THE ANSWER TO MANY OF THE COMPLEX PROBLEMS OF THE WORLD TODAY LIES IN THE INTERFACES BETWEEN DISCIPLINES.

THE UNIVERSITY HAS MANY DISCIPLINES, OF COURSE, BUT MANY TIMES THERE ARE WALLS ABOVE THEM.

AND OUR INTERDISCIPLINARY GRADUATE SCHOOL OF NTU IS MEANT TO BREAK DOWN THESE WALLS.

PROFESSOR BERTIL ANDERSSON
PRESIDENT, NTU SINGAPORE

CONDUCTING RESEARCH THE INTERDISCIPLINARY WAY OFFERS OPPORTUNITIES FOR IDEAS TO TRANSLATE INTO PRACTICAL SOLUTIONS FOR SINGAPORE AND BEYOND.

PROFESSOR BO LIEDEBERG
DEAN
INTERDISCIPLINARY GRADUATE SCHOOL

ABOUT NANYANG TECHNOLOGICAL UNIVERSITY

Nanyang Technological University (NTU Singapore) is a young and research-intensive university on a rapid global rise.

It has about 33,000 undergraduate and postgraduate students in the colleges of Engineering, Business, Science, Humanities, Arts, & Social Sciences, and an Interdisciplinary Graduate School. It’s medical school, the Lee Kong Chian School of Medicine, is set up jointly with Imperial College London.

NTU is also home to world-class autonomous institutes – the National Institute of Education, S Rajaratnam School of International Studies, Earth Observatory of Singapore, and Singapore Centre on Environmental Life Sciences Engineering – and various leading research centres such as the Nanyang Environment & Water Research Institute (NEWRI), Energy Research Institute @ NTU (ERI@N) and the Institute on Asian Consumer Insight (ACI).

NTU is a cosmopolitan university with more than 100 nationalities. Its main Yunnan Garden Campus has been named one of the Top 15 Most Beautiful in the World. NTU also has a campus in Novena, Singapore’s medical district.
DOCTOR OF PHILOSOPHY
(FOR RESEARCH IN SUSTAINABLE EARTH)

As humankind and life forms evolve, their relationship with the environment also changes. Sustainability and the earth’s ability to meet the needs of both current and future generations is a growing global concern. As a case in point, Singapore expects the clean-tech sector to contribute 18,000 jobs and S$3.4 billion to gross domestic product by 2015.

Through a holistic approach, the Sustainable Earth thrust, also identified as the "peak of peaks", empowers research on clean water, alternative energy, clean technologies, urban systems and geological risks.

COMPLEXITY INSTITUTE
Complexity Institute came into existence in April 2014, with the goal of becoming a global centre for complexity research. It facilitates transdisciplinary team-based science to study how interactions within a system and its environment generate dynamical patterns of behaviour. The four research focus areas are: Critical Transitions in Man-Made & Natural Systems, Foundations of Complex Adaptive Systems, Urban Adaptive Dynamics and Health Systems Complexity. Learn more about Complexity Institute at www.complexity.ntu.edu.sg.

EOS (EARTH OBSERVATORY OF SINGAPORE)
EOS was founded in 2009 to conduct fundamental research on earthquakes, volcanic eruptions, tsunamis and climate change in and around Southeast Asia. Multidisciplinary research teams of international stature will blaze new paths through the fascinating mysteries of this dynamic, thin shell of our planet. Through research and outreach activities, EOS increases awareness of geohazards to help ensure a more sustainable human presence in Southeast Asia. Learn more about EOS at www.earthobservatory.sg.

ERI@N (ENERGY RESEARCH INSTITUTE @ NTU)
At the heart of ERI@N lies the goal of improving efficiency of current energy systems while maximising synergistic effects of alternative energy sources. To this end, researchers at ERI@N have the opportunity to interact and together promote relevant energy solutions and policies for the future. Ongoing collaborations with industry players such as Bosch GmbH (Photovoltaics), Vestas Technology R&D Singapore (Wind), and Rolls-Royce (Marine Engineering & Power Systems Research) and partnerships with universities such as the University of Cambridge and the Technical University of Munich help foster a research environment dedicated to the goal of sustainability. Learn more about ERI@N at http://erian.ntu.edu.sg.

