



### **Sharad Kumar**

Sharad is a Senior Principal Research Fellow of the National Health and Medical Research Council of Australia. He is also a co-Director of the Centre for Cancer Biology, a Research Professor of Cell Biology and Chair of Cancer Biology at the University of South Australia. His laboratory has made several seminal contributions to biomedical sciences, including the discovery of Nedd genes, such as Nedd1, a key centrosomal protein required for  $\gamma$ -tubulin recruitment; Nedd2 (caspase-2), one of the first mammalian caspase; Nedd4, the first and the founding member of the WW-HECT type of ubiquitin-protein ligase family; and Nedd8, a ubiquitin-like protein involved in a protein modification pathway, now widely known as *neddylation*. His group with key collaborators also discovered and characterised a several components of the *Drosophila* apoptosis machinery and defined a caspase-independent, autophagy-dependent cell death process. Other discoveries from his team include Ndfips as regulators of the Nedd4 family of ubiquitin ligases, the functions of Nedd4 family of ubiquitin ligases and Ndfips in regulating ion channels and transporters, and an unexpected role of caspase-2 as a tumour suppressor. He continues to study caspase functions, mechanisms of developmental cell deaths, and the physiological functions and regulation of the Nedd4 family members. He is a Fellow of the Australian Academy of Science (FAA), and the Australian Academy of Health and Medical Sciences (FAHMS). His contributions to science and the profession have also been recognised through the ASBMB Amersham Award, the Ranbaxy Research Award, the ASBMB Lemberg Medal, the FAOBMB Research Excellence Award, the ANZSCDB President's Medal and appointment as a Member of the Order of Australia.

### **Seminar:**

#### **Ubiquitination-dependent regulation of membrane proteins**

Ubiquitination is a common protein modification process that is essential for the normal functioning of the cell. This seminar will discuss how ubiquitination regulates membrane proteins, such as the signaling receptors, ions channels and transporters, and the pathophysiological consequences of such a regulatory system. Data will be presented on the role of ubiquitination in iron and salt homeostasis, and in disease. The seminar should be of interest to a wide audience in biomedical sciences, biochemistry, cell biology and physiology.