

Seminar Program

Director's Lecture Series

On 6 August 2004, **Professor Inder Verma** spoke on *Lentiviral Vectors: Utilities and Applications*. Professor Verma is American Cancer Society Professor of Molecular Biology and the Director of the Laboratory of Genetics at the renowned Salk Institute, where he has played a major leadership role over many years. He is a Fellow of the Third World Academy of Sciences, the National Academy of Sciences in the US and the Institute of Medicine. His life work has centred around RNA tumour viruses and gene therapy.

On 13 August 2004, **Professor Fotis Kafatos**, Director General of the European Molecular Biology Laboratory in Heidelberg, Germany, delivered a brilliant overview of the work of his group on *Malaria transmission in the mosquito: insights from functional genomics*. Professor Kafatos was an initiator of the Drosophila genome project and in the last decade has helped change the field of malaria research beyond recognition, by leading the development of molecular approaches to understanding the interactions between the Anopheles mosquito and the Plasmodium parasite.

It was a great pleasure to welcome the internationally renowned cancer biologist **Professor Arnold Levine** to give a Special Lecture on Friday, 12 November 2004. Professor Levine is currently a Professor at The Cancer Institute of New Jersey, Robert Wood Johnson School of Medicine, New Brunswick, NJ, and a Visiting Professor at the Institute for Advanced Study, Princeton, NJ. Professor Levine's research has focused upon the causes of cancer in humans and animals. He was one of the discoverers of the p53 tumour suppressor gene, which acts to protect individuals from developing cancer and his research group has helped to elucidate the mode of action of this tumour suppressor gene. The title of Professor Levine's lecture was *Single Nucleotide Polymorphisms in the HDM-2 Gene*.

We were privileged to welcome **Professor Bob Weinberg** to the Institute on 19 November 2004. Professor Weinberg is a founding member of the Whitehead Institute for Biomedical Research and the Daniel K Ludwig Professor for Cancer Research at the Massachusetts Institute of Technology in Boston. His lecture was entitled *Genes and proteins participating in the growth of malignant human tumors*. Professor Weinberg is an internationally recognised authority on the genetic basis of human cancer and was an invited speaker at the Australian Breast Cancer Conference in Melbourne that month.



Professor Kerin O'Dea, (left) **Director of the Menzies School of Health Research** in Darwin, gave a lecture in the Director's Series at the Institute on 23 March 2005. Her research focus has been on lifestyle-related chronic diseases (obesity, diabetes and vascular disease), Indigenous health, and public health nutrition. Her research spans the spectrum from basic sciences (biochemistry and physiology) through clinical research and population health. She is probably best known for her novel research on the marked beneficial health impact of temporary reversion to traditional hunter gatherer lifestyle on diabetes and associated conditions in Australian Aborigines. She has a strong research interest in the therapeutic and preventive potential of diet in relation to chronic disease. The title of Professor O'Dea's lecture was *Unhealthy aging: preventable chronic disease in Indigenous Australians*.

2004-2005 Institute Speakers

Dr Wendy Cook

Molecular Genetics of Cancer Division

Beyond the LiMit and straight into the PU.I – who's the real tumour suppressor around here? (7/04)

Dr Justin Rubio

Genetics and Bioinformatics Division

Scanning the genome for genes that predispose to multiple sclerosis: identification of novel loci on chromosomes 6, 10 and in the HLA complex (7/04)

Dr Ian Street

HTCS Lab, Structural Biology Division

The WEHI/Bio21 High Throughput Chemical Facility - A progress report on the first 8 months of operation (8/04)

Mr Toby Merson

Cancer and Haematology Division

The histone acetyltransferase querkopf controls adult neurogenesis by regulating neural stem cells (8/04)

Dr Gordon Smyth

Genetics and Bioinformatics Division

Truth and beauty in microarray data analysis (8/04)

Mr Simon Willis

Molecular Genetics of Cancer Division

How pro-apoptotic BH3-only proteins trigger cell death (9/04)

Mr Matthew Ritchie

Genetics and Bioinformatics Division

Quantitative quality control in the analysis of microarray data (9/04)

Ms Joelle Michaud

Genetics and Bioinformatics Division

Identification of genetic networks regulated by RUNX1/AML1 (9/04)

Dr Stuart Mannering

Autoimmunity and Transplantation Division

A novel post-translationally modified epitope in type 1 diabetes: Following T cells into trouble (9/04)

Mr Frédéric Schütz

Genetics and Bioinformatics Division

High-throughput identification of proteins by tandem mass spectrometry (10/04)

Dr David Keizer

Structural Biology Division

Structural studies of the P.falciparum merozoite surface protein 2 (10/04)

Ms Melissa Martyn

Genetics and Bioinformatics Division
Genetic control of Interleukin (IL)-12p40 production (10/04)

Ms Eleanor Sum

Victorian Breast Cancer Research Consortium
The role of the LIM domain protein LM04 in mammary development and breast cancer (10/04)

Mr Nick Wilson

Immunology Division
Control of antigen presentation in dendritic cells (11/04)

Ms Kylie Webster

Genetics and Bioinformatics Division
Dnmt3L - an epigenetic regulator in germ cells and thymus (11/04)

