University Awards 2010
Recognising Excellence in
Education, Research and Service

Date
Friday, 21 May 2010

Venue
University Cultural Centre
The University Awards celebrate excellence. As a community, we embrace and are driven by the pursuit of excellence. Yet amidst the rich and diverse pool of talent in NUS, there are many who have truly distinguished themselves and who stand out.

Today, we recognise and honour some of the best in our community – passionate educators who have inspired students and unleashed their true potential; groundbreaking researchers who have scaled new heights in cutting-edge research and innovation; and a multi-talented individual who has served society with great distinction and impact. Each of our award recipients has scaled impressive peaks and collectively, have helped us to further deepen our culture of excellence in education, research and service. Through their exceptional attainments, values and drive, they have contributed to moving NUS closer to becoming a global knowledge enterprise.

Inspired by our award recipients, we must constantly challenge ourselves to redefine what excellence means to our University, to keep raising the bar. We must do so to keep at the forefront of innovation in global education and research, and to create deep and lasting value for Singapore and for society. And in so doing, to make NUS a leading global university centred in Asia.

TAN Chorh Chuan
NUS President
OUTSTANDING EDUCATOR AWARD
Acknowledges faculty members who have excelled in engaging and inspiring students in their quest for knowledge

OUTSTANDING RESEARCHER AWARD
Recognises researchers whose works have impacted and advanced the frontiers of knowledge, and positioned NUS at the forefront of their areas of expertise

YOUNG RESEARCHER AWARD
Commends researchers whose works show promise in extending the frontiers of knowledge in their respective fields

OUTSTANDING SERVICE AWARD
Honours individuals who have distinguished themselves by their sustained contributions in serving the University and society
UNIVERSITY AWARDS

OUTSTANDING EDUCATOR AWARD
Assoc Prof Phil CHAN Aik Hui
Dr NARAYANAN Ganapathy

OUTSTANDING RESEARCHER AWARD
Prof ONG Chong Kim
Prof PHOON Kok Kwang

YOUNG RESEARCHER AWARD
Prof Simon CHESTERMAN
Assoc Prof Dagomir KASZLIKOWSKI
Dr Paul MACARY

OUTSTANDING SERVICE AWARD
Prof J Y PILLAY
“American scientist Carl Sagan said that science is a way of thinking, much more than it is a body of knowledge.

Perhaps the role of a physics don is to lead the students in a Socratic way to discern what questions are important; to listen to and patiently evaluate the answers that Nature offers.”
CURRENT TEACHING PORTFOLIO
• Deviance and social control
• Crime and delinquency
• Sociology of law and penology
• Methods of social research
• Qualitative research methodology

TEACHING ACHIEVEMENTS
• Served as the department’s Deputy Coordinator and Coordinator of the Honours programme, during which major curriculum reviews were introduced to accommodate an increasing number of sociology majors and several new modules for Honours students were launched
• Conceived and instructed a course in qualitative research methods for the Master of Public Health programme offered by the Yong Loo Lin School of Medicine, with the materials developed becoming a standard resource for health care practitioners
• Contributed expertise and knowledge to the Singapore Police Force by establishing an academic programme offering four different qualifications for junior officers
• Helped create ethical guidelines for student researchers working in the areas of criminology, penology and criminal justice in Singapore that continue to be widely used today
• Teaching materials have been adapted for use by external organisations such as Singapore’s National Council of Social Service Training Institute and the Civil Service College

TEACHING STRENGTHS
• Presents thought-provoking questions and critiques of theories to encourage students to sharpen their critical thinking skills, question conventional wisdom and be accepting of new perspectives
• Promotes the understanding and appreciation of sociology by sharing research findings and fieldwork strategies during classes
• Facilitates learning by mapping out abstract concepts coherently and systematically, simplifying them and making them accessible
• Outstanding ability to teach a wide variety of modules to students from different faculties and backgrounds

