NUS National University of Singapore | Department of Biological Sciences, Faculty of Science

ON-SITE BIOLOGY COLLOQUIUM

Friday, 16 Feb 2024 | 4 pm | DBS Conference Room 1

Hosted by Assist. Prof Luo Min

Map to Block S3

Back to the Future?: Exploiting the biology of bacteria cell wall biosynthesis for next generation antibacterial strategies

By **David Roper**

School of Life Sciences, University of Warwick, Coventry, United Kingdom

Inhibitors of bacterial cell wall biosynthesis have been the mainstay of antimicrobial therapy since the very introduction of antibiotics in the 1940s. The development of resistance mechanisms to antibiotics generally threatens their future and there is a dearth of large pharmaceutic company innovation and development in this important translational sector despite these being essential drugs that underpin many aspects of healthcare. At Warwick we have been studying the linkage between bacterial cell wall biosynthesis and cell division for some time and have some new insights on old targets that may provide a route to next generation antibiotic compounds with low potential for the generation of resistance. In this presentation I will discuss some new ideas and perspective on old targets and the tools and technology we are developing to assist in next generation antibiotic drug discovery.

About the Speaker

David is a Professor of Biochemistry and Director of Research for the School of Life Sciences at the University of Warwick in the UK. The Roper group uses interdisciplinary approaches to study the ways in which bacteria make their cell walls and how this is related to cell division to address antimicrobial resistance. We use a range of tools from basic microbiology to molecular structure determination to relate enzyme and protein mechanism to structure and function at a cellular level. His research encompasses both fundamental and translation approaches including assay development and drug discovery approaches and includes the design and synthesis of chemical mimetic small molecule probes for mechanistic and translational studies.

David was a awarded a BBSRC-Royal Society of Edinburgh Enterprise Fellowship and was elected as Fellow of the Royal Society of chemistry in 2015, was awarded an Academy of Medical Sciences, Hamied Foundation UK-India AMR Visiting Professorships in 2018 and a Vagelos College of Physicians & Surgeons, Columbia University New York visiting Schaefer Research Scholarship in 2020.