

# COLLOQUE



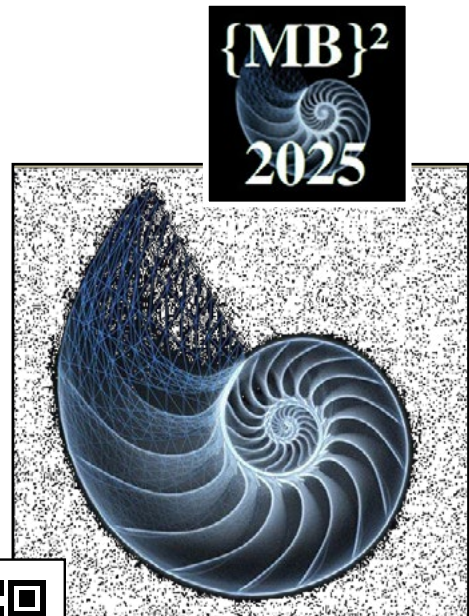
## 4<sup>th</sup> Mathematical Biology Modelling days of Besançon

**Besançon (France)**  
**20-22 octobre 2025**

Maison des Sciences humaines  
et environnementales  
1 rue Charles-Nodier  
25000 Besançon

En savoir plus :

<https://mb2-2025.sciencesconf.org/>





# Conference programme

4<sup>th</sup> Mathematical Biology Modelling days of Besançon | 20-22 Oct. 25 | BESANÇON (France)

## Monday 20<sup>th</sup> October 2025

13:00 – 13:45 ▪ *Welcome of participants*

13:45 – 14:00 ▪ *Welcome speech*

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### 14:00 – 17:30 Session 1. Memorial session in honor of Ezio Venturino

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14:00 – 14:10 ▪ Introduction to the session by Antoine Perasso

14:10 – 14:50 ▪ **Horst Malchow.** Stability, oscillations, carrying capacities, infections and pattern formation in population-dynamical systems

14:50 – 15:30 ▪ **Daniel Franco** – Dispersal in discrete-time population models

15:30 – 16:00 ▪ *Coffee break*

16:00 – 16:40 ▪ **Frank Hilker** – Eco-epidemiological models with trait- and density-mediated effects of parasitized predators

16:40 – 17:20 ▪ **Jean-Christophe Poggiale** – The role of manipulative trophically transmitted parasites in the stability of a predator-prey community

19:00 ▪ *Dinner in Besançon for invited lecturers*

## INFORMATIONS

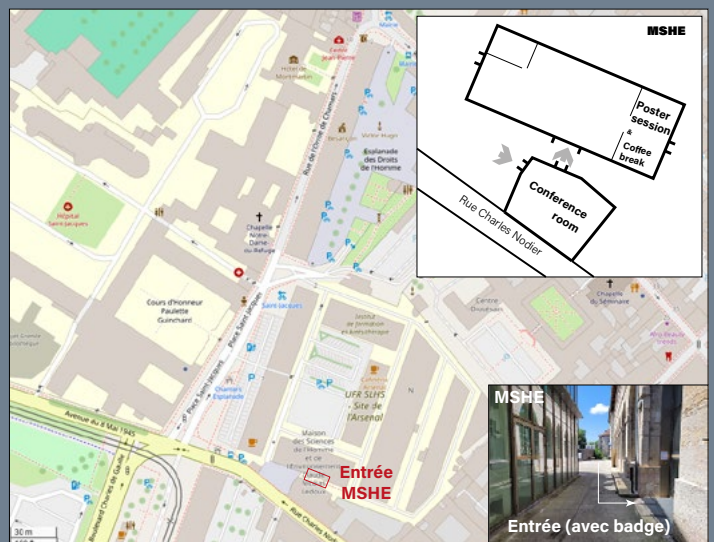
### Conference venue

The conference will be held at the Maison des Sciences Humaines et Environnementales (MSHE) Claude Nicolas Ledoux in Besançon.

Pedestrian acces:  
Esplanade Germaine Tillion  
1 rue Charles-Nodier  
25000 Besançon

Oral presentations will take place in the conference room, while coffee breaks and poster sessions will be held in the exhibition hall.

**IMPORTANT :** It is forbidden to eat or drink outside the exhibition hall (poster session room). Thank you in advance.





# Conference programme

4<sup>th</sup> Mathematical Biology Modelling days of Besançon | 20-22 Oct. 25 | BESANÇON (France)

## Tuesday 21<sup>st</sup> October 2025

8:30 – 9:00 ▪ *Welcome of participants*

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### 9:00 – 12:30 *Session 2. Ecology, Evolution and Population Dynamics*

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9:00 – 9:45 ▪ **Guillaume Achaz**. What process(es) explain(s) genetics diversity in the wild? Applying mathematical models to study biological questions

9:45 – 10:30 ▪ **Anne-Florence Bitbol** – Impact of complex spatial population structures on biological evolution

10:30 – 11:00 ▪ *Coffee break*

11:00 – 11:45 ▪ **Hélène Leman** – Trait evolution in a Moran Model: Impact of environment and population structure

11:45 – 12:30 ▪ **Frederic Alberti** – Loose linkage in the ancestral recombination graph

12:30 – 14:30 ▪ *Lunch at Espace Grammont*

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### 14:30 – 17:00 *Session 3. Open session*

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14:30 – 15:00 ▪ **Ana Fernández Baranda** – Hematopoiesis as a continuum: from stochastic compartmental model to hydrodynamic limit

15:00 – 15:30 ▪ **François Ged** – A general PDE for travelling waves and adaptive dynamics

15:30 – 16:00 ▪ *Coffee break*

16:00 – 16:30 ▪ **Louis Faul** – How Cross-Feeding Shapes Stability and Persistence in Microbial Communities

16:30 – 17:00 ▪ **Louise Martineau** – ToMATo clustering algorithm for neuronal spike sorting

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### 17:00 – 18:00 *Poster session*

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18:00 – 19:00 ▪ *Cocktail at the MSHE*



# Conference programme

4<sup>th</sup> Mathematical Biology Modelling days of Besançon | 20-22 Oct. 25 | BESANÇON (France)

## Wednesday 22<sup>nd</sup> October 2025

8:30 – 9:00 ▪ *Welcome of participants*

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### 9:00 – 12:30 *Session 4. AI for Health Science*

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9:00 – 9:30 ▪ **Stephan Robert-Nicoud, Léonard Truscello.** AI-Driven Healthcare Management : From Emergency Resource Optimization to Crisis Detection

9:30 – 10:00 ▪ **Jennifer Lagoutte-Renosi, Marie-Blanche Valnet Rabier, Ornella Jutcha Nganwa** Health Data and AI: Application to HIV

10:00 – 10:30 ▪ **Douglas Teodoro.** Graphing the spread: Using graph neural networks to predict multi-drug resistant infection risks in hospitals

10:30 – 11:00 ▪ *Coffee break*

11:00 – 11:30 ▪ **Mohamed Sraitih** – AI-Powered Analysis of Cardiovascular Signals for the Prevention and Management of Cardiovascular Diseases

11:30 – 12:00 ▪ **Jeremy Decerle** – Multi-objective approaches to the home health care problem

12:00 – 12:30 ▪ Discussion

12:30 – 12:45 ▪ MB2 Closing speech

