

CHALLENGES IN CHEMICAL BIOLOGY - ISACS5
PROVISIONAL PROGRAMME AS AT 30 JUNE

Tuesday 26 July

- 15:00 REGISTRATION
- 16:30 Opening and Honorary Fellowship Presentation
- 17:00 PLENARY: From the Structure and Function of the Ribosome to New Antibiotics
[Thomas Steitz](#), *Yale University, USA*
- 18:00 PLENARY: The Structural Basis of the Decoding of mRNA by the Ribosome
[Venki Ramakrishnan](#), *MRC Laboratory of Molecular Biology, Cambridge, UK*
- 19:00 WELCOME RECEPTION

Wednesday 27 July

- 08:00 REGISTRATION
- 08:45 OPENING COMMENTS
- 09:00 PLENARY: Bringing DNA Sequences to Life: Synthetic Genes, Genomes, and Cells
[Clyde Hutchison](#), *J Craig Venter Institute, USA*
- 09:40 Engineering Cytochrome P450 Monooxygenases for Biotechnological Applications
[Andrew Munro](#), *Manchester Interdisciplinary Biocentre, UK*
- 10:00 PLENARY: Expanding the Central Dogma
[Philip Holliger](#), *MRC Laboratory of Molecular Biology, Cambridge, UK*
- 10:40 COFFEE
- 11:10 PLENARY: RNA versus Protein, and the Inevitable Compromise
[Andrew Ellington](#), *University of Texas at Austin, USA*
- 11:50 Synthetic Tools for the Investigation and Exploitation of Polyketide Biosynthesis
[Manuela Tosin](#), *Department of Chemistry, University of Warwick, UK*
- 12:10 PLENARY: Non-standard Peptides Expressed under Reprogrammed Genetic Code
[Hiroaki Suga](#), *University of Tokyo, Japan*
- 12:50 LUNCH
- 13:50 PLENARY: From Single Molecule Detection to Super Resolution Microscopy in Biochemistry and Chemical Biology
[Johan Hofkens](#), *Katholieke Universiteit Leuven, Belgium*
- 14:30 A Primary Hydrogen-Deuterium Isotope Effect Observed at the Single-molecule Level
[Wen-Wu Li](#), *Department of Chemistry, University of Oxford, UK*
- 14:50 PLENARY: Title Tbc
[Andrew Griffiths](#), *University of Strasbourg, France*
- 15:30 COFFEE
- 16:00 PLENARY: New Paradigms at the Proto-life/Synthetic Biology Interface
[Stephen Mann](#), *University of Bristol, UK*
- 16:40 Biomolecular Catalytic Assemblies - Creation of an Artificial Metalloenzyme -
[Jeffrey Bos](#), *University of Groningen, Netherlands*
- 17:00 POSTER SESSION
- 18:30 CLOSE

Thursday 28 July

- 09:00 PLENARY: Of Compounds, Crystals and Knock-ins: the Chemical Biology of Sphingosine 1-Phosphate Receptors
[Hugh Rosen](#), *Scripps Research Institute, USA*
- 09:40 Improving Bioluminescent Imaging with Synthetic Luciferins and Engineered Mutant Luciferases
[Stephen Miller](#), *UMass Medical School, USA*
- 10:00 PLENARY: New Approaches to Targeting Wild-type and Mutant Kinases in Cancer
[Nathanael Gray](#), *Harvard Medical School, USA*
- 10:40 COFFEE

- 11:10 PLENARY: Targeting Epigenetic Readers of the Bromodomain Family
[Stefan Knapp](#), *Structural Genomics Consortium, Oxford, UK*
- 11:50 Deciphering the Role of C-Terminal Binding Proteins in Cell Cycle Regulation using Cyclic Peptide Protein-Protein Interaction Inhibitors.
[Ali Tavassoli](#), *School of Chemistry, University of Southampton, UK*
- 12:10 PLENARY: The Rise of Fragment Based Drug Discovery
[David Rees](#), *Astex Therapeutics, Cambridge, UK*
- 12:50 LUNCH
- 13:50 PLENARY: DNA Strand Displacement Cascades
[Erik Winfree](#), *Caltech, USA*
- 14:30 Reengineering Orthogonally Selective Riboswitches
[Jason Micklefield](#), *Manchester Interdisciplinary Biocentre, UK*
- 14:50 PLENARY: Self-assembly of DNA into Nanoscale Three-dimensional Shapes
[William Shih](#), *Harvard University, USA*
- 15:30 COFFEE
- 16:00 PLENARY: Self-Assembling Peptide Nanotubes: Design and Biological Applications
[Reza Ghadiri](#), **Scripps Research Institute, USA**
- 16:40 Mitochondria-targeted Probes and Functional Molecules to Test the Free Radical Theory of Ageing and Understand Smooth Muscle Contraction
[Richard Hartley](#), *University of Glasgow, UK*
- 17:00 POSTER SESSION
- 18:30 CLOSE

Friday 29 July

- 09:00 PLENARY: The Micromechanics and Physics of Cancerous Cells: What are the Physical Hallmarks of Cancer Metastasis?
[Bartosz A Grzybowski](#), *Northwestern University, USA*
- 09:40 Bio-inorganic Protocells: Enzyme Catalysis in Silica Nanoparticle-stabilized Water Droplets
[Mei Li](#), *University of Bristol, UK*
- 10:00 PLENARY: Single Molecule Cut & Paste
[Hermann Gaub](#), *Ludwig-Maximilians University, Germany*
- 10:40 COFFEE
- 11:10 PLENARY: The Origin of Biological Homochirality
[Donna Blackmond](#), *Scripps Research Institute, USA*
- 11:50 PLENARY: Sugars & Proteins: Some BioPhysical Organic Chemistry of Sugars, Norman Heatley Award Lecture
[Ben Davis](#), *University of Oxford, UK*
- 12:30 CLOSING REMARKS
- 12:45 CLOSE

SPONSORS

We would like to thank the AstraZeneca and the BBSRC for their sponsorship support of ISACS5.

