

Assistive Technology (AT) Research Forum: “Best Practices in AT Research”
Monday, 26 September 2005
Suntec Singapore International Convention & Exhibition Centre
Meeting Room 201

8.30 am	Registration
9.00 am	Welcome and Opening Speech by Dr OW Chee Chung Executive Director, The Society for the Physically Disabled (SPD)
9.10 am	Keynote Address: “Pushing the Limits” by Dr William TAN Neuroscientist and Medical Doctor
Session I User’s Perspective and its Impact on Research Session Chair: Ms CHIA Woon Yee Director of Technology, The Society for the Physically Disabled (SPD).	
9.30 am	Testimony by Technology User by Mr YEONG Sam Choi
9.40 am	Plenary: “On the Ontario Rehabilitation Technology Consortium (ORTC) and User Perspectives” by Dr Morris (Mickey) MILNER Managing Director, Health Technology Exchange (htx), Canada
10.10 am	Plenary: “Assessments, User Experiences and Research” by Dr Graeme SMITH Executive Director, Ability Technology, Australia
10.40 am	Morning Break Networking Session I
Session II Involving Practitioners in Research Session Chair: Dr Morris (Mickey) MILNER	
11.00 am	Plenary: “Vocational Rehabilitation, Research and Policy – The Role of the Practitioner” by Dr Graeme SMITH Executive Director, Ability Technology, Australia
11.30 am	Presentation: “Burden of Disease for Head Injury in Singapore” by Dr Ivan NG Head & Principal Investigator of Acute Brain Injury Research Laboratories National Neuroscience Institute (NNI)
11.50 am	Presentation: “Assistive Technology in the Rehabilitation Setting” by Dr Adela TOW Consultant of Rehabilitation Centre, Tan Tock Seng Hospital (TTSH)
12.10 pm	Presentation: “Technology in Physiotherapy” by Ms CHEAM Boon See Head, Department of Physiotherapy, Singapore General Hospital (SGH)
12.30 pm	Lunchtime Networking Session II
Session III Emerging Technology Research in Singapore and Technology Transfer Session Chair: Dr Graeme SMITH	
1.30 pm	Plenary: “Technology Transfer and Commercialization Experiences with the Ontario Rehabilitation Technology Consortium and htx.ca – The Health Technology Exchange” by Dr Morris (Mickey) MILNER Managing Director, Health Technology Exchange (htx), Canada
2.00 pm	Presentation: “Development of Assistive Devices in Singapore and UK” by Dr Etienne BURDET Senior Lecturer, Department of Bioengineering, Imperial College London and National University of Singapore (NUS)
2.20 pm	Presentation: “Applying Techniques from Autonomous Robots to Assistive Technology” by Dr Andrew SHACKLOCK Research Scientist, Singapore Institute of Manufacturing Technology (SIMTech)
2.40 pm	Presentation: “SP CARE and Assistive Technology” by Mr Ronny THAM Manager, Singapore Polytechnic Centre for Applications in Rehabilitation Engineering (SP CARE)
3.00 pm	Presentation: “Intel IT Innovation in Healthcare and Disability” by Mr John BRUNKARD Senior Solution Architect, ISTG-Innovation, Intel Corporation
3.20 pm	Afternoon Break Networking Session III
3.40 pm	Presentation: “Augmentative Communication and Control Through Brain Computer Interface” by Dr GUAN Cuntai Manager, Pervasive Signal Processing Department, Institute for Infocomm Research (I²R)
4.00 pm	Presentation: “Towards an Intelligent Universal Society” by Dr ANG Wei Tech Assistant Professor, Nanyang Technological University (NTU)
Session IV Focus Group Discussion on Best Practices in AT Research Session Chair: Dr LOW Kin Huat Associate Professor, School of Mechanical & Aerospace Engineering, Nanyang Technological University (NTU)	
4.20 pm	Focus Group Discussion
5.00 pm	Presentation of Discussion Outcome
5.25 pm	Concluding Remarks by Ms CHIA Woon Yee
5.30 pm	End of Session Networking Session IV



Society for the
Physically Disabled

Assistive Technology (AT) Research Forum: “Best Practices in AT Research”

Global Entrepolis @ Singapore, 26 September 2005
Organised by The Society for the Physically Disabled



The Best Practices in AT Research Forum provides opportunities for exchanging views on key issues related to Assistive Technology (AT). Topics that will be discussed include Rehabilitation Engineering (RE) and AT, Practice/Policy, Technology Transfer, Mobility, Assistive Robotics/Mechatronics, Augmentative and Alternative Communication, Environmental Control and Computer Access.