ICRM (INSTITUTE OF CATASTROPHE RISK MANAGEMENT)
Established in response to the massive increase in human and economic losses due to catastrophic events of recent years, ICRM is a first-of-its-kind multidisciplinary risk management research institute that focuses on new, evolving and complex risks that Asia will face as it urbanises in an increasingly interconnected global environment. Through ICRM, researchers will work on integrated risk assessment and management of hazards, covering both natural and man-induced, to develop Asian catastrophe risk models and help governments, industries and communities better understand the fundamental characteristics of such catastrophes. Learn more about ICRM at http://icrm.ntu.edu.sg.
**NEWRI (NANYANG ENVIRONMENT & WATER RESEARCH INSTITUTE)**

A culmination of NTU’s contribution to Singapore’s Environmental and Water Technology (EWT) R&D landscape over the past two decades, NEWRI is the platform for multi- and trans-disciplinary interactions concerning environmental science and engineering. Together with NEWRI’s unique ecosystem of eight coordinated units, researchers drive environmental solutions that are innovative, and relevant to the industry and community. Learn more about NEWRI at [http://newri.ntu.edu.sg](http://newri.ntu.edu.sg).

**SCELSE (SINGAPORE CENTRE FOR ENVIRONMENTAL LIFE SCIENCES ENGINEERING)**

SCELSE is a Research Centre of Excellence breaking new ground in understanding, harnessing and controlling microbial biofilm communities in environmental, industrial and public health settings. SCELSE’s interdisciplinary research focuses on overall community structure, function and performance of microbial biofilms as well as the mechanisms of their communication and micro-ecological interactions by using cutting edge expertise from emerging technologies in engineering and natural sciences. SCELSE aims to harness biofilms to meet the crucial challenges of securing clean water and maintaining a sustainable environment. Learn more about SCELSE at [www.scelse.sg](http://www.scelse.sg).

**DOCTOR OF PHILOSOPHY (FOR RESEARCH IN GLOBAL ASIA)**

Bringing a new focus and understanding to the rapid transformation of Asia and its linkages to the rest of the world, Global Asia Peak integrates a broad spectrum of research strengths across the University including business studies, social sciences, the humanities and the natural sciences.

The Peak takes advantage of Singapore’s geographical position at the heart of Asia and NTU’s competitive advantage in business studies, international policies and the arts, as well as strong roots and links to China, India and the surrounding parts of Southeast Asia. Asia accounts for 60% of the world’s population, one third of its GDP and is now recognised as the supply chain and manufacturing hub of the planet. Understanding the new Global Asia has never been more important and the continuing growth of Asia is of particular relevance to Singapore. With the aim of contributing to the national development of Singapore in the Asian context and offer academic leadership in this area, the Peak will adopt three foci – Business Asia, Cultural Asia and Transformational Asia.

*First admission intake will be August 2017.*
As Singapore looks set for her transformation into a global media city, the Peak of Excellence in Secure Community provides a timely boost to position the country as one of the key strategic media centres in the Asia-Pacific region.

Endless opportunities await as the National Institute of Education and Ministry of Education work together to laterally translate new media research into teaching and learning pedagogies, preparing students for the 21st century workforce. Be it educational games or immersive teaching and learning environments, media data analytic or image and video processing, the Secure Community candidate can expect to gain hands-on, extensive exposure.

**IMI (INSTITUTE FOR MEDIA INNOVATION)**
Spurred by Singapore’s call to make the development of Interactive Digital Media a national priority, IMI was launched in 2008 as a world-class interdisciplinary research institute with a core focus on virtual humans and social robots. Apart from projects such as virtual reality and 3D telepresence, fashion and cloth simulation, as well as medical simulation, IMI has a unique Immersive Room that allows viewers to be completely immersed in the virtual world, and a state-of-the-art Motion Capture System. IMI offers researchers the perfect environment for invention and exploration. Learn more about IMI at [http://imi.ntu.edu.sg](http://imi.ntu.edu.sg).

**LILY (ACTIVE LIVING FOR THE ELDERLY)**
Responding to the challenges of a rapidly ageing population, LILY was established with the aim of placing Singapore in a leading position in the emerging age-friendly economy. Focused on building an age-friendly technology ecosystem, the research areas of LILY spans from ageing studies, innovative ageing-in-place concepts, human-computer interaction, intelligent agent and multi-agent systems, social signal processing, cognitive and rehabilitation game design, interactive storytelling, distributed sensing technologies, service cloud to data mining and analytics. Along with the support and collaboration of government agencies, businesses and institutes of higher learning in Asia and North America, researchers can look forward to an enriching environment for exploring cutting-edge technologies and the opportunity to make a positive difference to the society. Learn more about LILY at [http://lily.ntu.edu.sg](http://lily.ntu.edu.sg).

