

# Federica Padovano

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**Email:** federica.padovano@sorbonne-universite.fr

**Memberships:** SMB, ESMTB

**Office:** 4 Pl. Jussieu, Paris, 75005, France

**Languages:** Italian, English, French

## Education

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2023-present

**LJLL, Sorbonne Université (SU)**

**PhD in Applied Mathematics.**

Project: “Mathematical modelling of the role of nutrients in the tumour microenvironment on the efficacy of melanoma treatment “

Advisors: Prof. L. Almeida (LPSM, SU), Prof. M. Cerezo (Université Côte d’Azur), Dr. C. Villa (MAP5, UPC)

2021-2023

**École Polytechnique Fédérale de Lausanne (EPFL)**

**MSc in Applied Mathematics.**

Master project: “An evolutionary dynamics model of the development of drug resistance in metastatic tumors“ (LJLL, Sorbonne Université, Paris)

Advisors: Prof. L. Almeida, Prof. M. Picasso (EPFL), Dr. C. Villa

2018-2021

**Politecnico di Torino (PoliTo)**

**BSc in Mathematics For Engineering.**

Bachelor project: “Study of an aggregation and propagation model of amyloid in neurons to describe the progression of Alzheimer’s disease”

Advisor: Prof. A. Tosin

## Industry experience

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09/2022-02/2023

**Novartis**, Lyon

**Biomodeler internship**, “Physiologically-based pharmacokinetic model for small molecule drugs”

## Publications & Preprints

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F. Padovano, C. Villa, *The development of drug resistance in metastatic tumours under chemotherapy: an evolutionary perspective*, Journal of Theoretical Biology, 595(1):111957, 2024

R. Singh, J. Glowacki, M. Beaud, F. Padovano, R.S. Manning, J.H. Maddocks, *cgNA+ min: computation of sequence-dependent dsDNA energy-minimising mini-circle configurations*. arXiv preprint arXiv:2411.06036, 2024

F. Padovano, , A. M. Lombardi (UniTo), S. Novello (UniTo), T. Lorenzi (PoliTo), E. Vigna (UniTo), E. Leschiera (ESILV), C. Villa, *Modelling the efficacy of CIK cell immunotherapy targeting MET-expressing mesothelioma cells* (preprint available in ResearchGate)

## Ongoing projects

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F. Padovano, L. Almeida, A. C. Bastos (Université Côte d'Azur), M. Cerezo, C. Villa, *Mathematical modelling of the role of nutrients in the tumour microenvironment on the efficacy of melanoma treatment*

## Meetings with contribution

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02/2026, PoliTo	<b>From Micro To Macro in Mathematical Biology: Recent advances in the modeling and analysis of biological systems</b> (Workshop - Contributed talk)
11/2025, Grenoble	<b>J-Biot 2025: Les 1ères Journées de la Biologie Théorique</b> (Workshop - Contributed talk)
09/2025, SIMAI	<b>Mathematical and Computational Models for Tumor Evolution and Therapy</b> (Conference minisymposium - Invited speaker)
06/2025, SMAI	<b>Mathematical advances in modelling cancer treatment</b> (Conference minisymposium - Invited speaker)
04/2025, Bonn	<b>Young women in mathematical biology</b> (Workshop - Invited speaker)

## Future appointments

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07/2026, ECMTB	<b>Deterministic models to describe and analyse tumour-immune interactions and immunotherapy</b> (Conference minisymposium organiser and speaker)
06/2026, Nanterre	<b>Collective Behavior in Complex Systems</b> (Conference - Invited Speaker)

## Grants

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04/2025	European Women in Mathematics (EWM) travel grant (400€)
10/2025	BOUM SMAI funding, for the “Data-driven approaches in modelling cell and tissue dynamics” workshop organisation in 09/2026 (500€)

## Teaching experience

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2023-2026	<b>Teaching assistant, Sorbonne Université</b> <ul style="list-style-type: none"><li>• 54h (1 semester) of the BSc course <i>Mathématiques for sciences 1</i> (Basic notions: calculus, differential equations, multivariable functions, and linear transformations of the plane)</li><li>• 138h (3 semesters) of the BSc course <i>Mathématiques for sciences 2</i> (Linear algebra and Probability)</li></ul>
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