

PROGRAMME OVERVIEW

Monday, 2 July 2007

07:30 – 09:00 Registration

09:00 - 09:45 Opening Ceremony

09:45 - 10:30 Plenary Lecture 1 - **Claude COHEN-TANNOUJJI**
Manipulating Atoms with Light
Chair: Shih Choon Fong

10:30 - 11:00 Tea Break

11:00 - 11:45 Plenary Lecture 2 – **Subra SURESH**
Nanotechnology and Materials Science at the Intersections of Engineering, Biology and Medicine
Chair: John WONG

11:45 - 13:30 Keynote Lecture

13:30 - 14:30 Lunch

14:30 - 16:30 Invited Presentations

16:30 - 17:00 Tea Break

17:00 - 18:00 Transport to UCC

18:00 - 20:30 Nobel Laureate Public Lectures @ UCC

PROGRAMME OVERVIEW

Tuesday, 3 July 2007

07:30 - 08:30 Registration

08:30 – 09:15 Plenary Lecture 3 – **K. Barry SHARPLESS**
Orthogonal Reactivity
Chair: LIM Khiang Wee

09:15 – 10:00 Plenary Lecture 4 – **Richard H. FRIEND**
Organic Electronics: Interfaces, Heterojunctions and Semiconductor Device Engineering
Chair: Freddy BOEY

10:00 - 10:30 Tea Break

10:30 - 12:45 Keynote Lecture

12:45 - 14:00 Lunch

13:00 – 13:45 Theme Lecture 1 – **P. VADGAMA**
Designer Surfaces for the Biological Interface – How Far can we Enhance Functional Performance
Chair: John BAGLIN

14:00 - 14:45 Keynote Lecture

14:45 - 16:00 Invited Presentations

16:00 - 16:30 Tea Break

16:30 - 18:30 Invited Presentations

PROGRAMME OVERVIEW

Wednesday, 4 July 2007

07:30 - 08:30 Registration

08:30 – 09:15 Plenary Lecture 5 - **H. Robert HORVITZ**
Cell Suicide: Programmed Cell Death in Development and Disease
Chair: TAN Chorh Chuan

09:15 – 10:00 Plenary Lecture 6 – **David LANE**
Drug Discovery in the p53 Pathway
Chair: Yoshiaki ITO

10:00 - 10:30 Tea Break

10:30 - 12:45 Keynote Lecture

12:45 - 14:00 Lunch

13:00 – 13:45 Theme Lecture 2 – **Martin JANSEN**
Synthesis Planning in Solid State and Materials Chemistry
Chair: M. YOSHIMURA

14:00 - 14:45 Keynote Lecture

14:45 - 16:00 Invited Presentations

16:00 - 16:30 Tea Break

16:30 - 18:30 Invited Presentations

END OF CONFERENCE

ACTIVITY LOCATOR

ACTIVITY	DAY / DATE	TIME	LOCATION
Registration Counter	Sun, 1 Jul 07 Mon – Wed, 2 – 4 Jul 07	14:00 – 19:30 hrs 07:30 – 14:30 hrs	Level 1
Speakers' Ready Room	Mon – Wed, 2 – 4 Jul 07	08:00 – 17:00 hrs	Level 3, Gallery
Internet Access	Mon – Wed, 2 – 4 Jul 07	08:00 – 18:00 hrs	Level 3, Gallery
Coffee Breaks (Morning)	Mon, 2 Jul 07 Tue – Wed, 3 – 4 Jul 07	10:30 – 11:00 hrs 10:00 – 10:30 hrs	Level 3 Gallery
Lunches	Mon, 2 Jul 07 Tue – Wed, 3 – 4 Jul 07	13:00 – 14:30 hrs 12:30 – 14:00 hrs	Level 4 Exhibition Hall 401
Coffee Breaks (Afternoon)	Mon, 2 Jul 07 Tue – Wed, 3 – 4 Jul 07	16:30 – 17:00 hrs 16:00 – 16:30 hrs	Level 3 Gallery
Plenary Sessions	Mon, 2 Jul 07 Tue – Wed, 3 – 4 Jul 07	09:45 – 11:45 hrs 08:30 – 10:00 hrs	Level 2, Ballroom 1 & 2
Theme Lectures	Tue – Wed, 3 – 4 Jul 07	13:00 – 13:45 hrs	Level 2, Ballroom 1
Public Lectures	Mon, 2 Jul 07	18:00 – 20:00 hrs	UCC, NUS
Symposium Presentations	Mon, 2 Jul 07 Tue – Wed, 3 – 4 Jul 07	11:45 – 16:00 hrs 10:30 – 18:30 hrs	Level 3 Meeting Rooms

