MEDIA RELEASE

EMBARGOED TILL 27 FEBRUARY 2012

SINGAPORE AND AUSTRALIA TEAM UP TO FOCUS RESEARCH EFFORTS ON EMERGING INFECTIOUS DISEASES

Inaugural A*STAR-NHMRC Joint Symposium facilitates research collaborations to combat infectious diseases through integrative technology approaches across Singapore and Australia

1. Distinguished scientists from Singapore and Australia will present recent groundbreaking findings in infectious diseases and the use of new technology approaches to combat them at the inaugural A*STAR-NHMRC joint symposium over two days (27 to 28 Feb). Jointly organized by A*STAR and Australia's National Health and Medical Research Council (NHMRC), this inaugural symposium will facilitate scientific exchange and provide a platform to forge research collaborations between scientists from both nations. This is a step towards further developing and strengthening our regional systems and capacity to detect, respond to and prepare for disease outbreaks and public health events.

2. The symposium will focus on influenza and tuberculosis, two major infectious diseases that affect the Asia-Pacific region with great societal impact. The 2009 flu pandemic in Asia, part of an epidemic in 2009 of a new strain of influenza A virus subtype H1N1, afflicted at least 394,133 people in Asia with 2,137 confirmed deaths\(^1\). Asia has historically been the epicenter for the emergence of new influenza viruses, and experts believe that the next pandemic will begin there\(^2\). Tuberculosis (TB) remains a major public health problem in the region because of its high morbidity and mortality rates. Strains of TB resistant to all major anti-TB drugs have also emerged\(^3\). The World Health Organization (WHO) estimates that the largest number of new TB cases in 2008 occurred in the South-East Asia Region, which accounted for 35% of incident cases globally\(^4\).

\(^1\) 2009 Flu Pandemic in Asia, Frederic P. Miller, Agnes F. Vandome, McBrewster John

\(^2\) Pacific Health Summit, Emerging Infections/Pandemics Workgroup, An Avian Flu Pandemic: What would it mean, and what can we do? June 2006

\(^3\) [http://www.who.int/mediacentre/factsheets/fs104/en/](http://www.who.int/mediacentre/factsheets/fs104/en/)

\(^4\) [http://www.who.int/mediacentre/factsheets/fs104/en/](http://www.who.int/mediacentre/factsheets/fs104/en/)
3. Hosted by the Agency of Science Technology and Research (A*STAR), this joint symposium is one of the outcomes of the Memorandum of Understanding (MOU) signed between A*STAR and Australia's National Health and Medical Research Council (NHMRC) in September 2011. Following the symposium, NHMRC and A*STAR will identify key issues and develop a $3.5 million (AUD) joint grant call for research.

4. Said A*STAR Chairman, Mr Lim Chuan Poh, "Despite advances in science and medicine, infectious diseases continue to emerge at a rapid pace which can lead to significant social and economic impact. Global pandemic is a serious security threat that transcends borders and we need to adopt a transnational outlook and approach to be best prepared. This symposium brings together the top minds from Singapore and Australia to examine this threat to human health. We are confident that the collaborations forged and discoveries made in our partnership with NHMRC will translate to greater medical discoveries and innovations that will bring benefit not only to Australia and Singapore, but the wider region."

5. Prof Warwick Anderson, CEO of Australia’s National Health and Medical Research Council said, “The symposium is an opportunity to forge research and development collaborations amongst Australian and Singapore-based researchers. New technological approaches such as genomics, the sequencing and analysis of DNA and bioinformatics, the application of computing power to medical research are priority areas. By sharing resources and knowledge, we can minimise research duplication and improve delivery of bench to bedside solutions for patients.”

6. Some highlights of the symposium include lectures by distinguished Singaporean and Australian scientists:

- **Dr Martin Lloyd Hibberd**, Associate Director for Infectious Diseases at Genome Institute of Singapore (GIS), A*STAR, will be speaking on genomics as an enabling platform, “Whole genome sequencing of viruses and bacteria”. Dr Hibberd has a broad scientific background spanning both microbial and human determinants of infectious and inflammatory diseases. Previous posts include WHO-funded Senior Microbiologist at the UK’s central Public Health Laboratories, and for seven years prior to his current appointment he was lecturer and senior lecturer in Paediatric Infectious Diseases at the Imperial College School of Medicine, one of the very top-ranking British universities.

