



The Immunology Group of Victoria

A branch of the Australasian Society for Immunology

Masterclass in Immunology

To be held at the Woodruff lecture Theatre, University of Melbourne, 22 July, 2008. Registration details: www.microbiol.unimelb.edu.au/lgv

Speakers:



Stem cells represent one of the most exciting new horizons in medicine - but their effective clinical translation requires a successful marriage with the immune system. **Richard Boyd** (*Director of Monash Immunology and Stem Cell Laboratories*) will discuss the important synergistic interplay between these two seemingly unlikely scientific partners.



The immune system must have broad specificity to ensure it can respond to any type of pathogen, but it must also limit autoreactivity to components of the body. **Bill Heath** (*HHMI International Research Scholar and ARC Federation Fellow, University of Melbourne*) will review how self tolerance is educated in the thymus and maintained in the peripheral immune system.



Despite excellent treatments, there is still no cure or vaccine to prevent HIV infection. **Sharon Lewin** (*Director, Infectious Diseases Unit, Alfred Hospital*) will discuss current advances in the understanding of T-cell decline, T-cell recovery, the role of immune activation and barriers to cure of HIV.



Interactions between the immune system and tumours involve at least 1 of 3 distinct phases: 1. Elimination of transformed cells by immune effectors; 2. Equilibrium – where the immune system controls tumour growth, but does not “cure” the host; and 3. Escape – where a tumour emerges that is no longer controlled by immunity. **Mark Smyth** (*Head, Cancer Immunology Program, Peter MacCallum Cancer Institute*) will discuss the major cell types and effector molecules involved in each phase and the implications for cancer therapy.



David Tarlinton (*Laboratory Head, Immunology Division, WEHI*) will examine the B cell response to antigen, using current and landmark experiments to illustrate how memory is formed and maintained. He will describe the transcriptional cascades that regulate B lymphocyte differentiation and how this provides a paradigm for understanding lymphocyte differentiation.



Jose Villadangos (*Leukemia and Lymphoma Society Scholar, WEHI*) will provide a historical perspective on the emergence of Dendritic Cells (DCs) as a fundamental component of the immune system. He will describe landmark experiments in the field, including recent reports that have caused some aspects of DC development and function to be reassessed. He will highlight future research directions in the DC field, including the development of novel vaccines and the treatment of autoimmunity and cancer.



Nigel Waterhouse (*NHMRC RD Wright Fellow, Peter MacCallum Cancer Institute*) will discuss how cytotoxic lymphocytes kill their targets by granule exocytosis. His presentation will demonstrate the use of time lapse microscopy as a tool to visualise and characterise the different modes of killing. Understanding the various ways that cytotoxic lymphocytes kill virus-infected cells and tumour cells may uncover alternative, natural ways to kill tumour cells.