SYMPOSIUM MEETING ROOM

SYMPOSIUM	ROOM
Symposium 1 – EMERGING CONCEPTS IN CANCER DIAGNOSTICS AND NANOMEDICINE	303
Symposium 2 – BIOIMAGING OF CANCER	307
Symposium 3 – COMPUTATIONAL SYSTEMS BIOLOGY AND MOLECULAR EPIDEMIOLOGY OF CANCER	304
Symposium 4 – INNOVATIVE THERAPIES IN CANCER	308
Symposium 5 – CANCER CELL INTERACTION, MOTILITY AND METASTASIS	313
Symposium 6 – THE WAYS THAT CELLS MOVE	321
Keynote Sessions for All Symposia (Except Symposium 2)	303/304

SYMPOSIUM (1) EMERGING CONCEPTS IN CANCER DIAGNOSTICS AND NANOMEDICINE

TECHNICAL PROGRAMME

Monday, 2nd July 2007 (Room 303)

- 09:00 – 09:45 hrs Opening Ceremony
- 09:45 – 10:30 hrs Plenary 1 — Claude Cohen-Tannoudji
Manipulating Atoms with Light
Chair: SHIH Choon Fong
- 10:30 – 11:00 hrs Morning Break
- 11:00 – 11:45 hrs Plenary 2 — Subra Suresh
Nanotechnology and Materials Science at the Intersections of Engineering, Biology and Medicine
Chair: John WONG
- 12:00 – 12:45 hrs Keynote Presentation
Systems Biology and Genomic Medicine
Edison Liu, Genome Institute of Singapore, Singapore
- 12:30 – 13:15 hrs Keynote Presentation
Advanced Technologies & their Impact on the Future of Cancer
Richard Satava, University of Washington, USA
- 13:00 – 14:30 hrs Lunch
- 14:30 – 14:55 hrs Invited Presentation
Peroral Paclitaxel Delivery: Implication of Nanotechnology for Effective Treatment of Solid Tumors
M.N.V. Ravi Kumar, National Institute of Pharmaceutical Education and Research (NIPER), India
- 14:55 – 15:20 hrs Invited Presentation
Size- and Composition-Tunable Quantum Dots for Biological Detection and Imaging
Han Mingyong, Institute of Materials Research and Engineering and National University of Singapore, Singapore
- 15:20 – 15:45 hrs Invited Presentation
Use of NIR-to-visible Upconversion Fluorescent Nanoparticles for Imaging of Cancer
Zhang Yong, National University of Singapore, Singapore
- 15:45 – 16:10 hrs Invited Presentation
Translating Tumor Targeting Nanomedicines: Enhancing Current Cancer Therapies and Diagnosis
Esther H. Chang, Georgetown University Medical Center, Washington DC, U.S.A
- 16:10 – 16:25 hrs Oral Presentation
Multi-walled Carbon Nanotube-Titanium Electrodes for Electrochemical Release of Anti-Bone Cancer Drugs
Sirinrath Srivisoot, Brown University, USA
- 16:25 – 16:40 hrs Oral Presentation
Live Cell Imaging with Semiconductor and Magnetic Quantum Dots
Tamil Selvan Subramaniam, Institute of Bioengineering and Nanotechnology, Singapore
- 16:30 – 17:00 hrs Evening Break
- 18:00 – 22:00 hrs Nobel Laureate Public Lectures @ UCC, NUS
K. Barry SHARPLESS & Claude COHEN-TANNOUDJI
Chair: TAN Eng Chye

Tuesday, 3rd July 2007 (Room 303)

- 08:30 – 09:15 hrs Plenary 3 — K. Barry SHARPLESS
Orthogonal Reactivity
Chair: LIM Khiang Wee
- 09:15 – 10:00 hrs Plenary 4 — Richard H. FRIEND
Organic Electronics: Interfaces, Heterojunctions and Semiconductor Device Engineering
Chair: Freddy BOEY
- 10:00 – 10:30 hrs Morning Break
- 10:30 – 11:15 hrs Keynote Presentation
Genetic Predisposition to Breast Cancer
B.A.J. Ponder, Cambridge Research Institute, UK
- 11:15 – 12:00 hrs Keynote Presentation
Recovery of Tumor-Infiltrating Lymphocyte Effector Functions
P. van der Bruggen, Ludwig Institute for Cancer Research and Institute of Cellular Pathology, Belgium
- 12:00 – 12:45 hrs Keynote Presentation
The Workings of NCI Nanotechnology Alliance for Cancer - an Opportunity for a New Class of Diagnostic and Therapeutic Solutions Based on Nanotechnology
P. Grodzinski, National Cancer Institute, USA
- 12:30 – 14:00 hrs Lunch
- 13:00 – 13:45 hrs Theme Lecture 1 — P. VADGAMA
Designer Surfaces for the Biological Interface — How Far can we Enhance Functional Performance?
Chair: John BAGLIN
- 14:00 – 14:45 hrs Keynote Presentation
Molecular Engineering of Cellular Environments: Cell Adhesion to Nano-Digital Surfaces
Joachim P. Spatz, Stuttgart & University of Heidelberg, Germany
- 15:00 – 15:25 hrs Invited Presentation
Novel Alternating Copolymer Structures for Targeted *In Vivo* Imaging and Therapy in Cancer
C.K. Colton, Massachusetts Institute of Technology, USA
- 15:25 – 15:50 hrs Invited Presentation
Modeling and Analysis of Mechanisms Linking Inflammation and Cancer
Cheng Dong, The Pennsylvania State University, USA
- 15:50 – 16:05 hrs Oral Presentation
Development of Lipid Nanoparticles for Stabilization of Chemically Sensitive Nitrogen Mustard Derivative, Chlorambucil
Puneet Sharma, University of Auckland, New Zealand
- 16:05 – 16:30 hrs Evening Break
- 16:30 – 16:55 hrs Invited Presentation
Filovirus Mimics for Cancer Nano-Therapeutics: Particle Shape Effects in Flow and Delivery
D.E. Discher, University of Pennsylvania, USA
- 16:55 – 17:20 hrs Invited Presentation
Nanoparticles for the Treatment of Bone Cancer
T.J. Webster, Brown University, USA
- 17:20 – 17:45 hrs Invited Presentation
Paclitaxel-Loaded γ -PGA-PLA Nanoparticles as a targeted Drug Delivery System for the Treatment of Liver Cancers
H.W. Sung, National Tsing Hua University, Taiwan
- 17:45 – 18:10 hrs Invited Presentation
Cancer Nanotechnology: Nanoparticles of Biodegradable Polymers for Sustainable Chemotherapy
Si-Shen Feng, National University of Singapore, Singapore

