

# Innovating vectorization of biomolecules | InnoVec

The  **Interdisciplinary thematic institutes**  
of the **University of Strasbourg** &  &  **Inserm**  
funded under the **Excellence Initiative** program 

Winter School



# Micro-Technology

5 au 9 Février 2024

# for vectorization of drugs

**ESBS**

**Amphithéâtre A207**

300 Bld Sebastien Brant,  
67400 ILLKIRCH-GRAFFENSTADEN  
Organisée par N. DUMAS et M.MADEC.

**[innovec.unistra.fr](http://innovec.unistra.fr)**

Dans le cadre de  
**l'Initiative d'excellence**



## CONFERENCES

## Workshop – Biosystems Modeling - Only for Students

Mathematical Modeling and Numerical Simulation of Multidisciplinary Systems  
at the Interface between Biology and Engineering Sciences.

	MONDAY 5 <sup>th</sup>	TUESDAY 6 <sup>th</sup>	WEDNESDAY 7 <sup>TH</sup>	THURSDAY 8 <sup>TH</sup>	FRIDAY 9 <sup>TH</sup>
08h45	Welcome of participants AMPHI A207	Welcome of participants AMPHI A207	Salle A502-A503 Morning 8.30 – 12.30	Salle A502-A503 Morning 8.30 – 12.30	Salle A502-A503 Morning 8.30 – 12.30
09h00	Introduction	Introduction	<b>Introduction to Python Programming Language</b> Most common modules used for system modeling and simulation (numpy, scipy and matplotlib)	<b>Mathematical Modeling of Biosystems</b> How to go from a single biological system to a multidisciplinary system	<b>Team Project</b>
09h15	Microfluidic-assisted development of synthetic nucleic acids for imaging and beyond Pr. Michaël RYCKELYNCK	Electroporation : from the study of molecule transfer mechanism to medical application Dr. Marie-Pierre ROLS			
10h00	Lectin-based tools for future therapeutical applications Pr. Winfried RÖMER	Localized drug delivery using focused ultrasound Dr. Jonathan VAPPOU			
10h45	Coffee	Coffee			
11h15	Printing health: A 3D journey into personalised medicine Dr. Atheer AWAD	Iron Uptake Pathways in Pseudomonas aeruginosa Dr. Morgan MADEC			
12h15	Buffet	Buffet	Lunch break	Lunch break	Lunch break
14h00	Microfluidic and AI for Nanoparticles engineering AMPHI A301 Dr. Khair ALHARETH	Organoïd maturation in microsystems AMPHI A207 Dr. Youri ARNTZ	Salle A502-A503 AFTERNOON 14.00 – 18.00	Salle A502-A503 AFTERNOON 14.00 – 18.00	Salle A502-A503 AFTERNOON 14.00 – 18.00
14h45	Polymeric microcarriers: from microfluidic elaboration to tunable co-release of incompatible APIs Pr. Christophe SERRA	Poster Session	<b>Mathematical Modeling in System Biology</b> Deterministic and stochastic simulation, model formalization, dedicated tools and languages	<b>Team Project</b> Modeling of a biological switch in a microfluidic circuit and controlled by an electronic circuit	<b>Presentation of team projects, feedback and discussion</b>
15h30	Coffee	Coffee			
16h00	Engineering in industry and therapeutic application Transgene, Fluigent, Delta Diagnostics	Poster prize Closing remarks Students meeting TPS - InnoVec			
17h30	Closing remarks Invited plenary speakers: social event		Gala Dinner for Students Workshop		