- **Dr Sebastian Maurer-Stroh**, Programme Director Bioinformatics Institute (BII), A*STAR, will be speaking on the importance of bioinformatics in tracking the evolution of influenza viruses for early detection of changes towards severity, “Bioinformatics as enabling technology for influenza surveillance”. Dr Maurer-Stroh directs a cross-division programme for Human Infectious Diseases at BII that builds upon the expertise of several groups from different backgrounds. Following the 2009 H1N1 pandemic, his group has been collaborating with hospitals and health
authorities in Singapore, Mexico, Brazil and the WHO CC in Australia, to characterize circulating strains and possible effects of new mutations.

- Dr Ian Barr, Deputy Director of the WHO Collaborating Centre for Reference and Research on Influenza at the Victorian Infectious Diseases Reference Laboratory (VIDRL), will be speaking on influenza biology, “Influenza surveillance and how it impacts on current vaccine development and drug resistance awareness”. One of only five centers in the world, the WHO Collaborating Centre for Reference and Research on Influenza plays an active role in regional influenza surveillance and performs detailed analysis of influenza viruses including gene sequencing, antigenic analysis and anti-viral resistance testing.

- Professor Ross Coppel, Director of the Victorian Bioinformatics Consortium, will be speaking on tuberculosis biology, “Bioinformatics and Functional "Omics" to inform studies of cell wall synthesis of Mycobacteria”. He is a medical graduate and an internationally recognized scientist in the fields of tropical infectious diseases and primary biliary cirrhosis. Professor Coppel is a recipient of the Glaxo Award for Advanced Research in Infectious Diseases and was a Howard Hughes Medical Institute International Fellow.

(A full list of the speakers can be found in Annex B)

Information on the A*STAR- Australian NHMRC Joint Symposium 2012 is available here: http://www.astar-nhmrc.org/

AGENCY FOR SCIENCE, TECHNOLOGY AND RESEARCH (A*STAR)

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About the Agency for Science, Technology and Research (A*STAR)

The Agency for Science, Technology and Research (A*STAR) is the lead agency for fostering world-class scientific research and talent for a vibrant knowledge-based and innovation-driven Singapore. A*STAR oversees 14 biomedical sciences and physical sciences and engineering research institutes, and six consortia & centres, located in Biopolis and Fusionopolis as well as their immediate vicinity.
A*STAR supports Singapore's key economic clusters by providing intellectual, human and industrial capital to its partners in industry. It also supports extramural research in the universities, and with other local and international partners. For more information about A*STAR, please visit www.a-star.edu.sg.

**About the National Health and Medical Research Council**

The National Health and Medical Research Council is the Australian Government's lead body for funding health and medical research. In 2010-11 the NHMRC, funded over AUD$700million of research in universities, health and medical research institutes and hospitals in Australia and through international collaborations.

The NHMRC was established in 1936 to

- Raise the standard of individual and public health throughout Australia.
- Foster medical research and training and public health research and training.
- Foster consideration of ethical issues relating to health.

For more information on NHMRC, please visit www.nhmrc.gov.au
# PROGRAMME

## Day 1: (27 Feb 2012, Monday)

<table>
<thead>
<tr>
<th>Time</th>
<th>Activity</th>
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<tbody>
<tr>
<td>0900 - 0940</td>
<td>Arrival of Participants and Registration (Tea/Coffee provided)</td>
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<tr>
<td>0940 - 0950</td>
<td>Welcome Address by: Mr Lim Chuan Poh, Chairman, A*STAR</td>
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<tr>
<td>0950 - 1000</td>
<td>Welcome Address by: Prof Warwick Anderson, Chief Executive Officer, National Health and Medical Research Council, Australia</td>
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**Session 1  TB Biology**

<table>
<thead>
<tr>
<th>Time</th>
<th>Presentation</th>
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<tbody>
<tr>
<td>1000 - 1030</td>
<td>S01: James Triccas, University of Sydney. Advancing the tuberculosis vaccine pipeline</td>
</tr>
<tr>
<td>1030 - 1100</td>
<td>S02: Gennaro de Libero, Singapore Immunology Network, A*STAR. Lipid-specific immune response in Tuberculosis</td>
</tr>
<tr>
<td>1100 - 1130</td>
<td>S03: Nicholas West, Centenary Institute. Functional Genomics and the Search for Anti-Tuberculosis Therapies.</td>
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<tr>
<td>1130 - 1200</td>
<td>S04: Sylvie Alonso, National University of Singapore. Ethionamide: Novel insights into an old drug.</td>
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<tr>
<td>1200 - 1300</td>
<td>Lunch</td>
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**Session 2  Influenza Biology**

