FUTURISTIC NTU
NTU’s BeingThere Centre

OPERATION BLACK SWANS
Earth Observatory of Singapore

ADVANCING SUSTAINABILITY AT NTU
A supplementary special featuring the University’s commitment to Sustainable Earth
Message from the President

Prof Bertil Andersson
NTU President

Dear NTU alumni, faculty, staff and students,

As institutions driving thought-leadership, universities have a role in steering our community towards a responsible stewardship of our planet, especially in the face of mounting ecological and environmental issues.

At NTU, we take on this duty seriously. NTU is a world leader in the most exciting research areas that will have the greatest impact on our planet. The University’s research capabilities and the relevance of its research are clearly reflected by the steady increase of its research funding over the past few years, with more than S$830 million in sustainability research. Renowned researchers leading our major research centres, together with key partnerships with industry giants, combine to make this a most exciting period and vibrant place for NTU.

Under NTU 2015, the University’s five-year strategic blueprint, Sustainable Earth has been identified as one of the pivotal areas NTU seeks to make a difference to. With this mission clearly mapped out, the University further deepens its commitment to sustainability research and sustainability, bringing together the vital work of its research institutes, incorporating along the way responsible environmental stewardship of its operations, and fostering the culture of sustainability across campus.

Research institutes like the Nanyang Environment and Water Research Institute (NEWRI), and the Energy Research Institute at NTU (ERI@N) address the significant sources of environmental impact – water and waste management, energy and emissions. The establishment of two National Research Centres of Excellence at NTU, the Earth Observatory of Singapore (EOS), and the Singapore Centre on Environmental Life Sciences Engineering (SCELSE) will ensure that geological concerns are met and new solutions in water and environmental sustainability looked into.

As part of the University’s Campus Master Plan, CleanTech Park (Singapore’s first eco-business park built by JTC Corporation and the Economic Development Board along Nanyang Avenue) reflects the University’s understanding of the need for seamless integration in sustainability research and development activities across campus with key industry partners in clean technology. Once ready, in the second half of 2012, the Park will be home to NTU’s major research institutes, including NEWRI and ERI@N.

With sustainability as its guiding principle, the Campus Master Plan will incorporate infrastructure, buildings and landscaped spaces aimed at reducing NTU’s carbon footprints. Some of these initiatives include building ponds and lakes that will allow for the capture and reuse of rainwater for irrigation purposes, and the introduction of walkways and cycling lanes to encourage walking and the use of eco-friendly bicycles.

In partnerships with leading industry players, NTU is thriving too. Some of these include collaborations with JTC, Philips, Bosch, Rolls-Royce, Vestas, and Atlantis, to develop energy-related solutions and policies for combating climate change. Others include partnering with Spanish energy giant Gamesa, on wind technology research.

NTU is home to a growing number of distinguished researchers. Amongst these are Professor Michael Grätzel, the Swiss pioneer for artificial photosynthesis and an eminent scientist who developed the ‘Grätzel cell’ as a cheaper way to harness solar energy; Professor Stephan Schuster, the geneticist who gained international repute with his deciphering of mammoth DNA; Professor Staffan Kjelleberg, Director of SCELSE and a prominent microbiologist who has more than 230 original papers in international refereed scientific journals and 30 books or book chapters to his name; and Professor Kerry Sieh, Director of EOS, prominent geologist and a member of the US National Academy of Sciences.

Students at NTU are encouraged also to contribute to the University’s dedication to Sustainable Earth. Two years ago, NTU collaborated with the World Future Foundation, launching the first of its kind PhD prize for PhD students working on environmental and sustainability research. To date, ten PhD students from NTU have won US$10,000 each, in recognition of their research excellence. These students, our alumni today, are the University’s pride and work, an embodiment of our move towards Sustainable Earth. Since 2011, a new core course in Environmental Sustainability was made compulsory for all first year undergraduates, to ensure that awareness in this area begins early.

We want to move NTU towards becoming a role model in environmental sustainability. As a member of the University community, you can help us achieve this goal. Effecting change is possible only with the efforts of the collective. If you have ideas on how the University can further reduce its carbon footprints, we want to know. Join us on our journey towards a more sustainable future!
Imagine being miles away from home, from your loved ones and friends. Would it not be nice to be able to break down physical and geographical barriers for a face-to-face communication that makes you feel that they were really right beside you, in the opposite room? Perhaps you could even visualise the scenes in the room as they unfold through real-time through an ‘invisible’ glass?

Maybe there is an important meeting you wish to attend, but are unable to do so. Why not create an animatronic avatar which represents you, to communicate with the others at the meeting?

You may think of the above as technologies that can only exist in movies, or perhaps in the very distant future. With NTU’s BeingThere Centre, however, these technologies may become available sooner than you think.

So far, yet so near

Growing demand

Talking to Prof Nadia Thalmann, one cannot help but feel her infectious enthusiasm and conviction for the place of virtual humans, social robots and other telepresence systems in our modern world today.

“I believe that the demand for such technologies will become stronger. Today, we use Skype to communicate with colleagues in different parts of the world. With the research being conducted at the BeingThere Centre, you will soon be able to see the other person, halfway across the world, in 3D, as well as all that is happening around that person. This will give you the impression that the person is really there, behind the glass,” says Prof Thalmann.

“There are many multi-national companies which have set up their branches here in Singapore. With this technology, the employees from all the different branches around the world would be able to communicate effectively, as if they were all together in one meeting room,” adds Prof Thalmann.

The establishment of the BeingThere Centre comes at a time when 3D technology and telepresence are becoming a multi-billion dollar industry. Broadband internet networks enhance the capacity to transmit and process highly intensive data streams. The latest global telepresence and videoconferencing equipment market forecasts estimate that the value of this industry will reach $5.5 billion by 2016.

The launch is also in line with the University’s efforts to establish New Media as one of NTU’s Five Peaks of Excellence. The BeingThere Centre is part of NTU’s Institute for Media Innovation (IMI). IMI will facilitate new media research collaborations, thus playing an important role in transforming Singapore into a global media city. The University also strongly advocates inter-disciplinary research and with the BeingThere Centre, more multi-national and multi-disciplinary collaborations will be encouraged.

