

Verónica Miró Pina

www.normalesup.org/~miropina

Born in Murcia (Spain), February 18th 1991
✉ miropina.veronica@gmail.com

Current position

2020 - ... **Postdoc**, *Weghorn's lab*, Centre for Genomic Regulation, Barcelona (Spain).

Research Interests

Population genetics, Evolutionary biology, Cancer genomics.

Probability theory, Stochastic processes, Coalescent theory.

Statistical inference, Data-analysis, Simulations, Machine Learning.

Previous positions

2018 - 2020 **Postdoc**, *Instituto de Investigaciones en Matemáticas Avanzadas y Sistemas (IIMAS)*, Universidad Nacional Autónoma de México (UNAM).

Education

2015 - 2018 **PhD**, *Equilibrium patterns of genetic diversity shuffled by migration and recombination*, LPSM (Sorbonne Université) and CIRB (Collège de France), Advisors : Emmanuel Schertzer and Amaury Lambert.

2013-2014 **Masters (2nd year)**, *Applied Mathematics*, Université Pierre et Marie Curie, Paris 6, with honors.

2012-2013 **Master (1st year)**, *Biology*, École Normale supérieure (Paris).

2011-2012 **Bachelors Degree**, *Biology*, École Normale supérieure (Paris).

Publications

Published papers

2021 **Estimating the time since admixture from phased and unphased molecular data**, Janzen, T., Miró Pina, V., *Molecular Ecology Resources*, 00, 1–19.

2021 **The symmetric coalescent and Wright-Fisher models with bottlenecks**, González Casanova, A., Miró Pina, V. and Siri-Jégousse, A., *Annals of Applied Probability*, in press .

2021 **Chromosome Painting**, Lambert, A., Miró Pina, V. and Schertzer, E. , *Annals of Applied Probability* , 31(2), 826–864.

2020 **The Wright-Fisher model with efficiency**, González Casanova, A., Miró Pina, V. and Pardo, J.C., *Theoretical Population Biology* , 132, 33–46 .

2019 **How does geographic distance translates into genetic distance?**, Miró Pina, V and Schertzer, E. , *Stochastic processes and their Applications* , 129(10) 3839-3921 7.

Preprints and manuscripts

2021 **The role of connectivity on COVID-19 preventive approaches**, Miró Pina, V., Nava-Trejo, J. Tobiás, A., Nzabarushimana, E., González Casanova, A. and González Casanova, I., under revision.

2022 **Segregational instability of multicopy plasmids: a population genetics approach**, Miró Pina, V., Hernandez, J.C.R. Siri-Jégousse, A., Peña Miller, R., Palau, S. and González Casanova, A., in prep.

2022 **Ξ-coalescents from i.i.d. mass partitions**, González Casanova, A., Miró Pina, V., Schertzer, E. and Siri-Jégousse, A., in prep.

Research Experience

May-July 2015 **Laboratoire de Biométrie et Biologie Évolutive**, *University Lyon 1 (Lyon, France)*, Nicolas Lartillot, Study of an individual-based model of species diversification.
Statistical inference, MCMC algorithms

January-April 2015 **Department of Ecology and Evolutionary Biology, Princeton University**, *Simon Levin's Lab*, Theoretical ecology, Study of the speciation mechanisms.

- February 2014 **SMILE team (Stochastic Models for the Inference of Life and Evolution)**, *CIRB, Collège de France*, Emmanuel Scherter and Amaury Lambert, Study of a population-based model of speciation.
- July 2015
- February -June 2013 **Center for Genomics and Systems Biology**, *NYU, New York University*, Edo Kussell
Experimental evolution.
- June-July 2012 **Centro Nacional de Biotecnología, CSIC**, *Universidad Autónoma de Madrid (Spain)*, Juan Poyatos
Experimental study of a genetic network in *E.coli*.

Teaching experience

- 2022 Supervisor. Larisa Arreola's undergraduate tesis, UNAM.
- 2020 Supervisor. Fernanda López Eslava's undergraduate tesis, UNAM.
- 2020 Supervisor. Amilkar Gazque's undergraduate tesis, UNAM.
- 2019 Teacher. Probability 2 and Applied mathematics seminar. Undergrad level at UNAM
- 2015-2018 Teaching assistant at Ecole Normale Supérieure (Paris): Mathematics for biologist. Master's level
- 2015-2018 Teaching assistant at Université Pierre et Marie Curie (Paris): Probability, Differential equations, Analysis. Undergrad level.
- 2012-2015 Oral examiner at lycée Henri IV (Paris, France). Undergrad level

Selected Presentations

- 2021 Ξ -coalescents arising from population models with bottlenecks. Probability seminar, University of Bath, UK (online).
- 2020 The symmetric coalescent. Bernoulli-IMS One World Symposium 2020. Available on YouTube.
- 2019 The symmetric coalescent. Invited talk. CLAPEM 2019, Merida, Yucatan, Mexico
- 2019 A population genetics model to understand plasmid loss and maintenance, segundo taller nacional de Probabilidad y Biología, Cuernavaca
- 2019 The symmetric coalescent. Invited talk. SPA 2019, Chigado, US
- 2019 The symmetric coalescent. MMEE 2019, Lyon, France
- 2019 The symmetric coalescent. Invited talk. Congreso de la Sociedad Matemática Mexicana, Monterrey, México.
- 2019 Spatial models in Population Genetics. Workshop Ecosystem dynamics: stakes, data and models, Institut Pascal, Saclay, France
- 2018 Chromosome Painting. Primer taller nacional de Probabilidad y Biología, Cuernavaca.
- 2018 Chromosome Painting. Saint Flour Probability School France).
- 2017 Chromosome Painting. AIEM - SBE meeting (regional meeting of the Society for Molecular Biology and Evolution). Lyon (France).
- 2017 How does geographic distance translates into genetic distance? Annual meeting of the French research group 'Theory and Models of Biodiversity' Paris (France).
- 2017 Chromosome Painting. 'Les Probabilités de demain' (young researchers in Probability meeting), IHES (France).
- 2017 How does geographic distance translates into genetic distance? Conference MMEE (Mathematical Models in Ecology and Evolution), London (UK).
- 2016 Chromosome Painting (poster) Conference MCEB (Mathematical and Computational Evolutionary Biology), Montpellier (France).
- 2016 How does geographic distance translates into genetic distance? ECMTB (European Conference on Mathematical and Theoretical Biology), Nottingham (UK).

Other skills

- Computer science Python, R, bash (advanced), C++, Matlab (basics)
- Languages Bilingual in Spanish and French. Fluent in English. Basic knowledge of Catalán
- Organisation 2021-2022. Postdoc representative: member of the CRG postdoc committee, organisation of career related and social events.
- 2015-2016. Student representative: organisation of cultural and social events for the students and postdocs at Collège de France.

2011-2012. Student representative: organisation of social events and of the annual gala at Ecole Normale Supérieure.

Dancing 2007-2009 Ballet Entredanzas (Murcia, Spain). Member of a semi-professional flamenco dancing company. I have been on tour to the UK twice.

Hobbies Dancing, ballet, running, traveling.