PUBLICATION CREDITS
• Published close to 10 articles in high quality international journals such as the Australian and New Zealand Journal of Criminology, Policing and Society: An International Journal of Research and Policy, Journal of Criminal Justice and International Criminal Justice Review
• Published 12 articles in international conference proceedings and compiled volumes
• Reviewer and editorial board member of journals such as the European Journal of Criminology and Asian Journal of Criminology, and reviewer for Asian Journal of Social Sciences

INTERNATIONAL STANDING
• Member, International Advisory Board, European Journal of Criminology
• Member, Editorial Board, Asian Journal of Criminology
• Founding member, Asian Criminological Society
• Invited adjunct professor, Queensland University of Technology
• Undertook several consultancy projects for various ministries and government agencies in Singapore, including the Ministry of Education, Singapore Police Force, Central Narcotics Bureau and the National Environment Agency

AWARDS AND ACCOLADES
• Annual Teaching Excellence Award, NUS (2006/5, 2005/4, 2003/2)
• Faculty Teaching Excellence Award (2008, 2009, 2005)
• Long Service Award, National Council Against Drug Abuse (2009)

TEACHING ASPIRATION
“I am driven by a deep passion for sociology, a firm commitment to my students’ learning, and a conviction that what I do every day makes a difference.”
OUTSTANDING RESEARCHER AWARD

Prof ONG Chong Kim
PhD, MSc (University of Manitoba); BSc (Nanyang University)
Department of Physics

RESEARCH INTERESTS
• Electronics and nanostructures of oxide thin films
• Microwave measurement and materials characterisation
• Superconductivity, magnetism and ferroelectricity
• Electromagnetic materials and photonics

RESEARCH ACHIEVEMENTS
• Played a key role in fabricating the omnidirectional retroreflector – a device capable of reflecting all light rays to their original source once deemed impossible to create – which has opened up a world of practical applications, especially for radar tracking
• Demonstrated that crystalline yttrium-stabilised zirconium oxide is a viable alternative for silicon oxide in metal-oxide semiconductors, a discovery that has since been widely adopted in the semiconductor industry
• Pioneered a many body glue potential, an application widely used in computer simulation
• Invented a patterned ferroelectric thin films for microwave devices that received a US patent
• Developed a prototype dual-spiral filter that is among the most compact planar-circuit filters in miniature microwave devices operating in the frequency range of a few hundred megahertz
• Provided the first full-wave numerical evidence that evanescent waves could be amplified inside a metamaterial slab with finite absorption, contributing to the design of the perfect lens
• Won competitive research funding of over US$3 million from the University and government agencies

RESEARCH STRENGTHS
• Dedication and commitment to develop sophisticated facilities in NUS’ physics laboratories designed in-house based on original research
• Outstanding ability to inspire and motivate young scientists in conducting basic research on functional materials, and exploring their applications in new devices

PUBLICATION CREDITS
• Contributed more than 450 papers with a Hirsch index of 28, signifying high scientific productivity and impact
• Co-authored a book entitled Microwave Electronics: Measurement and Materials Characterization published by John Wiley and Sons, Inc

INTERNATIONAL STANDING
• Member, editorial boards of
  • Superconductor Science and Technology (2000 – 2004)
• Concurrent Professor, Nanjing University, China (2000 – 2003)
• Fellow and Chartered Physicist, Institute of Physics, London, UK (2002)
• Professor, Tohoku University, Japan (2000)
• Vice President, Singapore National Academy of Science (1998 – 2000)
• President, Institute of Physics Singapore (1996 – 2000)
• Fellow, Institute of Physics Singapore (1991)
• Associate Member, International Centre for Theoretical Physics and International School for Advanced Studies, Trieste, Italy (1989)
• Visiting Scientist, Imperial College London (1988)

AWARDS AND ACCOLADES
• Outstanding Scientist Award, Faculty of Science, NUS (2007)

RESEARCH ASPIRATION
“There are many interesting ideas in theoretical physics, but very few can be implemented in practise. It is my goal to continue contributing towards making abstract concepts such as singularity transmutation, once thought impossible, possible in real life.”