<table>
<thead>
<tr>
<th>Time</th>
<th>Presentation</th>
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<tbody>
<tr>
<td>1300 - 1330</td>
<td>&lt;NHMRC LECTURE - by special invitation of the NHMRC CEO&gt;  S05: Katherine Kedzierska, University of Melbourne Defining cross-strain protective T cell immunity across different HLAs: insights into a universal influenza vaccine</td>
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<tr>
<td>1330 - 1400</td>
<td>S06: Stephen J Turner, University of Melbourne The persistence of memory: Deciphering epigenetic regulation of influenza-specific T cell immunity</td>
</tr>
<tr>
<td>1400 - 1430</td>
<td>S07: Veronika von Messling, Duke-NUS Graduate Medical School Influenza virulence factors: insights from the ferret model</td>
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<tr>
<td>1430 - 1500</td>
<td>S08: Sivasankar Balasubramanian, Singapore Institute for</td>
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Clinical Science.
Complement is critical for the functioning of pulmonary migratory DC subsets during influenza infection.

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<thead>
<tr>
<th>Time</th>
<th>Event</th>
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<tbody>
<tr>
<td>1500</td>
<td>Coffee/Tea Break</td>
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**Session 3 Enabling platform - Genomics**

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<thead>
<tr>
<th>Time</th>
<th>Speaker</th>
<th>Topic</th>
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<tbody>
<tr>
<td>1530</td>
<td>S09: Edward Holmes, Pennsylvania State U.</td>
<td>The Phylogenomics of Viral Infections</td>
</tr>
<tr>
<td>1600</td>
<td>S10: Chris Wong, Genome Institute Singapore</td>
<td>PathGEN Chip Platform for virus and bacteria diagnostics, biosurveillance and discovery.</td>
</tr>
<tr>
<td>1630</td>
<td>S11: Frank McKeon, Genome Institute Singapore, A*STAR.</td>
<td>Stem Cells Underlying Lung Regeneration Following ARDS</td>
</tr>
<tr>
<td>1700</td>
<td>S12: Gavin Smith, Duke-NUS Graduate Medical School.</td>
<td>Evolutionary genomics of pandemic influenza A viruses</td>
</tr>
<tr>
<td>1730</td>
<td>S13: Martin Hibberd, Genome Institute Singapore, A*STAR.</td>
<td>Whole genome sequencing of viruses and bacteria.</td>
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**Day 2: (28 Feb 2012, Tuesday)**

**Session 4 Enabling platform - Bioinformatics**

<table>
<thead>
<tr>
<th>Time</th>
<th>Speaker</th>
<th>Topic</th>
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<tbody>
<tr>
<td>0900</td>
<td>S14: Ross Coppel, Monash University.</td>
<td>Bioinformatics and Functional &quot;Omics&quot; to inform studies of cell wall synthesis of Mycobacteria</td>
</tr>
<tr>
<td>0930</td>
<td>S15: Michael Poidinger, Singapore Immunology Network, A*STAR.</td>
<td>Transcript variation in response to flu challenge in dendritic cells as measured by RNAseq</td>
</tr>
<tr>
<td>1030</td>
<td>S16: Chandra Verma, Bioinformatics Institute, A*STAR.</td>
<td>The design and development of novel antimicrobials targeted against the membranes of bacteria</td>
</tr>
<tr>
<td>1100</td>
<td>S17: Ian Barr, WHO Collaborating Centres, Melbourne.</td>
<td>Influenza surveillance and how it impacts on current vaccine</td>
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development and drug resistance awareness.

1130 - 1200  **S18: Sebastian Maurer-Stroh, Bioinformatics Institute, A*STAR.**
Bioinformatics as enabling technology for influenza surveillance.

