11:30 - 12:00 Registration & coffee

12:00 - 13:00 Lunch

13:00 - 13:10 Opening remarks reception
The discovery of GFP and a tribute to the contributions of R.Y. Tsien

13:10 - 13:50 *lecture*
Expanding the palette of genetically-encoded indicators for multi-parameter imaging and manipulation
Robert Campbell, *University of Alberta, CA*

Plenary session 1 **Hall: Auditorium**

NEW AND IMPROVED FLUORESCENT PROTEINS

Chairs: Oliver Griesbeck & Fabienne Merola

13:50 - 14:20 Enhanced monomeric chromoproteins and red fluorescent proteins for FRET imaging
Theodorus Gadella, *Universiteit van Amsterdam, NL*

14:20 - 14:50 Fluorescent proteins as optical reporters for the structural and quantitative characterization of protein-protein interactions in live cell
Marie Erard, *LCP, CNRS UMR 8000, Orsay, FR*

14:50 - 15:05 Unexpected events in the functioning of three different fluorescent proteins
Antoine Royant, *Institut de Biologie Structurale, FR (Poster #50)*

15:05 - 15:20 *In vivo* manipulation of signal transduction using red/infrared light in *C. elegans*
Shigekazu Oda, *National Institute for Basic Biology, JP (Poster #37)*

15:20 - 15:40 *flash talks*
Iron live imaging in *Arabidopsis thaliana*
Tou Cheu Xiong, *BPMP, FR (Poster #67)*
Optimization of fluorophores and analysis approaches to ameliorate a FRET biosensor of the mitotic kinase AURKA
Giulia Bertolin, *Institute of genetics & devt of Rennes, FR (Poster #03)*
Zn2+-signaling in insulin-secreting beta-cells
Oleg Dyachok, *Uppsala University, SE (Poster #18)*

Photoactivatable dopamine to explore the function of dopaminergic neurons and circuits
Timothy Dore, *New York University Abu Dhabi, AE (Poster #15)*

15:40 - 16:10 Coffee break

16:10 - 16:40 New labelling strategies for genetically-encoded biosensors
Peter Dedecker, *KU Leuven, BE*

16:40 - 17:10 Imaging of G-protein signaling with genetically encoded fluorescent probes
Joachim Goedhart, *Universiteit van Amsterdam, NL*

17:10 - 17:40 Tools to image single molecules to human disease
Erik Rodriguez, *The George Washington University, US (Poster #48)*

17:40 - 18:10 Coffee break

Plenary session 2 **Hall: Auditorium**

FUNCTIONAL SCREENING AND DRUG DISCOVERY

Chairs: May Morris & Alessandro Esposito

18:10 - 18:40 Optimizing FLIM-FRET for fast screening- and signaling applications
Kees Jalink, *NKI, Amsterdam, NL*

18:40 - 19:10 Optical biosensors for drug discovery - from conventional kinase inhibitors to allosteric drugs
May Morris, *IBMM, CNRS, Montpellier, FR*

19:10 - 19:25 Cathepsin G activity reporters detect chronic lung inflammation by microscopy and flow cytometry
Matteo Guerra, *EMBL, DE (Poster #23)*

19:25 - 19:40 Quantitative analysis of the *in vivo* performance of fluorescent proteins in yeast
Dennis Botman, *Vrije Universiteit Amsterdam, NL (Poster #05)*

19:40 - 21:10 Reception & Poster Session

08:30 - 09:00 Coffee

09:00 - 09:40 *lecture*
Illuminating the Biochemical Activity Architecture of the Cell
Jin Zhang, *University of California, San Diego, CA, US*

Plenary session 3 **Hall:** Auditorium

MONITORING THE DYNAMICS OF BIOLOGICAL EVENTS IN LIVING CELLS

Chairs: Clotilde Randriamampita & Pierre Vincent

09:40 - 10:10 Dynamic control of insulin secretion - a real-time view beneath the beta-cell plasma membrane
Anders Tengholm, *Uppsala University, SE*

10:10 - 10:40 Studying the spatio-temporal regulation of unperturbed Life and Death cellular processes: Easier said than done!
Franck Riquet, *IRC, VIB-UGent, BE*

10:40 - 11:10 Integration of growth factor signaling and glucose metabolism in single cells
John Albeck, *University of California, Davis, CA, US*

11:10 - 11:40 Coffee break

11:40 - 12:00 Novel short isoforms of adenylyl cyclase as negative regulators of cAMP production
Isabelle Limon, *IBPS, UPMC-CNRS, Paris, FR*

