

PROGRAM AILM2024

Tuesday May 28^h

8:30 - 10:00 *Arrival / Registration / Coffee*

Isotopic Labeling for the Study of Nucleic Acids and Complexes- I

10:00 **Welcome**

10:20 **Frédéric Allain** (ETH Zurich – CH) - *Structural insights into protein-RNA interactions within biomolecular condensates using UV cross-linking and mass spectrometry of isotopically labeled RNA*

11:00 **Victoria D'Souza** (Harvard Medical School – Boston, USA) - *Extending the toolbox for RNA biology*

11:40 **Darren Hart** (ISBG - Grenoble – FR) - *User access to high-level research platforms through Instruct-ERIC and French FRISBI programs*

12:10-13:40 *Lunch will be served in front of IBS*

Isotopic Labeling for Neutron Sciences

13:40 **Giovanna Fragneto** (European Spallation Source, Lund –SE) - *Neutron structural characterisation of model membranes from natural lipids*

14:20 **Karyn Wylde** (National Deuteration Facility – ANSTO – AU) - *Enabling biomolecular investigations using neutrons and more: isotopic labelling strategies of the Australian National Deuteration Facility*

14:40 **Franck Gabel** (ILL, Grenoble – FR) - *Deuteration and neutrons: a perfect couple for studying complex biomacromolecular systems in solution*

15:20 **Suzanne Zoe Fisher** (European Spallation Source, Lund –SE) - *Botryococcus braunii autolysate for the production of deuterium-labeled recombinant protein production*

15:40-16:10 *Coffee Break*

Spin Labeling for DNP & EPR

16:10 **Bjorn Corzilius** (University of Rostock – DE) - *Site-specific dynamic nuclear polarization in uniform and sparsely labeled biomolecules*

16:50 **Sabine Hediger** (CEA – Grenoble - FR) - *SelDNP: Focusing on a selected protein site by DNP-enhanced solid-state NMR*

17:30 **Elisabetta Mileo** (Bioénergétique et Ingénierie des Protéines, Marseille, FR) – *Structural dynamics insights from in-cell EPR of proteins*

17:50 **Kendra Frederick** (University of Southwestern, Dallas – USA) - TBA

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

Wednesday May 29th**In Cell NMR**

- 8:45** François-Xavier Theillet (I2BC – Gif sur Yvette - FR) - *In-cell NMR of α -Synuclein and Tau at 310K and 10 μ M: the actual powers of 13 C-labeling & 13 C-detection*
- 9:25** Enrico Luchinat (CERM, Florence – IT) - *Expression of fluorinated proteins in human cells for 19 F in-cell NMR*

10:05-10:35 Coffee Break

Membrane Proteins

- 10:35** Alvar Gossert (ETH Zurich – CH) - *Labeling in eukaryotic cells enables NMR studies of GPCR activation and deactivation*
- 11:15** Lauriane Lecoq (MMSB – Lyon - FR) - *Deciphering the Structure of SARS-CoV-2 ORF6 Membrane Protein Using Selective Labeling and combination of solution and solid-state NMR*
- 11:35** Clemens Glaubitz (University of Frankfurt – DE) - *Solid-state NMR and DNP approaches for the study of transporter and receptor proteins within the membrane*
- 12:15** Sun Zhiyu (CRMN – Villeurbanne - FR) - *Isotopic labelling of the human copper transporter hCTR1 for structural dynamics study with NMR*

12:35-14:35 Lunch and Poster session

Chemical Biology for NMR

- 14:35** Galia Debelouchina (University of California, San Diego – USA) - *Chemical biology tools for NMR spectroscopy of gels and cells*
- 15:15** Darja Rhoden (University of Vienna –AT) - *Unraveling Protein Dynamics with Selectively Labeled Arginine in NMR Spectroscopy*
- 15:35** Martina Rosati (CERM-University of Florence, IT) - *Towards cost-effective side-chain isotope labelling of proteins expressed in human cells*
- 15:55** Giorgia Toscano (University of Vienna –AT) – *Isotope Labeling to probe Biomolecular Interactions*

16:15-16:45 Coffee Break

Isotopic Labelling for the Study of Nucleic Acids and Complexes- II

- 16:45** Sarah Keane (University of Michigan – FR) - *Structure-based regulation of microRNAs biogenesis*
- 17:25** Laura Troussicot (CRMN – Lyon –FR) - *19 F NMR - a gateway towards complex dynamical processes in RNA*
- 17:45** Katja Petzold (Uppsala University – SE) - *What label for what experiment: RNA dynamics*
- 18:25** Loïc Salmon (CRMN – Lyon) - *Assessing extreme flexibility in RNA by combining selective labeling, ultra-high-field NMR spectroscopy and advanced molecular modeling*