Independent futuristic robots

“A lot of research has been conducted on the development of these virtual humans, but we need to move one step further. We need to make these robots behave like humans!” says Prof Thalmann.

Researchers at the Centre are also working on an animatronic robotic mannequin onto which a representation of the remote user can be projected. The robot, which acts as a remotely located avatar, can be controlled by the remote user and is able to navigate through different rooms.

“Chloe” is BeingThere Centre’s avatar receptionist. She is a virtual human who is able to recognise faces, remember past conversations and handle some real conversations with anyone. Virtual humans like “Chloe” have memory and awareness capabilities that can take the place of its host when he or she is absent.

“If there is a meeting you are unable to attend, your avatar can take on your appearance and even your gestures and attend the meeting on your behalf. This avatar can become your substitute in the meeting and it will have capabilities of sensing, gesturing, memory, and speech communication,” says Prof Thalmann.

For example, if a person is present in an office in Zurich, the telepresence system uses 3D teleconferencing technology which allows one to see the 3D representation of a person who is not in the same room.

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Exciting prototypes of advanced 3-D communication technologies set to advance the industry of virtual communication are being developed at the Centre, under the guidance of its Co-Director, Professor Nadia Magnenat-Thalmann.

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The telepresence system uses 3D teleconferencing technology which allows one to see the 3D representation of a person who is not in the same room.

“For example, if a person is present in an office in Zurich, the person can place a camera in said office. The camera will track his image and send a reconstructed 3D image of this person, to the person he is communicating with in Singapore. So the person in Singapore does not see just an image of the person in Zurich, but a full 3D representation of him. The communication exchange will also be in real time, with corresponding actions and emotions,” explains Prof Thalmann.

“In this project, you are able to see the entire scene unfolding at the other office, through a transparent glass. You are able to see the decor, the other people (if there are others in the same room), and whatever is happening in the room.

The transmission of all this data is very complex as it has to be two-way. The challenge is to be able to reconstruct the person into a 3D image, transmit the huge amount of data both ways and also invent a glass which allows us to see the other persons at the other side of the glass, without the need for a computer screen,” adds Prof Thalmann.

“Chloe” and robotic mannequins

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For example, if someone’s image is tracked and the reconstructed 3D image sent over to the intended recipient, the image will not have any independence. Prof Thalmann hopes to conduct more research on how best to develop these virtual humans into autonomous robots which will not require any guidance from humans. These robots should develop their own memory process and remember faces and relationships.

The development of such a social robot or virtual human will take time, but Prof Thalmann is confident that NTU’s BeingThere Centre is leading in this field of moving from guided robots to autonomous robots.

“I am very keen on developing autonomous robots. It is easy to have a team of animators guiding a robot. But without these animators, the robots are just dummies and they have no independence. We must create robots that can move and think on their own, so that they can help us without the need for guidance. But this will take time, as you need to work with researchers from various disciplines. You need psychologists and sociologists who can guide us on the needs of real users and help us to model personality, believable emotions and expressions on these robots,” says Prof Thalmann.

Prof Thalmann hopes for more research to be conducted in the areas of avatars and social robots, allowing them to have minds of their own. Although a lot of research has been conducted on improving avatars, the research has only been limited to improving the appearances and capacities of these robots, without much focus on autonomy and mind functions. She believes that in the future, these social robots should be able to function without the help of programmed sets of responses to different situations. This would save both money (software programmes) and resources (animators’ expertise to programme the software).

The BeingThere Centre is a collaboration between NTU, the Swiss Federal Institute of Technology Zurich (ETH), the University of North Carolina at Chapel Hill, USA (UNC) and the Media Development Authority of Singapore (MDA). The $23 million research centre will develop the next generation of 3D communication technologies such as robotic avatars and virtual humans. Some of these innovations are expected to be commercialised in the next five years.

The idea behind the BeingThere Centre was the brainchild of Professor Henry Fuchs, from the University of North Carolina at Chapel Hill, USA (UNC), one of the Centre’s Co-Directors. Prof Fuchs was interested in a collaboration to establish a centre focusing on 3D teleconferencing technologies.

Professor Markus Gross from ETH Zurich is the third Co-Director of the Centre.

Professor Nadia Magnenat-Thalmann is the Director of NTU’s Institute of Media Innovation (IMI). She has pioneered research on Virtual Humans over the last 30 years, and published more than 500 papers in the field. Prof Thalmann received in 2010 the Distinguished Career Award from the Eurographics Association. She also received two honorary doctorates, one from the Leibniz Universität Hannover in 2009, and the other from the University of Ottawa, Canada, in 2010. Her work on medical 3D simulation was awarded the first medical prize at Eurographics 2010. She is a life member of the Swiss Academy of Engineering Sciences (SATW).

Professor Henry Fuchs is the Federico Gil Distinguished Professor of Computer Science and Adjunct Professor of Biomedical Engineering at the University of North Carolina, Chapel Hill, USA. He has been active in computer graphics since the early 1970s, with rendering algorithms (BSP Trees), hardware (Pixel-Planes and PixelFlow), virtual environments, tele-immersion systems and medical applications. He was the recipient of the 1992 ACM-SIGGRAPH Achievement Award, the 1992 Academic Award of the National Computer Graphics Association, and the 1997 Satava Award of the Medicine Meets Virtual Reality Conference.

Professor Markus Gross specialises in computer science at ETH Zurich and is the Director of Disney Research Zurich. For more than 20 years, Prof Gross has been pursuing basic and applied research in computer graphics, image generation and display, geometric modelling, and computer animation. His research interests include point-based graphics, physically-based modelling, immersive displays, and 3D video. He has published more than 200 scientific papers and he holds various patents on core graphics and visualisation technologies. Prof Gross serves on the boards of numerous international research institutes, societies, and governmental organisations.
Climate change and the prevalence of natural disasters are taking a toll on our planet. NTU’s Earth Observatory of Singapore (EOS) is at the forefront of addressing these weighty issues. Its Director, Professor Kerry Sieh, shares with NTULink the research being carried out at EOS that is paramount to sustaining planet Earth. Natural disasters are common occurrences in countries worldwide. In the past five years, there have been devastating earthquakes in China, Indonesia, Pakistan, New Zealand, Haiti, Chile, Japan and more; volcanic eruptions in Indonesia; tsunamis in Aceh and Japan; and more recently, severe flooding in Bangkok. These calamities and climate changes are weighty issues posing grave threats to our planet and our civilisation.