1200 - 1300  **Lunch**

### Session 5  Integrating technology and biology

<table>
<thead>
<tr>
<th>Time</th>
<th>Speaker</th>
<th>Topic</th>
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<tbody>
<tr>
<td>1300 - 1330</td>
<td><strong>S19: Wayne Mitchell, Experimental Therapeutics Centre, A*STAR.</strong></td>
<td>Mining new medicine from genomic dark matter</td>
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<tr>
<td>1330 - 1400</td>
<td><strong>S20: John Connolly, Singapore Immunology Network, A*STAR.</strong></td>
<td>Systems Based Approach to Monitoring Vaccine Responses</td>
</tr>
<tr>
<td>1400 - 1430</td>
<td><strong>S21: Matthew Cooper, IMB-University of Queensland.</strong></td>
<td>Building an academic anti-infective pipeline.</td>
</tr>
<tr>
<td>1430 - 1500</td>
<td><strong>S22: Masafumi Inoue, Experimental Therapeutics Centre, A*STAR.</strong></td>
<td>Current molecular diagnostic assay for TB and Influenza.</td>
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<tr>
<td>1500 - 1530</td>
<td><strong>Coffee/Tea Break</strong></td>
<td></td>
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<tr>
<td>1530 - 1600</td>
<td><strong>S23: Srinivasa Rao, Novartis Institute for Tropical Diseases.</strong></td>
<td>TB drug discovery: Hits from anaerobic whole cell screen.</td>
</tr>
<tr>
<td>1600 - 1630</td>
<td><strong>S24: Mark von Itzstein, Griffith University</strong></td>
<td>Carbohydrate recognition by influenza virus and implications in drug discovery</td>
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### Session 6  General Discussion on project integration

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<tr>
<th>Time</th>
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<tr>
<td>1630 - 1700</td>
<td>General Discussion led by Co-Chairs</td>
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<tr>
<td>1700 - 1715</td>
<td>Info on A*STAR-NHMRC joint grant call &amp; Closing Remarks</td>
</tr>
<tr>
<td>1715 - 1830</td>
<td><strong>Networking Reception @ Long Black Café</strong></td>
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### Day 3: (29 Feb 2012, Wednesday)

<table>
<thead>
<tr>
<th>Time</th>
<th>Activity</th>
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<tbody>
<tr>
<td>0830 - 1200</td>
<td>Ad-hoc self-arranged visits to Singapore PIs</td>
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</table>
SPEAKER BIOGRAPHIES AND ABSTRACTS

S01: Assoc Prof Jamie Triccas

Dept of Infectious Diseases and Immunology, University of Sydney

A/Prof Jamie Triccas is head of the Microbial Immunity and Pathogenesis Group in the Discipline of Infectious Diseases and Immunology at the University of Sydney. He was previously a Cantarini Research Fellow at the Institut Pasteur in Paris (1997-1999) and a Senior Research Fellow at the Centenary Institute in Sydney (1999-2004). The research program of Dr Triccas is focused on determining how virulent microorganisms promote disease, and developing novel strategies to prevent infection. A particular emphasis of his research is determining which components of the immune response are targeted by pathogenic mycobacteria during infection, and using this information to aid the rational development of more effective anti-tuberculosis vaccines.

S02: Prof Gennaro De Libero

Principal Investigator, Singapore Immunology Network (SIgN), A*STAR

Prof. Gennaro De Libero is Principal investigator responsible of the Tuberculosis Program at SIgN, A*STAR and Professor of Immunology at the Faculty of Medicine, University of Basel, Switzerland. He was previously a long term Embo Fellow at the
Max Planck Institute of Immunobiology in Freiburg (1984-1986), and full member of the Basel Institute for Immunology (1988-1991). The main focus of Prof. De Libero’s laboratory is the immune response against non-peptidic antigens. One important research area is the recognition of mycobacterial lipids as antigens, the protective role of lipid-specific immunity in Tuberculosis and the development of novel anti-tuberculosis vaccines containing mycobacterial lipids.

S03: Dr Nicholas West

*Centenary Institute, Sydney Medical School, University of Sydney*

Dr West is a molecular microbiologist, expert in bacterial pathogenesis. He is an Australian NHMRC CDA-2 research fellow and heads the “Vaccine Development and Pathogenesis” group within the “Mycobacterial Research Program” at the Centenary Institute. Dr West’s research is based on modern molecular genomic technologies to identify the bacterial genetic requirements for *Mycobacterium tuberculosis* to cause Tuberculosis (TB). This information is being translated toward the development of new therapies and control measures for TB. Dr West received his PhD in 2000, thereafter conducting research at the University of Oxford and Imperial College London. His work has been published in leading journals, including Science, Nature, and JEM.

S04: Dr Sylvie Alonso
Assistant Professor, Dept. of Microbiology, National University of Singapore (NUS)

Dr Alonso has obtained a PhD degree in Cellular and Molecular Biology from the University Claude Bernard in Lyon (France). As post-doctorate fellow at the Pasteur Institute of Lille (France) and Cornell University (Ithaca, USA) she investigated the mechanisms involved in the pathogenesis of *Bordetella pertussis* and *Mycobacterium tuberculosis* respectively. Dr Alonso then joined NUS in 2004 and is currently an assistant professor in the Department of Microbiology and is a member of the Immunology programme. Her current research projects involve exploring host-pathogen interactions during bacterial (*M. tuberculosis* and *B. pertussis*) and viral (Dengue virus, Enterovirus 71) infection. For these studies, her lab has established/developed mouse animal models, which also represent platforms for vaccine and drug testing.