“It takes determination to attain professional success, so when things get difficult, you have to grit your teeth and persevere.”
“The knowledge and value a single researcher can contribute to society may be limited, but it is nonetheless exhilarating and worthwhile to be part of this majestic endeavour called research that profoundly alters the fabric of our existence.”

OUTSTANDING RESEARCHER AWARD

Prof PHOON Kok Kwang
PhD (Cornell University); MEng, BEng (First Class Hons) (NUS)
Department of Civil Engineering

RESEARCH INTERESTS
• Risk and reliability of geotechnical systems
• Statistical characterisation of geovariability
• Iterative solutions of very large Biot’s problems
• Rainfall-induced landslides

RESEARCH ACHIEVEMENTS
• Achieved a breakthrough in adapting the Karhunen-Loève expansion for the simulation of non-Gaussian processes, bringing wide-ranging impact on diverse areas, such as geostatistics, signal processing and earthquake engineering
• Conceived a national geotechnical data system containing over 31,000 borehole records across mainland Singapore, providing a spatial map of unprecedented coverage of Singapore’s underground space that the Housing Development Board has endorsed
• Pioneered a systematic compilation and worldwide synthesis of geostatistical data that influences an entire generation of reliability-based design guidelines and codes in geotechnical engineering
• Developed novel pre-conditioners for iterative solutions of very large geotechnical problems such as 3D tunnelling, an innovation adopted for use in a commercial geotechnical software

RESEARCH STRENGTHS
• Equally adept at advancing knowledge frontiers in basic research and generating innovations for industry

PUBLICATION CREDITS
• Published over 60 papers in leading international journals with over 600 citations received from diverse authors and journals across science and engineering
• Edited over 15 proceedings, including three Geotechnical Special Publications of the American Society of Civil Engineers (ASCE), and developed three sets of ASCE Standard Guidelines

INTERNATIONAL STANDING
• Chair, Technical Committee on Engineering Practice of Risk Assessment and Management, International Society for Soil Mechanics and Geotechnical Engineering (since 2009)
• Board of Directors, International Association for Computer Methods and Advances in Geomechanics (IACMAG) (since 2009)
• Chair, Executive Board, Geotechnical Safety Network (2007 – 2009)
• Founding editor-in-chief, Georisk (since 2007)
• Member, Scientific Council, Inter-Polytechnic Doctoral School, Italy (since 2007)
• International Scientific Advisor, International Centre for Geohazards, Norway (since 2004)
• Board of Directors, International Civil Engineering Risk and Reliability Association (since 2003)
• Chair, Technical Committee on Risk Assessment and Management, Geo-Institute, ASCE (2003 – 2009)
• Serves on the editorial boards and advisory committees of numerous leading international journals and conferences, including the top three journals in geotechnical engineering

AWARDS AND ACCOLADES
• Excellent Paper Award, Journal of Geotechnical Engineering (2009)
• Fellow, ASCE (2008)
• Committee of the Year Award, Geo-Institute, ASCE (2008)
• Minister Innovation Award (Distinguished), Ministry of Transportation (2008)
• Excellent Contributions Award, IACMAG (2008)
• Editorial Board Member Exemplary Service Award, Geo-Institute, ASCE (2007)
• C.A. Hogentogler Award, American Society for Testing of Materials (2006)
• ASCE Norman Medal (2005), the oldest and highest honour granted by ASCE, the world’s largest civil engineering professional society
• Highly Commendable Paper, 8th International Conference on Inspection, Appraisal, Repairs and Maintenance of Structures (2003)

RESEARCH ASPIRATION
“To push scientific and engineering boundaries in the creation of bigger, deeper and safer underground spaces and structures.”
“As an Australian educated in Europe moving from an American university to Asia, I consider myself ‘global’ – yet I also know that one idea can be seen in many different ways from diverse perspectives.”

