



# Perla Mallouk

PhD Student in Applied Mathematics - MAP5, Université Paris Cité

 13/03/2001

 Arabic, French, English, Spanish

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 perlamallouk.com

## RESEARCH INTERESTS

- Mathematical Modeling of Cancer Growth.
- Stochastic Gene Expression and Gene Regulatory Networks.
- Partial Differential Equations (PDEs).
- Pattern Formation and Self-Organization.

## MEMBERSHIPS

since 2026 **SMB** 

Society for Mathematical Biology.

since 2026 **EMS-TAG-MLS** 

EMS Topical Activity Group - Mathematical Modelling in Life Sciences.

## EDUCATION AND EXPERIENCE

2025 - 2028 **PHD | MAP5 LABORATORY, UNIVERSITÉ PARIS CITÉ**

Stochastic-Deterministic Mathematical Models of Neuroblastoma Spatial Structure.  
Supervisor: Fabien Crauste . Funding: Fondation CFM pour la recherche .

2025 **MOOC WRITING IN THE SCIENCES | STANFORD UNIVERSITY, COURSERA**

Online course on clear and effective scientific writing, focusing on structure, style, and communication for scientific audiences .

2025 **MASTER'S INTERNSHIP | MAP5 LABORATORY**

Mathematical Modeling of Neuroblastoma Growth Based on Tumoroid Data.

2023 - 2025 **MASTER'S DEGREE | UNIVERSITÉ PARIS CITÉ**

Mathematics, Modeling, and Machine Learning.

2021 - 2023 **TEACHING ASSISTANT | COLLÈGE GEORGES DUHAMEL, PARIS**

Observed classes, prepared lessons and exercises, and conducted classroom teaching for middle school students.

2020 - 2023 **BACHELOR'S DEGREE | UNIVERSITÉ PARIS CITÉ**

Mathematics and Applications.

## AWARDS AND GRANTS

2023 - 2025 **PGSM SCHOLARSHIP | FONDATION SCIENCES MATHÉMATIQUES DE PARIS**

Excellence scholarship awarded for the full two-year Master's program.

## MENTORSHIPS

### 2026 **MANON POUPARD - M1 INTERNSHIP | UNIVERSITÉ PARIS CITÉ**

Introduction to PDEs and application to pattern formation in reaction-diffusion systems.

## TEACHING

### 2025 - 2026 **M1 BIOMEDICAL ENGINEERING | UNIVERSITÉ PARIS CITÉ**

Course (in english): Applied Mathematics for Biological Systems: introduction to Ordinary Differential Equations (ODEs); numerical methods; systems of ODEs; graphical solutions.

Responsibilities: preparation and delivery of lectures and practical sessions; exam preparation, grading, and assessment – 15h/year.

### 2025 - 2026 **M2 ENGINEERING, MATHEMATICS, AND BIOSTATISTICS | UNIVERSITÉ PARIS CITÉ**

Course (in french): Differential Equation Models and Data: population dynamics and complex systems; parameter influence; PDE models; numerical simulations.

Responsibilities: preparation and delivery of Python-based practical sessions; development of numerical simulations; student guidance and support – 15h/year.

### 2025 - 2026 **B1 MATHEMATICS AND COMPUTER SCIENCE | UNIVERSITÉ PARIS CITÉ**

Course (in french): Foundations of Mathematics: linear algebra; primitives and integrals; convergence of integrals; numerical series; differential equations.

Responsibilities: preparation and delivery of problem-solving sessions; design of tests and exercises for the exams; grading of tests and exams – 30h/year.

## CONFERENCES, WORKSHOPS AND SEMINARS

### TALKS

- Doctoral Seminar in Analysis | Orsay (France), February 24, 2026 ☺.
- FP2M Study Day for PhD Students | Paris Nanterre (France), January 7, 2026 ☺.
- Modeling, Analysis and Simulation Team Study Day | MAP5 laboratory, July 4, 2025 ☺.
- Doctoral Seminar | MAP5 laboratory, June 20, 2025 ☺.

### POSTER PRESENTATIONS

- 2nd Bonn Conference on Mathematical Life Sciences | Bonn (Germany), March 2026 ☺.
- CJC-MA 2026 | Champs-sur-Marne (France), March 2026 ☺.
- JMBS 2025 | Montpellier (France), November 2025 ☺.

### PARTICIPATION

- New Trends in Mathematical Models for Biology | Institut Henri Poincaré (France), December 2025 ☺.
- 6<sup>th</sup> edition of the Mathematical Modeling Seminar in Life and Health Sciences | MAP5 laboratory, November 2025 ☺.
- FP2M Study Day | MAP5 laboratory, October 2025 ☺.
- 5<sup>th</sup> edition of the Mathematical Modeling Seminar in Life and Health Sciences | Villeteuse (France), March 2025 ☺.
- Applied and Industrial Mathematics Month | Institut Henri Poincaré (France), November 2023 ☺.
- Second Day Meeting Translational Bioinformatics Graduate School | Paris (France), November 2023 ☺.

## SCIENCE COMMUNICATION

### March 2026 **QUESTIONS FOR A PHD | S[CUBE]**

Speaker in a 90-minute interactive session (icebreaker, interviews, speed-meeting) introducing students to the daily work of early-career researchers ☺.

### 2025 **INTRODUCTION TO PYTHON | MAP5 LABORATORY**

Introduction to Python for 9<sup>th</sup> and 10<sup>th</sup> grade students.

### 2025 **PRESENTATION OF MY RESEARCH TOPIC | MAP5 LABORATORY**

Presentation of my research work for 9<sup>th</sup> and 10<sup>th</sup> grade students.

## GIRLS&MATH ☺ | WOMEN&MATH ☺

Activities and initiatives aimed at promoting women's participation in mathematics, increasing visibility of female role models, and encouraging interest in mathematics among younger students through outreach, mentoring, and educational events.

### since 2026 **TÊTES CHERCHEUSES | UNIVERSITÉ PARIS CITÉ**

Interventions in high schools in the Île-de-France region aimed at presenting our academic paths, answering students' questions, and encouraging young women to pursue careers in scientific research, with a particular focus on mathematics.

#### Interventions:

- Lycée Thibaut de Champagne, Provins, France: April 14, 2026.

### since 2026 **MEMBER OF THE GENDER EQUALITY COMMITTEE | MAP5 LABORATORY**

Observing and identifying situations within the laboratory where gender equality is lacking or poorly addressed, proposing actions to promote equality, and communicating on this issue ☺.

### April 2026 **RJMI LABORATOIRE MAP5 | MAP5 LABORATORY**

Co-organizer of the Young Women in Mathematics and Computer Science Meeting, a two-day event bringing together 20 high school students from across France. The program includes research workshops, speed meetings with women scientists, conferences, and a workshop on stereotypes, with the goal of encouraging participants to pursue studies and research in mathematics and computer science ☺.

#### Secured Funding:

- 1000€ AMI médiation scientifique 2026, Université Paris Cité ☺.
- 1000€ Mission Égalité, Diversité, Inclusion, Université Paris Cité ☺.
- 500€ FP2M (Fédération Parisienne de Modélisation Mathématique) ☺.

### Dec. 2025 **SPEED-MEETING RJMI ENS | ENS PARIS**

Participation as a speaker in a speed-meeting session with high school students to discuss academic paths in mathematics, answer questions, and encourage interest in scientific research careers ☺.

### June 2023 **INTERNSHIP MATHS C POUR L | AMIENS, FRANCE**

Participated as a student in a mathematics research internship, attending meetings and conferences with women researchers, and engaging in discussions on gender stereotypes in mathematics ☺.