18:10 – 18:35 hrs Invited Presentation
A New Gene Therapy Vector based on Baculovirus for Malignant Glioma Therapy
Shu Wang, National University of Singapore, Singapore

18:35 – 18:50 hrs Oral Presentation
Nanoparticles in Cancer Therapy
Thomas Prevenslik, Hong Kong

Wednesday, 4th July 2007 (Room 303)

08:30 – 09:15 hrs Plenary 5 — H. Robert HORVITZ
Cell Suicide: Programmed Cell Death in Development and Disease
Chair: TAN Chorh Chuan

09:15 – 10:00 hrs Plenary 6 — David LANE
Drug Discovery in the p53 Pathway
Chair: Yoshiaki ITO

10:00 – 10:30 hrs Morning Break

10:30 – 11:15 hrs Keynote Presentation
New Materials for Drug Delivery- Lipids & Linkers & Bow-ties
F. Szoka, University of California, U.S.A

11:15 – 12:00 hrs Keynote Presentation
Title To Be Advised
Roger Kamm, Massachusetts Institute of Technology, USA

12:00 – 12:45 hrs Keynote Presentation
Genomic Strategies for Personalized Cancer Therapy
Joseph Nevins, Duke University Medical, USA

12:30 – 14:00 hrs Lunch

13:00 – 13:45 hrs Theme Lecture 2 — M. JANSEN
Synthesis Planning in Solid State and Materials Chemistry
Chair: M. YOSHIMURA

14:00 – 14:45 hrs Keynote Presentation
Local force and geometry sensing regulate cell functions
Michael P. Sheetz, Columbia University, U.S.A

15:00 – 15:25 hrs Invited Presentation
Gene Expression Profiling and Molecular Diagnosis of B-Cell Lymphomas: Towards Clinical Application
Andreas Rosenwald, University of Würzburg, Germany

15:25 – 15:50 hrs Invited Presentation
Prognostic and Mechanistic Discoveries in Breast Cancer Through Integrative Genomic Analysis
Lance D. Miller, Genome Institute of Singapore, Singapore

15:50 – 16:05 hrs Oral Presentation
Atomic and Magnetic Force Microscopy in Quantitative Immunohistochemical Imaging of Cancer
John Mitchels, University of the West of England, United Kingdom

16:05 – 16:30 hrs Evening Break

16:30 – 16:55 hrs Invited Presentation
Herceptin and SUTENT: Prototypes of Targeted Cancer Therapies
Axel Ullrich, Centre of Molecular Medicine, Singapore

16:55 – 17:20 hrs Invited Presentation
Gene Expression Profiling in Childhood Leukaemias
Allen Yeoh, National University of Singapore, Singapore

17.20 – 17:45 hrs Invited Presentation
Genomic Predictors of Clinical Outcome in Breast Cancer
Patrick Tan, National University of Singapore, Singapore

17.45 – 18:10 hrs Invited Presentation
Basic Principles and Infrastructure for Biomarker Validation and Technology Transfer from Research Laboratories into Molecular Diagnostics
M Salto-Tellez, National University of Singapore, Singapore

18.10 – 18:25 hrs Oral Presentation
Applications of Magnetic Nanoparticles in Quantitative Histopathology
John Mitchels, University of the West of England, United Kingdom

END OF SYMPOSIUM

SYMPOSIUM (2) BIOIMAGING OF CANCER

TECHNICAL PROGRAMME

Monday, 2nd July 2007 (Room 307)