Professor Len Harrison

Autoimmunity and Transplantation Division
Using proinsulin to prevent diabetes (11/04)

Ms Ariel Forrai

Cancer and Haematology Division
Embryonic stem cells: Trapping genes and understanding self-renewal (11/04)

Ms Vikki Marshall

Genetics and Bioinformatics Division
Robotic extraction of DNA from mouse tails - information on the use of WEHI's x-tractor gene from Corbett Research (12/04)

Ms Alison Every

Autoimmunity and Transplantation Division
The tolerogenic, immunogenic and hormonal effects of proinsulin (3/05)

Sir Gustav Nossal

WEHI Patron and Governor
Immunisation and global health: Old and new vaccines (3/05)

Professor Jacques Miller

Immunology Division
The thymus: Maestro of the immune system (3/05)

Ms Christine White

Immunology Division
NF- κ B family members in TLR signalling (3/05)

Dr Andrew Roberts

Cancer and Haematology Division
Development and function of myeloid cells (3/05)

Dr Andrew Wei

Molecular Genetics of Cancer Division
Prospects of targeting pro-survival Bcl-2 for cancer therapy (3/05)

Dr Phil Hodgkin

Immunology Division
B cell development (4/05)

Ms Jacqueline Satchell

Structural Biology Division
The structure of Plasmodium falciparum Glyceraldehyde-3-Phosphate Dehydrogenase (4/05)

Ms Kate Sutherland

Victorian Breast Cancer Research Consortium
Conditional deletion of SOCS3 in mammary epithelium (4/05)

Dr José Villadangos

Immunology Division
Dendritic cell development and function (4/05)

Ms Krystal Evans

Infection and Immunity Division
Mechanisms and pathogenesis of severe malarial anaemia (4/05)

Dr Mark Shackleton

Victorian Breast Cancer Research Consortium
Identification of mammary epithelial progenitor cells (4/05)

Dr Bill Heath

Immunology Division
Immunological tolerance (5/05)

Ms Anu Sakthianandeswaren

Genetics and Bioinformatics Division & Infection and Immunity Division
The genetics of host response to murine cutaneous leishmaniasis (5/05)

Professor Peter Colman

Structural Biology Division
Structural biology and immunology (5/05)

Mr Peter Wong

Autoimmunity and Transplantation Division
The role of suppressor of cytokine signalling 3 (SOCS-3) in inflammatory arthritis and bone turnover (5/05)

Dr David Tarlinton

Immunology Division
Signal transduction from antigen receptors (5/05)

Mr Nick Huntington

Immunology Division
Regulation of lymphocyte signalling by the phosphatase CD45 (5/05)

Associate Professor Andrew Lew

Autoimmunity and Transplantation Division
From microbial domestication to designer vaccines (5/05)

Mr Jeff Babon

Structural Biology Division
Structural studies on suppressor of cytokine signalling 3 (SOCS3) (5/05)

Dr Louis Schofield

Infection and Immunity Division
The innate immune system – TOLL-like receptor signalling (5/05)

Ms Janine Stubbs

Infection and Immunity Division
Breaking in when you're locked out: Red cell invasion strategies and switching of a potential malaria vaccine candidate (6/05)

Dr Axel Kallies

Immunology Division
The end of a lymphocyte (6/05)

Dr James Beeson

Infection and Immunity Division
Parasitic infections and the art of immune evasion (6/05)

Dr Ian Campbell

Autoimmunity and Transplantation Division
NF- κ B1 (p50) is a critical requirement for CD4 T cell function in acute inflammatory arthritis (6/05)

Ms Rebecca McCrackan

Immunology Division
The role of Rel/NF κ B in myelopoiesis (6/05)

2004-2005 Visiting Speakers**Dr Mark Kaplan Ph.D**

Department of Microbiology and Immunology, Indiana University School of Medicine, Walther Oncology Center, USA

Transcriptional regulation of differentiation programs by Stat4 (7/04)

Professor Ralph Budd

University of Vermont, USA
T cell activation: The FLIP side of Fas (7/04)

Dr Michael Kershaw

Peter MacCallum Cancer Institute, Australia
Fighting cancer using a genetically enhanced immune system (7/04)

Associate Professor Adam Goldfarb

Clinical Haematology/Oncology Laboratory, University of Virginia, USA
Erythro-megakaryocytic lineage divergence in hematopoiesis (7/04)

Dr Graham Lieschke

Ludwig Institute for Cancer Research, Australia
Genetic studies of myeloid development in zebrafish (7/04)

Dr Janindra Warusavitarn

Kolling Institute, University of Sydney, Australia
The effect of restoring TGF B function on metastasis and response to chemotherapy of microsatellite unstable colon cancer (7/04)

Associate Professor Ygal Haupt

The Lautenberg Center for General and Tumor Immunology, The Hebrew University, Israel
Modulation of the p53-Mdm2 auto-regulatory loop (7/04)

Dr Richard Gibbs

Baylor College of Medicine, Houston, Texas, USA
Genomics after the human genome project (8/04)

