



Solvay Workshop on “The interplay of Molecules and Membranes”

ULB - Campus Plaine - Yellow Area - NO Building - 5th Floor - Solvay Room

PROGRAM

MONDAY 28 APRIL 2025

09:00 – 09:30 Registration and coffee
09:30 – 09:45 **Hennie Valkenier & Yves Geerts:** *Welcome and introduction*

SESSION 1 Interactions and mobility of synthetic molecules in membranes

09:45 – 10:05 **Phil Williamson:** *Introduction*
10:05 – 10:45 **Martin Hof:** *Physical chemistry of gangliosides nanodomains*
10:45 – 11:25 **Gerhard Gröbner:** *Unravelling the molecular machinery of the Bcl-2 family in apoptosis at mitochondrial membrane level*
11:25 – 12:05 **Werner Nau:** *Interactions of Superchaotropic Cluster Anions with Membranes*
12:05 – 13:30 LUNCH BREAK (at the ULB Plaine campus restaurant)

SESSION 2 Synthetic transport systems

13:30 – 13:50 **Hennie Valkenier:** *Introduction*
13:50 – 14:30 **Matt Langton:** *Stimuli-responsive synthetic ion transporters*
14:30 – 14:50 **Roberto Quesada** (Contributed talk): *Biologically active anion transporters*
14:50 – 15:30 **Javier Montenegro:** *Dynamic counterion exchange for membrane transport, from amphiphilic to chaotropic carriers*
15:30 – 16:00 COFFEE BREAK
16:00 – 17:00 **Phil Gale** - Solvay Colloquium: *Transmembrane anion transport: mechanism, selectivity and control*
17:00 – 17:20 **Aaron Torres Huerta** (Contributed talk - ECR): *Liposome-Based Nanoreactors: Transmembrane Transport for Controlled Formation of Luminescent Lanthanide Complexes*

17:30 – 20:00 **POSTER SESSION** - with Belgian beers and cheese (in the room adjacent to the conference room)

TUESDAY 29 APRIL 2025

09:00 – 09:30 Coffee

SESSION 3 Partitioning and permeability of molecules in membranes

09:30 – 09:50 **Bruno Linclau:** Introduction

09:50 – 10:30 **Shobna Kapoor:** *Decoding the role of mycobacterial lipid remodelling and membrane dynamics in antibiotic tolerance*

10:30 – 10:50 **Joseph Lorent** (Contributed talk): *The synergistic effects of oxidative and acid stress on membrane permeability*

10:50 – 11:30 **An Ghysels:** *Zooming in to the atomic scale: strengths and challenges of simulating partitioning and permeability of membranes*

11:30 – 12:10 **Bert Poolman:** *Synthetic, out-of-equilibrium cell-like systems for directing reaction networks and maintaining homeostasis*

12:10: 12:15 Group photo

12:15 – 13:30 LUNCH BREAK (at the ULB Plaine campus restaurant)

13:30 – 14:30 **PANEL DISCUSSION** - with all invited speakers of session 1-3

Chair: Phil Williamson

SESSION 4 Towards synthetic systems for active transport

14:30 – 14:50 **Sander Wezenberg:** *Introduction*

14:50 – 15:30 **Joachim Heberle:** *Light-driven halide pumping in protein crystals, detergent micelles, liposomes, and living cells*

15:30- 15:50 COFFEE BREAK

15:50 – 16:30 **Huaqiang Zeng:** *Membrane-Active Molecular Machines*

16:30 – 17:10 **Pinaki Talukdar:** *Development of Stimuli-Responsive Artificial Ion Channels*

17:10 -17:30 **Julia Villalva** (Contributed talk – ECR): *Visible-light-activation of transmembrane transport by sensitized isomerization*

19:30 – 22:00 BANQUET (Les Petits Oignons, rue de la Régence, 25, 1000 Bruxelles)

WEDNESDAY 30 APRIL 2025

09:00 – 09:30 Coffee

SESSION 5

Diffusion/transport across active membranes

09:30 – 09:50 **Patricia Losada Perez:** Introduction

09:50 – 10:30 **Timo Betz:** *Resolving a 100-year-old debate: Is red blood cell membrane flickering active or passive?*

10:30 – 11:10 **Patricia Basserau:** *Membrane mechanics affects function and clustering of active membrane transporters*

11:10 – 11:50 **Petra Schwille:** *Role of active membranes in the emergence of cell division*

11:50 – 12:10 **Agur Sevink** (Contributed talk): *Why lipid defects regulate membrane binding*

12:10 – 13:30 LUNCH BREAK (at the ULB Plaine campus restaurant)

SESSION 6

Interactions with and transport across (bacterial) membranes

13:30 – 13:50 **Han Remaut** (Contributed talk): *Nanodomain formation in the bacterial outer membrane*

13:50 – 14:30 **Nathalie Busschaert:** *Lipid head group binding and transmembrane transport: friends or foes?*

14:30 – 15:10 **Stefan Matile:** *New Directions from Synthetic Transport Systems*

15:10- 15:30 COFFEE BREAK

15:30 – 16:30 **PANEL DISCUSSION** - with all invited speakers of sessions 4-6

Chair: Patricia Losada Perez

16:30 -16:45 Closing

Propose (and vote for) questions for the panel discussion via [slido.com](https://www.slido.com)
access code #7070 133

