

Programme

Saturday, June 30

12:00 – 15:00 Registration (Sir Charles Wilson Building)

14:00 – 14:15 Welcome and Opening Remarks

Session 1: New Probes, New Tools 1 *Chair: Anita Jones*

14:15 – 14:40 Contributed Talk 1
Donal O'Shea (Royal College of Surgeons in Ireland, Ireland)
Real-time near infrared fluorescence imaging: research tools with the potential for clinical use

14:40 – 15:05 Contributed Talk 2
Xiaogang Liu (Singapore University of Technology and Design, Singapore)
"Big data" reveals new structure-property relationships of fluorescent dyes

15:05 – 15:30 Contributed Talk 3
Anders Foller Füchtbauer (Chalmers University of Technology, Sweden)
Pentacyclic adenine: a versatile base analog with a bright future

15:30 – 15:55 Emerging Investigator 1
Robert Neely (University of Birmingham, UK)
Image search for the genome: the development and application of fluorescent single-molecule DNA barcodes

15:55 – 16:25 COFFEE BREAK

Session 2: Biological Applications 1 *Chair: Marcus Wilhelmsson*

16:25 – 17:05 Invited Talk 1
Jane Grasby (University of Sheffield, UK)
DNA and Protein Conformational Change in the Action of Flap Endonuclease 1

17:05 – 17:45 Invited Talk 2
Claus Seidel (Heinrich Heine University, Germany)
Integrative dynamic structural biology with fluorescence spectroscopy

18:00 – 20:00 WELCOME RECEPTION (with drinks and canapés; Cloisters and Hunterian Museum, University of Glasgow)

Sunday, July 1

Session 3: Fluorescent Amino Acids and Proteins

Chair: Trevor Smith

- 09:00 – 09:40 Invited Talk 3
Steve Meech (University of East Anglia, UK)
Femtosecond to Microsecond Study of Mechanism in Photoswitchable Fluorescent Proteins
- 09:40 – 10:05 Contributed Talk 4
Sheng Yi Wu (University of Alberta, Canada)
KIRIN1, a genetically encoded indicator for ratiometric imaging of intracellular potassium ion dynamics
- 10:05 – 10:30 Contributed Talk 5
Andrew Sutherland (University of Glasgow, UK)
Charge-transfer based pyridyl-derived amino acids: highly fluorescent probes for in vivo cell imaging
- 10:30 – 11:00 COFFEE BREAK

Session 4: Roger Tsien Keynote Lecture

Chair: Steven Magennis

- 11:00 – 12:00 Inaugural Roger Tsien Keynote Lecture
Taekjip Ha (Johns Hopkins University, USA)
From single molecule fluorescence to superenzyme engineering and beyond
- 12:00 – 12:25 Emerging Investigator 2
Lena Simine (Rice University, USA)
Fluorescent proteins detect host structural rearrangements via electrostatic mechanism
- 12:25 – 13:25 LUNCH BREAK (Provided in venue)

Session 5: Nucleic Acid Structure 1

Chair: Claus Seidel

- 13:25 – 14:05 Invited Talk 4
Hiroshi Sugiyama (Kyoto University, Japan)
Deciphering of nucleosome structure using an emissive nucleobase FRET pair
- 14:05 – 14:30 Contributed Talk 6
Moa Sandberg Wranne (Chalmers University of Technology, Sweden)
FRET in nucleic acid systems
- 14:30 – 14:55 Contributed Talk 7
Fabio Steffen (University of Zurich, Switzerland)
Site-specific two-color labeling of long RNAs for single-molecule FRET

14:55 – 15:25 COFFEE BREAK

Session 6: Nucleic Acid Structure 2 *Chair: Tom Brown*

15:25 – 15:50 Contributed Talk 8
Srivatsan Seergazhi Gopalan (Indian Institute of Science Education and Research, India)
Probing nucleic acid structure and recognition using multi-functional nucleoside tool box

15:50 – 16:15 Contributed Talk 9
Kiyohiko Kawai (Osaka University, Japan)
Fluorescence blinking adaptable to structural analysis of nucleic acids

16:15 – 18:30 POSTER SESSION (with drinks and snacks).

