



BSI 2025

4TH INTEGRATIVE STRUCTURAL BIOLOGY MEETING

15-19 DECEMBER 2025 • BORDEAUX, FRANCE

Monday 15 December

11h00-13h00 : Welcome participants

13h00-13h45 : Introduction, Organizing Committee, AFC and SFB President

13h45-16h00 : Session 1

13h45-14h15: Helene Malet : Structural and functional characterization of Bunyavirus replication and transcription

14h15-14h35: Ons Dakhlaoui : Structural basis and regulation of Cap-4 RNA binding to eIF4E1 in *Trypanosoma cruzi* revealed by an integrative structural biology approach.

14h35-14h55: Cyril Charlier : Mechanistic details of a PETase at high-temperature

14h55-15h15: Robert Bosman : Catalytic dynamics in an antibiotic resistance enzyme observed by time-resolved crystallography.

15h15-15h35: Vincent Chaptal : Motion Pictures. Visualizing protein intimate movements through inter-particle variability of cryo-EM data.

15h35-17h00: Coffee break

17h00-18h20: Session 2

17h00-17h30: Giorgio Schiro : Integrated structural approach tracks B12 photoreceptor activation in real time

17h30-17h50: Florence Tama : tomistic Biomolecular Dynamics from High-Speed Atomic Microscopy data

17h50-18h10: Antoine Royant : Protein dynamics probed at room temperature by combined time-resolved crystallography and spectroscopy

18h10-18h20: Gianluca Cioci : Structural Investigations of CAZymes for the Synthesis of Biopolymers

18h20-19h20: Conference Grand Public: Sylvain Delzon : Responses of forests and farming systems to global change

19h20-22h: Welcome cocktail

Tuesday 16 December

9h00-10h30 : Session 3

9h00-9h30: Adeline Goulet : Exploring bacteriophage structures with a focus on their host-binding machineries

9h30-9h50: Pierre Dorlet : An original periplasmic system for copper resistance in bacteria

9h50-10h10: Eleni Litsardaki : Histone assembly mechanism coupled to DNA synthesis

10h10-10h30: Birgit Strodel : A holistic approach to enzymatic plastic degradation: from machine learning and simulations to wet lab and back.

10h30-11h00: Coffee break

11h00-12h30: Session 4

11h00-11h30: Massimiliano Bonomi : Structural and dynamic biology with integrative approaches

11h30-11h50: Elsa Garcin : Engineering SIRP α conformational plasticity to reveal a cryptic pocket suitable for structure-based drug design

11h50-12h10: Julien Rizet : Is Mycobacterial InhA a Suitable Target for Rational Drug Design?

12h10-12h30: Mathieu Chavent : Modelling host-pathogen interactions using multiscale MD simulations: the Mycobacterium tuberculosis case

12h30-15h00: Lunch + Poster session

15h00-15h50: Keynote 1 – Sebastian Hiller : A structural journey through molecular life and death

15h50-16h30: Industrials

16h30-17h00 : Coffee break

17h00-18h30 : Session 5

17h00-17h30: Ariane Briegel : Using a large volume cryo-electron tomography pipeline to study microbial interactions with their environment

17h30-17h50: Shrankhla Bawaria : Structural and functional studies of CHIKUNGUNYA NSP1-4 with its potent inhibitors.

17h50-18h10: Juan Reguena : Decoding how Chikungunya virus non structural proteins assemble in evolving complexes for setting a sequential program of virus infection

18h10-18h30: Célia Caillet-Saguy : Sars-cov-2 Envelope protein–host ZO-1 interaction: from virulence mechanisms to targeted inhibitor discovery

Wednesday 17 December

9h00-10h30 : Session 6

9h00-9h30: Rebekka Wild : Mechanistic insight into the step-by-step biosynthesis of glycosaminoglycans

9h30-9h50: Suliane Quilleré : Moss BRCA2 interacts with recombinases and ssDNA in DNA repair

9h50-10h10: Julien Karazi : The role of the WRN exonuclease/helicase in coordinating DNA repair and replication pathways, and their connection to premature aging syndromes

10h10-10h30: Pierre Maisonneuve : Novel Regulatory Mechanisms of the Pseudokinase KSR in the RAS-ERK Pathway

10h30-11h00: Coffee break

11h00-12h20: Session Infrastructure

12h20-15h00: Lunch + Poster session

15h00-18h00: Free time – travel to Cité du Vin

18h00-19h00: Conference Grand Public: Daniel Choquet : Nanoscale synapse organization and function

19h00-20h00 : Visit of the Musem

20h00-23h00 : Gala Diner

Thursday 18 December

9h00-10h30 : Session 7

9h00-9h30: Lionel Mourey : Quaternary structure and DNA recognition of a toxin-antitoxin-chaperone system of Mycobacterium tuberculosis

9h30-9h50: Andreas Zoumpoulakis : Unique structural features of the human Kir2.1 channel in two different conformational states unveiled by cryo-electron microscopy.

9h50-10h10: Paramita Chaudhuri : Condensation of an intrinsically disordered translation factor eIF4B: from in vitro to in-cell

10h10-11h00: Coffee break

11h00-11h50 Keynote 2 – Malene Jensen : Elucidating the interaction mechanisms of intrinsically disordered proteins at atomic resolution

11h50-15h00: Lunch + Poster session

15h00-15h50: Session 8

15h00-15h30: Marion Mathelie-Guinlet : N-terminal capping tunes fibrillation and cytotoxicity of Staphylococcus aureus PSM α 3

15h30-15h50: Pascale Marchot : Molecular bases for functional disruption of synapse by autoantibodies in limbic encephalitis.

15h50-16h10: Bertrand Raynal : Role of monomers, Dimers, and Oligomers of Pyroglutamate-Modified α -Synuclein Fragments in fibril assembly.

16h10-16h30: Nadia El Mammeri : Understanding Tau's Chemical code: microtubules, lipid membranes, and phosphorylation

16h30-17h30: Coffee break

17h30-18h30 : Session 9

17h30-18h00: Lauriane Lecoq : Bridging Solution and Solid-State NMR to Elucidate Hepatitis D. Virus Protein-RNA Interactions

18h00-18h20: Leo Chillard : Balancing activation and inhibition of immune receptors: AlphaFold-guided structural analysis of the paired NLRs RGA4 and RGA5

18h20-18h40: Romain La Rocca : Structure of a photosystem II-FCPII supercomplex from a haptophyte reveals a distinct antenna organization.

Friday 19 December

9h00-10h20: Session 10

9h00-9h40: Prix SFB – Jody Pacalon

9h40-10h00: Erick Dufourc : Quantitative lipid analysis of brain, myelin-enriched and corpus callosum fractions in mice, by multinuclear NMR and mass spectrometry

10h00-10h20: Maria Davila Miliani : Time-resolved cryo-EM to visualize biomolecules in action

10h20-10h40: Coffee break

10h40-11h30: Keynote 3 – Petya Krasteva : Mechanisms of activation and diversification of the bacterial cellulose synthase

11h30-12h00: Concluding remark, remise prix poster, talk, prix Cancéropole.