- 09:00 – 09:45 hrs Opening Ceremony
- 09:45 – 10:30 hrs Plenary 1 — Claude COHEN-TANNOUDJI
Manipulating Atoms with Light
Chair: SHIH Choon Fong
- 10:30 – 11:00 hrs Morning Break
- 11:00 – 11:45 hrs Plenary 2 — Subra SURESH
Nanotechnology and Materials Science at the Intersections of Engineering, Biology and Medicine
Chair: John WONG
- 11.45 – 12:15 hrs Invited Presentation
Getting Inside Cancer: A Chemical Perspective on Molecular Imaging
Martin J. Lear, National University of Singapore, Singapore
- 12.15 – 12:45 hrs Invited Presentation
Genomics and Imaging of Breast Cancer Response to Chemotherapy
Wang Shih-chang, National University of Singapore, Singapore
- 12.45 – 13:15 hrs Keynote Presentation
Genomic Sciences and Molecular Markers for Imaging
Edison Liu, Genome Institute of Singapore, Singapore
- 13:00 – 14:30 hrs Lunch
- 14.30 – 15:00 hrs Invited Presentation
Nanoparticle-enhanced photoacoustic tomography for preclinical imaging of tumors
Jeffery J.L. Carson, Lawson Health Research Institute and Department of Medical Biophysics, University of Western Ontario, Canada
- 15.00 – 15:25 hrs Invited Presentation
In-vivo Cellular and Molecular Imaging for Cancer
Malini Olivo, National Cancer Center, Singapore
- 15.50 – 16:15 hrs Invited Presentation
Elucidating the Mitochondrial Mechanism of the “Smart Bomb” for Prostate Cancer.
Jeffery Armstrong, National University of Singapore, Singapore
- 16.15 – 16:30 hrs Oral Presentation
Effect of Susceptibility Matching on Echo Planar Imaging of Murine Tumor
Jeeva Munasinghe, National Institute of Neurological Disorder and Stroke, NIH, USA
- 16.15 – 16:30 hrs Oral Presentation
Determination of Absolute Tumor Blood Volume and Multi-Functional Imaging using MRI and EPRI
Jeeva Munasinghe, National Institute of Neurological Disorder and Stroke, NIH, USA
- 16:30 – 17:00 hrs Evening Break
- 18:00 – 22:00 hrs Nobel Laureate Public Lectures @ UCC, NUS
K. Barry SHARPLESS & Claude COHEN-TANNOUDJI
Chair: TAN Eng Chye

Tuesday, 3rd July 2007 (Room 307)

- 08:30 – 09:15 hrs Plenary 3 — K. Barry SHARPLESS
Orthogonal Reactivity
Chair: LIM Khiang Wee
- 09:15 – 10:00 hrs Plenary 4 — Richard H. FRIEND
Organic Electronics: Interfaces, Heterojunctions and Semiconductor Device Engineering
Chair: Freddy BOEY
- 10:00 – 10:30 hrs Morning Break
- 10.30 – 11:15 hrs Keynote Presentation
Magnetic Resonance of Tumor Physiology
M.K. Cherukuri, National Institutes of Health, USA
- 11.15 – 11:45 hrs Invited Presentation
Oncological Imaging of Cells and Molecules Using Magnetic Nanoparticles and MRI
PJ Foster Roberts Research Institute, London, Ontario, Canada
- 11.45 – 12:30 hrs Invited Presentation
Molecular Imaging and Orthotopic Tumour models in Experimental Oncology
Pierce Chow, Singapore General Hospital, Singapore
- 12:30 – 14:00 hrs Lunch
- 13:00 – 13:45 hrs Theme Lecture 1 — P. VADGAMA
Designer Surfaces for the Biological Interface — How Far can we Enhance Functional Performance?
Chair: John BAGLIN
- 13.30 – 14:00 hrs Keynote Presentation
Development of Bioimaging Infrastructure and Research in Singapore
Sir George Radda, Singapore Bioimaging Consortium, Singapore
- 14.00 – 14:30 hrs Invited Presentation
Arterial Spin Labeling for the Quantitative Measurement of Perfusion in Brain Tumors
Xavier Golay, National Neuroscience Institute, Singapore
- 14.30 – 15:00 hrs Invited Presentation
Optical spectroscopy and imaging for early cancer diagnosis and detection.
Zhiwei Hwang, National University of Singapore, Singapore
- 14.30 – 15:00 hrs Invited Presentation
Endoscopic Diagnosis and Optical Imaging for Mucosal Malignancies
Khek Yu Ho , National University of Singapore, Singapore
- 15.00 – 15:30 hrs Invited Presentation
Diffuse Optical Tomography for Cancer Imaging
Ng Chen, National University of Singapore, Singapore
- 15.30 – 16:00 hrs Invited Presentation
An Overview of Recent Developments in Ultra-Wideband Microwave Imaging for Breast Cancer Detection
C.B. Soh, National University of Singapore, Singapore
- 16:00 – 16:30 hrs Evening Break
- 16.30 – 16:50 hrs Invited Presentation
MR Assessment of Angiogenesis in Cancer
Thng Hua Choon, National Cancer Centre, Singapore
- 16.50 – 17:10 hrs Invited Presentation
MR Spectroscopy in Brain Tumors
Lim Tchoyoson, National University of Singapore, Singapore
- 17.10 – 17:30 hrs Invited Presentation
Clinical Applications of Hybrid Molecular Imaging
Anthony Goh, Singapore General Hospital, Singapore