**RESEARCH INTERESTS**
- International law, organisations and global governance
- Intervention, state-building and post-conflict reconstruction
- Regulation and oversight of intelligence services

**RESEARCH ACHIEVEMENTS**
- Published definitive works on the law and practice of the United Nations (UN) and the role of its Secretary-General
- Author of leading books on international law, humanitarian intervention and state-building, widely reviewed by publications including *The New York Review of Books*, *The Economist*, the *American Journal of International Law* and *The Modern Law Review*
- Engaged by the UN to evaluate its Security Council Affairs Division, and called on by the Government of Austria to craft a report on the Council, later circulated as a UN document in all its official languages
- Invited by governments in Europe and North America to review their international policies
- Principal investigator for grants amounting to over US$2 million awarded by governments, national research councils and foundations around the world

**RESEARCH STRENGTHS**
- Uncommon versatility in combining practical experience and theoretical rigour to produce work that is not only academically sound but also policy-relevant

**PUBLICATION CREDITS**
- Author of six books and editor of six more; 49 journal articles, 40 book chapters, 17 book reviews, and dozens of mass media opinion pieces

**INTERNATIONAL STANDING**
- Widely regarded as being among the world’s leading experts on the UN, particularly its Security Council
- Founding editor of the new *Asian Journal of International Law*, co-editor of the *Journal of Intervention and Statebuilding*, and editorial board member of leading international journals such as *Global Governance*, *The Hague Journal on the Rule of Law* and *Security Dialogue*
- External reviewer of grant proposals for government research councils, book manuscripts for university presses and articles for leading international journals
- Regularly invited to speak at major international conferences, such as the American Society of International Law’s Annual Meeting and the 2009 World Bank Headline Seminar

**AWARDS AND ACCOLADES**
- Residency, Rockefeller Foundation Bellagio Study and Conference Centre (2003)
- Dasturzada Dr Jal Pavry Memorial Prize, University of Oxford (2000)
- Rhodes Scholar (1997)
- Supreme Court Prize, Victoria, Australia (1997)

**RESEARCH ASPIRATION**
“To understand and help shape the ways in which international norms can encourage us to do the right thing – or at least make it harder to do the wrong thing, or nothing at all.”
RESEARCH INTERESTS
• Foundational aspects of quantum theory
• Multipartite entanglement and its connection to thermodynamic properties of many-body systems
• Entanglement extraction from complex systems and its manipulations
• Classification of many-body states as a resource for universal quantum computing

RESEARCH ACHIEVEMENTS
• Contributed to deriving a new physical principle known as Information Causality that appeared in top journal *Nature* and promises to lead to a completely new understanding of quantum theory
• Helped advance the understanding of coherent quantum phenomena and how the governing fundamental laws of physics can be harnessed to dramatically improve the acquisition, transmission and processing of information
• Credited for shedding light on fundamental issues in quantum theory, some of which may impact areas such as computation, information technology and the development of new materials
• Demonstrated a promising link between many-body entanglement theory and phase transitions in some physical models such as Heisenberg chain and the Bose-Einstein condensate that may lead to systems capable of performing certain computations more quickly and efficiently than classical computers

RESEARCH STRENGTHS
• Transcends boundaries of disciplines, geography and cultures by collaborating extensively with scientists from diverse disciplines from leading universities and laboratories worldwide

PUBLICATION CREDITS
• Over 50 papers published in international peer-reviewed journals, with most in super tier and top tier journals, and over 600 citations received

INTERNATIONAL STANDING
• Internationally recognised as a leading researcher in the field of quantum information science
• Referee for leading international journals such as *Physical Review Letters*, *Physical Review A* and *Journal of Physics A*

AWARDS AND ACCOLADES
• Faculty Young Scientist Award (2009)
• National Science Award, Agency for Science, Technology and Research, Singapore (2006)
• Scholarship for Young Scientists, Foundation for Polish Science (2000)
• Scholarship for Outstanding PhD students, Foundation for University of Gdańsk (1999)

RESEARCH ASPIRATION
“To contribute to the conception of the world’s first working quantum computer in Singapore.”

