

BY LAXMI IYER ON SEPTEMBER 29, 2015 • ([LEAVE A COMMENT](#))

NTU launches NIMBELS Institute featuring the \$9million Singapore Phenome Centre



Nanyang Technological University (NTU Singapore) added

another feather to its cap today by launching the new life sciences research cluster called the NTU Integrated Medical, Biological & Environmental Life Sciences (NIMBELS) Cluster which features Southeast Asia's first Singapore Phenome centre tackling key issues such as ageing, diabetes, gut microbiomes and the urban water cycle.

Launch of NIMBELS

NTU in a bid to achieve research excellence, is trying to promote an interdisciplinary and collaborative research atmosphere by bringing together the life sciences expertise in NTU's [Lee Kong Chian School of Medicine](http://www.lkcmedicine.ntu.edu.sg/Pages/Home.aspx) ([LKC Medicine](http://www.lkcmedicine.ntu.edu.sg/Pages/Home.aspx)), [School of Biological Sciences](http://www.sbs.ntu.edu.sg/Pages/Home.aspx) (SBS), [Singapore Centre for Environmental Life Sciences Engineering](http://www.scelse.sg/) (SCELSE) and the [NTU Institute of Structural Biology](http://biotechn.asia/2015/02/12/ntu-setting-up-institute-of-structural-biology-with-state-of-the-art-imaging-facilities/) under NIMBELS. With the launch of NIMBELS, NTU aims to tackle three essential goals- improved health for populations, better care for individuals and a more sustainable environment.

Speaking at the launch of the Singapore Phenome Center, NTU President Professor Bertil Andersson claimed that this was a historic day for NTU. For a university that was established in 1991 and whose traditional strengths lay in engineering and not in Life sciences, to have established a research cluster like NIMBELS to address global healthcare challenges shows NTU's unwavering commitment to research excellence.

"To achieve breakthroughs in this modern era of biomedical research involving big data, we need a new approach, a new way of thinking about these challenges. We need solutions that bring together not just the best clinical and biomedical minds, but also involving experts in structural biology, environmental

life sciences and computing technologies,” said Professor Andersson

NIMBELS will be led by Professor Staffan Kjelleberg, a world expert in environmental microbiology, microbial ecology and biofilm biology. Speaking about NIMBELS Prof Staffan said, “This new life sciences cluster offers a unique research environment and capitalises on the interface between life sciences and excellence in engineering to find solutions to health issues.”





NTU's Singapore Phenome Centre

Prof. Bertil also launched the \$9 million Singapore Phenome Centre which is part of the NIMBELS Cluster.

A phenome describes all of a person's physiological traits in the same way that a genome describes genetic features. By studying unique biochemical metabolites in fluids such as urine, blood etc, it is possible to **make connections** (<http://news.sciencemag.org/europe/2012/08/olympic-drug-testing-lab-become-national-phenome-center>) between a person's metabolism and the diseases they develop. The Singapore Phenome Centre at NTU seeks to have a better understanding of phenomes, and shed light on how these physical and biochemical traits are produced by the interactions between genes and environmental factors.

It brings together expertise from NTU's LKCMedicine, SCELSE and School of Biological Sciences along with strong industry support from Waters Corporation.

LKCMedicine Dean Professor James Best, who chairs the new centre, said: "We intend to characterise the unique Asian phenotypes by working with clinicians from across Singapore, so that we can offer tailored therapies for individuals. We also hope to identify new biomarkers that can be used at a population level to assist people to lead healthier lives." They also hope to study phenomes of environmental ecosystems such as the urban water cycle, providing information that will

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factors that contribute to complications in diabetes, in

partnership with Khoo Teck Puat Hospital and Tan Tock Seng Hospital; investigating microbial products from waste water treatment systems with the national water agency PUB, various industry collaborations and partnerships including with Waters Corporation.

The Singapore Phenome Centre, currently located at the Research Techno Plaza, will move to the Experimental Medicine Building by the end of the year.



Singapore Phenome Center partners with National Phenome Center led by Imperial College London, UK

The **Singapore Phenome Center** (<http://www.lkcmedicine.ntu.edu.sg/Research/Singapore%20Phenome%20Centre/Pages/Home.aspx>) is only the second such organization dedicated to learning about Phenomes apart from MRC-NIHR Phenome Centre and the first in SouthEast Asia. SPC will collaborate with an international network initiated by the MRC-NIHR National Phenome Centre at Imperial College London, for developing medical innovations in human diseases.

Professor Jeremy Nicholson, Director of the centre at Imperial said, “On behalf of the MRC-NIHR National Phenome Centre at Imperial College London, we are delighted to be working with the newly established Singapore Phenome Centre at NTU. The harmonisation and standardisation of metabolic phenotyping

technologies for human healthcare screening and monitoring operated by the phenome centres will help achieve major advances in personalised and public healthcare based on new knowledge of human biology and gene-environment interactions.”

NTU is also organizing a two-day international symposium to mark the launch of NIMBELS and the Singapore Phenome Centre where distinguished scientists will share their expertise in various disciplines such as biomedical science and environmental engineering.

