

Alexandre P. Fernandes

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Education

- 2023– ··· ◇ **Ph.D., University of Cambridge**
Studying the emergence of collective behaviour during the evolutionary transition from single-celled to multicellular life.
- 2019–2022 ◇ **Bachelor's Degree in Biology, University of Porto**
Thesis title: *Coevolution between retroviruses and the innate immune system of mammals*.
Graduated with a final grade of 19/20, corresponding to A in the ECTS scale.

Research Publications

- 1 A. P. Fernandes, M. OhAinle, and P. J. Esteves, "Patterns of evolution of TRIM genes highlight the evolutionary plasticity of antiviral effectors in mammals," *Genome Biology and Evolution*, no. 12, Dec. 1, 2023. 🔗 DOI: 10.1093/gbe/evad209.
- 2 A. P. Fernandes, A. Águeda-Pinto, A. Pinheiro, H. Rebelo, and P. J. Esteves, "Evolution of CCR5 and CCR2 genes in bats showed multiple independent gene conversion events," *Viruses*, no. 2, Feb. 2022. 🔗 DOI: 10.3390/v14020169.
- 3 A. P. Fernandes, A. Águeda-Pinto, A. Pinheiro, H. Rebelo, and P. J. Esteves, "Evolution of TRIM5 and TRIM22 in bats reveals a complex duplication process," *Viruses*, no. 2, Feb. 2022. 🔗 DOI: 10.3390/v14020345.

Scholarships & Awards

- 2023 ◇ **Cambridge Trust Scholarship**, University of Cambridge
Awarded a full scholarship from Cambridge Trust International to cover tuition and living costs during my PhD.
- 2022 ◇ **Erasmus+ Scholarship**, University of Cambridge
Awarded a scholarship from the Erasmus program to cover living costs during my internship in Cambridge.
- 2021 ◇ **Doutor Manuel Ferreira Award**, University of Porto
Awarded a distinction for my work in Plant Biology.

Skills

- Research** ◇ Teaching, supervising students, conference talks, outreach.
- Coding** ◇ C++, Rust, Python and its scientific libraries, Linux, Bash.
- Languages** ◇ Native Portuguese, fluent English, intermediate Spanish, beginner German.

Experience

Teaching

- 2025–2026 ♦ **Supervisor of Undergraduate Teaching, University of Cambridge**
Supervised groups of students for the Mathematical and Computational Biology course.
- 2024 ♦ **Supervisor of Master's Student, University of Cambridge**
Supervised a student during their Master's project on the evolution of collective chemotaxis.
- ♦ **Supervisor of Summer Student, University of Cambridge**
Was the main supervisor of a Bachelor's student for their summer project.
- ♦ **Teaching Assistant, University of Cambridge**
Worked as a demonstrator for the Mathematical and Computational Biology course.
- 2023 ♦ **Teacher in Preparatory School, PEAC, Federal University of Rio Grande do Sul**
Worked as a volunteer teacher in a program of the Federal University of Rio Grande do Sul that aimed at facilitating the access of disadvantaged students to university.

Research Internships

- 2022–2023 ♦ **Erasmus+ Studentship, Sainsbury Laboratory, University of Cambridge**
Studied the emergence and evolution of multicellularity using a Cellular Potts model developed in C++.
Supervised by Dr. Renske Maria Vroomans and Dr. Enrico Sandro Colizzi.
- 2020–2022 ♦ **Research Internship, University of Porto**
Studied the evolution of TRIM and CCR immune proteins in mammals.
Supervised by Prof. Pedro José de Castro Esteves.

Miscellaneous

- 2025–2026 ♦ **Organiser of Journal Club, Sainsbury Laboratory, University of Cambridge**
Organised the Evo-Devo Journal Club, a fortnightly meeting open to all members of the University of Cambridge to discuss the latest research developments in the field of evolutionary-developmental biology.
- 2024–2026 ♦ **Member of the Departmental Postgraduate Education Committee, Department of Genetics, University of Cambridge**
Represented the postgraduate student body in departmental decisions. Organised retreats and events for the student community.
- ♦ **Organiser of Seminar Series, University of Cambridge**
Organised talks for the Theory of Living Matter seminar series.
- 2024–2025 ♦ **Member of the Darwin College Student Association, University of Cambridge**
Represented the interests of LGBTQ+ and international students in the student association of Darwin College. The role involved decision-making on college affairs and organising events.
- 2025 ♦ **Outreach Project, University of Cambridge**
Developed 3-Devo, a model of plant evolution used to teach school-age kids about how computational models of evolution are used in research.