

Marc Manceau

Modélisation pour la Santé

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Education

- 2014 – 2018 **PhD, Probabilistic modeling in evolutionary biology**, *Muséum National d'Histoire Naturelle, ENS et Collège de France*, Paris.
Prospecting for unconventional hypotheses in biodiversity macroevolution modeling. Work on birth-death models, coalescent models, models of continuous and molecular traits along a tree.
- 2012 – 2013 **Master in Applied Mathematics**, *Université Pierre et Marie Curie*, Paris.
Markov processes, stochastic calculus, numerical methods in probability, theoretical statistics.
- 2010 – 2012 **Bachelor in Biology**, *ENS*, