

Prof Su Guaning was inaugurated as NTU's second President on 28 March. In his inauguration speech, he shared his vision for the new Nanyang University

Visions of a new Nanyang

The inauguration ceremony, in which Prof Su Guaning was installed as NTU's second President, was replete with vestiges of the past and visions of the future.

Featuring the pomp of a procession of Council and Academic Board members, senior university officers, and representatives from the NTU Alumni and Students' Union, it was as much an occasion for public pronouncements as an occasion for private reflection.

In full academic regalia, Prof Su took the stage and in a thirty-minute speech held an audience of 2,000 – staff, students, alumni, Council members, and guests – in the palm of his hand.

Noting that teaching and research were the twin pillars of a university, he said: "Whatever resources we put into the University comes to naught if we do not see the results in our graduates."

As for the professors, they deserved the strongest support and grooming to "do what they do best, to raise the international standing of the University and to bring the best education to our students".

To make NTU "student-centric" and "professor-centric", however, two traditional approaches had to be turned upside down. "Students and professors are at the top. Everyone else, Vice Presidents, Deans, Deputy Presidents, President, are at the bottom supporting them," he said.

Turning things round

"The second approach we have to turn on its head is the way we run the University." Prof Su said this entailed turning the administration "from an input-based approach to a results-based and output-based approach".

He added: "There is no need to work out the complete road map and be certain of success before moving. That would make us too conservative. Instead, we must free up our people to become more entrepreneurial. Move in the right direction, but adjust and adapt all along the way."

His call to staff was: be willing to take the plunge, though not blindly, and be "well armed and agile, with an intelligent and adaptable mind, quick to spot opportunities and traps".

On the future of the university community, Prof Su shared this vision – graduates with diverse roles in society and leading Singapore forward, academic staff with international renown, and administrative staff with "the satisfaction of seeing their efforts flower in the new Nanyang University, a university of choice with its own distinctive identity, fired by ideals and passion".

The return of idealism and passion on campus would be timely, he said. "These are qualities we need most in these times of trouble. Just like the early pioneers in the colonial times who founded Nanyang University in the face of adversity, with the support of everyone down to the humblest trishaw rider."

Passing the torch

Mr Koh Boon Hwee, Chairman of the Council, said he was delighted to witness the passing of the torch to Prof Su. He told the gathering in the Nanyang Auditorium: "We have found, in one man, a person with a lifelong interest in learning and in academia, and a person intimately familiar with research.

Continued from cover

"NTU could not have found a better combination to build the superstructure on the foundation that has been laid," said Mr Koh.

The inauguration programme also included greetings from Prof Lim Chong Yah, Mr R Sinnakarupan, and Mr Ching Wai Hou, representing NTU faculty and staff, alumni, and the student body, respectively.

Prof Su, 52, former Chief Executive of the Defence Science and Technology Agency, succeeded Prof Cham Tao

Soon, the founding President of NTU, on 1 January this year. The formal passing of the presidential torch is yet another significant milestone in NTU's 21-year history.

"I am immensely proud to be the President of this university," said Prof Su. "I am proud of the people we have and the students we have. I feel privileged to have this opportunity to create a unique university that will stand as a shining beacon of knowledge throughout the world."

Inauguration fanfare: The NTU Choir in a stirring rendition of Somewhere Over the Rainbow



Prof Su Guanng, second President of NTU

Changing our genetic makeup

With Singapore facing one of its most severe economic crises since independence, Prof Su said that there was a need for the country to remake itself from the bottom up to survive and prosper.

"This means changing our genetic makeup as a society... a role our university is particularly well suited for," he noted, adding that Tan Lark Sye, the founder of Nanyang University, was himself an entrepreneur.

"Not long ago, I read a news report that the world's bananas are in danger because of their monolithic genetic structure. As bananas are propagated by essentially natural cloning, the genetic makeup of all bananas is identical."

The problem with this, Prof Su explained, was that bananas had become particularly vulnerable to diseases.

Singapore would be in danger of becoming just like the banana, if we continued to look solely towards the government for economic direction, "behaving like stampeding herds of cattle not knowing if we are rushing to paradise or our doom".

Prof Su's message seemed to be that to get round this problem, *diversity and a sense of adventure* were needed.

"If we can create a diverse ecosystem of enterprises, some enterprises may fail but there will always be new ones to take their place. The successful ones grow and multiply many times over, helping Singaporeans prosper. Our university shall be the key driver in this remaking of Singapore."

The university community could also look to the past – the founding and tribulations of Nanyang University – for valuable lessons and a dose of inspiration.

"The passions and ideals in the foundation of Nanyang University is a heritage all Singaporeans can be proud of," Prof Su said. "We must build on this heritage to create a truly unique university that will be first choice for those with ideals and passion."

In outlining his vision for "the new Nanyang University", Prof Su also drew on his experiences at his three alma maters – University of Alberta, California Institute of Technology, and Stanford University.

"I would like campus life to match my wonderful university experiences at all three schools. Vibrant, multi-cultural, open-minded, inclusive. An experience to be proud of that will stay with our graduates their entire life."

R&D boost to defence science and technology

Temasek Laboratories established at NTU

War games as training aids, robots in the battlefield, and small devices that improve a soldier's chances of survival in battle – these are some areas of research and study at the new Temasek Laboratories, established jointly by the Defence Science and Technology Agency (DSTA) and NTU.

Set up to enhance Singapore's R&D capabilities in harnessing science and technology for defence and security, Temasek Laboratories will also coordinate and develop long-term technology programmes in synergy with those of the defence research community.

Work at the laboratories, to be housed in the new Research TechnoPlaza, will focus on three initial

areas of research – microsystems, computer modelling and simulation, and autonomous systems.

Microsystems research involves developing small devices – from design to fabrication – to improve the combat performance and survival rate of soldiers. Research in computer modelling and simulation focuses on the wide range of war games that can be used for both training and simulation. Autonomous systems research includes developing intelligent and “cooperative” robots capable of working autonomously or in concert with soldiers.

To develop competencies in these areas, Temasek Laboratories will tap the wealth of talent in NTU, DSTA, DSO, the Ministry of Defence (MINDEF), and



Combat-ready: Mr Peter Ho, Permanent Secretary (Defence) and Chairman of DSTA (right), and Prof Su Guanng, NTU President, formalising the collaboration

other local and overseas institutions. One approach will be to build a pool of researchers on full-time, adjunct, or short-term visiting appointments.

Prof Shang Huai Min of the School of Mechanical and Production Engineering has been appointed Director of Temasek Laboratories at NTU. A Management Board, chaired by Prof Lui Pao Chuen, Chief Defence Scientist, MINDEF, will chart the laboratories' overall direction and policies and manage key operations.

New dedicated centre for photonics

NTU is ramping up education and research in photonics through a new centre – the Photonics Research Centre (PhRC) – which is also a boost to the photonics industry in Singapore.

Photonics, the generating and harnessing of light and other forms of radiant energy, is a technology which can be applied in many industries, from biomedical, IT, and telecommunications to microelectronics.

PhRC results from the expansion of the Photonics Research Group, a multidisciplinary group established in 1994 in the School of Electrical and Electronic Engineering.

A centre of excellence

PhRC aims to become a centre of excellence in photonics in Asia, producing cutting-edge applied research in optical communications, biophotonics, and photonics materials and devices.

It will also provide undergraduate and postgraduate training and short courses to meet the needs of the local photonics industry. Technology transfer is yet another key aim.

To support training, a new Photon-

Committed to research and training in photonics, the centre is carving new alliances with institutions like Institut d'Optique in France and Imperial College in UK



Growing semiconductor materials and microstructures for optoelectronic devices at the Centre

ics Training Laboratory has been set up. Another facility – a Class 100 Clean Room for III-V semiconductor-related research – will be ready soon.

Students on the Photonics Final Year Option, launched in 2000, and the Centre's new Master of Science (Photonics) programme, which starts in July, will be able to use the facilities.

PhRC will also be setting up a joint laboratory with NTU's Network Technology Research Centre in the new Research TechnoPlaza, for collaborative

projects in optical communications.

To harness the full potential of the field, PhRC is currently finalising the details of a tripartite MOU with Thales Training Centre in Singapore and Institut d'Optique in France.

This covers photonics teaching and research, including student and staff exchange. A research collaboration in applied photonics with Imperial College, under the Imperial College-Singapore Strategic Alliance Programme, is also on the cards.

Rolling out *The New Undergraduate Experience*

NTU will welcome the new intake of undergraduates this July with an exciting and diverse mix of learning experiences.

For starters, there will be more courses on the platter – majors, minors, and non-core electives. Students will also get to decide the pace and structure of their studies according to their strengths, interests, and career goals.

Announcing *The New Undergraduate Experience* on 3 March at his inaugural news conference, NTU President Prof Su Guaning said: "It's like going to a restaurant where you have an a la carte menu and a set menu. We're now letting students choose what they want to have from the a la carte menu so that they can be responsible for their career path."

More electives

To make this possible, a quarter of the curriculum will be set aside for the study of electives – or non-core subjects – in IT, humanities, communication, life sciences, finance and management, and physical education.

Students can also pick from an expanded set of six minors – Chinese, Business, Entrepreneurship, Environmental Management, Education Studies, and Communication Studies. Minors to be offered in the future include Computational Science, Information Management, Drama and Performance, Technology and Innovation, and Music.

There will not be any constraints on choice as long as there is no duplication of the main discipline.

Also on the platter are four new engineering degrees – Bioengineering and Environmental Engineering, available from July, and Chemical Engineering and Computer Science, available from 2004.

By 2005, students can enjoy a feast of academic choices, when the three new NTU schools start running – the School of Physical Sciences, School of Humanities and Social Sciences, and School of Design and Media.

One key characteristic of the new curriculum is its responsiveness to

changing interests and academic ability. For example, students will not be rushed into deciding their major until their inclination is more certain; they have up to the middle of Year 2, or in exceptional cases, till the end of Year 2, to decide their major.

They can even change courses mid-stream as their aspirations and inclinations evolve. Bright students can graduate in three years instead of four, and go on to accelerate their Master's or PhD studies.

More mentoring

For the cream of the crop, tailored programmes will be offered, with senior faculty of the University, including the President, acting as mentors.

The practical component of the curriculum will also be diversified. Instead of being attached to a company for real-life training, students can opt to work on supervised R&D projects on or off campus, spend a semester in Seattle or Silicon Valley to hone their entrepreneurship skills, or learn the ropes of business in Beijing or Shanghai.

To give students an edge in the working world, stimulating student-run leadership and life skills programmes focused on student activities, entrepreneurship, and self-government will be a mainstay of the curriculum.

All first-year students will be encouraged to stay on campus to reap the full benefits of these experiences.

The New Undergraduate Experience kicks off with a grand orientation programme this July and is expected to usher in an educational and cultural renaissance on campus.

More culture

As a hub of cultural, academic, and leisure pursuits, NTU would be a place where students and staff meet in bookshop cafes and restaurants to "measure their ideas in coffee spoons" and immerse themselves in theatrical performances, recitals, and art exhibitions.

The infrastructure for this lively campus hub is taking shape. Eight new



"Like the Renaissance men of old, NTU graduates will be masters of their profession and also competent in many areas, which is key to their survival in this fast-changing world." – President Su

halls of residence will sprout on our campus and its periphery to house an additional 5,000 students by 2011. *Nanyang Global Village*, as this hub is called, could be in full swing by 2008. With these sweeping changes in place, NTU hopes, ultimately, to give students a *Complete Education*.

Key, apart from the acquisition of professional knowledge, is learning to be innovative, creative, entrepreneurial, a team worker, and comfortable with uncertainty.

The last curriculum revamp took place in July 2001. The main changes then were the institution of a two-year broad-based curriculum for engineering students and a 20% reduction in curriculum content for all students.



Prof Su (third from right) with our top teachers: (From left) Assoc Prof Augustine Tan Tuck Lee (Natural Sciences, NIE), Assoc Prof Roop Singh Chandel (School of Materials Engineering), Assoc Prof Ooi Kim Tiow (School of Mechanical and Production Engineering), Assoc Prof Ng Eng Juan (Nanyang Business School/Accountancy), Assoc Prof Chua Hock Chuan (School of Electrical and Electronic Engineering), Assoc Prof Ian McGovern (Nanyang Business

World's first Dual MSc in MEMS Engineering

NTU partners prestigious École Supérieure d'Ingénieurs en Électrotechnique et Électronique to offer one-year programme from 2004

MEMS has been widely reported in technical magazines as the "next big revolution" in modern technology.

To accelerate its growth and to meet industry needs, NTU has joined hands with France's top technological university, École Supérieure d'Ingénieurs en Électrotechnique et Électronique (ESIEE), to offer the world's first dual Master of Science degree programme in MEMS Engineering.

In this unique arrangement, students graduate with two Master of Science (MSc) degrees – an MSc in MEMS Engineering from NTU and an MSc in MEMS Engineering from ESIEE. Twenty students will be accepted for the first intake in January 2004.

Graduate students from Europe and Asia will spend several months at both ESIEE in Paris and NTU as part of their academic and practical curriculum, said NTU President Prof Su Guanng, who signed a Memorandum of Agreement on the programme with Prof Alain Cadix, Director of ESIEE, on 7 March.

ESIEE, which specialises in electron-

ics and MEMS education and research, has trained top MEMS scientists, engineers, and a CEO of MEMSCAP, the world's largest MEMS company.

The MSc (MEMS) curriculum, drawn up by NTU's School of Mechanical and Production Engineering, School of Electrical and Electronic Engineering, and ESIEE, covers MEMS design and technology, nanotechnology, and bio-MEMS engineering, and includes hands-on training at a company or an R&D laboratory.

Sophisticated facilities

Facilities available for the programme include the School of Mechanical and Production Engineering's MEMS research centre with sophisticated clean room facilities and design tools, and complementary facilities at ESIEE.

Multinational corporations are gradually increasing their MEMS-related manufacturing and R&D activities in Singapore, fuelling a demand for MEMS engineering graduates.

Companies such as Delphi Automotive,

Small wonders

MEMS, or "Micro Electro Mechanical Systems", is an engineering discipline combining many different engineering disciplines and sciences to produce "miniaturised electronic machines". As the smallest commercially produced machine, an entire MEMS is only a few millimetres long, with individual integrated devices and features that are micrometres in size – impossible to see with the naked eye. Intensive worldwide MEMS research and development has led to widespread applications in consumer, industrial, and military products. For example, MEMS devices are used as sensors to monitor and detect faulty vehicle travel patterns. They are also used in hearing aids, micro-mirrors for surveillance, and biochips.

HP, 3M, Sony, and Siemens all have a need for such expertise.

For more information on the programme or to join the first intake, visit www.ntu.edu.sg/mpe/. You can also contact Assoc Prof Thomas Gong, the joint programme director, at mhggong@ntu.edu.sg.



School/Business), Asst Prof Constance Chay Cheng Choo (School of Communication and Information), Assoc Prof Pamela Jean Sharpe (Specialised Education, NIE), and Assoc Prof Anneliese Kramer-Dahl (English Language and Literature, NIE). Not in picture: Assoc Prof David Chew Ah Seng (School of Civil and Environmental Engineering) and Asst Prof Charlotte Arlene Bastion (School of Computer Engineering)

Teaching "Oscars" for eleven

Every year, thousands of NTU and NIE students get to choose the teacher they like most for the Teacher of the Year award

This year was no different and on 9 April, NTU President Prof Su Guanng presented certificates to 11 deserving teachers at the 2003 NTU-NIE Teacher of the Year Awards Ceremony cum Seminar on Teaching.

The recipients of the teaching "Oscars" picked up more than just a well-deserved pat on the back – they also took home a monetary reward for their outstanding teaching performance over the past year.

This year saw the largest crop of repeat winners in the awards' ten-year history. Four winners – Assoc Prof Ooi Kim Tiow, Assoc Prof Roop Singh Chandel, Assoc Prof David Chew, and Assoc Prof Pamela Sharpe – took home the award for the second time. Asst Prof Arlene Bastion also became the first Communication Skills lecturer in NTU to win the award.

After the awards presentation, faculty in LT 1A were treated to a stimulating keynote address by Prof Allan Luke, new Dean of the Centre for Research in Pedagogy and Practice at NIE. In his address, themed "New Universities, New Pedagogies and New Knowledges", Prof Luke said that a variety of pedagogical modes – both old and new – should be tapped on to enrich learning.

He also emphasised that different teaching modes were particularly suited for the teaching of different subjects. "Don't treat e-learning as the panacea for all," he cautioned.

Prof Luke's talk was followed by a panel discussion chaired by Assoc Prof Daniel Tan, Director of the Centre for Educational Development, and a question and answer session which was broadcast live over the web.

More top US varsities partner NTU in graduate education

Stanford and Cornell are the latest to tie up with NTU; both alliances mean unprecedented graduate programmes and research opportunities for the region's best

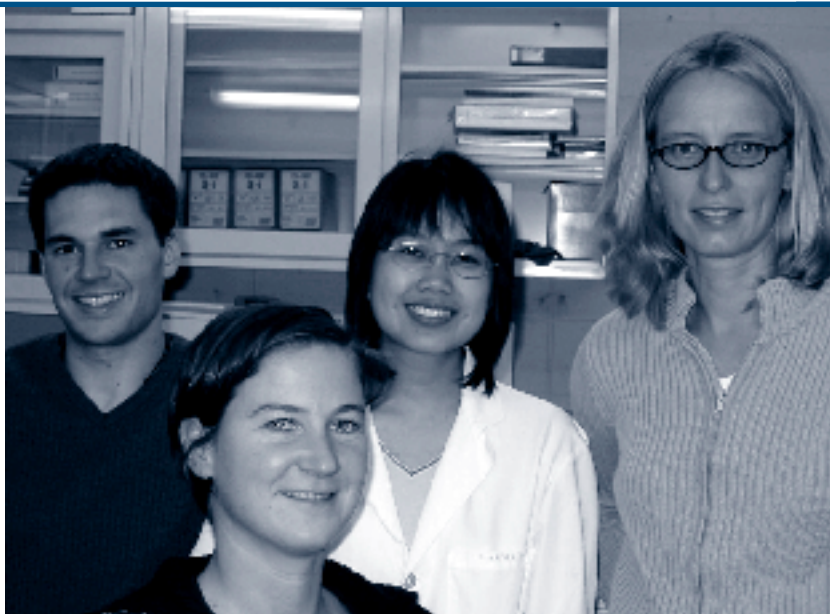
On 18 February, the Nanyang Business School (NBS) welcomed Ivy League Cornell in yet another strategic educational tie-up. This came hot on the heels of Shanghai Jiao Tong University launching its first overseas graduate school at NBS last October.

The aim this time: to start the Cornell-Nanyang Business School of Hospitality Management at NTU by 2004, with the offering of a joint Master's degree programme in Hospitality Management.

A week later, on 25 February, NTU and Stanford University launched the Singapore Stanford Partnership (SSP) with the aim of establishing the region's premier graduate programme in Environmental Science and Engineering.

Both tie-ups offer exceptional academic and research opportunities for students and researchers.

With the best and brightest: More like Ms Lim Tok Hoon from NTU's Clean Water Programme will be able to do research stints at Stanford



Cornell hotel school's first regional presence in Asia

The school will be the first in Asia offering graduate hotel management programmes with Cornell University's School of Hotel Administration, the world's leader in hospitality management education and research.

Students on its flagship two-year Master's programme in Hospitality Management will spend two semesters at NBS and another two at Cornell in Ithaca, New York. NBS senior tutors will be sent to Cornell for PhD programmes. They will later form the core local faculty of the new school.

The graduate school will also undertake research on the Asian hospitality industry to fill a critical need for Asian-centric hospitality research.

Prof Neo Boon Siong, Dean of NBS, said that in addition to educating business leaders in Asia, the school would grow "knowledge and understanding of best practices in the fast-growing hospitality management industry".

NBS has been working closely with other renowned foreign universities

such as University of Illinois at Urbana-Champaign, Richard Ivey School of Business (Ivey) of University of Western Ontario, Carnegie Mellon University, University of St Gallen, and Sloan School of Management of MIT.

Asia's new premier graduate environmental engineering programme

While the details of the Cornell-NTU tie-up are still being finalised, NTU's new partnership with Stanford University will be realised as early as June this year.

The tie-up is a coup for NTU as Stanford's Civil and Environmental Engineering graduate programme has been ranked first in the past three years by *US News and World Report*.

NTU and Stanford, through the SSP, will lead the field in graduate education and research in Environmental Science and Engineering, beginning with full-time Master of Science (MS) and PhD programmes.

The one-year MS programme starts in late June with around 20 students.

New global programmes



with Stanford

Master of Science/PhD in Environmental Science and Engineering



with Cornell

Master in Hospitality Management



with ESIEE, France

Dual Master of Science in MEMS Engineering



Cornell connection: (From left) NBS Dean Prof Neo Boon Siong, Dean David W Butler of Cornell's School of Hotel Administration, and HMS International's Chief Executive, Mr Yeo Khee Leng, signing an MOU to establish the Cornell-NBS of Hospitality Management at NTU

NTU grads still industry's top choice

The economy worsened in 2002, but computer engineering (honours) graduates and mechanical engineering graduates actually enjoyed higher employment rates

If the economy in 2001 was bad, it was worse in 2002. But fresh NTU graduates prove to have the right mix of training and bent, and were still in demand last year, especially in the private sector.

While the employment rate for the Class of 2002 fell in relation to the previous year, the dip of 3.7% was smaller than expected. An equivalent survey by the National University of Singapore (NUS) found that the employment rate of fresh NUS graduates fell over the same period by 9.2%.

Ahead of NUS

A higher proportion of NTU graduates than NUS graduates found employment – 77.8% versus 70.2%.

Among NTU graduates, those who entered the workforce in 2002 earned less than their counterparts in 2001. However, their mean gross annual salary fell by only 4% to \$28,579, a marginal dip in view of the tight labour market and wage restraint imposed

by most employers. Once again, Computer Engineering (Honours) graduates enjoyed the highest annual starting salary (\$33,211). The employment rate of these graduates even rose by 4.6% over the previous year to 86.4%.

A job within three months

The private sector remained the key employer of fresh NTU graduates, hiring about five in six graduates from the Class of 2002. The manufacturing sector absorbed more fresh graduates in 2002 than in 2001, mainly those from the Electrical and Electronic Engineering, Mechanical and Production Engineering, and Materials Engineering courses.

Although the 2002 cohort generally took longer to find work, as many as three in four employed graduates (75.6%) secured their first job within three months of their final examinations. More impressive is the fact that almost half of the employed graduates received two or more job offers.

Bright spots for 2002 graduates

Despite the bleaker employment situation, some 2002 graduates got ahead of their 2001 counterparts in the job hunt:

More employed

Computer Engineering Hons (up 4.6%)
Mechanical Engineering (up 0.8%)

More with multiple job offers

Business (up 6.3%),
Communication Studies (up 2.8%),
Computer Engineering Hons (up 11.4%)
Mechanical Engineering (up 7.8%)

NTU and NUS conducted separate employment surveys to ascertain the employability of their recent graduates. The findings were released on 6 March. The NTU survey was conducted by the Office of Professional Attachments over a 10-week period from 14 October – 21 December 2002. Some 2,756 graduates responded to the survey, giving a response rate of 80.7%, by far the highest in the history of the annual survey.



Singapore-Stanford partnership:

(From left) Prof Tay Joo Hwa, Director, Institute of Environmental Science and Engineering, NTU; Mr Teo Ming Kian, Chairman, Economic Development Board; His Excellency Franklin Lavin, US Ambassador to Singapore; BG (NS) George Yeo, Minister for Trade and Industry; Prof Su Guanng, NTU President; Prof Cheong Hee Kiat, NTU Deputy President and Dean, CEE; and Prof James Leckie, Department of Civil and Environmental Engineering, Stanford University

The intake for the four-year PhD programme will be capped at five. MS students spend the first academic quarter at Stanford in Palo Alto, California, and the remaining time at NTU, while PhD students spend up to three academic quarters at Stanford.

NTU is wooing the best students in Asia through regional student recruitment drives. There is also the lure of full scholarships for outstanding candidates in addition to joint SSP certification by NTU and Stanford.

Stanford is not a new partner and has been working with the School of Civil and Environmental Engineering

(CEE) on advanced water reclamation technologies. The SSP will drive this collaboration further as well as generate new synergistic partnerships between NTU, Stanford, Singapore-based industries, and other top academic and scientific institutions.

On the SSP benefits, NTU President Prof Su Guanng said: "Singapore-based organisations and industries can leverage off the SSP in many ways. Besides benefiting from a pool of high quality graduates for their manpower needs, they can also tap the SSP through new joint R&D initiatives."

According to *Environmental Business*

International, the Asian environmental engineering market, excluding Japan, is worth at least \$37 billion and may triple to \$105 billion by 2010.

"Stanford's expertise in a wide range of technologies from water treatment to clean energy will be very useful for Singapore-based companies, particularly for the development and test-bedding of new technologies," said BG (NS) George Yeo, Minister for Trade and Industry and Guest-of-Honour at the launch.

The tie-up between NTU and Stanford is the tenth under the Economic Development Board's World Class University Programme.

For 21 splendid years, thank you

Our founding President is honoured

One night of appreciation for years of dedicated service seemed like paltry thanks, considering the extent of Prof Cham Tao Soon's contributions.

Under his leadership, NTU went from mere conception in 1980 into one of Asia's best universities today. From 582 pioneer students in 1982, the University now schools over 25,000 students a year.

"The most significant contribution which Professor Cham has made to NTU is maintaining academic standards and not lowering quality while rapidly increasing the faculty and student numbers," said Deputy Prime Minister (DPM) Dr Tony Tan, speaking at an appreciation dinner in honour of Prof Cham. Prof Cham retired as President of NTU last December.

The dinner on 26 March at Meritus Mandarin was also a small gesture of gratitude from more than 650 guests, staff, students, and alumni who toasted Prof Cham and wished him well.

Accolades and anecdotes

Colleagues lavished praise and shared their thoughts on video. Students paid tribute through song and dance.

Distinguished guests – DPM Dr Tony Tan, NTU Alumni Club President Mr R Sinnakarupan, and current NTU President Prof Su Guaning – gave speeches peppered with accolades.

Inevitably, the more personal side of Prof Cham surfaced – the accomplished musician, the man with the uncanny ability to sniff out Chinese food in any part of the world, the well-rounded student who aced table-tennis



Three cheers for NTU's founding President, with a toast led by Dr Tony Tan, Deputy Prime Minister

at Cambridge University, the President who delegated work (to the Deans and Deputy Presidents) over fish-head curry once a week.

"As a person, Prof Cham can be described as firm, decisive and yet friendly, and with a good sense of humour," said Mr Sinnakarupan. Prof Su hailed Prof Cham as "a legend in his own time".

Prof Cham's legacy is, of course, well known – a story which started in 1980, when as Dean of Engineering at the National University of Singapore (NUS), he was handpicked to lead the establishment of Nanyang Technological Institute (NTI) as a practice-oriented alternative to the research-oriented NUS.

NTI expanded from three engineering schools and by 1991 became a full-fledged university incorporating the National Institute of Education.

The rise of NTU "would not have been possible without the energetic and inspiring leadership of Professor Cham," said DPM Tan.

Prof Cham, who spoke at the dinner, offered his gratitude to his wife, Ee Lin. "Over the last twenty-one years, she had to tolerate my busy schedule... she had to shoulder a greater responsibility in looking after our two children when they were young, sacrificing her own successful career in geophysics."

He also acknowledged the collective contributions of the NTU community – both past and present. "I could not have dreamt the way this institution has evolved. We were fortunate to have the support of dedicated staff and the enrolment of excellent students. Of course, the unwavering support of the government has helped a lot."

Keeping busy

Hinting that he would not go gently into his post-presidency, Prof Cham said: "I can assure you that I shall be kept very busy."

As NTU's first University Distinguished Professor, things may even come full circle for him as he considers teaching again. "It is quite stimulating to interact with young minds," he said.

These days, though, he is most preoccupied with studies on the strategies of small and medium enterprises (SMEs) and trends and policies in entrepreneurship and technology.

He is also active in the boardroom as independent director and advisor to companies, something he has always enjoyed doing. Most recently, he was appointed Chairman of the Nanyang Academy of Fine Arts (NAFA) and board member of the Singapore International Foundation.

Prof Cham catching up with Nanyang University graduates



When rabbits rule...

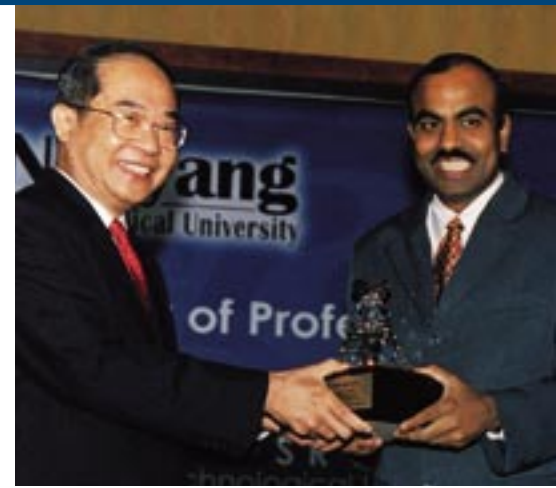
Prof Cham, 63, is a rabbit by Chinese zodiac. Rabbits are known to be docile in appearance, articulate, ambitious, and talented. They are also often admired for their wisdom.

Prof Cham's predilection for the gentle animal is well known – rabbits occupied every nook and cranny of his former office on the sixth floor of the Administration Building, whether

in the form of ornaments, souvenirs, or beautiful paintings. Not surprisingly, the indomitable bunny made its appearance at the dinner.

The NTU Alumni Club presented Prof Cham a stunning – and very heavy – crystal rabbit (*right*). After a rousing dance performance, the NTU modern jazz group gave Prof Cham a bouquet bound with a rabbit stuffed toy.

Rabbits rule indeed.



Study engineering and dance like a summer breeze



Spirited away: Li Yanqiong rides a Tibetan yak, formed by the crouching figures of You Hu and Zhang Zhan

Grace, beauty, and brains – Tsinghua students seem to have them all

What do three students in management, chemical engineering, and economics have in common? The magic and romance of Tibet.

In a dance performance of sheer virtuosity, the three from Tsinghua University transported the audience in the Nanyang Auditorium to the Roof of the World. Li Yanqiong was the beautiful Tibetan girl riding a yak, formed by the crouching figures of You Hu and Zhang Zhan.

No backdrop or prop was necessary – the entire narrative was in the liquid movement of just the three very tal-

ented dancers in their crimson, black, and saffron costumes.

More amazing was that these were not full-time stage professionals, but students from one of the top technological universities in the world.

Science and art

They, and the other 60-odd members of the art troupe, showed that the rigours of academic studies in engineering, management, communication, and social sciences could blend with the grace and poetry of dance, music, songs, and other dramatic pursuits.

One may expound economic theo-

ries and sing *O Sole Mio* (Down From His Glory) in a tenor solo that brings the house down, like Zhang Jifei, graduate student in economics and management at Tsinghua.

And one may write software programs with the same hands that drip dulcet music from the piano keyboard, like Xia Yu of the School of Software.

And so it went, that evening of 11 March, where NTU students and faculty were privileged to experience two hours of culture from the Tsinghua students. In all, there were 12 performances, climaxing with a rousing dance of the Yellow River by 18 students.



Their moment with Bill: (From left) Anumeha, Kapil, Kunal, and Harishankar – “best student developers in Asia” – have brought glory to NTU and Singapore

They beat 3,000 teams and met Bill Gates

Four computer engineering students create AutoShop, a multiple award-winning application that could revolutionise the way we shop; other SCE teams also scoop awards

In a spectacular feat, a team of four students from the School of Computer Engineering (SCE) beat 15,000 students in almost 3,000 teams from Asia to win the second Asia Pacific Student .NET Competition organised by Microsoft. The students had earlier won in the Singapore .NET Competition, where another SCE team was placed second.

The clincher, developed by final-year students Anumeha Bisaria, Harishankar Vijayarajan, Kapil Vaidyanathan, and Kunal Talwar, is a wireless supermarket application that enables shoppers to see in real time how their shopping bill adds up.

The four students flew to Beijing, where the regional competition was held on 26 February, and demonstrated their technology to Microsoft Chairman Bill Gates in front of a 10,000-strong audience. They came in first, beating tough competition from Taiwan and China, which took the second and third places respectively. They will compete in the World Finals in Barcelona, Spain, this June and July at Microsoft's TechEd Seminar.

The team was supported by the

Microcomputer Systems Lab of SCE and guided by Asst Prof Yow Kin Choong, Sub-Dean of SCE.

World's smartest cart

John and Rachel do their weekly shopping on Sunday. Like other working couples, this is the only time they can spend together. One Sunday, they pick out groceries at their local supermarket. The long check-out lines seem neverending. Will they spend their precious weekend queueing?

Not necessarily, if the supermarket makes use of *AutoShop*.

In this shopping system, a compact battery-powered wireless unit connected to the supermarket's wireless LAN is installed on every shopping cart. The unit has an embedded computer with a touch screen and a barcode reader that helps shoppers self-check out their items. As items are scanned, the unit on the cart sends the barcode values to the supermarket's server wirelessly and retrieves product information and price, which are displayed on the screen. All shoppers do at the check-out counter is pay the bill. No more long queues.

More top honours for AutoShop and other SCE inventions

AutoShop snared another top prize soon after the Microsoft .NET win – at Wireless Challenge

The competition, organised by the Wireless Chapter of the Singapore Information Technology Federation and Cisco Systems, aims to identify and promote the best wireless applications developed in Singapore.

The students beat 128 teams from all over Singapore. Half of the 12 finalists were from NTU. They received their awards on 14 March.

Academic Category

First Place (\$10,000) and Cisco Special Award for Wireless LAN (\$5,000): *AutoShop*, by students Anumeha Bisaria, Harishankar Vijayarajan, Kapil Vaidyanathan, and Kunal Talwar

Merit Award (\$5,000) and Siemens Special Award for Location Services (\$2,000 worth of Siemens handphones): *Vector*, by students Rajat Dev, Arun Jacob, Arun Kishore K K, Dev Ramnane, and Nishith Prabhakar

Hewlett-Packard Special Award for Best Regional Appeal (\$2,000): *iName = Name*, by senior tutor Woo Wing Keong and student Chung York Wei

Open Category

First Place (\$10,000): *ECHO*, by SCE alumnus Jeffrey Ng Kim Ngee (Class of 2001) and his team representing Meta Concepts

At the backend, the system also updates the inventory so the supermarket knows what has been sold and what needs to be replenished. SMS alerts are sent to staff when shelf stock is low. Other features include being able to view one's virtual shopping list created online at home and to redeem MMS discount coupons. The system is so smart it can help shoppers locate items in-store with interactive maps and even alert them to special promotions through wireless advertisements.

Undergrads not hungry for the future?

Too many questions, too little time at the 9th Ministerial Forum

A week before Senior Minister Lee Kuan Yew came to speak at NTU, long snakes of students were seen at Canteen A and B, waiting patiently to get tickets to the event. It was an opportunity to hear the man himself, a legend in his time, speak on the topic: *What has the future in store for your generation?*

The sight of metal detectors, special entrances, and security personnel transformed the Nanyang Auditorium into something like an airport departure hall on the evening of 18 February.

It was a sign of the times, this massive display of security, that the world had changed, with looming threats of terrorism, threats of economic meltdown, and above all, threats of Singapore becoming irrelevant if it failed to keep pace with technological and social changes worldwide.

Tour de force

Mr Lee took his audience of 1,800 students from NTU, the National University of Singapore, and Singapore Management University on a historical tour de force.

Like a masterly guide, he started at the beginning, about two decades before most of the present undergraduates were born – his student days in 1941 at Raffles College, then the Japanese invasion, the end of the war, his stay in England, communism in Malaya, the creation of Malaysia, Singapore's expulsion, and so on.

Fall of an empire

When he was a student, he thought the British Empire would last at least another century. But it collapsed suddenly when the Japanese drove them out. His message was that today, too, the world was changing rapidly and seemed to be heading for economic chaos and collapse.

"So I add this caveat," he said, "that no one can accurately foretell the future because no one can predict what technological breakthroughs will take



After the forum, students got to talk with Mr Lee. The forum was organised by the NTU Students' Union

place and have the most fundamental effects on human life and the economies of nations.

"However, during your university days, you can nevertheless identify and define certain trends that will reshape the world in the next few decades."

After his speech, students rushed to the scattering of microphones in the hall to ask him questions. These concerned issues such as foreign talent, Singapore's lack of natural resources,

streaming of pupils, and the employment situation in Singapore.

But the hours hastened and soon it was time for Mr Lee and his entourage to leave, even though by then there were small crowds of students around the various microphone stands waiting patiently to ask more questions.

One swallow does not a summer make. One session with Mr Lee is not sufficient to gain an understanding of the future for our generation.

Nurturing young netizens

The endless chattering of 45 pint-sized children filled the air. It wasn't the usual scene, this lesson at the Microcomputer Systems Laboratory on 27 February.

The primary school children from the Lakeside Before and After School Care Family Centre had come to NTU with one intention – to find out what the Net is and how big the global village is today.

Armed with an easy-to-understand guide filled with pictures and cartoons, they learnt how to surf the Net, send e-mail, and draw pictures over a two-day course on basic Internet and basic Paint, taught by members of the

Computer Engineering Club.

The young netizens can now venture further into the global village as the School of Computer Engineering has sponsored five refurbished computers to the Lakeside centre.

Netting young ones: Computer Engineering students turned teachers to share the joy of technology



Using waste, not granite, for roads

NTU's idea is being tested at Jurong East Central and could change the way Singapore roads are paved

If all goes well along Jurong East Central, Singapore could stop importing granite to make roads and, instead, use waste material from the furnaces of NatSteel.

After three years of laboratory research, NTU and NatSteel are now testing a stretch of road at Jurong East that has been paved with furnace waste mixed into asphalt. Conventional road-paving asphalt is granite-based.

The idea of using the waste, known as "ladle furnace slag", or LFS in short, was the brainchild of Assoc Prof Darren Sun from the School of Civil and Environmental Engineering (CEE).

The project started in 1999, when NatSteel, Singapore's only steel-manu-

facturing company, approached the Environmental Engineering Research Centre (EERC), hosted by CEE, to find alternative methods of disposing their steel waste.

Every year, during the production of molten steel, 24,000 tons of LFS are produced and dumped at Pulau Semakau at a cost of \$1.1 million, filling up the equivalent of three football fields, each to a man's height.

Assoc Prof Sun took up the challenge of recycling the waste, assisted by Dickson Lai, a Project Officer from EERC, and two final-year students – Tang Tsen Meng and Roy Tan Hsin Loong – who are now graduate students at EERC.

One for the road

LFS is a fine, powdery substance, unlike granite, which is coarser. When it is further processed, it is superior to granite in many ways; it is harder, retains its shape under heat, and binds better to other material. The \$65,000 site trial began on 21 February, when a 40m stretch of road near Jurong East Central in front of Block 101 was paved with material containing recycled LFS. The trial is expected to last one year and will enable researchers to find out whether the mix of LFS in the road material is up to the standard set by the Land Transport Authority. The characteristics of the new LFS-mixed road material will also be studied.

The team's real-world R&D effort could mean substantial cost savings for NatSteel and, potentially, the Land Transport Authority, which currently uses imported granite to pave roads. It is also in line with the government's 3R policy to "Reduce, Reuse and Recycle".

From classroom idea to money-spinner?

At the finale of the fourth NTU-JC-ENV Challenge on 15 February, a plethora of ingenious "green" technologies – the result of three months of hard work – lined the foyer of LT 1

Among these inventions was a new kind of household utilities meter which its inventors from Jurong Junior College (JC) are trying to patent and commercialise.

NewMeter, which converts data on utility usage into dollars and cents to help homeowners track water and electricity bills, won the "PerkinElmer Best Innovation Award", one of three awards given away at the Challenge.

Other marketable inventions presented by the JC students included:

- an IT-driven toilet flushing system that recycles shower water and uses less water per flush – from Temasek JC;
- refuse chutes for HDB flats that compartmentalise waste according to type for recycling and disposal – from Serangoon JC;
- state-of-the-art weight-sensitive rubbish bins that reward good recycling habits with redeemable points – from Pioneer JC; and

- an engaging strategy/simulation PC game inspired by historical events related to the theme of saving our earth – from National JC.

Praising the students' entrepreneur-

ial zest, the Guest-of-Honour at the finale, Assoc Prof Simon Tay, Chairman of the National Environment Agency, said: "I hope they make millions and, of course, help the environment."

NewMeter in HDB flats? An inventor from Jurong JC explains to Assoc Prof Tay how his team's smart meter tracks household utilities expenditure



Zapping tumours

A new non-invasive method of killing cancer could outmode the usual treatment options – surgery and chemotherapy

The thought of cancer strikes fear in most people – fear of pain and, sometimes, eventual death. With the latest innovations in robotic research coupled with a non-invasive form of treatment called High Intensity Focused Ultrasound (HIFU), some of that fear could be squashed.

Dr Sunita Chauhan and her team at the Robotics Research Centre, School of Mechanical and Production Engineering, have been using sound waves to kill tumours.

Relatively pain-free

Their relatively pain-free method – Focal Ultrasound Surgery (FUS) – is a non-invasive surgical procedure that converts mechanical energy of an ultrasound wave into heat energy at its focal point. It is like the sun's rays converging through a magnifying glass to burn a piece of paper.

When high-intensity ultrasound waves are beamed through the skin, the temperature of the cancerous cells at the beam focus is raised up to 80 degrees Celsius. The target cells are killed without any open cuts and without any harm to the overlying normal tissue. A customised robot named FUSBOT, partially submerged in a water tank, helps with the zapping.

Reduced danger

With this method, the danger of infection and complications from open surgery are greatly reduced. As good tissue is spared, recovery is also much faster. For certain cancers, this technique can replace secondary therapies such as chemotherapy and radiation.

The NTU team is working with the Mannheim-based medical school of the University of Heidelberg, Germany, to test the technique on animals. Clinical trials on patients with kidney tumours have produced positive outcomes.



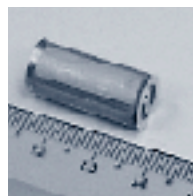
Getting to the heart of the matter: (Clockwise from top left) Asst Prof Alfred Tok, Assoc Prof Ma Jan, George Ong, Nathaniel Ng, and Li Tao

World's tiniest heart pump

Millions worldwide could benefit from this commercialised invention which reverses end-stage heart failure

Heart disease is among the top two killers in the world. In 2002 alone, 30 million people around the world had Congestive Heart Failure (CHF). In Singapore, 4,000 cases are registered annually.

But patients can take heart. Assoc Prof Ma Jan and Prof Freddy Boey from the School of Materials Engineering have patented a piezoelectric ("pressure-electricity") heart pump, which has been commercially licensed to Orqis Medical, an American biomedical company in Irvine, California.



The Piezoelectric Cardiovascular Pump works by giving the heart a break so it can recover

The pump is for treating patients with stage III and IV CHF. In CHF, stage III requires hospitalisation and surgery, while stage IV requires heart replacement and is usually the last stage of the disease. If left alone, stage III patients degenerate quickly to stage IV, which can then be treated only with costly invasive surgical devices, and with limited success.

Patients at stage III when treated with the piezoelectric pump, however, are able to recover and revert

to stage II, which then can be simply treated with medication.

When the pump is used alongside the heart to relieve it of a large part of its load, the heart gets enough rest to recover. As the load reduction restores hormonal balance in the heart, the enlarged heart also shrinks back to its normal size.

The team is working with the California Institute of Technology to use the pump in other non-cardiovascular applications such as drug delivery for long-term pain management.

Four times smaller

The piezoelectric heart pump, at 50g, is at least four times lighter than conventional heart pumps in the market and uses less than one watt of power. This means it can be inserted into the body without open-heart surgery.

Unlike other pumps, it is totally non-metallic and can be coated with biocompatible materials. These factors prevent complications from immunological rejection, thrombotic infection, and blood clotting.

The pump, in fact, can be made tiny enough (less than 1mm wide and 1cm long) to be inserted into smaller veins to act as a "booster" pump that drives blood through the parts of the body starved of blood.

Giving back creatively

Motivated to do something for society, four pioneer graduates of NTU's graduate diploma Technopreneurship and Innovation Programme turned Singaporeans' pursuit of culinary pleasures into an opportunity for fund-raising.

Their aim: to encourage others to "Eat a bowl of kindness", also the name of a \$25 soup-based concoction of Chinese delicacies specially created for their event, *Noodles with Love*.

Noodle Hut Restaurant was roped in to provide the food – a variety of dishes

from *dim sum* and noodles to sauces and soups.

The four alumni – Ho Kok Hiang, Daniel Ng, Shirley Chia, and Tan Hong Fui – are team members in the Citi Youth for Causes Programme, a charity outreach programme organised by YMCA and sponsored by the CitiGroup Foundation.

Noodles with Love, held at Noodle Hut's three restaurants from 15 to 16 March, raised the auspicious amount of \$2,818 for the Children's Cancer Foundation.

"Today"



Extending ties with MIT

NTU is now gearing up for Phase 2 of the Singapore-MIT Alliance (SMA), launched in 1998

SMA-2 will once again bring together the resources, faculty expertise, and research facilities of the Massachusetts Institute of Technology (MIT), NTU, and the National University of Singapore in global graduate engineering education and research.

The School of Mechanical and Production Engineering has been hosting the SMA programme, *Innovation in Manufacturing Systems and Technology* (IMST), since 2000.

Speaking at the launch of SMA-2 on 24 March, NTU President Prof Su Guanng said that IMST had fared well. "Student intake for IMST grew 30% over a span of two years.

"The IMST programme has been well positioned to address broad but fundamental areas at the cutting-edge of manufacturing industries.

"This broad-based multidisciplinary programme also provides a business dimension through its links with the Sloan School of Management."

SMA-2, which extends the partnership another five years, would include, among other initiatives, a "more strategic and invigorated IMST," said Prof Su.

Appointments

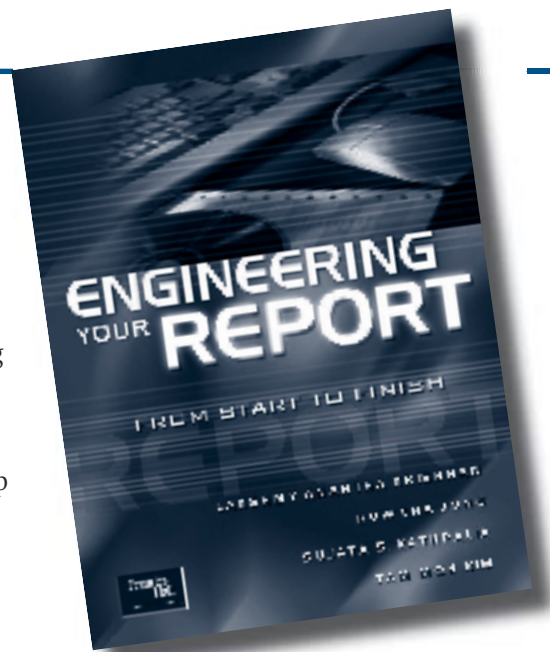
Appointments

Assoc Prof Sharen Liu – Head,
Division of Electronic and Broadcast Media, SCI
Asst Prof Yan Yaw Kai

– Head, NIE DNA Learning Centre

Re-appointments

Centre for Financial Engineering:
Assoc Prof Ho Kim Wai (NBS) – Director
Assoc Prof Low Buen Sin (NBS) – Deputy Director
Asst Prof Edmond Prakash (SCE) – Deputy Director
Assoc Prof Lim Meng Hiot (EEE) – Deputy Director



Report writing made easy

Engineering students can now turn to a new reader-friendly book to learn the conventions and language features of report writing.

The book, *Engineering your Report: From Start to Finish*, written by a Communication Skills team at NTU, takes readers through the dynamics of report writing in a step-by-step fashion. Examples and exercises are extracted from authentic engineering reports.

The book is written by Ms Lakshmy Anantha Krishnan from the School of Civil and Environmental Engineering, and Asst Prof Rowena Jong, Asst Prof Sujata Kathpalia, and Mrs Tam Moh Kim from the School of Mechanical and Production Engineering.

Copies are available at Popular NTU.

NTU first Sun Centre of Excellence in Asia South!

Sun Microsystems named NTU a Sun Centre of Excellence for E-Learning (COE) on 19 March. The first COE in Asia South, NTU joins an elite group of three universities recognised by Sun and the academic community as leaders in e-learning technologies. Kim Jones, Vice President, Global Education and Research for Sun Microsystems Inc, said: "NTU was the natural choice as the first Asia South COE. The research NTU conducts exemplifies the principles of Sun's COE programme – innovations that bring real world results."

Welcome

The University welcomes the following new staff members:

Nanyang Business School (NBS)

Assoc Prof Keshab Man Shrestha
- Associate Professor
Prof Charles Michael Hampden-Turner
- Goh Tjoei Kok Professor
Prof Gary Lewis Sundem
- Shaw Foundation Professor
Prof Gordon Bitter Davis
- Shaw Foundation Professor
Dr Jone Marie Rymer
- Senior Fellow

School of Computer Engineering (SCE)

Assoc Prof Tan Ah Hwee - Associate Professor
Asst Prof Chng Eng Siong - Assistant Professor
Asst Prof Foh Chuan Heng - Assistant Professor
Asst Prof Fu Chengpeng - Assistant Professor
Asst Prof Seow Kiam Tian - Assistant Professor
Asst Prof Vivekanand Gopalakrishnan
- Assistant Professor

Asst Prof Wong Kok Wai - Assistant Professor
Mr Adrian Leung Ho Yin - Lecturer
Miss Aileen Ng Cheng Cheng - Lecturer
Dr Huang Minting - Lecturer
Prof Serge Abiteboul - Visiting Professor
Dr Wlodzislaw Duch - Senior Fellow
Dr Wu Zhongke - Research Fellow
Miss He Yuxiong - Project Officer
Miss Luan Lan - Project Officer
Mr Mok Hon Mun - Project Officer
Mr Tan Choong Leong - Project Officer
Miss Tham Wei Ping, Wendy - Project Officer

School of Materials Engineering (SME)

Dr Luo Linghong - Research Fellow
Dr Qu Yi - Research Fellow
Mr Chen Yunzhong - Research Associate
Miss Cheng Wen - Research Associate
Miss Koh Sok Boon - Research Associate
Mr Ma Dongrui - Research Associate
Mr Ma Siguang - Research Associate
Mdm Zhang Jixuan - Research Associate
Mr Chua Jang Ching, Julian - Project Officer
Mr Ong Tze-Wei, George - Project Officer

School of Civil and Environmental Engineering (CEE)

Prof Bengt Baltzar Broms - Visiting Professor
Dr Chua Hock Chye, Lloyd - Research Fellow
Dr Pan Jun - Research Fellow
Mdm Tan Swee Huang - Research Associate
Mr Maung Nyi Nyi Kyaw - Project Officer
Miss Tay Daphne - Project Officer

School of Electrical and Electronic Engineering (EEE)

Assoc Prof Anamitra Makur - Associate Professor
Assoc Prof Chin Mee Koy - Associate Professor
Assoc Prof Low Kay Soon - Associate Professor
Asst Prof Tiew Kei Tee - Assistant Professor
Prof Debasis Mitra - Albert Winsemius Professor
Dr Zhang Yujin - Senior Fellow
Asst Prof (Adj) Yeo Chiew Beng, Allen
- Adjunct Assistant Professor

Dr Gao Hai - Research Fellow
Dr Li Kai - Research Fellow
Dr Ravinder Kumar Khatri - Research Fellow
Dr Wu Jihui - Research Fellow
Dr Zhang Lin - Research Fellow
Dr Fei Xun - Research Associate
Mdm Gong Liping - Research Associate
Mr Lim Khoon Seong - Research Associate
Mr Wang Lei - Research Associate
Mdm Yang Xiangyu - Research Associate
Mdm Yu Jianhong - Research Associate
Mr Amod Kumar Agarwala - Project Officer
Mr Lim Yang Lyn - Project Officer
Mr Liu Yingsha - Project Officer

Mr Ng Kok Chai - Project Officer
Mr Prabaharan s/o Kandasamy - Project Officer
Mr Vipul Gupta - Project Officer
Miss Wei Na - Project Officer
Mr Yeap Yean Wei - Project Officer
Mr Zeng Jiancheng - Project Officer
Miss Zheng Miaomiao - Project Officer
Mr Wang Hongzhi - Senior Officer [Lab] (Grade 5)

School of Mechanical and Production Engineering (MPE)

Prof Shang Huai Min - Professor
Asst Prof Yeh Hsien-Chi - Assistant Professor
Prof Buddy Dennis Ratner - Nanyang Professor
Dr Bai Shaoping - Research Fellow
Dr Lei Min - Research Fellow
Dr Olaf Eyke Heinrich Alfred Andersen
- Research Fellow

Dr Zhou Gangyi - Research Fellow
Miss Moe Moe Thwe - Research Associate
Mr Peng Liang - Research Associate
Mr Wang Jin - Research Associate
Mr Tan Huai - Project Officer
Mr Ten Min Hai - Project Officer
Mdm Goh Wee Hoon - Senior Officer (Grade 4)
Mdm Lai Lee Fern - Senior Officer (Grade 4)
Miss Wong Sook Wei, Elita - Senior Officer (Grade 5)

Mdm Lim Chiok Kia - Senior Officer (Grade 5A)

School of Communication and Information (SCI)

Asst Prof Chua Ling-Yen - Assistant Professor
Mr Ivan Kwek Eng Tai - Lecturer
Miss Ho Soo Yee - Senior Tutor
Prof Patricia Rodden Zimmermann
- Visiting Professor

Assoc Prof (Adj) Kwok Kian Woon, Anthony
- Adjunct Associate Professor

School of Biological Sciences (SBS)

Assoc Prof Peter Rainer Preiser - Associate Professor

Centre for Educational Development

Mr Goh Wee Sen - Senior Officer (Grade 4)

Centre for Chinese Language and Culture

Mr Gu Zuzhao - Research Fellow

Singapore-MIT Alliance Programme

Mr Arun Sreeranganathan - Research Associate

Mr Zhang Guoge - Research Associate

Institute of Defence and Strategic Studies

Prof Iain Johnston - S Rajaratnam Professor in Strategic Studies

Mr Adrian Kuah Wee Jin - Associate Research Fellow

Ms Elena Pavlova - Visiting Associate

Prof Wang Zhengyi - Visiting IDSS-Sasakawa Fellow

Dr David Betz - Lecturer

Miss Deborah Lee May Yian - Research Assistant

National Institute of Education

Special Training Programme

Mr Othman Bin Salam - Trainer

Policy and Management Studies

Mr Richard Dawson - Teaching Fellow

Psychological Studies

Asst Prof Wong Yuen Fun, Isabella - Assistant Professor

Mr Kang Hui Kwong, Sean - Project Officer

Miss Koh Yun Tzy - Project Officer

English Language and Literature

Assoc Prof Lubna Alsagoff - Associate Professor

Mrs Shila Fernandez nee Chandran - Lecturer

Mr Chia Ti Yong, Alexius - Lecturer

Mr Leong Kai Wah, Cedric - Teaching Fellow

Mr De Costa Peter Ignatius - Teaching Fellow

Dr Joyce Evangeline James - Teaching Fellow

Ms Png Lay Hoon, Jessie - Teaching Fellow

Asian Languages and Cultures

Mdm Rosnani Bte Suni - Teaching Fellow

Mr Phoon Mun Kwong - Teaching Fellow

Humanities and Social Studies Education

Mr Raymond Matthew Nichol - Senior Fellow

Mr Lim Yang Teck, Kenneth - Teaching Fellow

Mr Suhaimi Bin Mohamed Afandi - Teaching Fellow

Science and Technology Education

Mr Chung Soon Bee - Teaching Fellow

Mathematics and Mathematics Education

Mdm Foo Kum Fong - Teaching Fellow

Miss Ng Luan Eng - Teaching Fellow

Mr Chua Boon Liang - Teaching Fellow

Natural Sciences

Mr Long Jidong - Research Associate

Centre for Research in Pedagogy and Practice

Prof Allan Albert James Luke - Dean

Prof Peter Raymond Freebody - Vice-Dean (Research Methodology)

Asst Prof Lau Shun - Assistant Professor

Mdm Chen Min Pyng - Project Officer

Centre for IT in Education

Miss Lim Wei Ying - Senior Officer [IT]

Computer Services Centre

Miss Ng Ka Ling - Senior Officer [IT]

Mr Ng Yih Farn - Senior Officer [IT]

Library and Information Services Centre

Miss Yuyun Wirawati Ishak - Senior Officer [LIB]

Miss Tan Gek Hong, Jessie - Senior Officer [LIB]

Promotions

We congratulate our NIE colleagues on their recent promotion/emplacement:

To Associate Professor

English Language and Literature: Asst Prof Antonia Chandrasegaran; *Physical Education and Sports Science:* Asst Prof Michael Chia Yong Hwa, Asst Prof Nicholas Giles Aplin; *Humanities and Social Studies Education:* Asst Prof Karl Anthony Hack; *Instructional Science:* Asst Prof Myint Swe Khine; *Asian Languages and Cultures:* Asst Prof Paitoon Masmintra Chaiyanara; *Natural Sciences:* Asst Prof Tan Swee Ng, Asst Prof Augustine Tan Tuck Lee; *Mathematics and Mathematics Education:* Asst Prof Zhao Dongsheng

To Senior Officer [ECC] (Grade 2)

E-Learning Competency Centre: Mr Chua Chet Shiu

To Senior Officer [IT] (Grade 2)

Computer Services Centre: Mdm Choy Kwei Heong, Mr Eric Bonneau

To Senior Officer [IT] (Grade 3)

Centre for IT in Education: Mr Chew Tyng Song

To Senior Officer [IT] (Grade 4)

Computer Services Centre: Mr Chan Wai Mun, Mr Hong Keng Siang

To Senior Officer (Grade 1)

Student and Academic Services: Mrs Seah-Lee Moi Fong

To Senior Officer (Grade 4)

Director's Office: Mr Loh Mun Keong, Mdm Teo Lek Hong; *Practicum Office:* Mrs Jessica Tan-Wong Lai Fong; *Dean, Academic's Office:* Mrs Tay-Sung Bee Eng

To Senior Officer (Grade 5)

[Emplacement]

Finance Department: Miss Cherie Lek Yian Ping; *Centre for IT in Education:* Miss Seow Chow Loon; *Graduate Programmes and Research Office:* Ms Serena Yuen Wai Yin



It's our campus, virtually

The idea to build a virtual reality (VR) model of the NTU campus came about six years ago, when the School of Computer Engineering (SCE) purchased a powerful graphics workstation with advanced modelling software systems.

VISITORS

During the period January to March 2003, the University received the following distinguished visitors:

- 6 Jan** Prof Peter Schneider, Vice President, Hochschule für Technik Rapperswil, Switzerland
- 15 Jan** Prof Michael J H Sterling, President, and Dr Alf Roberts, Chief Executive Officer and Secretary, Institution of Electrical Engineers, UK
- 20 Jan** Dr Jae Yoon Park, President, Pusan National University, Korea
- 3 Mar** Prof Dr-Ing Johann-Dietrich Wörner, President, Technische Universität Darmstadt, Germany
- 7 Mar** Prof Cai Qingkui, President, Shenyang University, PRC
Prof Alain Cadix, Director, Ecole Supérieure d'Ingenieurs en Electrotechnique et Electronique, France
- 26 Mar** Prof Lao Guomin, Vice President, East China Normal University, PRC

During this period, the University also received visiting delegations from China University of Mining and Technology and Tsinghua University, PRC; Srinakharinwirot University, Thailand; International Islamic University, Malaysia; Ho Chi Minh National Political Academy, Vietnam; Universitas Airlangga, Indonesia; Norwegian University of Science and Technology; Jonkoping University, Sweden; University College London, Imperial College London, and King's College London, UK.

Visitors can fly over our campus, meet and talk to other visitors, and see our world from a very different angle!

"But these systems provided only tools, no methods and solutions. On top of this, the hilly ground of the campus complicated the task very much. No existing VR projects dealt with anything like this. We had to be first," said principal project investigator Assoc Prof Alexei Sourin from SCE.

The virtual land was built using information extracted from old contour maps found in the Office of Estate and Amenities. Roads, lampposts, trees, and traffic signs were measured.

Next came geometric modelling. Roads, created first, hung in the void, before adjoining pieces of land were attached to them one by one. The next steps were planting the trees and bushes, inserting lampposts and signs, and, finally, constructing the buildings.

Photo-realistic

Projecting the geometric complexity of the buildings in a photo-realistic way required a lot of time and imagination as well as experience in photography and interactive graphics modelling.

Many photos were taken and converted to texture images. "I even had to climb to the roof of the Administration Annex to take a panoramic shot of the campus," recalled Assoc Prof Sourin.

Visitors can view this VR model of NTU at the Centre for Graphics and Imaging Technology (CGIT).

But one need only get on the Internet for some fun at Virtual NTU.

Assoc Prof Sourin has gone further and created a multi-user virtual campus using Virtual Reality Modelling Language.

On this hospitable land, probably the largest of its kind, you can fly over buildings, disguised as an avatar, and meet and talk to other visitors from across the globe. Just surf to www.ntu.edu.sg/home/assourin/VirCampus.html, install the plug-in for Internet Explorer, and click in.

Halloween party at Hall 6



Prof Su Guaning was inaugurated as NTU's second President on 28 March.

In his inauguration speech, he shared his vision for the new Nanyang University

Visions of a new Nanyang

The inauguration ceremony, in which Prof Su Guaning was installed as NTU's second President, was replete with vestiges of the past and visions of the future.

Featuring the pomp of a procession of Council and Academic Board members, senior university officers, and representatives from the NTU Alumni and Students' Union, it was as much an occasion for public pronouncements as an occasion for private reflection.

In full academic regalia, Prof Su took the stage and in a thirty-minute speech held an audience of 2,000 – staff, students, alumni, Council members, and guests – in the palm of his hand.

Noting that teaching and research were the twin pillars of a university, he said: "Whatever resources we put into the University comes to naught if we do not see the results in our graduates."

As for the professors, they deserved the strongest support and grooming to "do what they do best, to raise the international standing of the University and to bring the best education to our students".

To make NTU "student-centric" and "professor-centric", however, two traditional approaches had to be turned upside down. "Students and professors are at the top. Everyone else, Vice Presidents, Deans, Deputy Presidents, President, are at the bottom supporting them," he said.

Turning things round

"The second approach we have to turn on its head is the way we run the University." Prof Su said this entailed turning the administration "from an input-based approach to a results-based and output-based approach".

He added: "There is no need to work out the complete road map and be certain of success before moving. That would make us too conservative. Instead, we must free up our people to become more entrepreneurial. Move in the right direction, but adjust and adapt all along the way."

His call to staff was: be willing to take the plunge, though not blindly, and be "well armed and agile, with an intelligent and adaptable mind, quick to spot opportunities and traps".

On the future of the university community, Prof Su shared this vision – graduates with diverse roles in society and leading Singapore forward, academic staff with international renown, and administrative staff with "the satisfaction of seeing their efforts flower in the new Nanyang University, a university of choice with its own distinctive identity, fired by ideals and passion".

The return of idealism and passion on campus would be timely, he said. "These are qualities we need most in these times of trouble. Just like the early pioneers in the colonial times who founded Nanyang University in the face of adversity, with the support of everyone down to the humblest trishaw rider."

Passing the torch

Mr Koh Boon Hwee, Chairman of the Council, said he was delighted to witness the passing of the torch to Prof Su. He told the gathering in the Nanyang Auditorium: "We have found, in one man, a person with a lifelong interest in learning and in academia, and a person intimately familiar with research.