



Prof Yue Chee Yoon, Acting Dean of the newly launched Interdisciplinary Graduate School, NTU.

Solving Worldwide Challenges, the Interdisciplinary Way

In striving to promote and facilitate interdisciplinary research and graduate education on globally pertinent issues, NTU's newly launched Interdisciplinary Graduate School (IGS) aims to encourage more graduate students to undertake research projects spanning different disciplines. IGS' Acting Dean, Professor Yue Chee Yoon, shares more with *NTULink*.

“If you are interested in **solving grand challenges**; if you want to **generate new ideas** and **innovations** which are impactful and can lead to **solutions for mankind**, then interdisciplinary research is for you!”

The increasing importance of interdisciplinary research in producing high-impact breakthroughs has been recognised over the past ten years. This has led to a worldwide trend in emphasising interdisciplinary research.

“Researchers were previously only concentrating on research within specific disciplines. But they are now realising the numerous opportunities at the interfaces between engineering and other disciplines, which is what constitutes interdisciplinary research,” says Prof Yue.

More researchers around the world have begun to realise that the world’s problems cannot be solved within one discipline. “Take for example the issue on ageing, where we would need to look at the medical, engineering and even business aspects,” says Prof Yue.

Medical research is needed for developing new medicinal products that are required by the ageing population; engineers are needed to invent, design and build medical devices that are suitable for the elderly and these have to be done by taking business considerations into account to ensure that everything is cost effective and inexpensive.

INTERDISCIPLINARY GRADUATE SCHOOL AT NTU

Officially opened on 25 June 2012, IGS is the first of its kind in Asia. Through its interdisciplinary programmes, it aims to pioneer a new push in PhD education.

Unlike traditional PhD programmes which are more specialised, IGS graduate students will pursue programmes which allow them to undertake projects spanning two or more disciplines.

By incorporating revolutionary and interdisciplinary research and graduate education across NTU, IGS will strengthen the University’s important role in encouraging the advancement of leading-edge ideas and technologies from NTU to the world.

Focussing on key research areas corresponding to NTU’s key thrusts in *Sustainable Earth*, *New Media* and *Future Healthcare*, IGS will leverage on professors from all the Schools and Colleges in NTU to undertake interdisciplinary research and to act as advisors for its PhD students.

The Centres included in the thematic research programme on *Sustainable Earth* are, the Energy Research Institute @ NTU (ERI@N), the Nanyang Environment and Water Research Institute (NEWRI), the Singapore Centre for Environmental Life Sciences Engineering (SCELSE), the Earth Observatory of Singapore (EOS), the Rajaratnam School of International Studies (RSIS) and the Institute of Catastrophe Risk Management (ICRM).

NTU’s Institute for Media Innovation will be the key centre under the thematic research programme on *New Media*, whilst a new key centre for *Future*

Healthcare is being established. It will be closely associated with the new Lee Kong Chian School of Medicine. Each of these research programmes will be headed by a Programme Chair.

Using the example of ERI@N, Prof Yue explained how the centre adopts a holistic multi-faceted interdisciplinary focus to solve energy related issues. Focussing on wind and marine, solar and bio energy, researchers at ERI@N employ knowledge from various engineering and science disciplines, such as mechanical, materials and chemical engineering as well as physics and chemistry, to conduct research on areas such as energy storage, fuel cells, green buildings, marine renewable and electro-mobility.

Additionally, modelling studies and research on environmental science and impact, legislation and policy, and the economics and business aspects of energy are being pursued.

A total of 25 applicants, from over a pool of 300, have been accepted for IGS’ pioneer batch of interdisciplinary research PhD students. Each student will have two supervisors and one additional mentor.