SYMPOSIUM (3) COMPUTATIONAL SYSTEMS BIOLOGY AND MOLECULAR EPIDEMIOLOGY OF CANCER

TECHNICAL PROGRAMME

Monday, 2nd July 2007 (Room 304)

- 09:00 – 09:45 hrs Opening Ceremony
- 09:45 – 10:30 hrs Plenary 1 — Claude COHEN-TANNOUJJI
Manipulating Atoms with Light
Chair: SHIH Choon Fong
- 10:30 – 11:00 hrs Morning Break
- 11:00 – 11:45 hrs Plenary 2 — Subra SURESH
*Nanotechnology and Materials Science at the Intersections of Engineering, Biology and
Medicine*
Chair: John WONG
- 12:00 – 12:45 hrs Keynote Presentation
Systems Biology and Genomic Medicine
Edison Liu, Genome Institute of Singapore, Singapore
- 12:30 – 13:15 hrs Keynote Presentation
Advanced Technologies & their Impact on the Future of Cancer
Richard Satava, University of Washington, USA
- 13:00 – 14:30 hrs Lunch
- 14.30 – 15:00 hrs Invited Presentation
Design and Analytical Issues for a Genomewide Association Study in a Multi-Ethnic Population
Yik Ying Teo, University of Oxford, UK
- 15.00 – 15:30 hrs Invited Presentation
**Functional variant of manganese superoxide dismutase (SOD2 V16A) polymorphism is associated with
prostate cancer risk in the PLCO study**
Daehee Kang, University of Oxford, UK
- 15.30 – 16:00 hrs Invited Presentation
Molecular Epidemiology of Cancer: Inflammation and Lung Cancer
Adeline Seow, National University of Singapore, Singapore
- 16.00 – 16:30 hrs Invited Presentation
Angiotensin II-mediated pathway: a potential therapeutic target for breast cancer treatment and prevention
Koh Puay Woon, National University of Singapore, Singapore
- 16:30 – 17:00 hrs Evening Break
- 18:00 – 22:00 hrs Nobel Laureate Public Lectures @ UCC, NUS
K. Barry SHARPLESS & Claude COHEN-TANNOUJJI
Chair: TAN Eng Chye

Tuesday, 3rd July 2007 (Room 304)

- 08:30 – 09:15 hrs Plenary 3 — K. Barry SHARPLESS
Orthogonal Reactivity
Chair: LIM Khiang Wee
- 09:15 – 10:00 hrs Plenary 4 — Richard H. FRIEND
Organic Electronics: Interfaces, Heterojunctions and Semiconductor Device Engineering
Chair: Freddy BOEY
- 10:00 – 10:30 hrs Morning Break

10:30 – 11:15 hrs Keynote Presentation
Genetic Predisposition to Breast Cancer
B.AJ. Ponder, Cambridge Research Institute, UK

11:15 – 12:00 hrs Keynote Presentation
Recovery of Tumor-Infiltrating Lymphocyte Effector Functions
P. van der Bruggen, Ludwig Institute for Cancer Research and Institute of Cellular Pathology, Belgium

12:00 – 12:45 hrs Keynote Presentation
The Workings of NCI Nanotechnology Alliance for Cancer - an Opportunity for a New Class of Diagnostic and Therapeutic Solutions Based on Nanotechnology
P. Grodzinski, National Cancer Institute, USA

12:30 – 14:00 hrs Lunch

13:00 – 13:45 hrs Theme Lecture 1 — P. VADGAMA
Designer Surfaces for the Biological Interface — How Far can we Enhance Functional Performance?
Chair: John BAGLIN

14:00 – 14:45 hrs Keynote Presentation
Molecular Engineering of Cellular Environments: Cell Adhesion to Nano-Digital Surfaces
Joachim P. Spatz, Stuggart & University of Heidelberg, Germany

15:30 – 16:00 hrs Invited Presentation
Modelling Cancer Signaling in a Panel of Breast Cancer Cell Lines
Paul Spellman

16:00 – 16:30 hrs Evening Break

16:30 – 17:00 hrs Invited Presentation
Sequencing and Analysis of Structural Rearrangements in Tumor Genomes
Ben Raphael, Brown University, U.S.A

17:00 – 17:30 hrs Invited Presentation
Biomolecular Structural Dynamics in Networks: Roles in health and Disease
Verma Chandra, BII, Singapore

17:30 – 18:00 hrs Invited Presentation
Reverse Genetic Analysis of an intronic p53 binding site SNP provides evidence for its role in transcriptional regulation and cancer susceptibility
Jianjun Liu, Genome Institute of Singapore, Singapore