**MAGIC (MULTI-PLATFORM GAME INNOVATION CENTRE)**
Hosting game researchers and practitioners focusing on inter-disciplinary research in next generation games and related areas, MAGIC seeks to redefine gameplay through game development and innovation. The result is enhanced digital game experience tailored to meet the needs of individuals and businesses alike. Strong academic and industry partners from around the world will be involved to form a collaborative ecosystem for game research and innovation. Learn more about MAGIC at [http://magic.ntu.edu.sg](http://magic.ntu.edu.sg).

**RAPID-RICH OBJECT SEARCH (ROSE) LAB**
With a focus on building the largest domain object database in Asia and providing mobile object search upon media cloud, ROSE is set to open new avenues in commerce, tourism, and education by enhancing visual search technology and creating a shared platform for media cloud innovation. Not only does ROSE partners Peking University to advance the core technologies, it also works with international industry leaders to commercialise them with an aim of impacting the creation, delivery and consumption of new media content in everyday life. Learn more about ROSE at [http://rose.ntu.edu.sg](http://rose.ntu.edu.sg).
DOCTOR OF PHILOSOPHY
(For Research in Healthy Society)

Underpinning the growth of the Peak of Research Excellence in Healthy Society (Healthy Living, Active Ageing) is the establishment of the Lee Kong Chian School of Medicine. Converging disciplines such as medicine, health, engineering, technology, science, business, and humanities, the Peak integrates research, education and innovation to address challenges of rapidly ageing societies, including Singapore. Besides promoting healthy living and mitigating the impact of ageing through technological innovations in human health and medicine, the Peak aims to strengthen clinical interface for research to advance healthcare in Singapore. Opportunities await Healthy Society candidates who are passionate about making an impact on Singapore’s health system and ultimately, changing people’s lives for the better.

ARISE (Ageing Research Institute for Society and Education)
ARISE is a pan-university research institute that supports multidisciplinary and interdisciplinary research devoted to aged and ageing-related research, programmes and activities. Leveraging NTU’s strengths in engineering and technology, and working with engineering, business and medical schools, ARISE will focus on emergent research in medicine, social sciences, technologies and media. Through fundamental and translational research conducted in partnership with health agencies, eldercare service providers and industry partners, ARISE aims to drive Singapore’s vision for an active, confident and productive ageing nation – contributing to sustainable high-quality eldercare, and independent and meaningful lifestyles for the elderly. ARISE aspires to nurture world-class talents and place Singapore at the forefront of ageing-related research. Learn more about ARISE at http://arise.ntu.edu.sg.

NITHM (Nanyang Institute of Technology in Health & Medicine)
Leveraging NTU’s engineering strengths and Lee Kong Chian School of Medicine’s competencies, the Nanyang Institute of Technology in Health and Medicine (NITHM) is poised to harness the synergistic effects of engineering and medicine. The multidisciplinary approach, which brings together scientists, engineers, and clinicians, form a collaborative ecosystem that provides innovative solutions for human health and medicine. Beyond propelling health engineering and technology research in NTU, NITHM also collaborates with industry partners to create engineering-enabled solutions for the healthcare community. The research thrusts of NITHM include Sensing & Diagnostics, Therapeutic Medical Devices, Nanomedicine, Tissue Engineering, Systems Biology & Medicine, Medical Imaging & Signal Analysis, Chemical Biology, Health Systems Complexity, and Skin Research. Learn more about NITHM at http://nithm.ntu.edu.sg.

NNIN (NTU-Northwestern Institute for Nanomedicine)
NTU-Northwestern Institute for Nanomedicine (NNIN) – a collaboration between NTU and International Institute of Nanotechnology (IIN), based in Northwestern University – is the first of its kind in Southeast Asia. This research institute will focus on the medical application of nanotechnology – nanomedicine, a relatively new discipline that combines nanomaterials-based detection and treatment of diseases. With a focus on developing innovative solutions in four key areas: diabetes, cardiovascular, ophthalmology and skin therapeutics, the institute will bring together scientists from both universities to work collaboratively on research projects in the areas of disease diagnostics, timed-release therapeutics, and targeted drug delivery methods, with emphasis on cardiovascular, skin, ocular and endocrinological disease. Learn more about NNIN at http://nnin.ntu.edu.sg.
SOLVING GLOBAL CHALLENGES
THE INTERDISCIPLINARY WAY

INTERGENERATIONAL IMPACT
In today’s increasingly complex world, problems are often multifaceted. To effectively address these challenges, it calls upon reflective and multidimensional insights into various disciplines. Spurring innovative ideas and paramount discoveries, IGS aims to transform the world today while shaping tomorrow.

