



Amphitheater Charles Flahault, 163 Rue Auguste Broussonnet, Montpellier

## Wednesday 5th June

13:00 - 14:00

*Welcoming participants*

14:00 - 14:15

*Introduction word*

14:15 - 15:00  
*Opening talk*

**Meriem El Karaoui** - *Centre for Synthetic and Systems Biology, Edinburgh*

« From single-molecules to populations: a multi-scale understanding of the Escherichia coli DNA damage response »

15:00 - 15:20  
*Short talk*

**Abhinav Pujar** - *Micalis, INRAE, Jouy-en-Josas*

« Multi-cellular Circuits in Bacteria Using Engineered Phages for Synthetic Cell-to-Cell Communication »

15:20 - 15:40  
*Short talk*

**Amir Pandi** - *INSERM, Université Paris Cité, Paris*

« De novo antimicrobial and phase-separating peptides »

15:40 - 16:10

*Coffee break*

16:10 - 16:40  
*Invited Keynote*

**Angel Goñi-Moreno** - *Centre for Biotechnology and Plant Genomics, Madrid*

« Re-programming circuits using the cellular context »

16:40 - 17:00  
*Short talk*

**Jacopo Gabrielli** - *Imperial College of London, London*

« Degradation Bottlenecks and Resource Competition in Transiently and Stably Engineered Mammalian Cells »

17:00 - 17:20  
*Short talk*

**Florence Bordes** - *INSA, Toulouse*

« Tools to delete and express multiple genes in one shot in the yeast *Yarrowia lipolytica* »

17:20 - 18:30  
*Botanical institute's garden*

*Social event/ Apéro*

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## Thursday 6th June

9:00 - 9:30

*Breakfast*

9:30 - 10:00  
*Invited Keynote*

**Henrike Niederholtmeyer** - *Technical University of Munich, Straubing*

« Cell-free synthetic biology of parts, molecular assemblies and networks »

10:00 - 10:20  
*Short talk*

**Helena Shomar** - *Institut Pasteur, Paris*

« Genomics-driven discovery of a family of RiPPs that protect Actinobacteria from phage infection. »

10:20 - 10:40  
*Short talk*

**Elsa Fristot** - *Centre de Biologie Structurale, Montpellier*

« Development of genetic tools for lactobacilli engineering and application in cancer therapy »

10:40 - 11:20  
*Patio*

*Coffee break/ Poster session*

11:20 - 11:50  
*Invited Keynote*

**David Maresca** - *Imaging Physics Department, TU DELFT, Delft*

« Acoustic pH biosensors for dynamic ultrasound imaging of lysosomal acidification »

11:50 - 12:10  
*Short talk*

**Julien Henri** - *Sorbonne Université, Paris*

« Functional recoding of *Chlamydomonas reinhardtii* thioredoxin type-h into photosynthetic type-f by switching selectivity determinant »

12:10 - 12:30  
*Short talk*

**Soutrick Das** - *UCL, London*

« Designing neural network computation across engineered bacterial communities »

12:30 - 14:00

*Lunch break*

14:00 - 16:00  
*Patio*

*Networking time/ Poster session*

16:00 - 16:30  
*Invited Keynote*

**Ana Zuniga** - *Centre de Biologie Structurale, Montpellier*

« Sensigut: bacterial biosensors for daily and long-term monitoring of targeted gut metabolites »

16:30 - 16:50  
*Short talk*

**Younes Bouchiba** - *Toulouse Biotechnology Institute, INSA, Toulouse*

« AI-powered de novo design of miniprotein binders »

16:50 - 17:10  
*Short talk*

**Quentin Boussau** - *Centre de Biologie Structurale, Montpellier*

« Enhancing anti-tumor bacterial therapies in vivo with smart polymeric encapsulation reducing systemic immunogenicity of probiotic *E. coli* »

17:10 - 17:30  
*Short talk*

**Sara Castano Cerezo** - *Toulouse Biotechnology Institute, INRAe, Toulouse*

« Construction of a novel Acetyl-CoA Pool in *Escherichia coli* »

18:30 - 21:00  
*Botanical institute's garden*

*Social event/ Diner*

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## Friday 7th June

9:00 - 9:30

*Breakfast*

9:30 - 10:00  
*Invited Keynote*

**Mehmet Ali Öztürk** - *Centre for Integrative Biological Signaling Studies, Freiburg*

« Computational Structural Biology Toolkit for Empowering Synthetic Biology »

