Diseases, Vaccinology and Drug Discovery

The National University of Singapore (NUS), the Novartis Institute for Tropical Diseases (NITD), the Biozentrum of the University of Basel (UoB) and the Swiss Tropical Institute (STI) are jointly recruiting candidates for a research-based joint M.Sc. program on the approaches to control communicable diseases, particularly in vaccinology and drug discovery.

### M.Sc. Programme

This program comprises 18 months of formal teaching and research work, of which students will spend the first 5 months (September 2009 to January 2010) in Basel, Switzerland, attached to the STI and the UoB-Biozentrum, before moving to Singapore for research work and their selected course modules. As the vacancies for this program are limited to a maximum of 20, candidates will be admitted based on the selection criteria of the Admission Committee of the National University of Singapore and the Teaching Committee for Biology of the University of Basel.

### Degree

Upon completion of the program, graduates will receive a joint M.Sc. Degree from NUS and UoB.

### Funding

Selected students will be offered a stipend which covers the 18 months of studies, including tuition fees, research and travel expenses. The number of stipends is limited, and students may opt for self-funding.

### What Will You Learn?

Students will obtain a comprehensive insight into the basics of infectious diseases, as well as the strategies of vaccine designing and drug discovery. Lectures will complement a research project undertaken within the leading laboratories at NUS and NITD.

### Application

Please refer to the document "Applications and FAQs" posted on the following websites: [www.nitd.novartis.com](http://www.nitd.novartis.com), [www.sti.ch/teaching-and-training/msc-in-infectious-diseases.html](http://www.sti.ch/teaching-and-training/msc-in-infectious-diseases.html) and [medicine.nus.edu.sg/corporate/joint\\_msc.shtml](http://medicine.nus.edu.sg/corporate/joint_msc.shtml). Graduates who have obtained a Bachelor's Degree in Biology or a related subject, (e.g Microbiology, Immunology) or successfully completed a degree course in Medicine, may apply for this program.

### Closing Date

Applications should reach us by 30 November 2008. The M.Sc. program will commence on 14 September 2009 in Basel, Switzerland.



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