INTERESTING RESEARCH
At IGS, opportunities for meaningful research abound. Beyond a choice of the centres and institutes under Sustainable Earth, Secure Community and Healthy Society, an intensive seminar culture with ample interaction opportunities characterises the research journey at IGS. Fuelling the research passion of our students, IGS adopts the same best practices as that of leading overseas institutions.

INTERRELATED FOCUSES
IGS champions research that is interdisciplinary and multidisciplinary in nature. Well aligned with NTU’s Peaks of Excellence in Sustainable Earth, Secure Community and Healthy Society, IGS features research that spans from humanities to science and technology. Much unlike conventional discipline-based programmes, IGS provides a broad yet tightly interrelated learning experience.

INTERDISCIPLINARY MOBILITY
Empowered to cross the boundaries between disciplines, IGS candidates can look forward to more possibilities for breakthroughs as they undertake cross-disciplinary research and graduate studies from different schools and colleges in NTU. Solid academic progression aside, interdisciplinary research opens doors to wider career opportunities in various strategic and emerging fields that are vital in our global world.

INTERNATIONAL REPUTATION
Supported by a team of experienced professors lauded as top international researchers in their respective fields, the IGS environment is one of dynamism and intellectual stimulation. The opportunity to work alongside some of the brightest in the industry makes IGS the preferred ground for interdisciplinary research.
ADMISSION REQUIREMENTS

• Applicants must have Bachelor’s degree with minimum 2nd class honours upper or equivalent in any discipline from a recognised university.
• A good GRE test score is required for international applicants and a good TOEFL score is required for candidates whose native language is not English.
• GATE score may be accepted in place of GRE for candidates with Indian basic degrees. IELTS can also be used in place of TOEFL.

*International candidates are advised to look up important information such as student’s pass, cost of living, etc., via the International Student Support’s website at http://www.ntu.edu.sg/SAO/iss/Pages/index.aspx

PROGRAMME HIGHLIGHTS

• Interdisciplinary research to support NTU’s Five Peaks of Research Excellence.
• Supervision and mentoring by 3 top professors.

BENEFITS FOR SUCCESSFUL APPLICANTS

• A 4-year PhD scholarship worth about S$200,000, inclusive of 4-year tuition fees and monthly stipends.
• The actual stipend will depend on the class of honours obtained for the Bachelor’s degree.
• Singapore Permanent Residents and Non-Singaporeans will have slightly lower stipends at competitive rates.
• Opportunities for overseas research attachment in renowned universities, research institutes and companies.
• Opportunity for involvement in tutoring.

APPLICATION DETAILS

• Applications are required to be submitted online. More information on admission procedures can be viewed at http://admissions.ntu.edu.sg/graduate/R-Programs/Pages/default.aspx
• Applicants must choose a Research Centre/Institute in which they wish to conduct their research work.
• There are 2 intakes in the academic year, i.e. August & January

NTU RESEARCH SCHOLARSHIP SCHEMES

There are other scholarships schemes, such as the Nanyang President’s Graduate Scholarships and the Singapore International Graduate Awards (SINGA), available to PhD candidates. For more details on scholarship schemes, please visit http://admissions.ntu.edu.sg/graduate/scholarships/Pages/default.aspx

Please scan the QR code to view

<table>
<thead>
<tr>
<th>IGS website</th>
<th>IGS video</th>
</tr>
</thead>
</table>

Please scan the QR code to view

<table>
<thead>
<tr>
<th>IGS website</th>
<th>IGS video</th>
</tr>
</thead>
</table>

Please scan the QR code to view

<table>
<thead>
<tr>
<th>IGS website</th>
<th>IGS video</th>
</tr>
</thead>
</table>

Please scan the QR code to view

<table>
<thead>
<tr>
<th>IGS website</th>
<th>IGS video</th>
</tr>
</thead>
</table>