“As far as I can remember, I have always had an immense curiosity about Nature and a strong desire to understand its beauty and richness. Till this day, my curiosity continues driving me to explore and discover, and I cannot imagine myself being anything else but a researcher.”
YOUNG RESEARCHER AWARD

Dr Paul MACARY
PhD (University of London); BSc (Hons) (Glasgow University)
Department of Microbiology and Life Sciences Institute’s Immunology Programme

RESEARCH INTERESTS
• Monoclonal antibodies
• Mycobacterium Tuberculosis
• Virus Immunology

RESEARCH ACHIEVEMENTS
• Discovered and characterised a new cellular receptor for the world’s most deadly pathogen M. Tuberculosis
• Developed a novel antibody platform for targeting virus-infected cells that may enhance the treatment of Hepatocellular Carcinoma, a type of liver cancer and Nasopharyngeal Carcinoma, a form of throat cancer
• Led the invention of highly innovative anti-lipid antibodies that may help boost the diagnosis of inflammatory and infectious diseases, and is part of a multi-disciplinary project that drew US$7 million
• Helmed a group generating therapeutic antibodies that identify and combat infections arising from the dengue virus, part of a larger project that secured funding of over US$18 million
• Secured competitive research funding of over US$3.5 million over the last five years

RESEARCH STRENGTHS
• Pursues a multi-disciplinary approach by collaborating extensively with scientists and physicians from research institutions, pharmaceutical companies and academia from across Singapore and around the world

PUBLICATION CREDITS
• Over 37 papers published in international journals, with 20 in premium tier ones such as Science, Nature Medicine, Immunity, Blood, Proceedings of the National Academy of Sciences, and over 900 citations received
• Has a current Hirsch index of 16, signifying high scientific productivity and impact
• Authored three manuscripts included in Faculty of 1000 and two covering articles on the BBC

INTERNATIONAL STANDING
• Internationally recognised as a leading researcher in the field of immunology
• Reviewer for leading international journals, such as Blood, Journal of Immunology and FEBS (Federation of European Biochemical Societies) Letters
• Co-founder and non-executive director of the British Stem Cell Registry Ltd
• Founding member and Meetings Secretary, Singaporean Society for Immunology

AWARDS AND ACCOLADES
• Excellence in Research, Yong Loo Lin School of Medicine, NUS (2007)
• Office of Life Sciences Young Investigator Award, NUS (2005)
• First prize for Best Research Presentation, Cambridge Institute for Medical Research (2003)

RESEARCH ASPIRATION
“to build one of the world’s best antibody-based laboratories for translating antibody candidates into new diagnostics and therapeutics, and to launch a spin-off company from NUS that will lead the way in antibody-based products focussed on Asian disease phenotypes.”

“The principle aim of my laboratory is to develop monoclonal antibody-based technologies to improve the management of infection, cancer and inflammatory diseases in Asian populations.”
“I have been blessed in life with a devoted family, congenial jobs, assignments, and colleagues, as well as steady friends and companions. What more could I ask for.”

OUTSTANDING SERVICE AWARD
Prof J Y Pillay
BSc (First Class Hons), Imperial College of Science & Technology, University of London, 1956
Chairman, Singapore Exchange Limited
Chairman, Council of Presidential Advisers of the Republic of Singapore
Member, Presidential Council for Minority Rights of the Republic of Singapore
Adjunct Professor, Lee Kuan Yew School of Public Policy

LIFETIME ACHIEVEMENTS
• Served with dedication and distinction over three decades in the Singapore civil service
• Contributed to Singapore’s development in diverse and numerous ways through leadership positions in the ministries of finance, defence and national development, as well as several government-linked organisations
• Among the pioneer group of bureaucrats entrusted to grow Singapore’s fledgling economy following the tiny city-state’s independence
• Led the growth and transformation of Singapore Airlines from a small start-up to a global industry leader
• Headed the advisory panel spearheading the merger of the Stock Exchange of Singapore and the Singapore International Monetary Exchange that led to the formation of the Singapore Exchange (SGX), and became its founding chairman