18:00 – 18:30 hrs Oral Presentation
Genome-Wide Co-Expression Patterns of Cis-Antisense Gene Pairs in Human Cancer Cells
Orlov Yuri, Genome Institute of Singapore, Singapore

END OF SYMPOSIUM

SYMPOSIUM (4) INNOVATIVE THERAPIES IN CANCER

TECHNICAL PROGRAMME

Monday, 2nd July 2007 (Room 308)

- 09:00 – 09:45 hrs Opening Ceremony
- 09:45 – 10:30 hrs Plenary 1 — Claude COHEN-TANNOUDI
Manipulating Atoms with Light
Chair: SHIH Choon Fong
- 10:30 – 11:00 hrs Morning Break
- 11:00 – 11:45 hrs Plenary 2 — Subra SURESH
Nanotechnology and Materials Science at the Intersections of Engineering, Biology and Medicine
Chair: John WONG
- 12:00 – 12:45 hrs Keynote Presentation
Systems Biology and Genomic Medicine
Edison Liu, Genome Institute of Singapore, Singapore
- 12:30 – 13:15 hrs Keynote Presentation
Advanced Technologies & their Impact on the Future of Cancer
Richard Satava, University of Washington, USA
- 13:00 – 14:30 hrs Lunch
- 14:15 – 14:55 hrs Invited Presentation
Protons And Anti-Protons in the treatment of Prostate Cancer
Terence Tan, National Cancer Centre, Singapore
- 14:15 – 14:55 hrs Invited Presentation
Three-year experience with robot-assisted laparoscopic radical prostatectomy in Singapore General hospital
Christopher Cheng, Singapore General Hospital, Singapore
- 14:55 – 15:35 hrs Invited Presentation
Title to be advised
Kee Chee Soo
- 15:35 – 16:15 hrs Invited Presentation
Intra-Operative Radiotherapy
Ivan Ng & Georgette Chan
- 16:15 – 16:55 hrs Invited Presentation
To be advised
R.M. Satava, University of Washington, U.S.A
- 16:30 – 17:00 hrs Evening Break
- 18:00 – 22:00 hrs Nobel Laureate Public Lectures @ UCC, NUS
K. Barry SHARPLESS & Claude COHEN-TANNOUDI
Chair: TAN Eng Chye

Tuesday, 3rd July 2007)Room 308)

- 08:30 – 09:15 Plenary 3 — K. Barry SHARPLESS
Orthogonal Reactivity
Chair: LIM Khiang Wee
- 09:15 – 10:00 Plenary 4 — Richard H. FRIEND
Organic Electronics: Interfaces, Heterojunctions and Semiconductor Device Engineering
Chair: Freddy BOEY

- 10:00 – 10:30 Morning Break
- 10:30 – 11:15 hrs Keynote Presentation
Genetic Predisposition to Breast Cancer
 B.A.J. Ponder, Cambridge Research Institute, UK
- 11:15 – 12:00 hrs Keynote Presentation
Recovery of Tumor-Infiltrating Lymphocyte Effector Functions
 P. van der Bruggen, Ludwig Institute for Cancer Research and Institute of Cellular Pathology, Belgium
- 12:00 – 12:45 hrs Keynote Presentation
The Workings of NCI Nanotechnology Alliance for Cancer - an Opportunity for a New Class of Diagnostic and Therapeutic Solutions Based on Nanotechnology
 P. Grodzinski, National Cancer Institute, USA
- 12:30 – 14:00 hrs Lunch
- 13:00 – 13:45 hrs Theme Lecture 1 — P. VADGAMA
Designer Surfaces for the Biological Interface — How Far can we Enhance Functional Performance?
 Chair: John BAGLIN
- 14:00 – 14:45 hrs Keynote Presentation
Molecular Engineering of Cellular Environments: Cell Adhesion to Nano-Digital Surfaces
 Joachim P. Spatz, Stuttgart & University of Heidelberg, Germany
- 15:00 – 15:25 hrs Invited Presentation
Towards Molecularly Defined Therapeutic Cancer Vaccines
 Pedro Romero, Ludwig Institute for Cancer Research and Institute of Cellular Pathology
- 15:25 – 15:50 hrs Invited Presentation
Prognostic Value of Tertiary Lymphoid Structures in Human Lung Cancers
 M.-C. Dieu-Nosjean, Ludwig Institute for Cancer Research and Institute of Cellular Pathology
- 16:00 – 16:30 hrs Evening Break
- 16:30 – 16:55 hrs Invited Presentation
Phenomenons Facilitating Antigen Recognition in Lymph Nodes
 A. Trautmann, Louisiana State University Health Sciences Center, USA
- 16:55 – 17:20 hrs Invited Presentation
Cytokine-Induced Killer Cells – bedside to bench, and back to bedside
 Kam M. Hui, National Cancer Centre, Singapore
- 17:20 – 17:45 hrs Invited Presentation
Augmentation of the Anti-tumor CTL Response by CD4+ T Cells
 Justin Wong, National University of Singapore, Singapore
- 17:45 – 18:10 hrs Invited Presentation
Cell and Immunotherapy For Advanced Nasopharyngeal Carcinoma (NPC)
 Han Chong Toh, National Cancer Centre, Singapore