![Dr Alonso](image)

**S05: Dr Katherine Kedzierska**

*Department of Microbiology & Immunology, University of Melbourne*

Dr Kedzierska received her Ph.D from Monash University in 2002. She then did her postdoctoral studies in Department of Microbiology and Immunology at University of Melbourne as an NHMRC Peter Doherty Postdoctoral Fellow under the mentorship of Laureate Professor Peter Doherty. In 2006, she got awarded an NHMRC RD Wright Fellowship and grant funding to expand her own research team. She is currently a senior research fellow and a group leader in Department of Microbiology and Immunology at University of Melbourne. Her research interests include human T cell immunity to pandemic and seasonal influenza viruses, anti-viral immunity in the elderly, viral escape and generation of immunological memory in influenza infection. In 2011, Dr Kedzierska was awarded an NHMRC Career Development Fellowship, Biomedical Level 2, Excellence Award.
S06: Assoc Prof Stephen J. Turner

Department of Microbiology & Immunology, University of Melbourne

Dr Turner is currently Professor and an Australian Research Council Future Fellow in the Department of Microbiology and Immunology, The University of Melbourne. Upon completion of his PhD in 1997, Dr Turner undertook postdoctoral training with Dr Janet Ruby, The University of Melbourne and Nobel Laureate Professor Peter Doherty, Dept of Immunology, St Judes Children’s Research Hospital, Memphis, TN. He returned to Australia, in 2002 and has led his own research group since 2005. His research interests utilize a combination of structural biology, genomics, systems biology, recombinant viral technology and cellular immunology to examine factors that impact T cell responses to virus infection.

S07: Assoc Prof Veronika von Messling

Emerging Infectious Diseases Programme, Duke-NUS Graduate Medical School

Dr. Veronika A. von Messling obtained her DVM in 1996, and her doctorate degree in 1998 from the Veterinary School of Hannover, Germany. After completing her postdoctoral training at the Mayo Clinic and Foundation in Rochester, Minnesota, USA, she joined the INRS-Institut Armand-Frappier, in Laval, Montreal, Canada, in March 2004, where she still holds an associate professor position. In October 2010, she moved to Duke-NUS Graduate Medical School in Singapore, where she is an associate professor in the Emerging Infectious Diseases Program. Dr. von Messling’s research program aims at characterizing the pathogenesis of respiratory
viruses, specifically morbilliviruses and influenza. Her laboratory identifies virus and host markers of virulence using animal models that reproduce the human disease, focusing on ferrets and more recently different primate species.

**S08: Dr Sivasankar Baalasubramanian**

*Principal Investigator, Singapore Institute of Clinical Science (SICS), A*STAR*

Dr. Baalasubramanian Sivasankar (Shiv) received his PhD from the All India Institute of Medical Sciences, New Delhi, in the field of Complement Biology. Subsequently, he joined the Complement Biology Group at School of Medicine, Cardiff University through the award of an independent International Travelling and Research Fellowship from the Wellcome trust. During his time in Cardiff he became particularly interested in how components of complement system influenced the adaptive cellular immunity, departing from the classical role of complement system. Together with the Immune regulation group at School of Medicine he showed negative regulatory role for CD59 on T cells and that it could be exploited for therapeutic purposes. Furthermore he has been involved in several other projects understanding the role of complement system in various disease conditions leading to numerous publications and awards. Shiv joined the Singapore Institute for Clinical Sciences in September 2009 where his research focuses on how the components of the innate immunity impinge on the adaptive immune response during viral infections.
**S09: Prof Edward Holmes**

*Department of Biology, The Pennsylvania State University*

Dr. Eddie Holmes is currently Professor of Biology at The Pennsylvania State University. In 2011 he was awarded an Australia Fellowship from the NHMRC and will move to the University of Sydney (Schools of Biological Science and Medicine) in 2012. Prior to Penn State, Dr. Holmes held various positions at the University of Oxford, UK, including University Lecturer in Evolutionary Biology and Fellow of New College. His research focuses on the evolutionary genetics of RNA viruses, with special emphasis on the major mechanisms of virus evolution, the molecular epidemiology of human pathogens including influenza virus, and the evolutionary processes that underpin viral emergence.