10:00 - 10:20  
*Short talk*

**Priyotosh Sil** - *The Institute of Mathematical Sciences, Chennai*

« Effect of biologically meaningful functions on the bushiness and convergence of Boolean state transition graphs »

10:20 - 10:40  
*Short talk*

**Emilie Chabert** - *Centre de Biologie Structurale, Montpellier*

« Engineering bacterial biosensors for robust performance in complex environments: a case study with a pH biosensor »

10:40 - 11:10

*Coffee break*

11:10 - 11:30  
*Short talk*

**Delphine Dessaux** - *Toulouse Biotechnology Institute, INSA, Toulouse*

"Artificial intelligence for computational protein design »

11:30 - 11:50  
*Short talk*

**Arthur Loubat** - *Micalis, INRAE, Jouy-en-Josas*

« Functional characterization of the genome of the Bacillus subtilis phage SPP1 using Synthetic Biology approaches. »

11:50 - 12:30  
*Closing talk*

**Ariel Lindner** - *Learning Planet Institute, Paris*

« Tailoring Tiny Titans: all in vitro bacteriophage engineering »

12:30 - 13:30

*Lunch/ End of the conference*

# POSTER LIST

PLANNING 2024

1	<b>Yannick Bernard-Lapeyre</b> - <i>INSA, Toulouse</i> « A closed-loop optimization workflow for directed evolution of synthetic cells »
2	<b>Julien Capin</b> - <i>Centre de Biologie Structurale, Montpellier</i> « A synthetic trans-envelope signaling system for protein biomarkers detection in <i>E. coli</i> »
3	<b>Younes Bouchiba</b> - <i>INSA, Toulouse</i> « AI-powered de novo design of miniprotein binders »
4	<b>Léa Meneu</b> - <i>Spatial Regulation of Genome, Institut Pasteur, Paris</i> « Testing cohesin-mediated long-range transcription regulation in <i>Saccharomyces cerevisiae</i> »
5	<b>Almiro Pires</b> - <i>Universidade Estadual Paulista Júlio de Mesquita Filho, São Paulo State University</i> « CONSTRUCTION OF AN ARABINOSE-INDUCIBLE EXPRESSION SYSTEM FOR <i>Cupriavidus necator</i> TO PRODUCE A BLUE PIGMENT »
6	<b>Vincent Libis</b> - <i>Learning Planet Institute, Paris</i> « Scalable discovery of microbial secondary metabolites through synthetic biology »
7	<b>Esteban Lebrun</b> - <i>Institut Pasteur, Paris</i> « Efficient full-length IgG secretion and sorting from single yeast clones in droplet picoreactors »
8	<b>Emilie Chabert</b> - <i>Centre de Biologie Structurale, Montpellier</i> « Engineering bacterial biosensors for robust performance in complex environments: a case study with a pH biosensor »
9	<b>Giada Forlani</b> - <i>Centers for Biological Signalling Studies BIOSS and CIBSS, Freiburg</i> « Tracking DNA damage in living cells with an optogenetically-induced nanobody against $\gamma$ -H2AX »
10	<b>Magali Roger</b> - <i>Bioénergétique et Ingénierie des Protéines</i> « RATIONAL DESIGN OF SYNTHETIC ECOSYSTEMS TO UNDERSTAND AND APPLY MICROBIAL COMMUNITIES. »
11	<b>Angelica Frusteri Chiacchiera</b> - <i>Department of Electrical, Computer and Biomedical Engineering, Pavia</i> « Harnessing CRISPR interference to re-sensitize laboratory strains and clinical isolates to last resort antibiotics »
12	<b>Estelle Grosjean</b> - <i>Centre de Biologie Structurale, Montpellier</i> « Deciphering and tuning signal transduction in a synthetic bacterial receptor »
13	<b>Anthony Carneiro</b> - <i>INSA, Toulouse</i> « Exploring Protein Candidates for Synthetic Condensate Formation in <i>Saccharomyces cerevisiae</i> »
14	<b>Armand Bernard</b> - <i>MICALIS, INRAE, Jouy-en-Josas</i> « Synthetic community of <i>Yarrowia lipolytica</i> for bioproduction »
15	<b>Chloé Sasson</b> - <i>Centre de Biologie Structurale, Montpellier</i> « Engineering anti-cancer bacteria for remote inducible delivery of therapeutic effectors »
16	<b>Maud Hoffman</b> - <i>MICALIS, INRAE, Jouy-en-Josas</i> « Budgeting for cellular expression: how to calculate protein expression costs? »