

CURRICULUM VITAE

Federica Ferretti

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Education

Sapienza University	Rome, Italy	Statistical Physics	Ph.D., 2022
Sapienza University	Rome, Italy	Theoretical Physics	M.S. <i>magna cum laude</i> , 2018
Sapienza University	Rome, Italy	Physics	B.S. <i>magna cum laude</i> , 2016

Research Experience

2024 – present	Postdoc fellow	NITMB	Chicago, IL
2022 – 2024	Postdoc researcher	MIT	Cambridge, MA
2021 – 2022	Research Associate	Sapienza University	Roma, Italy
2020	Visiting PhD student	Ecole Normale Superieure	Paris, France
2018	Master thesis internship	Ecole Normale Superieure	Paris, France

Scholarships

2024 – 2027	Postdoctoral fellowship (NSF & Simons Foundation)	NITMB
2013 – 2018	Superior School for Advanced Studies (SSAS)	Sapienza University

Teaching

2019 – 2021 Teaching Assistant LUISS Guido Carli Roma, Italy

Training

June 2022 Aspen Center for Theoretical Physics
July 2019 Boulder School for Condensed Matter and Materials Physics

Synergistic Activities

1. Referee for APS journals (PRL, PRE, PRR, PRX), Nature Communications, Journal of Statistical Mechanics.
2. Conference co-organization:
 - September 2026, Biological Function in Space and Time: from physical cues to emergent decision-making, NITMB, Chicago.

- June 2025, Interdisciplinary Challenges in the Physics of Complexity and Life (IntCha25), EMBL Heidelberg.

3. Seminar and local activity coordination:

- 2024 – 2026: Work-In-Progress, weekly meetings, NITMB.
- 2019: Statistical Mechanics PhD & Postdoc meetings, monthly, Sapienza University.

Invited Talks

Feb 2026	seminar	LPTMS	Orsay, France
Dec 2025	seminar	CENTURI Living Systems	Marseille, France
May 2025	seminar	SIFS Young Seminars	online
April 2024	conference	IntCha24	Dresden, Germany
May 2023	seminar	Yale QBio Hageromo Hour	New Haven, CT
April 2023	seminar	Harvard CMT Kids Seminars	Cambridge, MA
Nov 2022	conference	CUNY Physics of Life Symposium	New York, NY
Oct 2020	seminar	MSC, Université Paris Diderot	Paris, France
Nov 2018	conference	Multiscale Integration in Biological Physics	Paris, France

Academic References

<u>Arup Chakraborty</u>	postdoc mentor	arupc@mit.edu
<u>Irene Giardina</u>	PhD advisor	irene.giardina@uniroma1.it
<u>Mehran Kardar</u>	postdoc mentor	kardar@mit.edu
<u>Madhav Mani</u>	postdoc collaborator	madhav.mani@northwestern.edu
<u>Thierry Mora</u>	PhD co-advisor	tmora@lps.ens.fr
<u>Arvind Murugan</u>	postdoc mentor	amurugan@uchicago.edu
<u>Rama Ranganathan</u>	postdoc mentor	ranganathanr@uchicago.edu
<u>Olivier Rivoire</u>	postdoc collaborator	olivier.rivoire@espci.fr
<u>Aleksandra Walczak</u>	PhD co-advisor	aleksandra.walczak@phys.ens.fr

Publications

1. F. Ferretti, V. Chardès, T. Mora, A. M. Walczak, I. Giardina, *Phys. Rev. X* **10**, 031018, (<https://link.aps.org/doi/10.1103/PhysRevX.10.031018>) (3 July 2020).
2. F. Ferretti, V. Chardès, T. Mora, A. M. Walczak, I. Giardina, *Phys. Rev. E* **105**, 044133, (<https://link.aps.org/doi/10.1103/PhysRevE.105.044133>) (4 Apr. 2022).
3. F. Ferretti *et al.*, *Phys. Rev. E* **106**, 034608, (<https://link.aps.org/doi/10.1103/PhysRevE.106.034608>) (3 Sept. 2022).
4. F. Ferretti, I. Giardina, T. Grigera, G. Pisegna, M. Veca, *Phys. Rev. Res.* **7**, L032006, (<https://link.aps.org/doi/10.1103/dg4n-1f4f>) (3 July 2025).
5. F. Ferretti, M. Kardar, *Phys. Rev. E* **109**, 064409, (<https://link.aps.org/doi/10.1103/PhysRevE.109.064409>) (6 June 2024).
6. F. Ferretti, M. Kardar, A. Murugan, *Learning to generalize in evolution through annealed population heterogeneity*, arXiv:2510.24602, 2025, arXiv: [2510.24602](https://arxiv.org/abs/2510.24602) (q-bio.PE), (<https://arxiv.org/abs/2510.24602>).

7. E. Rouvière, F. **Ferretti**, O. Rivoire, R. Ranganathan, *Allostery: A Physical Consequence of Evolution in Fluctuating Environments*, In preparation.