**S10: Dr Christopher Wong**

*CSO Translational Technologies, Genome Institute of Singapore (GIS), A*STAR*

Dr Christopher Wong trained as a cancer biologist with Ruth Muschel at the University of Pennsylvania, receiving his PhD in 2001. He returned to Singapore and was one of the founding scientists at the Genome Institute of Singapore (GIS), where he became an expert in microarray technology development and applications. He was also concurrently Head of the Biopolis Shared Facilities for the past 3 years. Now, as Chief Scientific Officer at the GIS, he is responsible for transforming GIS research discoveries into products which can be used for patient care in the
hospitals, and for commercialization. He is also the Founder of PathGEN Dx Pte. Ltd., a spin-off company developing Infectious Disease Diagnostics products based on technology licensed from GIS.

S11: Prof Frank McKeon

Senior Group Leader, Genome Institute of Singapore (GIS), A*STAR

Prof Frank McKeon was born in New Haven and received his BA from Pomona College. He went on to obtain his Ph.D. and postdoctoral studies in Biochemistry and Biophysics with Prof. Marc Kirschner at the University of California, San Francisco. In 1986 he was appointed Assistant Professor of Physiology at the Harvard Medical School and has been Professor of Cell Biology at the Harvard Medical School since 1998. He has worked in several areas of cell biology including nuclear lamin dynamics, the spindle assembly checkpoint monitoring chromosome segregation, the role of NF-AT transcription factors in T cell activation, and mouse models of the p53 homologs p63 and p73. In 2008 he became Senior Group Leader at the Genome Institute of Singapore. Prof McKeon and Dr Wa Xian (from Institute of Medical Biology) jointly oversee a highly interactive group of postdoctoral fellows, graduate students, and research assistants devoted to the cloning of stem cells of regenerative tissues and using advanced technologies to understand the genetics of their self-renewal, commitment, and differentiation.
**S12: Assoc Prof Gavin JD Smith**

*Emerging Infectious Diseases Programme, Duke-NUS Graduate Medical School*

Dr Gavin Smith is an Associate Professor in Emerging Infectious Diseases at Duke-NUS Graduate Medical School Singapore. His research focuses on the ecology, genetic and antigenic evolution, population dynamics, molecular epidemiology and interspecies transmission of RNA viruses to better understand disease ecosystems at the animal-human interface. In 2007 Dr Smith was awarded a 7-year Career Development Award by the US NIAID/NIH for his work on influenza.

**S13: Assoc Prof Martin Lloyd Hibberd**

*Associate Director for Infectious Diseases, Genome Institute of Singapore (GIS), A*STAR*

Dr Martin Hibberd has adjunct positions at the National University of Singapore and Imperial College (London, UK). Graduated with Honors from Brunel University in 1985 (West London, UK) and received his Doctorate, on the immune-genetics of the human T-cell antigen receptor, from King’s College, London. Has a broad scientific background spanning both microbial and human determinants of infectious and inflammatory diseases. Previous posts include WHO-funded Senior Microbiologist at the UK’s central Public Health Laboratories, and for seven years prior to his current appointment he was Lecturer and Senior Lecturer in Pediatric Infectious Diseases at
the Imperial College School of Medicine, one of the very top-ranking British universities. Current research interests cover both pathogen and host aspects of infectious disease, understanding how microbial agents causes the observed disease (including pathogen identification and sequence characterization) and why specific individuals are susceptible to the disease (using host genetics on a genomic scale). Approaching infectious disease from these two directions also allows specific host pathogen responses to be investigated (utilizing RNA micro and low density arrays). This work aims to identify key host responses to specific pathogens that could be targeted by new therapies.

S14: Prof Ross Coppel

Dept. of Microbiology & Deputy Dean, Faculty of Medicine, Monash University

Director, Victorian Bioinformatics Consortium

Ross Coppel is a medical graduate and an internationally recognized scientist in the fields of tropical infectious diseases and primary biliary cirrhosis. He is a recipient of the Glaxo Award for Advanced Research in Infectious Diseases and was a Howard Hughes Medical Institute International Fellow. He has authored or co-authored more than 430 scientific publications and has an h-index above 70. Ross has had a longstanding interest in bioinformatics and he administered the malaria sequence database for the WHO and was a cofounder of the PlasmoDB consortium. He is currently director of the Victorian Bioinformatics Consortium. His current research interests also include understanding the synthesis of the major virulence structure of tuberculosis, the cell wall.
**S15: Dr Michael Poidinger**

*Principal Investigator Technologist, Singapore Immunology Network (SIgN), A*STAR*

