

Afra Salazar

PhD Candidate — Department of Fundamental Microbiology
University of Lausanne, Switzerland

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EDUCATION

- 2021 – **Doctoral School of the Faculty of Biology & Medicine**
PhD in Life Sciences | University of Lausanne
- 2019 – 2021 **Erasmus Mundus Master Programme in Evolutionary Biology (MEME)**
Master in Sciences | University of Groningen & University of Montpellier
- 2015 – 2019 **Undergraduate Program of Genomic Sciences**
Bachelor in Sciences | National Autonomous University of Mexico (UNAM)
Graduated with Honours

RESEARCH EXPERIENCE

- 2021 – **Research Assistant at the Department of Fundamental Microbiology**
Doctoral Student | University of Lausanne, Switzerland
Supervised by Dr. Sara Mitri
Developed a conceptual framework to study the individuality of communities
Built a consumer-resource model to study the eco-evolutionary dynamics of bacterial communities
- 2021 **Research Student at the Centre for History & Philosophy of Science**
Six-month master thesis project | University of Leeds, United Kingdom
Supervised by Dr. Ellen Clarke
Philosophical analysis on the evolutionary individuality of bacterial plasmids
- 2020 **Research Student at the Groningen Institute for Evolutionary Life Sciences**
Six-month master thesis project | University of Groningen, The Netherlands
Supervised by Dr. Marjon de Vos & Dr. Sander van Doorn
Studied the evolution of plasmid host ranges using adaptive dynamics
- 2020 **Research Student at MIVEGEC**
Three-month master project | University of Montpellier, France
Supervised by Dr. Samuel Alizon
Studied the evolutionary conditions driving symptom onset rates in infectious diseases
- 2019 **Research Assistant at the Department of Fundamental Microbiology**
Six-month undergraduate internship | University of Lausanne, Switzerland
Supervised by Dr. Sara Mitri
Built a kinetic model to design antibiotic treatments based on microbiota composition to reduce resistance
- 2018 **Research Assistant at the Department of Fundamental Microbiology**
Two-month summer internship | University of Lausanne, Switzerland
Supervised by Dr. Sara Mitri
Built a consumer-resource model mapping out the effects of different antibiotic treatment strategies on the microbiota of individual patients

2018	Research Student at the Laboratory of Systems & Synthetic Biology Six-month internship Center of Genomic Sciences, Mexico Supervised by Dr. Rafael Peña Miller <i>Built an agent-based computational model to study plasmid population dynamics in bacterial populations</i>
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PUBLICATIONS

2025	Salazar, A., & Mitri, S. Can a microbial community become an evolutionary individual? https://doi.org/10.1016/j.mib.2025.102596
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PRESENTATIONS

2025.10.16	Can individuality help us improve community functions? Internal conflicts and organismal adaptation ESEB Special Topic Network Invited seminar Online seminar
2025.10.03	Improving community breeding through evolutionary individuality first Alma Dal Co School on Collective Behaviour Contributed poster Venice, Italy
2025.07.21	Transitions in individuality beyond history International Society for the History, Philosophy and Social Studies of Biology Contributed oral presentation Porto, Portugal
2025.06.03	Improving community breeding through evolutionary individuality first European Meeting for PhD students in Evolutionary Biology (EMPSEB) Contributed oral presentation Milovy, Czechia
2025.02.14	Improving community breeding through evolutionary individuality first Biology Contributed poster Lausanne, Switzerland
2023.05.25	(How) Can we manipulate individuality in multispecies communities? Evolutionary transitions in individuality meeting Contributed oral presentation Plön, Germany
2023.03.03	Biografía & Ciencia: Redes, cooperación y contexto LIBAT Lectures by the Autonomous University of Nayarit Invited seminar Tepic, México
2022.05.19	Designing a community selection strategy based on individuality first Communities and coevolution meeting Contributed oral presentation Plön, Germany.
2022.05.19	The evolutionary individuality of bacterial plasmids Centre for history and philosophy of science visitors' day Invited seminar Leeds, England

AWARDS & GRANTS

2025	BIOLOGY25 Conference Swiss National Science Foundation (SNSF) CHF 12,000.00
2019 – 2021	Erasmus Mundus Joint Master Degree (EMJMD) Scholarship European Commission EUR 50,000.00
2018	Summer Undergraduate Research Programme (SURP) Faculty of Biology & Medicine, University of Lausanne CHF ~ 4,000.00
2017	Research methods training SEP-UNAM-FUNAM MXN 85,000.00

TEACHING EXPERIENCE

2025	Principles of programming and modelling in biology <i>Teaching assistant</i> Bachelor in biology, University of Lausanne
2021–2024	Introduction to mathematical models in biology <i>Teaching assistant</i> Bachelor in biology, University of Lausanne
2021–2024	Introduction to linear algebra <i>Teaching assistant</i> Undergraduate programme in genomic sciences, UNAM

OTHER COURSEWORK

2023	Guarda Summer School in Evolutionary Biology University of Basel & ETH Zurich
2022	Bordeaux Summer School in Philosophy in Biology & Medicine University of Bordeaux

REVIEWER

2023	Proceedings of the Royal Society B
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ORGANISER

2022 –	Evolutionary Biology Crash Course <i>Website design and advertising</i>
2025	The European Meeting for PhD Students in Evolutionary Biology <i>Website design and social media advertising</i>
2025	Biology Conference <i>Team coordinator, website design, social media advertising, and fund-raising</i>