19:00- 20:00 Dinner will be served in front of IBS

Thursday May 30th**Integrated Structural Biology**

- 8:45** **Nadia Izadi-Pruneyre** (Pasteur Institute, Paris – FR) - *Integrative structural biology of bacterial membrane nanomachines*
- 9:25** **Zinke Maximilian** (Pasteur Institute, Paris – FR) - *TONB RAIDER – Discovering the Secrets of the Ton System's Order*
- 9:45** **Hélène Déméné** (CBS –Montpellier – FR) - *Activation of the vasopressin type 2 receptor seen by an integrative approach*

10:05-10:35 Coffee Break

Therapeutic Proteins and Drug Discoveries

- 10:35** **Julien Orts** (University of Vienna – AT) - *Lead Generation without an X-Ray Crystal Structure: An NMR Method to Probe Protein-Ligand Complexes*
- 11:15** **Maria Pia Lenza** (University of Naples –FR) - *Siglec-8 complex structures with a therapeutic antibody and a high-affinity sialoside analog*
- 11:35** **Faustine Henot** (Sanofi –FR) - *Development of a fast and efficient assignment transfer strategy: from a first Fab fragment to other ones*
- 11:55** **Ulrich Hommel** (Novartis, Basel – CH) - *Drugging the Undruggable: Can Protein Dynamics guide Drug Discovery ?*

12:35-14:35 Lunch and Poster session

NMR of Proteins - I

- 14:35** **Elise Delaforge** (IBS, Grenoble –FR) - *Intrinsic disorder in the human 3'-end pre-mRNA polyadenylation machinery*
- 14:55** **Tessa Bolognesi** (CERM, University of Florence - IT) - *Expression of the nucleocapsid protein (N) from SARS-COV 2 and its characterization through high-field NMR spectroscopy*
- 15:15** **Stepanka Nedvedova** (ICSN, CNRS –FR) - *Unveiling the Enigma: Structural Insights into Schistosoma mansoni MEG Proteins*
- 15:35** **Stefan Nebl** (IBS, Grenoble - FR) - *Deciphering Electron Flow in Neisserial DsbD by Mutagenesis and NMR Dynamics*

15:55-16:25 Coffee Break

Isotopic Labeling and Cell-Free Protein Expression

- 16:25** **Frank Bernhard** (University of Frankfurt – DE) - *Cell-Free protein synthesis tools for the production of NMR samples*
- 17:05** **Astrid Audibert** (IBS, Grenoble – FR) - *Towards an atomic-resolution functional study of the ClpXP machinery in action using cell free and NMR technologies.*
- 17:25** **Pau Bernado** (CBS, Montpellier – FR) - *Cell-Free approaches for the incorporation of structural probes for ¹⁹F-NMR and SANS*
- 18:05** **Morgan Callon** (MMSB – Lyon - FR) - *Proton detected fast MAS solid-state NMR studies of the hepatitis D virus S and L proteins*

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

Friday May 31st

NMR of Proteins - II

- 8:45** Sebastian Hiller (Biozentrum, Basel – CH) - *The dynamic chaperone network in the endoplasmic reticulum*
- 9:25** Benoit Odaert (CNRS, Bordeaux –FR) - *Biochemical and Biophysical Characterization of the Mechanism of Activation for the pro-apoptotic death domain receptor DR5 by multivalent agonist.*
- 9:45** Ewen Lescop (ICSN Gif-sur Yvette – FR) - *Probing lipid/protein coupled dynamics in membranes by High-Pressure NMR spectroscopy*

10:25-10:55 Coffee Break

¹⁹F Labeling Methodologies

- 10:55** Ronald Micura (University of Innsbruck - AT) - *Chemical Synthesis of Modified RNA*
- 11:35** Davy Sinnaeve (CNRS, Lille - FR) - *A library of fluorinated prolines to study proline-rich motifs with ¹⁹F NMR*
- 11:55** Haribabu Arthanari (Harvard Medical School – Boston, USA) - *Leveraging Fluorine as Atomic Beacons in Biomolecular NMR: Challenges and Opportunities*

12:35 Closing of AILM2024

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