

Symposium 26: Why Neuroinformatics and Computational Modelling matters for Neuroscience

Theme: Methods and techniques

Wednesday 12th April, 13:20 – 15:00

Neuroinformatics and computational modelling methods aim to help us understand the burgeoning volume of data that arises in experimental neuroscience. Neuroinformatics is of growing importance because of the sheer data volume, because of the need for specialist tools to analyse large data volumes and because it enables re-use of data and analysis techniques. It also enables the use of this data to underpin the computational modelling that enables integration and understanding of the data, and formulate and testing of theories (including making predictions) about neural systems. The four talks will cover a range of topics in both neuroinformatics and computational modelling: Smith on including tools for sharing data and analysis techniques, Vogels and Clopath on the computational modelling side, from balancing inhibition and excitation to plasticity models, and Silver on synaptic integration and new software tools. The talks are drawn from the large UK community of neuroinformaticians and modellers who have extensive expertise in applying to core problems in neuroscience.

Chair: Professor Leslie Smith (University of Stirling)

Speaker 1: Professor Leslie Smith (University of Stirling)

'Neuroinformatics tools for sharing and analysing data'

Speaker 2: Dr Claudia Clopath (Imperial College London)

'Plasticity in neural networks'

Speaker 3: Dr Tim Vogels (University of Oxford)

'Balancing excitation and inhibition in sensory networks'

Speaker 4: Professor Angus Silver (University College London)

'Linking network structure and function in the cerebellar cortex'