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French nationality

## EDUCATION

- 2014: **PhD - Evolutionary biology**, with Honours. Muséum National d'Histoire Naturelle, Paris.
- 2010: **MSc - Ecology, Biodiversity and Evolution**, First class Honours, rank: 5th.  
University Pierre et Marie Curie, Paris VI & Ecole Normale Supérieure, Paris.
- 2007-2011: **Ecole Normale Supérieure**, Paris (entry rank: 4th)

## RESEARCH EXPERIENCES

- 2016- Post-doc : « *Chromosomal inversions and local adaptation in seaweed flies* ». Supervised by L. Bernatchez, Université Laval Québec.  
Merit scholarship for foreign students (PBEEE) - FRQNT  
By combining a survey of ecology and population genomics along a latitudinal cline with fitness experiments in the lab and functional test of the genetic basis for adaptation, I am trying to understand how genome structure may favour adaptation to heterogeneous environments.
- 2015: Post-doc: « *Genetic basis of reproductive isolation in Heliconius butterflies* ». Supervised by M. Joron (UMR 7205, MNHN). Collaboration with C. Jiggins (Cambridge)  
With RAD-seq on hybrids resulting from experimental crosses, I mapped chemical mating signals and wing morphology in *H. timareta* and *H. melpomene*.
- 2011-2014: PhD: « *Speciation in Heliconius butterflies: the balance between mimicry convergence and ecological divergence* ». Supervised by M. Joron (CNRS UMR 7205, MNHN).  
Between co-mimetic sibling species of butterflies, I investigated how mimicry, induced by introgression at colour pattern loci, could affect the nature and the strength of barriers involved in reproductive isolation. The study combines field collection, population genetics, behavioural experiment, experimental crosses, chemical analysis and phenotypic description of shape, pattern and colour.
- 2010: Short project: « *Plant-Pollinators interaction webs in an urban area* ». Supervised by I. Dajoz and M. Baude (CNRS UMR 7618, ENS).
- 2010: Master 2 thesis: « *Evolution of plant communities in the Kerguelen Archipelago in the context of biological invasions and climate change* ». Supervised by J-L. Chapuis and A. Muratet (CNRS UMR 7204, MNHN).
- 2009: Master 1 thesis: « *Sex change in two species of calyptraeid gastropods: effects of nutrition and perceived mortality rate* ». Supervised by R. Collin (Smithsonian Tropical Research Institute, Panama).
- 2008: Bachelor thesis: « *Wing-colour variation in Calopteryx and its importance in species recognition and sexual selection* ». Supervised by M. Wellenreuther and E. Svensson (University of Lund, Sweden).

## PUBLICATIONS

**Mérot C.**, Salazar. C., Merrill R., Jiggins. C, Joron M. 2017 What shapes the continuum of reproductive isolation? Lessons from *Heliconius* butterflies. *BioRxiv*. <https://doi.org/10.1101/107011>

**Mérot C.**, Le Poul Y., Théry M., Joron M. 2016. Mimicry refinement: Phenotypic variations tracking the local optimum. *Journal of Animal Ecology*. 85(4), 1056-1069.

**Mérot C.**, Frérot. B, Leppik E., Joron M. 2015. Beyond magic traits: multimodal mating cues in *Heliconius* butterflies. *Evolution*. 69 (11). 2891-2904.

**Mérot C.**, Mavarez J., Evin A., Dasmahapatra K., Mallet J., Lamas G., Joron M. 2013. Genetic differentiation without mimicry shift in a pair of hybridizing *Heliconius* species (Lepidoptera : Nymphalidae). *Biological Journal of the Linnean Society*. 109, 830-847.

Jones R., Le Poul Y., Whibley A., **Mérot C.**, Ffrench-Constant R. Joron M. 2013. Wing shape variation associated with mimicry in butterflies. *Evolution*. 67. 2323-2334.

Pardo-Diaz C., Salazar C., Baxter S., **Mérot C.**, Figueiredo-Ready W., Joron M., McMillan W., Jiggins C.. 2012. Adaptive Introgression across Species Boundaries in *Heliconius* Butterflies. *PLoS Genet*, 8 (6)

**Mérot C.**, Collin R. 2012. Effects of food availability on sex change in two species of *Crepidula* (Gastropoda: Calyptraeidae). *Marine Ecology Progress Series*, Vol. 449: 173–181.

**Mérot C.**, Collin R. 2012. Effects of stress on sex change in *Crepidula* cf. *marginalis* (Gastropoda: Calyptraeidae). *Journal of Experimental Marine Biology and Ecology*, 416-417: 68-71.

## COMMUNICATIONS AND POSTERS

**Mérot C.**, Davey J., Merrill R., Barker S., Leppik E., Frérot B., Jiggins C., Joron M. Sexual isolation and the genetics of chemical cues involved in speciation in *Heliconius* butterflies. *European society for evolutionary biology meeting. Août 2015*. Lausanne, Switzerland.

**Mérot C.**, Leppik E., Frérot B., Joron M. How to resist the social attractiveness of a co-mimic? *International conference of biology of butterflies. August 2014*. Turku, Finland

**Mérot C.**, Leppik E., Frérot B., Joron M. Male choice and chemical differentiation trigger contribute to reproductive isolation between two co-mimetic species of butterflies. *Le petit pois déridé. August 2014*. Orsay, France.

**Mérot C.**, Merrill R., Tholance A., Jiggins C., Debat V., Joron M. How do selection and hybridization shape the wing of mimetic butterflies? *SMEF, June 2014*. Dijon, France.

**Mérot C.**, Joron M. Asymmetric mate choice contribute to reproductive isolation between two species of *Heliconius* butterflies. *Ecology and behaviour, May 2014*. Montpellier, France.

**Mérot C.**, Mavarez J., Evin A., Dasmahapatra K., Mallet J., Lamas G., Joron M. Comment différencier deux espèces-soeurs mimétiques? Utilisation d'outils morphométriques et génétiques. *SMEF, May 2012*. Lyon, France.

**Mérot C.**, Mavarez J., Evin A., Dasmahapatra K., Mallet J., Lamas G., Joron M. Mimicry and speciation: Can you mimic your sister-species? *Popgroup, January 2012*. Nottingham, UK.

## OTHER PROFESSIONAL EXPERIENCES

- **Teaching and student supervision:**

2012-2014: Assistant teacher for master's lab courses (MNHN)  
2011-2012: Assistant teacher in animal biology (Université Paris 7)  
2011-2014: Supervision of three undergraduate students involved in short projects (2-3 months)

- **Popularising science :**

2012-2014: Adaptation of a citizen science program for high school: Vigie-nature Ecole.  
2006: Naturalist guide in charge of the presentation of a natural area.

## SKILLS

**Experimental:** Fieldwork, butterflies rearing, crosses, behavioural experiments.  
DNA extraction, PCR, sequences alignments, population genetics, RAD-seq.  
Extraction and quantification of chemical compounds (GC-MS).  
Geometric morphometry, spectrophotometry.  
Multivariate statistics and analyses with R.

**Languages:** English & Spanish: fluent.

**Naturalistic:** Bird-watching (member of the LPO, Birdlife international).  
Good knowledge of butterflies, odonata and amphibian.

## EXTRA-CURRICULAR ACTIVITIES

2006: **Driving Licence**

**Hobbies:** Sports, salsa, African dancing, skiing, badminton, climbing.  
Photography, naturalist trips, hiking, scuba-diving (level 2).

**Associations:** Secretary / Vice-president in the ENS students association (2007-2010).