

Synthesis for Drug Discovery and Fluorescent Sensing in Cells

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場所：北九州市立大学 国際環境工学部 ひびきのキャンパス第一会議室
(北九州市若松区ひびきの1-1)

共催：北九州市立大学 環境技術研究所 先制医療工学研究センター

Biography:

Professor Bull completed his first degree in Chemistry and Biochemistry in 1986 at the University of Wales, Cardiff and remained at Cardiff until 1990 to do his Ph.D under the supervision of Dr. D. R. Kelly. After PDRA stints at the Universities of Queensland (Australia) and St Catherine's College Oxford (UK), he joined the University of Bath in 2001 where he currently holds a personal Research Chair in Organic Chemistry. During his time at Bath, Steve has supervised >50 Ph.D students and PDRA's, 10 Masters students who have produced >190 papers in the areas of synthesis, catalysis, sustainability, sensing and medicinal chemistry, that currently attract a H-Index of 43 and >500 citations a year. In 2013 he was awarded the prestigious Excellence in Doctoral Supervision Award by the University of Bath in recognition of his exceptional record of supervising PhD students. He also received the 2014 Daiwa prize for carrying out collaborative international research with Japan and has been an Industrial Royal Society Fellow and Visiting Professor at ECUST, Sydney, Monash and Orsay.

Abstract: Recent developments in our synthetic methodology program directed towards the preparation of important amino acids, heterocycles, insecticides and drug molecules of use to the pharmaceutical industry will be described. The talk will describe the discovery of a new class of vinyl isocyanide activity that have been shown to demonstrate excellent antibiotic activity towards pathogenic Gram-positive bacteria (including problematic MRSA strains) and fungi. The development of robust chemical molecular sensors (chemosensors) for the selective detection of biologically relevant analytes will also be described, concentrating on the use of fluorescent boronic acid based probes that can signal the presence of diols, anions and reactive oxygen/nitrogen species (ROS/RNS) that are produced in cellular environments.

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