Wednesday, 4th July 2007 (Room 308)

- 08:30 – 09:15 hrs Plenary 5 — H. Robert HORVITZ
Cell Suicide: Programmed Cell Death in Development and Disease
 Chair: TAN Chorh Chuan
- 09:15 – 10:00 hrs Plenary 6 — David LANE
Drug Discovery in the p53 Pathway
 Chair: Yoshiaki ITO
- 10:00 – 10:30 hrs Morning Break
- 10:30 – 11:15 hrs Keynote Presentation

New Materials for Drug Delivery- Lipids & Linkers & Bow-ties

F. Szoka, University of California, U.S.A

11:15 – 12:00 hrs Keynote Presentation

Title To Be Advised

Roger Kamm, Massachusetts Institute of Technology, USA

12:00 – 12:45 hrs Keynote Presentation

Genomic Strategies for Personalized Cancer Therapy

Joseph Nevins, Duke University Medical, USA

12:30 – 14:00 hrs Lunch

13:00 – 13:45 hrs Theme Lecture 2 — M. JANSEN

Synthesis Planning in Solid State and Materials Chemistry

Chair: M. YOSHIMURA

14:00 – 14:45 hrs Keynote Presentation

Local force and geometry sensing regulate cell functions

Michael P. Sheetz, Columbia University, U.S.A

15:00 – 15:25 hrs Invited Presentation

pH-Responsive Nanoparticles For Drug And MR Contrast Delivery

J.Y.R. Ho, University of Washington, U.S.A

15:25 – 15:50 hrs Invited Presentation

Environment Responsive Polymers for Targeted Drug Delivery

N.K.H Slater, University of Cambridge, United Kingdom

16:00 – 16:30 hrs Evening Break

16:30 – 16:55 hrs Invited Presentation

Design of Recombinant Fusion Proteins of Transferrin and Granulocyte Colony-Stimulating Factor for Oral Delivery

W.C. Shen, University of Southern California School of Pharmacy, U.S.A

16:55 – 17:20 hrs Invited Presentation

Functionalized Amphiphilic Macromolecules for Targeted Cellular Interactions

Kathryn Uhrich, Rutgers University, USA

17:20 – 17:45 hrs Invited Presentation

Title to be advised

Wang Shu, National University of Singapore

END OF SYMPOSIUM

SYMPOSIUM (5) CANCER CELL INTERACTION, MOTILITY AND METASTASIS

TECHNICAL PROGRAMME

Monday, 2nd July 2007 (Room 313)

- 09:00 – 09:45 hrs Opening Ceremony
- 09:45 – 10:30 hrs Plenary 1 — Claude COHEN-TANNOUJJI
Manipulating Atoms with Light
Chair: SHIH Choon Fong
- 10:30 – 11:00 hrs Morning Break
- 11:00 – 11:45 hrs Plenary 2 — Subra SURESH
Nanotechnology and Materials Science at the Intersections of Engineering, Biology and Medicine
Chair: John WONG
- 12:00 – 12:45 hrs Keynote Presentation
Systems Biology and Genomic Medicine
Edison Liu, Genome Institute of Singapore, Singapore
- 12:30 – 13:15 hrs Keynote Presentation
Advanced Technologies & their Impact on the Future of Cancer
Richard Satava, University of Washington, USA
- 13:00 – 14:30 hrs Lunch
- 14:30 – 15:00 hrs Invited Presentation
The Dynamic Structure of the Pericellular Coat on Living Cells
Jennifer Curtis, Georgia Institute of Technology, USA
- 15:00 – 15:30 hrs Invited Presentation
Nanoindentation of Biological Cells and Tissues
Ming Dao, Massachusetts Institute of Technology, USA
- 15:30 – 16:00 hrs Invited Presentation
Continuum and Molecular Mechanics of Human Red Blood Cells
Ming Dao, Massachusetts Institute of Technology, USA
- 16:00 – 16:30 hrs Invited Presentation
Loading Cells with Single Elastic Micropillars to Influence Focal Adhesion Dynamics
P. Heil, University of Heidelberg, Germany
- 16:30 – 17:00 hrs Evening Break
- 18:00 – 22:00 hrs Nobel Laureate Public Lectures @ UCC, NUS
K. Barry SHARPLESS & Claude COHEN-TANNOUJJI
Chair: TAN Eng Chye

Tuesday, 3 July 2007 (Room 313)

- 08:30 – 09:15 hrs Plenary 3 — K. Barry SHARPLESS
Orthogonal Reactivity
Chair: LIM Khiang Wee
- 09:15 – 10:00 hrs Plenary 4 — Richard H. FRIEND
Organic Electronics: Interfaces, Heterojunctions and Semiconductor Device Engineering
Chair: Freddy BOEY
- 10:00 – 10:30 hrs Morning Break

