

Paul Bastide

Researcher in Statistics

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Curent Position

2020 – present **Permanent CNRS Researcher, IMAG, Université de Montpellier.**

Past Position

2017 – 2020 **Postdoctoral researcher, KU Leuven.**

Bayesian Phylogenetic Comparative Methods applied to virology. With **Philippe Lemey** (KU Leuven) and **Marc Suchard** (UCLA).

Keywords.

Phylogenetic Comparative Methods. Shift Detection. Model Selection. Phylogenetic Networks.

Educational Background

2014 – 2017 **PhD Thesis, Université Paris Sud.**

Shifted stochastic processes evolving on trees: application to models of adaptive evolution on phylogenies. Supervised by **Stéphane Robin** (MIA, UMR 518 AgroParisTech/INRA) and **Mahendra Mariadassou** (MaIAGE, UR 1404 INRA).

2013 – 2014 **Master2 MathSV, Université Paris Sud - École Polytechnique - ENS Cachan.**

Master in Mathematics For Life Sciences, awarded with highest honors.

2010 – 2014 **Grande École, École Polytechnique.**

(One of France's leading schools of science and engineering.)

Majoring in Applied Mathematics.

Awards and Fellowships

2019 **FWO long stay abroad grant, Research Foundation - Flanders.**

Project based personal grant to visit Marc Suchard in UCLA.

2018 **FWO Fellowship, Research Foundation - Flanders.**

Three years project based personal post-doctoral fellowship.

2018 **SFds PhD Thesis Award, French Statistical Society.**

Prix Marie-Jeanne Laurent-Duhamel, for a PhD in Applied Statistics, awarded every three years.

Fall 2015 **Fulbright Scholar, University of Wisconsin - Madison.**

To work with **Cécile Ané** at the Departments of Statistics and Botany, and in the **Sytsma Lab**.

Publications

2018 – **P. Bastide**, C. Solís-Lemus, R. Kriebel, K. W. Sparks, and C. Ané. Phylogenetic comparative methods on phylogenetic networks with reticulations. *Systematic Biology*, 67(5):800–820, 2018.

– **P. Bastide**, C. Ané, S. Robin, and M. Mariadassou. Inference of Adaptive Shifts for Multivariate Correlated Traits. *Systematic Biology*, 67(4):662–680, 2018.

– L. Aristide, **P. Bastide**, S. F. dos Reis, T. M. Pires dos Santos, R. T. Lopes, and S. I. Perez. Multiple factors behind early diversification of skull morphology in the continental radiation of New World monkeys. *Evolution*, 72(12):2697–2711, dec 2018.

2017 – C. Solís-Lemus, **P. Bastide**, and C. Ané. PhyloNetworks: A Package for Phylogenetic Networks. *Molecular Biology and Evolution*, 34(12):3292–3298, 2017.

- **P. Bastide**, M. Mariadassou, and S. Robin. Detection of adaptive shifts on phylogenies by using shifted stochastic processes on a tree. *Journal of the Royal Statistical Society: Series B (Statistical Methodology)*, 79(4):1067–1093, 2017.
- 2014 – **P. Bastide** and T. David. Discours de réception d'Édouard Estaunié à l'Académie française : définitions croisées de la persona d'un académicien scientifique. *Épistémocritique*, 14(Greffes), 2014.

Software

- PhylogeneticEM (Main Author) An **R** package for automatic shift detection on phylogenies. Available on the CRAN and on GitHub.
- PhyloNetworks (Contributor) A **julia** package for statistical inference, data manipulation and visualization of phylogenetic networks. Available on GitHub.
- BEAST (Contributor) A **java** cross-platform program for Bayesian analysis of molecular sequences and continuous traits using MCMC.
- nosoi (Contributor) An **R** package for flexible agent-based stochastic transmission chain/epidemic simulation

Talks and Posters in Conferences

- 29/07/2019 **JSM 2019**, Joint Statistical Meeting, Denver, contributed speed talk.
- 05/06/2019 **JdS 2019**, 51èmes Journées de Statistique de la SFdS, Nancy, contributed talk.
- 21/08/2018 **Evolution 2018**, Joint Congress on Evolutionary Biology, Montpellier, contributed talk.
- 30/05/2018 **JdS 2018**, 50ème Journées de Statistiques de la SFdS, Saclay, **invited speaker** for the Prix Marie-Jeanne Laurent-Duhamel.
- 13/06/2017 **MCEB 2017**, Mathematical and Computation Evolutionary Biology, Porquerolles, poster.
- 30/05/2017 **JdS 2017**, 49èmes Journées de Statistique de la SFdS, Avignon, contributed talk.
- 28/06/2016 **JOBIM 2016**, Journées Ouvertes en Biologie, Informatique et Mathématiques, Lyon, contributed talk.
- 19/04/2016 **JPS 2016**, Jeunes Probabilistes et Statisticiens, École de Physique des Houches, talk.
- 22/06/2015 **MCEB 2015**, Porquerolles, poster.
- 02/06/2015 **JdS 2015**, 47èmes Journées de Statistique de la SFdS, Lille, contributed talk.

