Durham University

Biophysical Sciences Institute

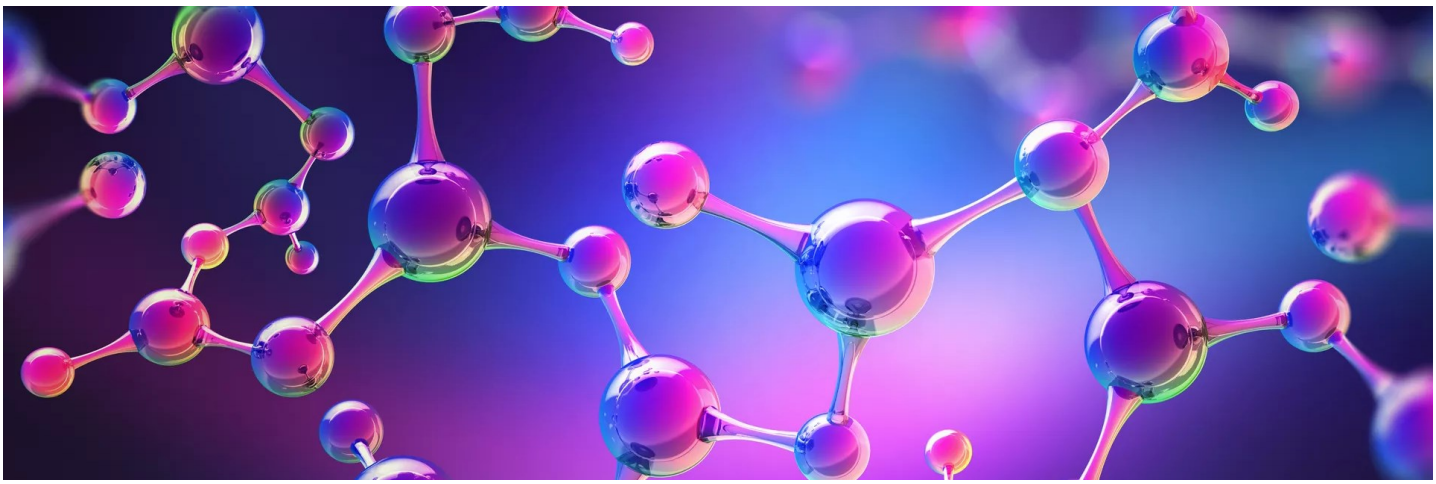
Inspiring the extraordinary

BSI's Early Career Researchers' Winter Symposium 2024

Thursday 12th December 2024, Collingwood College, Durham University

The BSI have organised this symposium to bring together early career researchers (ECRs) from across biomathematics, biophysics, biological chemistry, chemical biology, and bioengineering.

Hosted by the Biophysical Sciences Institute (BSI), the event has been designed to initiate new research collaborations, inspire researchers, and celebrate the importance of interdisciplinary research.



Organising Committee:

Libbi Moon (Chair)
Ermando Canga
Dorothea Barnes
Dr Will Brittain
Dr Liz Morris

Biophysical Sciences Institute

Innovation through interdisciplinary research

Programme

9:30 Registration and refreshments

10:00 Welcome from the BSI and event overview

Session 1

10:15 Ice Breaker Activity

10:30 Shining light on DNA hairpins environmental sensitivity with smFRET
Sarah Graham, University of York

10:45 Targeted Protein Degradation of Epstein-Barr Nuclear Antigen 1
Eleanor Taylor-Newman, Durham University

11:00 **Keynote:** Fluorinated peptide tools for chemical biology
Chris Coxon, University of Edinburgh

11:45 **Q&A with Industry Panel**

12:30 Lunch and poster session

Session 2

13:45 Biophysics of liquid-phase bacterial protein-RNA droplets
Lewis Frame, University of York

14:00 Structural requirements for the specific binding of CRABP2 to cyclin D3 revealed by biophysical and computational analysis
Natalie Tatum, Newcastle University

14:15 The role of post-synaptic dopamine transport in Drosophila memory
Karina M Piotrowska, Durham University

14:30 **Keynote:** Open-source software for building, scoring and design of SARS-CoV-2 main protease inhibitors
Danny Cole, Newcastle University

15:15 Coffee break and poster session

Session 3

15:35 Surface-immobilized, pH-responsive DNA nano switches for electronic actuation
Francisca D'Rozario, University of York

15:50 **Rapid oral presentations**
R1: Understanding enzyme mobility kinetics in complex industrial systems
Charlotte Fletcher, Newcastle University

R2: From Tip to Ship: Characterisation of New Antifouling Coatings
Benjamin Devenish, Durham University

R3: Quantifying the Mechanical Properties of Stress Granules in Live Cells
Thomas Williamson, University of Edinburgh

R4: Exploring the effects of a multicomponent phytoceutical health product in a Drosophila melanogaster repetitive concussion model
Norah Alanazi, Durham University

R5 Comparative Study of a Potent CNS-Permeable RARβ-Modulator, Ellorarxine, in Neuronal Cells In Vitro *Yunxi Zhang, Durham University*

16:15 **Keynote**: Designing tumour-targeted nanomedicines for cancer therapy
Christine Dufès, University of Strathclyde

17:00 People's choice award votes

17:05 Closing remarks, prizes, and instructions for evening meal