Cause for concern

“More and more lives are being lost because of natural disasters. The earth is dynamic and we have parked our cities and villages in a dynamic place,” explains Prof Sieh. Earth’s dynamism is slow. Our consciousness comes from the fact that Earth’s dynamism is slow. Our

“earth had a conscience, it would probably ask: ‘Tell me again why you’re building a city of six million people in a place that I flood every 100 years?’ As our world population increases, we have more people living in denser cities and they are becoming more susceptible to disruptions in their lives because of these megalopolises which lie in disaster prone areas,” says Prof Sieh.

“The 2005 Kashmir earthquake in Pakistan happened in an area which many people had known to be an area susceptible to occasional earthquakes. This is an example of the problem of a community who could have done something, but chose not to. Why didn’t they do anything to prepare for something they knew very well could happen anytime?” questions Prof Sieh of the disaster in Pakistan.

“Decades, engineers and geologists in New Orleans have classified the city to be one in danger. The engineers wanted more money to be invested, to build a better drainage system. The geologists warned that the delta will sink, causing the danger from hurricanes to become greater. But no one listened, the government couldn’t manage and this is where they failed,” explains Prof Sieh of the Hurricane Katrina disaster in New Orleans in 2005. All these tragedies show that more people could have been saved if the community had paid close attention to earth science and if the government had used research results in preparing for disasters. “In these instances, it can simply be a problem of the community and government not wanting to invest in the future,” says Prof Sieh.

“Planning for the future

The numerous natural disasters that have happened around the world have been eye-openers to all. One wonders if more could have been done to save the lives of people living in areas prone to these.

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EOS was set up to conduct research on natural disasters and climate change and at the same time educate the public, through various outreach programmes. One of the first research projects EOS undertook was on a great undersea earthquake fault that runs from Manila to Kaohsiung.

Prof Sieh elaborates: “That fault is like the one that broke in Aceh. It is underwater and thousands of kilometres long. We need to know what will happen if that fault were to break and how severe the disaster could be. We look at geological evidence and see if this has ever happened before. If we can find evidence in the beaches and coastal plains, we will be able to understand better what can be expected of such a disaster. Following that, we can educate people in the region through various modes of media and prepare them, even if nothing happens this century.”

“At EOS, my business is ‘black swans’ and giving you enough of the horizon scan so that you can spot them from far out there. Big events like the Aceh earthquake and tsunami are like ‘black swans’. You didn’t expect them to happen, but they did. They tend to be very rare, but very consequential events. With horizon scanning, the further you can see out there, the sooner you can anticipate what is eventually going to get here. This is an example of how we conduct science. We look for black swans, we find them, we find out how often they fly by and then we reach out to the communities who need to know,” shares Prof Sieh of EOS’ objectives.

Under the NTU 2015 blueprint which includes NTU’s Five Peaks of Excellence, Sustainable Earth has been identified as the “peak of peaks”. With more than S$830 million in research funding in sustainability, NTU is a global leader in this area. How will EOS play a role in this area of research?

Prof Sieh elaborates: “Part of our strategy is to recognise the fact that we are now in an age where this is going to become more important to all of us. We are engaged in the scientific business in understanding what we need to know about the earth, in order to sustain our civilisation. I do believe that the 21st century is going to be about adequately preparing for the future.”

EOS has set up major monitoring networks in neighbouring countries which serve as research platforms. There are lab volcanoes in Indonesia and the Sumatran GPS Array, which measures tectonic movements along the west coast of Sumatra, has become more robust. New collaborative monitoring efforts in Myanmar, Bangladesh and the surrounding region will provide new opportunities to understand the potential of natural disasters along the Indian-Asian fault line areas.

“I have EOS researchers working together with local scientists in Myanmar to understand the great fault that runs a few kilometres and bisects the country from North to South. In the beginning, the

“The Khmers built an empire in Southeast Asia that lasted half a millennium. Its demise remains a mystery. What is not a mystery is that the health of our societies through the 21st and later centuries will require a solid understanding of how our dynamic planet works and what its limitations are. The Earth Observatory is one of Singapore’s efforts to ensure Earth’s long-term sustainability.” – Prof Kerry Sieh
researchers from Myanmar knew little about this fault and we at EOS are working with them to see what information on this fault could be obtained through research," shares Prof Sieh.

As EOS evolves through the years, opportunities for more collaborative research will increase, but so will the challenges.

Prof Sieh says: “We will need to respond to external pressures caused by natural hazards and also to maintain the quality of our research and teaching. We aim to become an iconic institution in Singapore and the region.”

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In his line of work, Prof Sieh and his researchers go to various sites to collect geological evidence. He is seen here looking at the fault plane in the young sediment near Tounggyi, Shan plateau, Myanmar.

Prof Sieh at Mentawai Islands, Indonesia, surveying a reef uplifted in the September 2007 Mentawai earthquake.

The field involves using geological layers and landforms to understand the geometries of active faults, the earthquakes they generate and the crustal structure their movements produce. Prof Sieh’s work led to the discovery of how often the San Andreas fault has generated earthquakes in southern California.

In Asia, his work along the great undersea fault line, the Sunda megathrust, has revealed patterns of ancient rupture and current straining that led to forecasts of recent and impending large Sumatran earthquakes and tsunamis.

Prof Sieh, who has spent the past six years studying Indonesian earthquakes, successfully predicted Sumatra’s 8.7-magnitude earthquake off the island of Nias in 2005. That research also suggested that the megathrust is poised to produce yet another giant earthquake in western Sumatra within the next 30 years.

Prof Sieh joined NTU when the Singapore government made him an offer he could not refuse – to build a research centre of excellence for the study of earthquake sciences with S$150 million funding.

In February 2012, EOS received a €3 million (S$5 million) endowment from the AXA Research Fund to create a permanent Chair in Natural Hazards that would be held by Prof Kerry Sieh. The endowment will be used to fund research into five natural hazards – tsunamis, earthquakes, volcanic eruptions, rising sea levels and climate change – particularly those relevant to Southeast Asia and to focus on areas of risk assessment and management, policy, economic issues and education. These integrations will occur largely through joint appointments and engagements with other NTU departments and institutes. These funds will strengthen EOS’ ability to become a strong pillar in the application of earth science to create safer and more sustainable societies in the region.

A S$5 million endowment for EOS

Prof Sieh would like to develop a new way of teaching earth science that uses examples from South-east Asia rather than something that is California- or European-centric. He would like the teaching of the subject done so well that a Singaporean brand name will be established.

Said Prof Sieh: “Creating connections with industry partners such as AXA will be critical to our success in contributing to a Sustainable Earth, one of NTU’s five strategic, inter-disciplinary Peaks of Excellence. These partnerships will help governments, communities and businesses anticipate and adapt creatively to environmental challenges, as well as develop and implement visionary policies to mitigate risks that Nature poses to human infrastructure.”

A joint degree offered in partnership with Teachers College, Columbia University

The Master of Arts in Leadership and Educational Change is an innovative new programme, a joint degree offered by the National Institute of Education, Nanyang Technological University and Teachers College, Columbia University. With a dual focus on organisation and curriculum leadership, the programme provides opportunities to build new cross-national learning communities and networks rooted in both local and global perspectives.

If you are tasked with leadership responsibilities in leading educational change in your respective organisations, you will appreciate the advantage of pursuing a higher degree in an Asian context delivered by two leading educational institutions.

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Honouring the teachers’ pledge

Minister Heng Swee Keat encourages teachers to build rapport with their students.

The National Institute of Education (NIE) celebrated the first graduation of 320 student teachers for 2012, at the ceremony which welcomed them into the teaching profession.

In his speech to the graduands, Guest-of-Honour, Mr Heng Swee Keat, Minister for Education, emphasised the important role that teachers play in nurturing every child. He said that whilst the Ministry of Education sets the right policies in resourcing schools and hiring committed teachers, the critical factor is how a teacher builds rapport with his or her students, mentors, and nurtures them.

Minister Heng commended the first batch of 28 in-service teachers who completed their three-and-a-half-year part-time Bachelor of Education programme in Singapore who wish to obtain a degree through a part-time programme. It is customised for teachers with at least two years of classroom teaching experience, to enhance their understanding of curriculum structure and content and to establish clear links between pedagogical theory and actual classroom practice.

Professor Lee Sing Kong, Director of NIE, announced the complete transformation of NIE’s tutorial teaching facilities. A total of 72 new Collaborative Classrooms have been customised to incorporate features that simulate a first-hand experience of the 21st century classroom environment.

Mr Ivan Wu Biwei, the Valedictorian for the ceremony, shared with fellow students, mentors, and nurtures them.

At the ceremony held on 20 January, Minister Heng also presented five outstanding teachers with prizes for their academic achievements. Mr Joey Yeo was the recipient of two prizes – the Singapore Teachers’ Union Book Prize and Justice Choor Singh Book Prize.

It was a colourful afternoon in every sense of the word when alumni young and old from different countries came together for an International Alumni Get-together on 3 December, at the Concorde Hotel. Graduates from the pioneer class of 1959 to those from the most recent Class of 2011 were present.

“I am very proud and glad to join the rest of the Nanyang alumni family today. However, it is a pity that many of my peers have passed on and hence, unable to accompany me,” said 80-year-old alumnus, Mr Hong Tiong Heng (Nantah/1959), who was seen going around the tables, interacting with alumni from different classes.

To date, the University’s international alumni account for nearly 30% of its total alumni population of 156,000 worldwide.

“It is nice to know that close to 19,000 of our international alumni family are working and residing in Singapore. We want to stay in touch with our alumni, even if they have settled overseas. For that, we have established 36 overseas chapters in seven countries,” said Professor Er Meng Hwa, NTU’s Vice President (International Affairs) and Guest-of-Honour of the event. “Stay connected with us, and take part in your alma mater’s journey to excellence. As alumni, you play a crucial role in propelling the University to global prominence,” added Prof Er.

Diverse alumni under one roof

An aspiring young singer and ex-teacher, Foo Jierong, a graduate from the National Institute of Education (NIE), was invited to sing that afternoon. Jierong had launched his debut Chinese album, ‘感情事件’, in September, working with music maestros Lee Weisong, Jim Lim and Jay Lim.

The 120 alumni and guests present also enjoyed a Malay dance performance by Mr Tiong Heng (Nantah/1959), who attended the event with his husband. Mr Heng also presented five outstanding teachers with prizes for their academic achievements. Mr Ivan Wu Biwei was the recipient of two prizes – the Singapore Teachers’ Union Book Prize and Justice Choor Singh Book Prize.

NTU international alumni celebrate one common connection.

One big family

NTU international alumni celebrate one common connection.

About Foo Jierong

Singapore’s very own budding singer, Foo Jierong, tells NTULink about his passion in Chinese pop music.

The Class of 2009 NIE graduate decided to quit his job as a Chinese and Maths teacher to pursue a career in pop music.

Exposed to Chinese and Cantonese pop songs of the 80s since the age of five, Foo Jierong believed he had something of a career in singing and wanted to realise his dream and passion for it. “This passion, passed on to me by my mother, led me to take part in several singing contests. I was discovered by music maestro Lee Weisong and singer-composer Li Feihui and signed on by them, respectively,” he says.
Crowned ‘China’s Hawaii’, Hainan is China’s southernmost and youngest province and the latest to have an NTU Alumni Association.

A new chapter in the Hawaii of China

Officiating the launch of the NTU Alumni Association (Hainan) are: Ms Fu Junli, President of the Association (3rd from left); Prof Er Meng Hwa, NTU’s Vice President (International Affairs) (4th from left); and His Excellency Mr Ang Chay Chuan, Singapore Consul-General in Guangzhou (5th from left).

Alumni representatives from NTU alumni associations exchanging gifts.

NTU has to date, around 100 alumni in Hainan, China. To further strengthen their ties amongst one another and create a common platform for networking and collaboration, alumni in Hainan, led by Ms Fu Junli (MPA/2006), had been working hard to establish an alumni association.

On 11 December 2011, NTU senior management, distinguished guests and alumni representatives from various alumni associations in China, came together at the HNA Grand Hotel Mingguang, Hainan, to witness the official launch of NTU Alumni Association (Hainan).

Dr Liu Yunhua, the Deputy Director of the Nanyang Centre for Public Administration, was also invited to speak on the topic of ‘The Post-Crisis Era: Economic Development in China and Opportunities and Challenges for Hainan’s Development’, at a forum prior to the launch.

Amongst them were, His Excellency Mr Ang Chey Chuan, Singapore Consul-General in Guangzhou; Professor Er Meng Hwa, NTU’s Vice President (International Affairs); Mr Chew Programmes; and Mr Soon Min Yam, Director of Alumni Affairs.

‘We hope that all alumni in Hainan will continue to support the development of their alma mater, and work together to achieve its goal for 2015 – the 60th anniversary of the University,’ said Prof Er during his speech. Under the strategic plan of NTU 2015, the University aims to scale the Five Peaks of Excellence in the areas of Sustainable Earth, Future Healthcare, New Media, New Silk Road and Innovation Asia.

As Chinese prominent economist, Dr Liu Yunhua shared his insightful views on the topic, which was well received by the guests. He emphasized the importance of networking and collaboration among alumni to promote the development of Hainan.

At the event, the newly appointed President of the NTU Alumni Association (Hainan), Ms Fu Junli, was also installed. She expressed her gratitude to all alumni for their support and commitment to the development of the University and Hainan.

The launch ceremony was a grand success, with attendees expressing their enthusiasm and commitment to building a strong alumni network in Hainan. The newly established NTU Alumni Association (Hainan) is expected to play a significant role in fostering ties and collaborations between NTU alumni and the University.

Meanwhile, NTU has a total of 100 alumni in Hainan, China. To further strengthen their ties amongst one another and create a common platform for networking and collaboration, alumni in Hainan, led by Ms Fu Junli (MPA/2006), have been working hard to establish an alumni association.

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**Macaque with tools**

Primate psychology is a relatively new area of study in the university. It involves long hours of field trips and exceptional doses of patience. Assistant Professor Michael Gumert's research on sex differences was published as the cover work and the driving force behind their passion for it.

Field trips and exceptional Kuan Hoong's hard work was paid off when their study in the University. Not many NTU graduates can claim to have conducted research on macaques to understand psychology. But for Mr Low Kuan Hoong, a Class of 2010 alumnus from the School of Humanities and Social Sciences (HSS), this was what caught his imagination, after meeting passionate primatologist Prof Gumert from the School's Division of Psychology.

"I remember taking a module taught by Prof Gumert. He would share with us his research on monkeys in Kalimantan, and about a particular group of macaques in Thailand. I became interested as it was a unique topic on which not much research has been conducted," says Kuan Hoong.

Apart from humans, long-tailed macaques are the most widespread primate group. They live in many different habitats across the world. One variety, the Burmese long-tailed macaque, was recently discovered to use stone tools to open shellfish, and is the only one of its kind in Asia. They are skilled tool users and they select different tools for use on varying food items.

**Partners in Primatology**

Kuan Hoong teamed up with Prof Gumert, one other alumnus from NTU, and a collaborator in Thailand to study how the different sexes of the Burmese long-tailed macaques use stone tools for survival in the wild.

"I remember reading a research report on stone tool-using macaques on the islands of Thailand's Laemson National Park. I visited the site to observe these macaques. My expeditions to this island became quite frequent, but I soon realised that I could not be doing this alone. There was a lot of research to be done so when I met Kuan Hoong and saw how serious he was, I knew we could work on a research project together," says Prof Gumert.

In the company of macaques

With the project team in place, Kuan Hoong travelled to Laemson National Park in December 2009 and stayed for two weeks. There, he saw, much to his delight and interest, the much discussed stone tool-using macaques for the first time.

"The trip to the islands to observe the macaques was a real adventure," recalls Kuan Hoong. "We travelled for eight hours to a small town in southern Thailand. From the town, which served as our base, we would take a local boat to two islands in the Laemson National Park daily. These are the only two islands with stone tool-using macaques. Observation of the macaques was carried out from our boat as the primates on the islands are not habituated to humans," he says.

Prof Gumert elaborates: "The National Park has a total of 15 islands. These are the only two islands with stone tool-using macaques. Observation of the macaques was carried out from our boat as the primates on the islands are not habituated to humans," he says.

Prof Gumert says that a whole range of patterns about the species' use of stone tools. "The macaques would prey on oysters along the shores. They would sit on them, pound open oysters with stones before eating them. A technique used was pound hammering, where heavy rocks would be used to pound on a food item," shares Prof Gumert.

Small tools were used by the macaques to chip the oysters. Prof Gumert commented that this method requires hand synchrony similar to writing, as the macaques would need to place a supporting hand down and use the tool to finely chip at the food item with its other hand.

Prof Gumert said that a whole range of stone tools, some smaller, and some as food which had been exposed. This made it easier for us to see what they were doing in the open."

**Tool Masters**

Watching the macaques from a boat, the men were able to gather detailed patterns about the species' use of stone tools. "The macaques would prey on oysters along the shores. They would sit on them, pound open oysters with stones before eating them. A technique used was pound hammering, where heavy rocks would be used to pound on a food item," shares Prof Gumert.

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Online shopping made easier

Good friends Mr Damian Chow [NBS/2008] and Mr Vincent Lau [MSE/2009] started Paywhere and developed the proprietary product, Tack This!, a tool designed for people to buy and sell products on social networks. They share their success story and tell NTULink how they aim to revolutionise online shopping.

Q: What encouraged you to start the product Tack This!? Tell us more about it and what it does. How is it different from other similar products in the market?

VL: Paywhere is primarily a technological company where we develop products which will revolutionise online shopping. Tack This!, our company’s flagship product, which was launched in September 2011, is a social commerce platform. Social commerce here refers to a combination of social media and e-commerce.

