



University of Cyprus
Department of Biological
Sciences

Postgraduate Seminars

Seminar Series 2018 - 2019

Dr. Philippos Demetriou

**Molecular Immunology (Dustin) Lab
Kennedy Institute of Rheumatology
University of Oxford, UK**

“Regulation of human T-cell activation in health and disease: Insights from high resolution imaging and flow cytometry”

**Wednesday, 3 April 2019, at 17:00
Building CTF 01, Room 110, Panepistimioupoli Campus**

This seminar is open to the public

Immunotherapy is one of the most attractive strategies in the recent decades for improving treatment of cancer patients. An advancing appreciation of the basic T-cell immunobiology has revealed pathways and tools such as the PD-1 and CTLA-4 checkpoint pathways and engineered T-cell receptors and chimeric antigen receptors, CARs, which are harnessed to boost T-cell responses against tumours; these have shown positive and encouraging outcomes for patients but there is still a great need to improve these treatments and further enhance immune responses to tumours. This talk will present new advances in our understanding of the basic immunobiology of the CD2-CD58 costimulatory pathway in human T-cells. Using high resolution imaging we reveal unexpected localisation dynamics of CD2-CD58 interactions during in vitro tumour-antigen-specific T-cell activation by primary antigen presenting cells (APC) or synthetic APC-like membranes. This localisation turned out to be related to its function as a costimulatory molecule. Finally, this new understanding of the basic biology of CD2 function, allowed us to evaluate the integrity of this pathway in cancer using flow cytometric analysis and functional assays.