SERVICE TO NATION AND INTERNATIONAL COMMUNITY
• Board Member, The Community Foundation of Singapore (since 2008)
• Pro-Chancellor, Singapore Management University (since 2008)
• Life Trustee, Singapore Indian Development Association (since 1991)
• Chairman, Council on Corporate Disclosure and Governance (2002 – 2007)
• Member, Investment Committee of the United Nations Pension Fund (1997 – 2006)
• Board Member, Monetary Authority of Singapore (1998 – 1999)
• President, Singapore Indian Development Association (1991 – 1996)

• High Commissioner, Singapore High Commission in Britain (1996 – 1999)
• Director, Singapore Symphonia Company Ltd (1979 – 1996)
• Chairman, Singapore Airlines Limited (1972 – 1996)
• Permanent Secretary, Ministry of National Development (1989 – 1995)
• Managing Director, Monetary Authority of Singapore (1985 – 1989)
• Chairman, Petrochemical Corporation of Singapore Pte Ltd (1977 – 1986)
• Permanent Secretary, Revenue Division, Ministry of Finance (1972 – 1985)
• Second Permanent Secretary, Ministry of Defence (1970 – 1972)
• Permanent Secretary, Economic Development Division, Ministry of Finance (1968 – 1970)
• Deputy Secretary, Economic Development Division, Ministry of Finance (1965 – 1968)
• Chief, Projects Division, Economic Development Board (1961 – 1965)

FUTURE ASPIRATION
“In the evening of my life, I have no grand aspirations or ambitions, if ever I did harbour them. I just hope to serve my family, friends, colleagues, and society as best I can.”
The NUS Teaching Academy was established in April 2009 to serve the following aims and purposes:

- To foster a culture of teaching excellence, and underscore the University’s commitment to offering quality education.
- To provide a platform to engage our outstanding teachers, enabling them to share their expertise and develop new pedagogies.
- To confer recognition and enhance visibility of members of the NUS community who have maintained a high level of teaching excellence and helped raise the quality of NUS education.
- To enhance quality assurance and serve as a benchmark for excellence in teaching.

The Teaching Academy will comprise winners of the University’s Outstanding Educator Award as well as elected faculty who have contributed significantly to education in NUS. Known as Fellows, they will spearhead efforts in promoting excellence in teaching and learning at NUS, and provide leadership in educational initiatives such as teaching and learning master classes and mentorship schemes. Other roles these Fellows will play include engaging actively in research in pedagogy, serving in university-level committees, helping to review existing processes, advising university management on education matters, as well as acting as ambassadors and connectors for the University and the Centre for Development of Teaching and Learning (CDTL) within and beyond NUS.

Envisaged to be a “think-tank” in education matters, the NUS Teaching Academy will drive various projects including developing new educational thinking and initiatives aligned with the University’s vision and mission. It will also contribute to key educational processes within the University and help provide a unique and stimulating educational experience for our students.
NEW FELLOWS
Teaching Academy

Assoc Prof Phil CHAN Aik Hui
Department of Physics
Faculty of Science

Prof FAROOQ Shamsuzzaman
Department of Chemical & Biomolecular Engineering
Faculty of Engineering

Dr Johan GEERTSEMA
University Scholars Programme

Prof Matthew GWEE Choon Eng
Department of Pharmacology
Yong Loo Lin School of Medicine

Prof Alex IP Yuen Kwong
Department of Biological Sciences
Faculty of Science

Assoc Prof KANAGASUNTHERAM Rajendran
Department of Anatomy
Yong Loo Lin School of Medicine

Assoc Prof Cecilia LIM
Department of Philosophy
Faculty of Arts & Social Sciences

Dr NARAYANAN Ganapathy
Department of Sociology
Faculty of Arts & Social Sciences

Assoc Prof Daphne PAN
Department of English Language & Literature
Faculty of Arts & Social Sciences