

# PROGRAM

## Tuesday September 13<sup>th</sup>

10:00 - 13:00 *Arrival / Registration / Coffee*

11:30 – 13:00 *Lunch at EPN restaurant for registred participants*

13:00 **Opening – Welcome** - Bruno Kieffer

### **Isotopic Labelling and In Vitro Protein Expression – Chair : Bruno Kieffer**

**13:10 Takanori KIGAWA** (Riken – Yokohama - JP). *Advanced Stable-Isotope Labeling Using Cell-Free Protein Synthesis*

**13:50 Arthur GIRAUD** (IBS – Grenoble – FR). *Innovative isotopic labeling approaches enabling NMR investigation of monoclonal antibodies at atomic resolution*

**14:10 Pau BERNADO** (CBS – Montpellier – FR). *Novel labelling strategies for the site specific incorporation of natural and non-natural amino acids into Low-complexity Proteins*

**14:50 Carlos ELENA-REAL** (CBS - Montpellier– FR). *High-resolution structural study of Poly-Alanines and their role in developmental diseases*

15:10-15:40 *Coffee Break*

### **Isotopic Labelling in Eukaryotic Cells and Post Translational Modifications – Chair Rina ROSENZWEIG**

**15:40 François-Xavier THEILLET** (I2BC – FR). *Novel mammalian expression systems and isotope labeling schemes for in-cell NMR studies.*

**16:00 Philip RÖBLER** (ETH-Zurich – CH). *Isotope labelling in mammalian cells for NMR studies of human GPCRs*

**16:20 Fengje WU** (Biozentrum – Basel –CH). *dvances in labeling techniques of insect-cell expressed proteins and applications to the NMR analysis of GPCR activation*

**17:00 Léa EL HAJJAR** (Pasteur Institute Lille – FR). *Regulation of Tau protein phosphorylation by kinase O-GlcNAcylation and its implication in fibrillar aggregation*

**17:20 Agathe MARCELOT** (IBPC –Paris - FR). *Phosphorylation of the DNA-binding protein ‘BAF’ changes its conformational landscape*

**17:40 Darren HART** (ISBG - Grenoble – FR). *User access to high-level research platforms through Instruct-ERIC and French FRISBI programs*

18:00-19:00 *Poster session*

18:30- 20:00 *Dinner will be served in front of IBS*

## Wednesday September 14<sup>th</sup>

### Intrinsically Disordered Proteins – Chair Malene Ringkjøbing JENSEN

- 8:45** Carine VAN HEIJENOORT (ICSN – Gif sur Yvette - FR). *TBA*
- 9:25** Maximilian ZINKE (Institut Pasteur - Paris - FR). *Conformational selection of a sparsely populated state upon binding of an intrinsically disordered region between two components of the Ton system*
- 9:45** Thibault ORAND (IBS – Grenoble - FR). *Visualizing the interaction of the JIP1 intrinsically disordered scaffold protein with its cognate MAPK partner*
- 10:05** Lenette KJAER (IBS – Grenoble - FR). *A novel bi-partite recognition mode of Rac1 binding to the intrinsically disordered scaffold protein POSH*

*10:25-10:55 Coffee Break*

### NMR of Proteins I – Chair Carine TISNÉ

- 10:55** Tae Hun KIM (University of Toronto – FR). *Identifying Interaction Hot Spots for Phase Separation using NMR*
- 11:35** Allysa KEMRAJ (SUNY Upstate Medical University - USA). *ARE they ABLe: The Biochemical and Biophysical Characterizations of the Interactions Governing the Binding of the Androgen Receptor (AR), Abl Interactor 1 (ABI1) and DNA*
- 11:55** Kendra FREDERICK (UT Southwestern – USA). *Segmental isotopic labeling using split inteins*

*12:35-14:15 Poster session 2 and Lunch*

### NMR Investigations of Chaperones – Chair Teresa CARLOMAGNO

- 14:15** Rina ROSENZWEIG (Weizmann Institute – IL). *The True Tales of the Flexible Tails – Interaction of J-domain Protein with Hsp70 chaperones*
- 14:55** Guillaume MAS (Biozentrum Basel – CH). *Functional cycle of the human Hsp70 chaperone BiP at atomic resolution*
- 15:15** Elisa RIOUAL (IBS – Grenoble - FR). *Visualizing the transiently Populated Closed-State of Human HSP90 ATP Binding Domain*
- 15:35** Faustine HENOT (IBS – Grenoble - FR). *Human HSP90 a contortionist drug target – Modulation of its energy landscape upon ligand binding*

