

Jasmine Gamblin

Education

- 2020 – present **PhD in population biology**, SORBONNE UNIVERSITÉ, Paris, France
Modelling and inference for the evolution of *Escherichia coli* accessory genome. Supervised by Amaury Lambert and François Blanquart from the team Stochastic Models for the Inference of Life Evolution (CIRB, Collège de France).
- 2018 – 2020 **Computational Biology and Bioinformatics Master**, ETH, Zurich, Switzerland
Mathematical models for evolution, genetics, data analysis (GPA 5.5/6).
- 2015 – 2018 **Engineering Degree in Bioinformatics**, ÉCOLE POLYTECHNIQUE, Palaiseau, France
Interdisciplinary cursus in computer science, biology and mathematics (ranked 96/428, GPA 3.83/4).
- 2013 – 2015 **Mathematics and Physics Preparatory Class**, LYCÉE HENRI IV, Paris, France
Two year intensive training in mathematics, physics and computer science to prepare the competitive exam entrance to the French *Grandes Ecoles*.

Research Internships

- 2020 **Master's thesis, 6 months**, COLLÈGE DE FRANCE, Paris, France
Modelling the dynamics of phage adaptation to a complex environment using branching processes. Supervised by Amaury Lambert and François Blanquart, team Stochastic Models for the Inference of Life Evolution.
- 2019 **Lab rotation, 6 weeks**, ETH, Zurich, Switzerland
Applied a new computational method inferring gene regulation networks from RNA expression data in order to compare human and mouse kidney cells. Supervised by Pr. Joshua Payne, Computational Biology group.
- 2019 **Lab rotation, 6 weeks**, ETH, Basel, Switzerland
Implemented an R package allowing to simulate phylogenetic trees under a Birth-Death model conditioned on sampling times. Supervised by Dr. Timothy Vaughan, Computation Evolution group.
- 2018 **Research Intern, 4 months**, MCGILL UNIVERSITY, Montréal, Canada
Developed an algorithm allowing to adapt BLAST to probabilistic genomes alignment. Supervised by Pr. Mathieu Blanchette, Computational Genomics lab.
- 2017 **R&D Intern, 2 months**, STILLA TECHNOLOGIES, Villejuif (FR)
Studied the kinetics of the PCR (Polymerase Chain Reaction) in the context of the microfluidic devices produced by Stilla.

Teaching

- 2020 – 2023 **Teaching Assistant in Mathematics**, SORBONNE UNIVERSITÉ, Paris, France
Undergrad level:
- Mathematics for science (2 groups, 1 semester)
 - Introduction to probability theory (1 semester)
 - Python for mathematics (2 semesters)
 - Oral interrogations in mathematics (1 semester)

2015 – 2016 **Education Assistant**, APPRENTIS D'AUTEUIL, Nantes, France

Supervised the daily life of teenagers in a boarding school. Organized educational activities, taught mathematics, English and French during extra tutoring.

Publications

- **Jasmine Gamblin**, Sylvain Gandon, François Blanquart, Amaury Lambert, Bottlenecks can constrain and channel evolutionary paths. *Genetics, in press* (2023). doi: 10.1093/genetics/iyad001
- Félix Foutel-Rodier, François Blanquart, Philibert Courau, Peter Csuppon, Jean-Jil Duchamps, **Jasmine Gamblin**, Élise Kerdoncuff, Rob Kulathinal, Léo Régnier, Laura Vuduc, Amaury Lambert, Emmanuel Schertzer, From individual-based epidemic model to McKendrick-von Foerster PDEs: a guide to modeling and inferring COVID-19 dynamics. *Journal of Mathematical Biology* **85**, 43 (2022). doi: 10.1007/s00285-022-01794-4

Presentations

Invited talks

Nov. 2022 Seminar of the Evolutionary Theory department (Max Planck Institute for Evolutionary Biology), Plön, Germany

Sep. 2022 Workshop evolution and phages, Montpellier, France

Contributed talks

Jan. 2023 Interdisciplinary Approaches in Molecular Evolution (AIEM), Grenoble, France

Jan. 2023 PopGroup56, London, UK

Aug. 2022 Congress of the European Society for Evolutionary Biology (ESEB), Prague, Czech Republic

Posters

Jun. 2022 Mathematical and Computational Evolutionary Biology (MCEB), Château d'Oex, Switzerland

Mar. 2022 Interdisciplinary Approaches in Molecular Evolution (AIEM), Rennes, France

Others

Programming PYTHON, R (advanced), C++, JAVA, OCAML (intermediate)

Languages French (Mother tongue), English (Fluent), German (B1)

Organization Abstract selection for the French Natural History Museum young researchers' Congress