12:00 - 12:30 Dopamine, phosphodiesterases and cyclic nucleotide dynamics in the striatum
Pierre Vincent, *BAA, Sorbonne Université, Paris, FR*

12:30 - 12:45 Dopamine D1 and metabotropic glutamate mGlu5 receptors form heteromers whose activation favors Ca2+ signaling pathway
Julie Perroy, *IGF Montpellier, FR (Poster #45)*

12:45 - 13:00 Real-time measurements of cGMP in cardiac and hippocampal cells
Michael Russwurm, *Ruhr-University Bochum, DE (Poster #51)*

13:00 - 14:30 Lunch

Plenary session 4 **Hall:** Auditorium

PROBE DEVELOPMENT, OPTIMIZATION AND PERFORMANCE

Chairs: Juan Llopis & Franck Riquet

14:30 - 15:00 A screening platform for optimizing fluorophores and biosensors
Oliver Griesbeck, *MPIN, Martinsried, DE*

15:00 - 15:30 Live-cell FRET imaging reveals propagating waves of ERK activation and its function in collective cell migration
Kazuhiro Aoki, *National Institute for Basic Biology, JP (Poster #01)*

15:30 - 15:50 *Flash talks*
A gated solid-state camera for high throughput frequency domain FLIM measurements of cAMP dynamics
Rolf Harkes, *Netherlands Cancer Institute, NL (Poster #24)*
Bring high resolution, high content imaging to life
Ana Clara Fernandes, *Nikon, BE*
Functional *in vivo* imaging of pH and Ca2+ dynamics in Arabidopsis thaliana growing seedlings using biosensors and the VIP-box
Fabien Miart, *INRA, FR (Poster #34)*
SP8 FALCON – a new approach for lifetime imaging
Jochen Sieber, *Leica, BE*

15:50 - 16:30 Coffee break

16:30 - 17:00 New fluorescent probes for imaging disease-relevant events
Carsten Schultz, *EMBL, Heidelberg, Germany; OSHU, OR, US*

17:00 - 17:30 Monitoring real-time HIV-1 virion fusion and downstream metabolic consequences with FRET-based biosensors
Sergi Padilla-Parra, *University of Oxford, GB (Poster #40)*

17:30 - 17:45 Coordinated histone modifications and chromatin reorganization visualized in single live cells
Chiwei Man, *UCSD, US (Poster #63)*

17:45 - 18:00 Development of an affine and selective uranium biosensor and its use for environmental monitoring
Rym Cherif, *CEA, CNRS, Aix-Marseille Université, UMR, FR (Poster #11)*

18:00 - 20:00 Walking dinner & Poster session

08:30 - 09:00 Coffee

09:00 - 09:40 *lecture*
In vivo biochemistry with sensors for signaling molecules & transporters
Wolf Frommer, *Heinrich Heine University Düsseldorf, DE*

Plenary session 5 **Hall:** Auditorium

ADVANCES IN METHODOLOGIES AND INSTRUMENTATION

Chairs: Saskia Lippens & Peter Dedecker

09:40 - 10:10 Multiplex FRET by FLIM: how to reveal a force gradient across talin
Marc Tramier, *IGDR, Rennes, FR*

10:10 - 10:40 Live cell biochemistry by light
Alessandro Esposito, *MRC, University of Cambridge, UK*

10:40 - 10:55 Advanced spectral FRET approaches for quantitative Imaging reveal importance of receptor oligomerization in serotonergic signalling
Andre Zeug, *Hannover Medical School, DE (Poster #70)*

10:55 - 11:10 Coupling magneto-active substrates with FRET biosensors to decode mechanotransduction
Alain Henri Lombard, *Laboratoire Interdisciplinaire de Physique, FR (Poster #29)*

11:10 - 11:40 Coffee break

11:40 - 11:55 Studying cardiac function with Ca2+ biosensors in zebrafish (Danio rerio) embryos
Jussep Salgado, *CRIB & Albacete School of Medicine, University of Castilla-La Mancha, ES (Poster #52)*

11:55 - 12:10 *In vivo* optical mapping of cardiac action potentials in zebrafish larvae
Ewa Sieliwonczyk, *University of Antwerp, BE (Poster #54)*

12:10 - 12:40 Visualizing cellular heterogeneity in ERK signaling in patient-derived cancer organoids using an improved, cell-cycle insensitive, FRET sensor
Bas Ponsioen, *University Medical Center Utrecht, NL (Poster #46)*

12:40 - 13:10 *In vivo* quantification of FRET biosensors using multispectral FLIM-FRET
Sean Warren, *Garvan Institute of Medical Research, AU (Poster #64)*

13:10 - 13:15 Closing remarks

13:15 - 14:30 Lunch