Dr Inder Verma

The Salk Institute, La Jolla, California, USA
Lentiviral vectors: utilities and applications (8/04)

Professor Fotis Kafatos

Director General of EMBL, Heidelberg, Germany
Malaria transmission in the mosquito: Insights from functional genomics (8/04)

Dr John Wahren

Karolinska Institute, Stockholm, Sweden
C-peptide – A new potential in the treatment of type I diabetes (8/04)

Dr Jim Vadolas

The Murdoch Childrens Research Institute, Australia
Development of therapies for beta-thalassaemia using in vitro and in vivo models (8/04)

Dr Andy Waters

Leiden University Medical Center, The Netherlands
Post-genomic analysis of malaria (9/04)

Professor Richard Lang

*Childrens Hospital Research Foundation,
Cincinnati, Ohio, USA*

Macrophage mediated programmed vascular regression: Another function for the Wnt pathway (9/04)

Professor Peter Cresswell

Yale University, Connecticut, USA

Antigen processing in dendritic cells (9/04)

Dr Christine Brender

*St Vincent's Institute of Medical Research,
Australia*

Regulation of T cell activation by SOCS3 (9/04)

Professor Jean-Laurent Casanova

Necker Medical School, Paris, France

The human model: A genetic dissection of immunity to infection in natural conditions (9/04)

Dr Chris Love

University of Oxford, UK

The high resolution structure of Sema4D: Insights into ligand binding (10/04)

Professor Doug Green

*La Jolla Institute for Allergy and Immunology,
California, USA*

Apoptosis, immune tolerance and mitochondria - A twisted trail (11/04)

Dr Arnold Levine

School of Natural Sciences, Institute for Advanced Study in Princeton, New Jersey, USA

Single Nucleotide Polymorphisms in the HDM-2 Gene (11/04)

Professor Robert A Weinberg

*Professor of Biology, MIT and Member of the Whitehead Institute for Biomedical Research,
Cambridge, Massachusetts, USA*

Genes and proteins participating in the growth of malignant human tumors (11/04)

Dr Sean Morrison

University of Michigan, USA

The genetic regulation of stem cell function (11/04)

Professor Iain L. Campbell

Professor and Chair of Molecular Biology, School of Molecular and Microbial Biosciences, University of Sydney, Australia

Disrupted interferon signalling disturbs the brain in unexpectedly different ways (11/04)

Dr Stephen Ting

Bone Marrow Research Lab, The Royal Melbourne Hospital, Australia

The epithelial -specific factor, Grainyhead-like 3: Curly tails and beyond (12/04)

Professor Art Palmer

Department of Biochemistry and Molecular Biophysics, Columbia University, New York, USA

Protein motions in folding, binding and catalysis (12/04)

Dr Michael Stumpf

Imperial College London, UK

Evolutionary and statistical analysis of protein interaction networks (12/04)

Dr Clare Scott

Cold Spring Harbor Labs, New York, USA

The role of the novel polycomb gene, CBX7 in murine lymphomagenesis (12/04)

Professor Pierre De Meyts

Vice-President, Scientific Director, Receptor Biology Laboratory, Hagedorn Research Institute, Denmark

Structure, function and evolution of ligands and receptors of the insulin peptide family (2/05)

Dr Izhak Haviv

Ian Potter Centre for Cancer Genomics & Predictive Medicine, Peter MacCallum Cancer Institute, Australia

Manipulating epithelial cancers through cross talk genes (3/05)

Professor Kerin O'Dea

Director, Menzies School of Health Research, Darwin, Australia

Unhealthy aging: preventable chronic disease in Indigenous Australians (3/05)

Dr Erin Drew

University of British Columbia, Vancouver, Canada

CD34 and CD43 are Teflon on mast cells (3/05)

Professor James McCluskey

University of Melbourne, Australia
Antigen presentation (4/05)

Mr Robert Moritz

Proteomics Facility Manager, Ludwig Institute for Cancer Research, Australia

JPSF Proteomic Services Information Seminar (5/05)

Mr Lindsay Woods

Director, Business and Corporate Development, Australian Proteome Analysis Facility Ltd

How many Proteomes must a man walk down? A look into APAF (5/05)

Dr Boris Turk

Jozef Stefan Institute, Ljubljana, Slovenia

Protease signalling: cysteine cathepsins pathways to apoptosis (5/05)

Professor Jan-Paul Medema

Leiden University, The Netherlands

The role of APRIL in immunity and tumorigenesis (5/05)

Professor Anne Kelso

Queensland Institute of Medical Research, Australia

Effector T cell development (6/05)

Dr Stephen Schoenberger

La Jolla Institute of Allergy and Immunology, San Diego, California, USA

First impressions count: Programming of CD8 T cell responses (6/05)

Dr Richard Williams

Division of Hematology/Oncology, St Jude Children's Research Hospital, Memphis, Tennessee, USA

Functional and genetic interaction of the bcr-abl oncogene and the Arf Tumour suppressor (6/05)

Dr Eugene Maraskovsky

CSL Limited, Australia

Regulators of human dendritic cell function: Tumour antigen processing and presentation depend critically on dendritic cell type and the mode of antigen delivery (6/05)