The Forum aims to promote R&D, education and provision of technology that will improve the potential of disabled persons. It also aims to promote local RE and AT related industries and showcase Singapore as a RE and AT hub by creating a platform for interaction and developing principles of best practices in AT research.

Programme Overview

The programme provides opportunities for presentations and discussions, and time will be set aside for networking and personal meetings. Other features include: Plenary sessions and focus group discussions, amongst others. Individuals are encouraged to showcase their work, exchange ideas and make contacts over tea breaks and luncheons.

Who Can Take Part?

Those who would find the Forum useful are:

- 1) Clients/Users – People with physical limitations who require technologies for their daily living, as well as their caregivers
- 2) Practitioners/Therapists - Professionals working with people with physical disabilities, including teachers, therapists, medical professionals etc.
- 3) Researchers/Scientists – Professionals working on science and technology R&D related to AT and RE for people with physical disabilities
- 4) Manufacturers/Vendors – Companies developing and distributing AT related products
- 5) Policy makers – Civil servants and government officials who have interest in developing and promoting AT among disabled people

Venue: Suntec Singapore International Convention & Exhibition Centre, Meeting Room 201,
1 Raffles Boulevard, Suntec City, Singapore 039593
Date: 26 September 2005

Participation Fee

- S\$300 (payments by 16 September 2005)
- S\$400 (payments after 16 September 2005)
- S\$30 for VWO staff (Singaporeans or PRs with VCF*)
- S\$90 for VWO staff (non-Singaporeans with VCF*)
- S\$50 for Students (lunch not included)

* Detailed eligibility criteria for the VWO Capability Fund is available at http://www.ncss.org.sg/ncss/social_services/vcf.html

Registration Information

Registration can be done online at www.spd.org.sg/ATRF or by mail. Payments must be received before 16 September 2005, and can be made by cheque/cash, bank transfer and credit card. Notification of payment will be via email.

Only cancellations made before 5 September 2005 are refundable. An administrative fee of \$30 or 50% of the participation fee, which- ever is higher, will be charged.

Confirmation

Participants who have registered and paid their participation fee will receive:

- A confirmation letter for use in visa applications, requests for funding or leave of absence
- A GES badge for entry to all 3 days of GES Business Networking Activities
- Lunch, tea break and refreshments
- An optional tour of SPD Ability Centre

Please check regularly for updates online regarding speakers and logistic issues between June and September 2005.

For more information, please contact Ms Vera YANG at:

- Telephone: (65) 6236-6417
- Fax: (65) 6323-7008
- Email: vera_yang@spd.org.sg



Speakers' Profiles

ANG Wei Tech

Dr Ang Wei Tech is currently an Assistant Professor with the Mechatronics and Design Division, School of Mechanical and Aerospace Engineering, Nanyang Technological University (NTU). He received his B.Eng. and M.Eng. degrees in Mechanical Engineering from NTU in 1997 and 1999 respectively, and his Ph.D. degree in Robotics from the Robotics Institute, Carnegie Mellon University (CMU), USA in 2004. Prior to joining NTU, he was a post-doctoral fellow with the Medical Robotics Research Center in CMU. His primary research focus is in robotics technology, with special interests in medical related applications and human performance enhancement technology.

John BRUNKARD

Mr John Brunkard is a Senior Solution Architect in Intel's Information Technology Innovation Group focusing on the areas of Assisted Technology & Assisted Living for the Healthcare Industry. Mr Brunkard has a special interest in the application of technology to assist people with physical disabilities, to enable them to perform activities of daily living. Mr Brunkard is also researching the application of RFID and Sensor Network technology in the Healthcare Industry. Specialising in IT in the Asia region for 16 years, he has a B.Sc. (Engineering) and M.A. from University College Dublin and a Masters in Science in Management of Technology from the National University of Singapore (NUS).