With Tack This!, sellers can create and tack a shop window to their Facebook, blog or website within minutes and their customers will be able to complete their sales transactions immediately. Sellers can just create an account, have one synchronised inventory system, and then tack the e-shop on all their social media channels. Hence the same shop can exist simultaneously on many different platforms like Facebook, they had to depend on the email and comments function in Facebook to sell their items. We realised that there should be a better way for them to sell their items on Facebook, and at low cost too.

We founded Payewhere to revolutionise online shopping. It is our vision to see online sellers start their own eBay on the social network of their choice.

DC: We wanted to create a product which will allow anyone to set up an e-shop on social networks easily, giving rise to the blogshop phenomenon. For those who were using social media platforms like Facebook, they had to depend on the email and comments function in Facebook to sell their items. We realised that there should be a better way for them to sell their items on Facebook, and at low cost too.

We founded Payewhere to revolutionise online shopping. It is our vision to see online sellers start their own eBay on the social network of their choice.

Q: What were some of your motivations for starting the company Paywhere? How did the idea first take root?

VL: Currently, there is a market gap in the e-commerce industry. Many small business owners are unsure of how to use e-commerce to conduct their businesses. So these business owners would engage web developers who will charge them a hefty sum to set up an online shop. Thus, only business owners who can afford these fees are able to do so.

We noticed a growing number of young people selling items on the internet, which will allow anyone to set up an online shop easily, which will allow anyone to set up an online shop easily, which will allow anyone to set up an online shop easily, which will allow anyone to set up an online shop easily, which will allow anyone to set up an online shop easily. Giving rise to the blogshop phenomenon. For those who were using social media platforms like Facebook, they had to depend on the email and comments function in Facebook to sell their items. We realised that there should be a better way for them to sell their items on Facebook, and at low cost too.

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“Starting a business can be risky as there is a high percentage of failure. But if one fails, one has to be prepared to start again. Perseverence is a must in anything one wishes to achieve.”  
– Mr Damian Chow

Q: You benefitted from Spring Singapore’s Young Entrepreneurs Scheme for Start-Ups. How did it help you to get started?

DC: We received a grant from Spring Singapore, which helped us greatly in starting and running our own business. With the funds, we managed to cover some costs for resources like manpower, marketing and equipment.

VL: With this scheme, we were able to execute our business ideas and develop a product successfully. Perhaps without this help, we would have been spending more time sourcing for funds from venture capitalists.

Q: What were some of the challenges you faced starting out and how did you overcome them?

DC: Some of my peers wondered why an MSc graduate like me would start an information communication company. I feel that all that is taught in engineering is similar no matter which area one specialises in. Engineering helps one to organise one’s thoughts better and one picks up skills more systematically when one starts working. It doesn’t mean that one has to run a one-man-show in a start-up, but it is important to be aware of all the business functions and operations. For example, when I am hiring programmers, I must know what the programmer will be required to do, even though I did not study programming in depth.

Q: What do you think of your education at NTU has proven to be the most useful in getting you to where you are today?

DC: I learnt the importance of soft skills such as presentation and interpersonal skills. And since I am in charge of the company’s financial matters, what I learnt at NBS, like finance modelling, came in very useful, especially in relation to our proposals to investors.

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Q: What were some of the challenges you faced starting out and how did you overcome them?

VL: The challenge of developing a new product is that it might not meet the demands of the intended buyers. When nobody wants to use the product, it fails and the company gets negative publicity. To overcome this, we developed a trial product and worked closely with 30 merchants, paying close attention to the feedback these merchants provided. We took some time to launch our product because we wanted to improve it based on the feedback received. We wanted to be sure that Tack This! succeeds.

DC: Some people think that the biggest challenge in starting one’s own business is obtaining the finance. We do not think this is the biggest challenge though, as there are many schemes in Singapore, providing financial assistance to budding entrepreneurs. The biggest challenge is finding customers, and working hard to keep them. Another challenge we faced was in finding employees as many graduates would think twice about joining a start-up company.

Q: What is important to us is to maintain the friendship, and we have proven that we can be good business partners and good friends.

Q: How do you think your studies in MSE and NBS helped you in your entrepreneurial pursuit? Which aspect of your education at NTU has proven to be the most useful in getting you to where you are today?

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Q: Is there a motto you live your life by?

DC: I try not to have any regrets. It’s always better to try something even if you fail afterwards, than to have never tried at all.

VL: I always try to aim to do whatever I set my mind on. I always challenge myself to complete whatever task I set out to do.
五彩斑斓2011
临近岁末，南大各校友会举办了联欢宴会，让校友们再次相聚，一起重温南洋梦、同窗情、师生谊。

似水流年，花样年华
2011年12月17日，由南洋商学院中国项目和南大上海校友会联合举办的“南洋校友迎新晚会”，在上海雅居乐万豪酒店欢聚一堂。新加坡南大公共管理研究生院刘云华副院长出席晚会，并与南大校友会代表，以及来自中国各地的南洋EMBA及金融硕士班，以及在上海的南大校友共300余人欢聚一堂。

在晚会前的校友自由交流时间，主办方为大家准备了红茶品鉴及民间艺人表演。精美旗袍、糖人、素描、小提琴、黄包车、活雕塑，还原了老上海的味道，让与会嘉宾充分感受到了原汁原味的老上海风情。校友组织的节目、歌曲、舞蹈、游戏等表演为晚会增色不少。

欢聚京城 共享春天
南大北京校友会于2012年1月8日举行了“国际观察论坛”和新春联欢晚会。论坛邀请到南洋公共管理研究生院院长刘国辉博士和南洋公共管理研究生院刘云华副院长为近百名出席者分别主讲《全球金融局势下的投资与应对》和《新形势下中国的商业环境与机遇》。

再创新豫交流平台
悠然寸草心，报得三春晖，身在大中原，心系南洋情。12月11日，60多位南大河南校友怀着对母校的深厚感情，对校友的殷切关爱，校友会的团队精神，对南大同窗会的厚爱，共同参加了南大河南校友会成立一周年庆典活动。