10:30 – 11:15 hrs Keynote Presentation
Genetic Predisposition to Breast Cancer
B.AJ. Ponder, Cambridge Research Institute, UK

11:15 – 12:00 hrs Keynote Presentation
Recovery of Tumor-Infiltrating Lymphocyte Effector Functions
P. van der Bruggen, Ludwig Institute for Cancer Research and Institute of Cellular Pathology, Belgium

12:00 – 12:45 hrs Keynote Presentation
The Workings of NCI Nanotechnology Alliance for Cancer - an Opportunity for a New Class of Diagnostic and Therapeutic Solutions Based on Nanotechnology
P. Grodzinski, National Cancer Institute, USA

12:30 – 14:00 hrs Lunch

13:00 – 13:45 hrs Theme Lecture 1 — P. VADGAMA
Designer Surfaces for the Biological Interface — How Far can we Enhance Functional Performance?
Chair: John BAGLIN

14:00 – 14:45 hrs Keynote Presentation
Molecular Engineering of Cellular Environments: Cell Adhesion to Nano-Digital Surfaces
Joachim P. Spatz, Stuggart & University of Heidelberg, Germany

15:00 – 15:30 hrs Invited Presentation
Nanotechnology at QIAGEN: From Sample Preparation to Selective Cell Adhesion on Nanostructured Surfaces
F. Narz, QIAGEN, Germany

15:30 – 15:45 hrs Oral Presentation
Cancer Stroma Cells: Potential Effectors to Alter Phenotype of Normal Keratinocytes
Karel Jr Smetana, Charles University, Czech Republic

15:45 – 16:00 hrs Oral Presentation
Modeling the Adhesion of Normal and Cancer Cells in Metastasis
Tan Lei Lai, Institute of High Performance Computing, A*STAR, Singapore

16:00 – 16:30 hrs Evening Break

16:30 – 17:00 hrs Invited Presentation
Cytoskeleton-Driven Membrane Shapes, Dynamics and Phase Separation
N.S. Gov, Weizmann Institute of Science, Israel

17:00 – 17:30 hrs Invited Presentation
Two Characteristic Regimes in Frequency Dependent Dynamic Reorientation of Cells on Cyclically Stretched Substrates
Ralph Kemkemer, University of Heidelberg, germany

Wednesday, 4th July 2007 (Room 313)

08:30 – 09:15 hrs Plenary 5 — H. Robert HORVITZ
Cell Suicide: Programmed Cell Death in Development and Disease
Chair: TAN Chorh Chuan

09:15 – 10:00 hrs Plenary 6 — David LANE
Drug Discovery in the p53 Pathway
Chair: Yoshiaki ITO

10:00 – 10:30 hrs Morning Break

10:30 – 11:15 hrs Keynote Presentation
New Materials for Drug Delivery- Lipids & Linkers & Bow-ties
F. Szoka, University of California, U.S.A

11:15 – 12:00 hrs Keynote Presentation
Title To Be Advised
Roger Kamm, Massachusetts Institute of Technology, USA

12:00 – 12:45 hrs Keynote Presentation
Genomic Strategies for Personalized Cancer Therapy
Joseph Nevins, Duke University Medical, USA

12:30 – 14:00 hrs Lunch

13:00 – 13:45 hrs Theme Lecture 2 — M. JANSEN
Synthesis Planning in Solid State and Materials Chemistry
Chair: M. YOSHIMURA

14:00 – 14:45 hrs Keynote Presentation
Local force and geometry sensing regulate cell functions
Michael P. Sheetz, Columbia University, U.S.A

15:00 – 15:30 hrs Invited Presentation
Protein mechanics and function guided by force
Frauke Graeter, Columbia University, Department of Chemistry, U.S.A

15:30 – 16:00 hrs Invited Presentation
Approaching Cell Mechanics with Microfluids and Atomic Force Microscopy
Nadine Walter, (1) Max-Planck Institute for Metals Research, Stuttgart, and University of Heidelberg, Germany; (2) Massachusetts Institute of Technology, Cambridge, MA, USA

16:00 – 16:30 hrs Evening Break

16:30 – 16:45 hrs Oral Presentation
Computational Modeling of Cancer Cell Mechanics
Yeo Loong Raymond Quek, Institute of High Performance Computing, A*STAR, Singapore

16:45 – 17:00 hrs Oral Presentation
Anti-Apoptotic Role of TWIST and its Association with Akt Pathway in Mediating Taxol Resistance in Nasopharyngeal Carcinoma Cells
XiaoMeng Zhang, The University of Hong Kong, Hong Kong, SAR, China.

17:00 – 17:15 hrs Oral Presentation
An Intra-Vitro Device and Method to Study The Cancer Cell Migration and Deformation
Manimaran. M, Institute of Medical Biology, A*STAR, Singapore

17:15 – 17:30 hrs Oral Presentation
An Intra-Vitro Device and Method to Study The Cancer Cell Migration and Deformation
Ebenezer Chitra, National Health Research Institutes, Taiwan