Etienne BURDET

Dr Etienne Burdet is currently a Senior Lecturer at Imperial College London, and was faculty at the National University of Singapore (NUS) from 1999 to 2004. He obtained separate Master's Degrees in Mathematics (1990) and Physics (1991), and a Ph.D. in Robotics (1996), from ETH-Zurich. Before joining NUS, he carried out projects in neuroscience and human-machine interaction in Canada, Japan and USA. Currently, he does research in Robotics and Bioengineering. He is interested in developing novel robotic technology for bioengineering such as rehabilitation technology and assistive devices, micromanipulation in life science and MRI compatible robotics. He has developed techniques to infer human motor control, and is using the acquired knowledge to design assistive devices and virtual reality training systems.

CHEAM Boon See

Ms Cheam Boon See is the Head of the Physiotherapy Department at Singapore General Hospital (SGH). She has a Master's Degree in Manipulative Physiotherapy from South Australia, and has been a practicing physiotherapist for more than 10 years. Specialising in musculoskeletal physiotherapy, she participates actively in research with a view that there will always be new and better methodologies in providing physical rehabilitation.

GUAN Cuntai

Dr Guan Cuntai is Lead Scientist and Manager of Pervasive Signal Processing Department at Media Division of Institute for Infocomm Research (I²R). He is also the Head of Neural Signal

Processing Lab. He obtained his Ph.D. degree in Electrical and Electronic Engineering in 1993. With many years of experience in various academic, research and industrial organizations, his positions included associate professor, visiting scientist, research manager and R&D director. His current research focuses on investigation and development of an effective framework and statistical learning algorithms for the analysis and classification of brain signals, at the theory, algorithm and application levels. He is interested in machine learning, pattern classification and signal processing and is a Senior Member of IEEE and reviewer of several international conferences and journals.

Morris (Mickey) MILNER

Dr Morris (Mickey) Milner, received his B.Sc.(Eng) and Ph.D. degrees, respectively in 1957 and 1968, in the Department of Electrical Engineering, University of the Witwatersrand in Johannesburg, South Africa. He subsequently served there as a faculty member for over a decade, and initiated a program of biomedical engineering research. Dr Morris subsequently went on and held various appointments internationally, including serving at the National Research Council, Ottawa; University of Cape Town and Groote Schuur Hospital; Emory University and McMaster University, Hamilton, Ontario, before joining the Ontario Crippled Children's Centre (Now Bloorview MacMillan Children's Centre (BMCC)) in 1978. As Director of Rehabilitation Engineering, he held academic appointments at the University of Toronto, and as Chairman, Rehabilitation Medicine. He is now Professor Emeritus of University of Toronto. As Vice-President, Research at BMCC, his responsibilities included the Rehabilitation Engineering and Research Departments and directing Variety Ability Systems Inc., a non-profit manufacturer/distributor of assistive technologies. He is Founding Director of the Ontario Rehabilitation Technology Consortium (ORTC) which links Ontario rehabilitation facilities, academic centres, consumers, and manufacturers to develop and commercialize assistive technologies. Over the past 12 years 33 ORTC assistive devices have been marketed. He currently serves as the Managing Director, htx – The Health Technology Exchange (www.htx.ca).

Ivan NG

Dr Ivan Ng graduated from the National University of Singapore (NUS), Faculty of Medicine in 1990. He started surgical training in 1993 and obtained his Fellowship in Surgery from the Royal College of Surgeons, Edinburgh in 1995. He started neurosurgical training at the then Tan Tock Seng Hospital (TTSH) Department of Neurosurgery before going to Cambridge University from 1998 where he became Chief Resident from 1999 to 2000. In April 2000, he was awarded the Norman Dott Medal for being the most outstanding candidate in neurosurgery in the UK for his intercollegiate examinations. He returned to Singapore and was appointed as Director of the Neurocritical Care, National Neuroscience Institute (NNI), Singapore. He is also Director of the head injury program and neurovascular surgery pro-



grammes at the NNI and is currently the Head of Department of Neurosurgery, the largest neurosurgical unit in Singapore. Dr Ng has won numerous awards, including the Young Investigator's Award 1998 (Singapore-Malaysia Congress), ASEAN Young Neurosurgeon of the Year in 1999 (Bangkok) and was awarded the first prestigious Douglas Miller Traveling Fellowship sponsored by the American Association of Neurological Surgeons in 2001.

