

Perla Mallouk

PhD Student in Applied Mathematics - MAP5, Université Paris Cité

13/03/2001

Arabic, French, English, Spanish

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RESEARCH INTERESTS

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

MEMBERSHIPS AND RESPONSIBILITIES

2026 - 2027 **CO-ORGANIZER OF THE NON-PERMANENT RESEARCHERS WORKING GROUP**
Organized the laboratory's PhD student seminar throughout the academic year.

since 2026 **PHD STUDENT REPRESENTATIVE AT DOCTORAL SCHOOL**
Elected by vote to represent PhD students within the doctoral school.

since 2026 **SMB** ⎋
Society for Mathematical Biology.

since 2026 **EMS-TAG-MLS** ⎋
EMS Topical Activity Group - Mathematical Modelling in Life Sciences.

since 2026 **EWM** ⎋
European Women in Mathematics.

EDUCATION AND EXPERIENCE

2025 - 2028 **PHD | MAP5 LABORATORY, UNIVERSITÉ PARIS CITÉ**
Stochastic-Deterministic Mathematical Models of Neuroblastoma Spatial Structure.
Supervisors: Fabien Crauste ⎋ and Chiara Villa ⎋.
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

Sept 2026 **BEST POSTER AWARD | DURHAM, ENGLAND**
Mathematical Approaches to Spatial Biology ⎋.

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

- 14th European Conference on Mathematical and Theoretical Biology | Graz (Austria), July 13-17 2026 ⎋.
- 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

- Mathematical Approaches to Spatial Biology | Durham (England), September 2026 ⎋.
- 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

- JMBS 2026 | Lille (France), November 2026 ⎋.
- Data-driven approaches in modelling cell and tissue dynamics | LJLL (France), October 2026 ⎋.
- SilicoHealth: In Silico Models in Health | Puteaux (France), June 2026 ⎋.
- Workshop on PDEs and mathematical biology | LJLL (France), June 2026 ⎋.
- New Trends in Mathematical Models for Biology | Institut Henri Poincaré (France), December 2025 ⎋.
- 6th edition of the Mathematical Modeling Seminar in Life and Health Sciences | MAP5 laboratory, November 2025 ⎋.
- FP2M Study Day | MAP5 laboratory, October 2025 ⎋.
- 5th edition of the Mathematical Modeling Seminar in Life and Health Sciences | Villetaneuse (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

May 2026 **SALON OF CULTURE AND MATHEMATICAL GAMES | PARIS**

Presentation of my background and research topic to all types of audiences: middle school students, high school students, parents, and teachers in the salon's career/professional space⎋.

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 9th and 10th grade students.

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

Presentation of my research work for 9th and 10th 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 ⎋.

June 2026 **PARTICIPATION IN GENDER EQUALITY DAYS | UNIVERSITÉ PARIS CITÉ**

Two days of conferences, forum theater, and round-table discussions on gender parity in mathematics and computer science, organized annually ⎋.

Since 2026 **RESEARCH PRESENTATION | JFMI**

Presented my research to an audience of 120 9th and 10th grade students, sharing my academic background and studies while encouraging young women to pursue careers in research, particularly in mathematics and computer science ⎋.

Interventions:

- Lycée français Jean-Monnet, Belgium: October 14, 2026.
- Université Versailles Saint Quentin, France: May 7, 2026.

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) ⎋.

since 2025 **SPEED-MEETING**

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

- Maths C pour L at Université Paris Cité: June 18, 2026 ⎋.
- RJMI ENS at ENS Paris: December 7, 2025 ⎋.

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 ⎋.