Dr Michael Poidinger began his career in Bioinformatics by completing a postgraduate diploma in Computer Science at the University of Queensland in 1998, after spending eight years as a post-doctoral scientist. After completing that degree, he worked for one year for the Australian Genome Research Facility in its inaugural year. He then spent three years working for Entigen, a Bioinformatics start up company that produced the BioManager web interface. After the closure of Entigen he spent three years as the CEO and head of the Australian National Genomic Information Service (ANGIS), a subscription based bioinformatics service. In late 2004 he became the Bioinformatics Research Director of Johnson & Johnson Research, providing bioinformatic support to various programs in small nucleic acid diagnostics and therapies and a HIV gene therapy phase IIa trial. In 2008 he moved to Singapore as the associate director of the Integrative Computational Sciences division of the Lilly Singapore Centre for Drug discovery, managing a 20 strong bioinformatics team and building enterprise wide analytical solutions for Eli Lilly. He moved to SIgN in January of 2011, managing a team which provides operational bioinformatics support to the immunology research.

**S16: Dr Chandra Verma**

*Head of Division, Bioinformatics Institute (BII), A*STAR*

Dr Chandra Verma joined the Bioinformatics Institute (BII) A*STAR, Singapore, in
November 2003. He heads the division of Biomolecular Modelling and Design and leads a group that applies physics based models to understand the links between protein sequence, structure and biological function. Their work focuses on oncology and anti-infectives. The group have been actively developing antibiotics with the Singapore Eye Research Institute and some of their molecules have demonstrated excellent antimicrobials properties with very low toxicity and resistance profiles. Prior to joining Singapore, he worked as a research fellow/reader at the Structural Biology Laboratory in York, UK where he liaised with several experimental laboratories, building mechanistic models underpinning a range of biochemical and biological functions.

S17: Dr Ian Barr

Deputy Director, WHO Collaborating Centre for Reference & Research on Influenza

Victorian Infectious Diseases Reference Laboratory

Dr Ian Barr is currently the Deputy Director of the WHO Collaborating Centre for Reference and Research on Influenza based in Melbourne Australia (one of only 5 such Centre’s in the world), The Centre plays an active role in regional influenza surveillance and performs detailed analysis of influenza viruses including gene sequencing, antigenic analysis and antiviral resistance testing. Dr Barr has had over 30 years experience in Research and Development both with academic and commercial groups including 12 years at the Centre and has authored or co-authored over 110 publications including over 80 articles on various aspects of influenza.
S18: Dr Sebastian Maurer-Stroh

Programme Director of Human Infectious Diseases, Bioinformatics Institute (BII), A*STAR

Dr Sebastian Maurer-Stroh studied theoretical biochemistry at the University of Vienna and wrote his master and PhD thesis at the Institute of Molecular Pathology (IMP). After FEBS and Marie Curie fellowships at the VIB-SWITCH lab in Brussels, he now leads a group of 8 experts in protein sequence analysis as principal investigator in the A*STAR Bioinformatics Institute (BII) in Singapore since November 2007. He is also the director of a cross-division programme for Human Infectious Diseases at the Bioinformatics Institute that builds upon the expertise of several groups from different backgrounds. Following the 2009 H1N1 pandemic his group has been collaborating with hospitals and health authorities in Singapore, Mexico, Brazil and the WHO CC in Australia to characterize circulating strains and possible effects of new mutations.

S19: Assoc Prof Wayne Mitchell

Group Leader of Bioinformatics, Experimental Therapeutics Centre (ETC), A*STAR

Wayne Mitchell's research career began at the bench studying the mechanism of polyphenoloxidase, an enzyme that plays a central role in the polymerization of insect exoskeleton. As an early recruit to the genomics revolution, Mitchell was part of the team that sequenced Chlamydia trachomatis and C. pneumonias. Following a stint at T-10, the Theoretical Biology Lab at the Los Alamos National Laboratory, Dr. Mitchell founded Tao Biosciences, a 15 FTE, Bay Area 'nanocap' start-up conceived
as a tightly coupled experimental/computational platform dedicated to anti-microbial discovery. He joined the Experimental Therapeutics Centre in 2007 as Group Leader in Informatics, became Group Leader Bioinformatics in 2010. Dr. Mitchell holds bachelor’s degrees from Harvard University (cum laude, History) and the University of Massachusetts (magna cum laude, Biology). He received his doctorate from the University of California, Berkeley.