Andrew SHACKLOCK

Dr Andrew Shacklock is the Robotics Team Leader and a Research Scientist in the Mechatronics Group at the Singapore Institute of Manufacturing Technology (SIMTech). He is a specialist in visual guidance for machines and robotic systems and has a particular interest in collaborative and assistive robots. He graduated in Chemical Engineering in 1985 and gained industrial experience in automation and mechatronics before taking up a research position and study for a Ph.D. in robotics in 1990. In this time he worked on many skilled automation systems, including some early work on interfaces for semi-autonomous control. After completing his Ph.D., he became a Senior Lecturer and Course Director of Mechatronics at South Bank University in London. He moved to SIMTech in 2000 and has been developing visual-haptic based augmented reality systems for manufacturing tasks as well as guidance systems for mobile robots.

Graeme SMITH

Dr Graeme Smith came in first, in NSW, in Economics in the HSC (1969), topped Sydney University in Industrial Relations (1973) and obtained First Class Honours in a Master's Degree that focused on work ideologies and the work ethic (1990). He completed his doctoral studies in the area of disabilities, technology and employment (2002). He is the founder and Executive Director of Ability Technology, a not-for-profit organisation providing nationally recognised professional services in the areas of disability research, product testing, computer assessments and training. It has a multi-disciplinary team that includes therapy and technical staff, with a policy to include people with disabilities among its staff. He is the winner of the Rotary Club of Sydney Disability Award for Excellence in 2000. He currently provides advice throughout Australia and overseas to individu-

als, insurance companies, solicitors, rehabilitation organisations, disability organisations and schools. He is also frequently relied on as an expert witness in court cases involving technology and disability.

William TAN

Dr William Tan personifies both passion and compassion. Born in 1957, he contracted polio at the age of two and was paralysed from the waist down. Notwithstanding his disability, he has shown outstanding strength in overcoming adversities. From a kindergarten drop-out, he topped Selegie Primary and went to Raffles Institution on a Ministry of Education Scholarship for his secondary and pre-university education. The NUS Alumnus who majored in Biology and Psychology joined the Civil Service after graduation in 1980. In pursuit of his dream to become a scientist and medical doctor, he ventured abroad for postgraduate studies in 1989. Holder of a First Class Honours in Physiology, this Harvard University's Fulbright Scholar and Oxford University's Raffles Scholar has also trained at the world-renowned Mayo Clinic in USA. Dr Tan is also an accomplished sportsman. A Singapore wheelchair marathon champion, he has competed in many international games including the 1988 Seoul Paralympics, the Commonwealth Games as well as the Asia-Pacific Games.

Ronny THAM

Mr Ronny Tham graduated with a Bachelor in Mechanical Engineering in 1982 and later completed his M.Sc. in Engineering from NUS. Since 1996, he has been involved in designing and customising assistive technology devices for the disabled as well as designing equipment to test for the safety and reliability of assistive technology devices. In 2001, he completed his training in assistive technology at RESNA, USA and worked in Datex Ohmeda USA in the area of biomedical engineering. He returned to Singapore Polytechnic and started the biomedical option as the course co-ordinator. He has since been seconded to SP CARE as its manager. The centre was one of the recipients for the Samsung DigitAll Hope Award programme in 2004 for Asia.

Adela TOW

Dr Adela Tow is a Consultant Rehabilitation Physician with the Department of Rehabilitation Medicine, Tan Tock Seng Hospital (TTSH). After obtaining her MBBS and MRCP (UK), she further trained in rehabilitation medicine, and was attached as a clinical fellow in various rehabilitation centres in the Texas Medical Centre in Houston from 1996-97. The department has an interdisciplinary team of professionals who specialise in rehabilitating patients with spinal cord injury, stroke, head injury and musculoskeletal injuries. Dr Tow's special interests are in treating patients with spinal cord injury, myofascial pain and medical acupuncture. She is also the vice-chairperson of Tetraplegia Workgroup, a volunteer group under the umbrella of Friends of TTSH, which aims are to assist tetraplegics, who are individuals with paralysis in all four limbs, in linking up with existing services, and in reintegrating into society.