Seminars and Workshops

- 25/02/2020 **LPSM Statistics seminar**, Paris Diderot.
- 25/10/2019 **TSU Statistics seminar**, Texas State University.
- 25/04/2019 **IMO Statistics seminar**, Orsay.
- 21/01/2019 **MaIAGE Statistics Seminar**, Jouy-en-Josas.
- 19/10/2018 **LBBE Statistics Seminar**, Lyon.
- 28/09/2018 **LaMME Statistics Seminar**, Évry.
- 27/09/2018 **LJK Probability & Statistics Seminar**, Grenoble.
- 15/02/2018 **Meeting of the group "Modélisation Mathématique et Biodiversité"**, Institut de Mathématique d'Orsay.
- 20/11/2017 **Joint Seminar: "Mathématiques, Évolution, Biologie" and Statistics**, Institut de Mathématiques de Marseilles.
- 08/11/2017 **Bioinformatic Seminar (BIG)**, KU Leuven.
- 23/02/2017 **Bioinformatics Team Meeting**, INRA, Jouy-en-Josas.
- 14/11/2016 **StatInfOmics Team Meeting**, MaIAGE, Jouy-en-Josas.

04/10/2016 **Journées des maths-info de l'INRA**, Mallemort.
 27/06/2016 **AgroParisTech Statistics Seminar**, Paris.
 23/06/2016 **Université Paris Sud Statistics Seminar (PhD Session)**, Orsay.
 09/06/2016 **Université Paris Descartes PhD Seminar**, Paris.
 18/05/2016 **EDMH PhD Seminar**, Paris.
 11/04/2016 **SupAgro Statistics Seminar**, Montpellier.
 10/02/2016 **Sauquet Lab Botany Seminar**, Université Paris Sud - Orsay.
 19/11/2015 **Sytsma Lab Botany Seminar**, University of Wisconsin - Madison.
 18/11/2015 **University of Wisconsin Statistics Seminar**, Madison.
 22/07/2015 **Morlon Lab Evolution Seminar**, IBENS, Paris.
 23/06/2015 **SSB Statistics Seminar**, Jouy-en-Josas.
 16/02/2015 **MaAIGE Internal Seminar**, Jouy-en-Josas.

Teaching

2018 **Teaching Assistant**, KU Leuven, in English and Dutch.
 Applied Biostatistics. Master level, Biomedical sciences.
 Introduction to Biostatistics. Bachelor level, Biomedical sciences.

2014 – 2017 **Teaching Assistant**, Université Paris Sud, in French.
 Introduction to Mathematical Modeling. Bachelor level, Applied Mathematics (L3). [Springs 2015/16/17]
 Introduction to Statistics. Bachelor level, Biology (L2). [Fall 2016]
 Mathematics for Biology. Bachelor level, Biology (L1). [Fall 2016]
 Measure Theory and Probabilities. Bachelor level, Mathematics (L3). [Spring 2016]
 Introduction to Statistics. Bachelor level, Biology (L3). [Fall 2014]

2011 – 2012 **Tutor**, GEPPM.
 A national program to help underprivileged high school students to continue their studies after high school. One course a week.

Implication in the Research Community

Reviewer Systematic Biology, NIPS, Evolutionary Bioinformatics, PeerJ, PlosOne, French ANR.

Learned Society Member of the *Société Française de Statistique* (SFdS), the *Society of Systematic Biologists* (SSB) and the *American Statistical Association* (ASA).

Outreach "Scoop" highlight on the network PCM paper for the Life Sciences Department of the Université Paris Saclay (www.scoop.it/t/life-sci-news-upsaclay?q=bastide)

Scientific Projects and Internships

Spring 2014 **Internship**, UMR 518 AgroParisTech / INRA (Paris), Supervised by Stéphane Robin and Mahendra Mariadassou, *Shifted Phylogenetic Comparative Methods*.

2013 – 2014 **Project**, UMR de Génétique Végétale du Moulon (Saclay), Supervised by Christine Dillmann and Sylvie Huet, *Analysis of the relations between the phenotype and the genotype on yeast organisms, combining genomic, proteomic and metabolic data*.

Spring 2013 **Internship**, International Institute for Climate and Society (IRI) at Columbia University (New York), Supervised by Rémi Cousin and Daniel Ruiz Carrascal, *Construction and Study of a Multi-Model Framework For Short Term Predictions of a Malaria Epidemic in the Region of Kericho, Kenya*.

Fall 2012 **Project**, CMAP (École Polytechnique), Supervised by Stéphane Gaubert, *How to control the Chikungunya epidemic in La Réunion*.

2011 – 2012 **Project**, CMAP (École Polytechnique), Supervised by Amandine Veber, *Modeling the development of terrorists groups*.

Other Work Experience

Summer 2012 **Internship**, Intech-NSK, Novosibirsk (Russia).

2010 – 2011 **Internship**, l'Enfant @ l'Hôpital, French association.

Skills

French	First language	Dutch	Actively learning
English	Spoken and written	Russian, Spanish	Notions
Desktop tools	MS Office, LaTeX, Git	Programing	R, Rcpp, Julia, Java, Matlab