共叙“齐鲁•南洋”情
2011年12月10日，“齐鲁•南洋论坛暨山东校友联欢会”在济南喜来登酒店欢聚一堂。下午的“齐鲁•南洋论坛”由南洋公共管理研究生院刘云华副院长和山东省政府研究室副主任刘国辉院长，围绕《全球危机与中国经济的机遇与挑战》分别进行了精彩的演讲。联欢晚宴上同样丰富多彩的节目助兴。南大校友（国际事务）余霜华教授和南大校友会秘书处两位校友分别担任晚会主持人。随后的联欢晚会是山东校友会2011年度规模最大的一次聚会。

南大北京校友会于2012年1月8日举行了“国际观察论坛”和新春联欢晚会。论坛邀请到南洋公共管理研究生院院长刘国辉博士和南洋公共管理研究生院刘云华副院长，围绕《后危机时代中国经济的机遇与挑战》分别进行了精彩的演讲。联欢晚宴上同样丰富多彩的节目助兴。南大校友（国际事务）余霜华教授和南大校友会秘书处两位校友分别担任晚会主持人。随后的联欢晚会是山东校友会2011年度规模最大的一次聚会。

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End-of-year celebrations in China

NTU alumni in various provinces of China celebrate the end of 2011 in different styles.

**Shanghai**

Jointly organised by the NTU Alumni Association (Shanghai) and the Nanyang Business School, the NTU Shanghai Alumni Association’s Annual Alumni Gathering was attended by more than 300 alumni, NTU staff and guests from various provinces in China.

On the afternoon of 17 December, Professor Bernd Schmitt from the Business School of Columbia University conducted a seminar on ‘Customer Experience Management’. During dinner, guests learnt more about the lifestyle and fashion of Old Shanghai. They were given a chance to savour authentic tea and enjoy cultural performances, many of which were performed by alumni themselves.

Residents of Shanghai were treated to a forum on the topic ‘The Opportunities and Challenges of China’s Economy in Post-Financial-Crisis Era’, where Dr Liu Yunhua, Deputy Director of the Research Office of Shandong Provincial Government, China, shared their views. Established in November 2007, the Association has to date, around 700 alumni.

**Shandong**

Approximately 120 alumni and guests from different provinces attended the end-of-year celebration for NTU Shandong alumni on 10 December; an event that saw the greatest turnout amongst all events held by the NTU Alumni Association (Shandong) that year.

Alumni were treated to a forum on the topic ‘The Opportunities and Challenges of China’s Economy in Post-Financial-Crisis Era’, where Dr Liu Yunhua, Deputy Director of the Research Office of Shandong Provincial Government, China, shared their views. Established in November 2007, the Association has to date, around 700 alumni.

Close to 100 alumni and guests learnt more about investing and conducting business in China and overseas, at a talk given by Associate Professor Tan Kuk Hui, the Associate Dean of NTU’s Nanyang Business School’s China Programmes, and Dr Liu Yunhua, the Deputy Director of NTU’s Nanyang Centre for Public Administration.

Apart from the forum, guests also enjoyed wide-ranging song performances by alumni and Prof Er Meng Hwa, NTU’s Vice President of International Affairs.

**Henan**

Rounding up the year 2011, more than 60 alumni in Henan gathered at the capital city of Zhengzhou on 11 December to celebrate the first anniversary of its alumni chapter.

Mr Shi Xiangang (EMBA/2006), President of the Association, encouraged alumni to stay connected and said during his welcome speech: “We should make full use of the alumni website and magazine to promote networking amongst one another. We should also play an active role in advancing our alma mater, in terms of academic exchange, global reputation and employment rate.”

Alumni connected with one another that evening through group activities and interactive sessions. They also enjoyed various stage performances, from acrobatics, Sichuan mask-changing to live-band performances.

**Beijing**

Alumni from different areas of Beijing came together to celebrate the Year of the Dragon at the NTU Alumni Association (Beijing)’s Annual Forum cum Alumni Get-together Dinner 2012, held on 8 January at Beijing Broadcasting Tower Hotel.

Close to 100 alumni and guests learnt more about investing and conducting business in China and overseas, at a talk given by Associate Professor Tan Kuk Hui, the Associate Dean of NTU’s Nanyang Business School’s China Programmes, and Dr Liu Yunhua, the Deputy Director of NTU’s Nanyang Centre for Public Administration.

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EVENTS CALENDAR

UPCOMING ATTRACTIONS FOR ALUMNI

01 April 2012
NTU MALAYSIAN ALUMNI DINNER
南大马来西亚校友聚会

13 April 2012
NTU ALUMNI VOLUNTEERS’ APPRECIATION DINNER 2012
南大校友志愿者答谢晚宴

06 May 2012
NTU ALUMNI MOVIE SCREENING – ‘THE AVENGERS’

19 May 2012
LAUNCH OF NTU ALUMNI ASSOCIATION (SHANXI)
南大山西校友会成立大会

26 May 2012
NTU ALUMNI FARM VISIT
南大校友农庄之旅

02 June 2012
LAUNCH OF NTU ALUMNI ASSOCIATION (USA-EAST)

23 June 2012
NTU CLASS OF 1970 TO 1980 ALUMNI REUNION
南大第11届至第21届校友大聚会

30 June to 01 July 2012
2D1N ALUMNI DURIAN TRIP
南大校友榴梿之旅

To sign up for or enquire about any of the events, email alumniaffairs@ntu.edu.sg or call +65 6790 4875 / 4434. For a regular, monthly update of events, check out http://www.ntu.edu.sg/Alumni/Pages/Events.aspx. To subscribe to ClassACT e-zine for regular event updates and more, go to http://www.ntu.edu.sg/enewsletter/managemysubscription.aspx.