Monday, July 2

Session 7: Nucleic Acid Sensing and Imaging *Chair: Jane Grasby*

09:00 – 09:40 Invited Talk 5
Tom Brown (University of Oxford, UK)
Fluorogenic intercalators for sensing single and double stranded DNA and RNA

09:40 – 10:05 Contributed Talk 10
Eyal Nir (Ben-Gurion University of the Negev, Israel)
Monitoring computer controlled DNA bipedal walker with single-molecule fluorescence

10:05 – 10:30 Contributed Talk 11
Jong Jin Ro (Pohang University of Science and Technology, Republic of Korea)
Detection of miRNAs through formation of three way junctions with PyA-clusters

10:30 – 10:50 COFFEE BREAK

Session 8: New Probes, New Tools 2 *Chair: Markus Sauer*

10:50 – 11:30 Invited Talk 6
Marcia Levitus (Arizona State University, USA)
The photophysics of rhodamine dyes: Interchromophoric interactions as probes for protein-protein interactions

- 11:30 – 11:55 Contributed Talk 12
Hans-Achim Wagenknecht (Karlsruhe Institute of Technology, Germany)
Isosteric and fluorescent DNA base pair with 4-aminophthalimide as C-nucleoside
- 11:55 – 12:20 Contributed Talk 13
Bilha Fischer (Bar-Ilan University, Israel)
Lighting-up breast cancer mRNA markers towards personalized medicine
- 12:30 – 17:00 TRIP TO GLENGOYNE DISTILLERY AND LOCH LOMOND (Coach from the conference venue. Packed lunch provided. Return to university for ca. 17:00.)

Tuesday, July 3

Session 9: Lipids and Vesicles *Chair: Yves Mély*

- 09:00 – 09:40 Invited Talk 7
Christian Eggeling (University of Oxford, UK)
Use of fluorescent lipid analogs and mysteries in plasma membrane organisation - a super-resolution study
- 09:40 – 10:05 Contributed Talk 14
Hiroya Asami (Gakushuin University, Japan)
Novel millisecond time resolved spectroscopy for fluorescent nucleic acids: observation of molecular structural change on the droplet interface
- 10:05 – 10:30 Contributed Talk 15
Steven Quinn (University of York, UK)
Distortion, dynamics and destruction: real-time probing of vesicle solubilisation using single-molecule FRET spectroscopy
- 10:30 – 11:00 COFFEE BREAK

Session 10: Super Resolution *Chair: Christian Eggeling*

- 11:00 – 11:40 Invited Talk 8
Markus Sauer (University of Würzburg, Germany)
Single-molecule localization microscopy: where next?
- 11:40 – 12:05 Contributed Talk 16
Mathew Horrocks (University of Edinburgh, UK)
More than just location - expanding the use of PAINT for multi-dimensional imaging

12:05 – 12:30 Contributed Talk 17
Amy Davies (Heriot-Watt University, UK)
Re-engineering enzymes as dSTORM detection agents

12:30 – 13:30 LUNCH BREAK (at the venue)

Session 11: New Probes, New Tools 3 *Chair: Marcia Levitus*

13:30 – 14:10 Invited Talk 9
Trevor Smith (University of Melbourne, Australia)
Fluorophores for mapping molecular rotation and crowding using fluorescence lifetime and anisotropy imaging

14:10 – 14:35 Contributed Talk 18
Byron Purse (San Diego State University, USA)
Rational design of brighter, more responsive fluorescent nucleosides

14:35 – 15:00 Contributed Talk 19
Masayuki Tera (University of Zurich, Switzerland)
Fluorescent labeling of duplex DNA by water-soluble Sondheimer diyne

15:00 – 15:25 Contributed Talk 20
Glenn Burley (University of Strathclyde, UK)
Fluorophore-directed spatial recognition of light-harvesting DNA nanostructures and interfaces

15:25 – 16:00 COFFEE BREAK

Session 12: Biological Applications 2 *Chair: Yitzhak Tor*

16:00 – 16:40 Invited Talk 10
Kazuhiro Nakatani (Osaka University, Japan)
Fluorescent molecules binding to DNA bulges and mismatches: toward application for practical use

16:40 – 17:05 Contributed Talk 21
Bo W. Laursen (University of Copenhagen, Denmark)
Applications of triangulenium dyes with long fluorescence lifetime

17:05 – 17:30 Emerging Investigator 3
Martin Schnermann (National Cancer Institute, USA)
Harnessing cyanine reactivity to prepare novel fluorophores for advanced imaging applications

17:30 – 17:40 Closing remarks

19:00 CONFERENCE DINNER (Òran Mór, Byres Road)