

THE COLLEGE OF AGRICULTURE, ENGINEERING AND SCIENCE

The School of Chemistry and Physics

cordially invites you to attend a

Public Talk

Expanding the Structural Biology 'Toolbox' with Protein Mass Spectrometry. A Structural and Functional Study of a Novel Bacterial Iron Storage System

by the invited speaker

Dr. David J. Clarke

*Chancellor's Fellow and Lecturer, School of Chemistry
University of Edinburgh*



Dates:

Tuesday, 27 February 2018, PMB campus

Thursday, 1 March 2018, WVL campus

Venue:

PMB: Chem Inside Lecture Theatre, Chemistry building

WVL: Chemistry Seminar Room, Chemistry Building, 2nd floor H-block

Time:

16h00 - 17:00

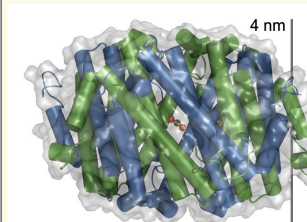
RSVP: [Please click here](#)

ENQUIRIES: Dr. Clint Veale; e-mail VealeC@ukzn.ac.za

INSPIRING GREATNESS

ABSTRACT

Over the last two decades, the utility of mass spectrometry (MS) has rapidly evolved from routine mass measurement of small molecules to challenging analysis of large mega-dalton biomolecular assemblies. Consequently, MS is now rapidly becoming a powerful technique for structural biology; complementary to existing techniques such as X-ray crystallography, NMR and cryo-electron microscopy. In large part, this has been facilitated by the emergence of native electrospray ionisation (native ESI) techniques – which preserve protein structure, protein-ligand and protein-protein interactions during ionization and detection process. Thus, mass measurement using native ESI provides a quick strategy to determine the stoichiometry and topology of constituents within protein assemblies. Here, I will describe our recent study of a family of novel bacterial iron storage system, the encapsulated ferritins and highlight how these emerging MS techniques can be used in combination with 'traditional' structural biology disciplines to investigate protein structure and function.



About the Speaker

Dr. Clarke is a Chancellor's Fellow and Lecturer in the School of Chemistry at the University of Edinburgh where he leads the Biomolecular Mass Spectrometry Group. The multidisciplinary group consists of chemists, biologists and engineers and the core research theme of the group is the development and application of modern techniques in mass spectrometry (MS) for the functional and structural characterisation of biological systems. Research utilises a range of MS-based techniques including: top-down and middle-down fragmentation, ion-mobility mass spectrometry, native mass spectrometry, MS imaging, and hydrogen/deuterium exchange. These MS-based studies are supported by complementary biochemical analysis and structural biology approaches.

