



# SIgN Immunology Seminar

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Date: Wednesday, 11<sup>th</sup> January 2012

Time: 10.00am – 11.00am

Venue: SIgN Seminar Room, Immunos Building Level 4, Biopolis

## Impact of immunological history on immune robustness, age-associated conditions and longevity

By 2020 there will be 1 billion elderly individuals (>60 years old) within the world's population. The problem we will face is not the number but the quality of aging. In Singapore, a majority of 65+ individuals display one or more chronic condition (eg. frailty). This population shows poor responses to vaccination, increased susceptibility to infections, cancer, and Alzheimer's diseases amongst others. Increasing evidence suggests the frail elderly as the more susceptible to immune dysfunctions. The objective of our research is to better define healthy aging at the immunological level, to better understand diseases-related alteration. We think immunological history defined by the array of infectious agents seen during lifespan, is one important determinant of immunity in the elderly. Cytomegalovirus (CMV) infection is one good candidate associated with "inflammaging", repertoire shrinkage, changes in immune cell distribution, T cell dysfunctions and also longevity. As partners of the Singapore Longitudinal Aging Study (SLAS) we are studying a pool of Chinese elderly (65+). We aim at following healthy and frail categories for their immune robustness (response to Influenza vaccine) together with a set of immune and clinical markers. In parallel a set of elderly is followed-up longitudinally and should allow identification of predictive markers for immune robustness, development of diseases and longevity. How these are influenced by chronic antigenic stimulations acquired over the years will be discussed.