Abstract
Natural products have always acted as the most important leads in drug discovery but, even though the first fluorescent molecules to be described were natural products, synthetic chemicals have since taken the lead as templates for new fluorescent probes. The recent discovery and commercialization of epicocconone, a fluorescent natural product from the fungus *Epicoccum nigrum*, and GFP from the jellyfish *Aequorea victoria* has developed our interest in natural products as leads for new fluorophore discovery. Our focus has resulted in the isolation of an extremely fluorescent natural product from a Botany Bay sponge (*Clathria australiensis*) that specifically stains lysosomes in live cells and the biomimetic synthesis of the blue fluorescent ageladine A (from *Agelas nakamurai*) using the Pictet-Spengler reaction. This extremely short synthesis encouraged us to apply this chemistry to the synthesis of fluorescent analogues and then to attempt the first three-component Pictet-Spengler-Huisgen cycloaddition (unsuccessfully). But, we did discover a new class of fluorophores that are extremely sensitive to pH as well as a range of “click”-fluorophores that may find application in biotechnology. This lecture will outline a nomadic journey from the isolation and structure elucidation of natural products to the discovery of new chemistry and the development of organic chemicals as tools for biotechnology.

About the Speaker
Dr Karuso completed his BSc and PhD in the Department of Organic Chemistry at Sydney University in natural products chemistry. Peter postdoced with Dame Patricia Bergquist, Paul Scheuer, and A. I. Scott before being awarded an Alexander von Humboldt fellowship at the Technische Universität München (Horst Kessler) then returning to Sydney as a Lecturer in Organic Chemistry and Biotechnology at Macquarie University.

Five Representative Publications in the Past Five Years