*15:55-16:25 Coffee Break*

### NMR of Nucleic Acids and Nucleic Acids complexes – Chair Christopher JARONIEC

- 16:25** Teresa CARLOMAGNO (University of Birmingham – UK). *Different conformations of the ADP- and ATP- bound states of the DEAD-box helicase Vasa underpin enzymatic activity*
- 17:05** Laura TROUSSICOT (CRMN – Lyon - FR). *<sup>19</sup>F labelling of miRNA as probe for structural and dynamical investigation by NMR spectroscopy.*
- 17:25** Carine TISNE (IBPC – Paris -FR). *RNA processing and modifications*
- 18:05** Theodore Kwaku DAYIE (University of Maryland – USA); *Shedding light on RNA with Isotope labels*

## Thursday September 15<sup>th</sup>

### Oligosaccharides and Cell-Wall – Chair Takanori KIGAWA

- 8:45** Lynette CEGELSKI (Stanford University – USA). *New Discovery in Bacterial Polysaccharides and Biofilms Enabled by Isotope Labels, Small Molecules, and a Big Magnet*
- 9:25** Daron FREEDBERG (Food & Drug Administration – USA). *Isotopic labeling of glycans facilitates NMR structural studies in complex conditions*

**10:05-10:35** *Coffee Break*

### Paramagnetic Probes and DNP – Chair Pau BERNADO

- 10:35** Gunnar JESCHKE (ETH - Zurich – CH). *Nitroxide Spin Labelling for Distance Distribution Measurements by EPR Techniques and for NMR Paramagnetic Relaxation Enhancement*
- 11:15** Ons DAKHLAOUI (University Grenoble Alpes – FR). *Improving selective DNP (SelDNP) for biomolecular applications.*
- 11:35** Arun G S (NCBS - Bangalore - IN); *Intermolecular transient contacts through Paramagnetic Relaxation Enhancement (PRE) NMR experiments and the Challenges while preparing a PRE tagged protein sample"*
- 11:55** Christopher JARONIEC (University of Ohio - Columbus – USA); *Probing Watson-Crick and Hoogsteen base pairing in duplex DNA using DNP solid-state NMR*

**12:35-14:15** *Poster session 3 and Lunch*

### Advanced Isotopic Labelling Methodologies I – Chair Jerome BOISBOUVIER

- 14:15** Michael LATHAM (University of Minnesota – USA). *Structure and dynamics of the Rad50 zinc hook domain in the Mre11-Rad50 DNA Repair complex*
- 14:55** Roman LEVIN (Goethe University- Frankfurt – DE); *Stablelabel" cell-free lysates for reduced NMR label conversion.*
- 15:15** Jobst LIEBAU (Univeristy of Regensburg – DE); *Dynamics and interactions in the 410 kDa RNA exosome*

**15:55-16:25** *Coffee Break*

### NMR of Proteins II – Chair Carine VAN HEIJENOORT

- 16:25** Philip SELENKO (Weizmann Institute – IL). *A new NMR experiment to probe the temperature dependency of IDP interactions with fluid membranes, rigid fibrils and complex cell lysate.*
- 17:05** Laura MARINO-PEREZ (University of the Balearic Islands – ES). *New insights into the structural details of protein breathing motions associated with aromatic ring flipping events*
- 17:45** Christopher WAUDBY (University College London – UK). *NMR without labelling: high-resolution ex vivo spectroscopy of patient-derived, disease-associated  $\alpha$ 1-antitrypsin variants*

**18:30-20:00** – *Dinner will be served in front of IBS*

## Friday September 16<sup>th</sup>

### Membrane Proteins – Chair François-Xavier THEILLET

- 8:45** Franz HAGN (Technical University of Munich – DE). *Biochemical tools and isotope labelling strategies for NMR structural studies of membrane proteins*
- 9:25** Remy SOUNIER (IGF - Montpellier – FR). *Molecular insights into the biased signaling mechanism of the  $\mu$ -opioid receptor*
- 9:45** Ayyalusamy RAMAMOORTHY (University of Michigan – USA). *Novel nanodisc technology for studies on protein-protein complexes*

**10:25-10:55** *Coffee Break*

### Advanced Isotopic Labelling Methodologies II – Chair Bernhard BRUTSCHER

- 10:55** Bruno KIEFFER (IGBMC– Illkirch - FR). *Using fluorinated prolines and fluorine NMR to probe protein interactions and folding*
- 11:35** Cyril CHARLIER (Toulouse Biotechnology Institute – FR); *Digging into the active site of PETase through histidine side chains*
- 11:55** Elwy ABDELKADER (Australian National University – AU); *NMR labels via site-specific installation of non-canonical amino acids*

**12:35** *Closing of AILM2022*

**12:45-13:30** *Lunch at the EPN Campus Restaurant*