S20: Dr John Connolly

Principal Investigator, Singapore Immunology Network (SIgN), A*STAR

Dr. Connolly is a Senior Principal Investigator and Director for the BMRC Program in Translational Research in Infectious Disease, a multi-disciplinary team focused on vaccine development. An Adjunct Associate Professor of Immunology at Baylor University, he serves on the Board of Governors for the Institute of Biomedical Sciences.

Dr. Connolly received his Ph.D. in Immunology from Dartmouth Medical School and studied human dendritic cell biology under Dr. Michael Fanger. During this time he was involved in the development of immunotherapeutic preclinical models and clinical trials for Glioblastoma multiforme (GBM). He was recruited to the Baylor Institute for Immunology Research, a fully translational research institute focused on rationally designed vaccines against cancer and infectious disease. Dr. Connolly served as the Director of Research Initiatives for the Baylor Research Institute, leading a large integrated translational research resource and multi-institutional programs that involved a number of international sites. During his tenure at Baylor, Dr. Connolly was the central core facility director of the NIAID Centers for Translational Research on Human Immunology and Biodefense, an NIH funded consortium of basic, translational research and clinical trials focused on vaccine design. Dr. Connolly is the past President of the Board of Directors of The American Cancer Society in Texas.
S21: Prof Matthew Cooper

Institute of Molecular Bioscience (IMB), University of Queensland

Prof. Matthew Cooper completed his PhD in 1995 and then spent 13 years in the UK, first at the University of Cambridge, then 9 years in start-ups and biotechnology companies. This involved innovation, fund raising, intellectual property generation, licensing, product development and commercialisation. He returned to Australia in 2009 as a NHMRC Australia Fellow, at the Institute for Molecular Bioscience at the University of Queensland. He has worked with Private Equity Investment, Pharmaceutical, Biotechnology and Diagnostics companies, was Managing Director of Cambridge Medical Innovations (part of Alere Inc.) and CSO of Akubio.

S22: Dr Masafumi Inoue

Group Leader of Molecular Diagnostics, Experimental Therapeutics Centre (ETC), A*STAR

In 1986, Dr Inoue joined the Molecular Pathology group at the Foothills Provincial Hospital in Calgary, Canada. As the head of the group, he developed many molecular-based assays for pathogen detection. The detection and subtyping of human papilloma virus (HPV) is one of his achievements. He joined IMCB, NUS in 1995, and served as the head of Translational Research Facility until October 2009. In November 2009 Masafumi joined ETC as the Project Director of Technology Development Unit. He developed many molecular-based assays for pathogens including a multiplex assay for the detection of Influenza A/B viruses with subtyping
information for pandemic H1N1 with TTSH. He also works with NUHS to develop techniques for the identification and quantification of genetic mutations that give rise to HBV drug resistance. His research now includes detection of HIV, TB, dengue, chikungunya as well as drug resistance mutations in HIV. He is currently leading a Flagship project of Molecular Diagnostics for Infectious Diseases, Health & Wellness funded by ETPL, A*STAR.

S23: Dr Srinivasa Rao

Research Investigator, Drug Discovery Unit, Novartis Institute for Tropical Diseases

Dr Srinivasa Rao completed his Ph.D. in molecular microbiology from National University of Singapore in 2003. During which he published several important papers describing the virulent mechanisms of enterobacteria Edwardsiella tarda and Aeromonas hydrophila. His research also identified novel secretion system that was later termed as type six secretion system (T6SS). Later in May 2004, he joined Novartis Institute for Tropical Diseases (NITD), Singapore to carry out the post doctoral research. During which he published a land mark paper describing ATP homeostasis as the ‘Achilles heel’ of hypoxic non-replicating persistent Mycobacteria, in PNAS. He progressed to research investigator in Drug Discovery unit at NITD in Feb 2007. Currently, his work involves identifying novel small molecule inhibitors (lead molecules) that are active against both replicating and hypoxic non-replicating Mycobacteria.
S24: Prof Mark von Itzstein

*Director, Institute for Glycomics, Griffith University*

Professor Mark von Itzstein is a Fellow of the Australian Academy of Science and a joint recipient of the prestigious Australia Prize in 1996. He is the Director of Griffith University’s Institute for Glycomics which is the only one of its kind in the southern hemisphere and only one of a few in the world. The Institute’s researchers collaborate with leading scientists around the globe to build a critical mass around carbohydrate-based research in areas of clinically significant diseases. Professor von Itzstein has a major research effort in the area of drug discovery focused on influenza and other viruses, drug-resistant bacteria and cancer. He has international standing in glycoscience and drug discovery particularly in the area of anti-infective drug discovery.