Information is accurate as of press time. Events and dates may be subject to change.
Relive
Reconnect
Relax

Facilities & Services at one-north Clubhouse

- Gymnasium & Wellness Centre
- Swimming Pool • Aspara Garden Spa
- Steam Room • Jacuzzi • Aerobics Dance Studio
- The Tanjong Bar & Restaurant
- Rooftop Tennis Courts
- Yunnan Garden Restaurant • Jackpot Room
- Teo Heng KTV Rooms • Card & Mahjong Room
- TV & Reading Room • Seminar Room
- Childcare Centre

Be part of our alumni family

Ordinary Membership @ $800+ (Entrance fee for NTU Graduates)
Associate Membership @ $1,200+ (Non NTU Graduates)

Membership Hotline 6777 1101

*Terms and conditions apply to all promotions & offers.
Come from France, Asia, in particular Singapore, was the destination I had in mind when I decided to pursue my MBA. I wanted to have an Asian exposure with a university that is globally recognised. NTU became the obvious choice with its growing international reputation and top ranking. I completed my programme last October, and I have to say I did not regret my choice.

The Nanyang MBA has completely ‘reformatted’ me. I feel like I’ve been equipped with a new ‘toolbox’ and through the different case studies in our programme which complemented my previous working experience, I am now ready to handle the many situations an organisation can face. The quality of inspiring professors of various international backgrounds and the diversity of the group I belonged to has been really useful in helping me adapt fast to an international ‘working’ environment.

The exposure that the Nanyang Business School (NBS) has given its students means that I now see things from a different perspective. I see how I could have made some of the decisions I made in the past differently, for the better. I am prepared to face new challenges.

When I was in NBS, I started a wine degustation club with another fellow classmate to share our passion for wines with our classmates. We believe that this club helped to prepare them for the future business dinners they will soon have to host! I love meeting new people and look forward to being back on campus soon to share my professional experiences with students. I also hope that my alma mater can keep me up-to-date on the latest developments in my field of study.
诚邀您出席南大第11届至21届校友大聚会

您还记得在美仑餐厅的奶油包及永祺厅的咖椰、奶油面包和咖啡吗？您有兴趣住校校舍和希望再度亲身感受校园生活吗？

在今年的6月23日，您将有机会与南大11届的校友共同相聚，与昔日的同学、老师和朋友们叙旧见面。

聚会详情如下：

日期：2012年6月23日（星期六）
时间：上午9时至下午4时
地点：南洋大礼堂前厅
费用：每人50新元（可于聚会现场付费）
衣着：整齐便装

节目包括：早茶、午宴、下午茶、南大湖畔赏月品茶、游览校园、参观华裔馆、学生楼、南大牌坊、校友叙旧、观赏表演及聚会礼品。您还可以有机会参加由曾渊沧校友主讲“小富之道”的讲座。聚会过后，工委也会将当天的照片录制成光碟，以送给出席的校友作纪念。

我们也会在先驱地铁站Pioneer MRT Station（EW28）旁安排巴士穿梭服务。有关服务将从当天上午8时15分开始至上午10时正，每15分钟穿梭于先驱地铁站和南洋大礼堂。过后，从下午3时开始穿梭于南洋大礼堂和先驱地铁站至4时15分结束。

有兴趣出席的校友，请上网报名或在网页上下载报名表格并于2012年5月2日（星期三）前填写并寄出回条或拨电向南大校友事务处报名。

网址是：http://www.ntu.edu.sg/nantah-reunion/Pages/default.aspx。届时，您可以通过网页上看到已经报名参加的同学名单。

我们热切期待能与您们在南大云南园校园重聚！

您还记得在美仑餐厅的奶油包及永祺厅的咖椰、奶油面包和咖啡吗？您有兴趣住宿校园并希望再度亲身感受校园生活吗？

在今年的6月23日，您将有机会与总共11届的校友共同相聚，与昔日的同学、老师和朋友们叙旧见面。

聚会详情如下：

日期：2012年6月23日（星期六）
时间：上午9时至下午4时
地点：南洋大礼堂前厅
费用：每人50新元（可于聚会现场付费）
衣着：整齐便装

节目包括：早茶、午宴、下午茶、南大湖畔赏月品茶、游览校园、参观华裔馆、学生楼、南大牌坊、校友叙旧、观赏表演及聚会礼品。您还可

以有机会参加由曾渊沧校友主讲“小富之道”的讲座。聚会过后，工委也会将当天的照片录制成光碟，以送给出席的校友作纪念。

我们也会在先驱地铁站Pioneer MRT Station（EW28）旁安排巴士穿梭服务。有关服务将从当天上午8时15分开始至上午10时正，每15分钟穿梭于先驱地铁站和南洋大礼堂。过后，从下午3时开始穿梭于南洋大礼堂和先驱地铁站至4时15分结束。

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经报名参加的同学名单。

我们热切期待能与您们在南大云南园校园重聚！
ALUMNI PARTICULARS UPDATE 更新校友个人资料

FOR CHANGE OF ADDRESS 更改地址

FULL NAME AS IN NRIC (IMs / DR / PROF / OTHERS) 姓名 (先生 / 女士 / 博士 / 教授 / 其他)

NRIC / PASSPORT NO. 身份证 / 护照号码

COURSE / YEAR OF GRADUATION 院系 / 毕业年份

HOME ADDRESS 家庭地址

POSTAL CODE 邮政编码

HP NO. 手机号码

EMAIL 电邮地址

DATE (DD/MM/YYYY) 生日日期 (日 / 月 / 年)

NATIONALITY 国籍

MARITAL STATUS 婚姻状况

RACE 种族

RELIGION 宗教

FOR EMPLOYMENT UPDATE 更改就任状况

COMPANY NAME 公司名称

COMPANY ADDRESS 公司地址

POSTAL CODE 邮政编码

TEL (0) 办公电话

FAX 传真

DESIGNATION 职务

INDUSTRY 行业

ALUMNI FAMILY MEMBERS 校友家庭成员情况

NAME 姓名

NRIC / PASSPORT NO. 身份证 / 护照号码

RELATIONSHIP 与本人关系

NAME 姓名

NRIC / PASSPORT NO. 身份证 / 护照号码

RELATIONSHIP 与本人关系

NAME 姓名

NRIC / PASSPORT NO. 身份证 / 护照号码

RELATIONSHIP 与本人关系

If you receive duplicate copies of NTUlink, or know of fellow alumni who are not receiving the magazine, please call us at +65 6513 8073 or email us at alumnaifairs@ntu.edu.sg

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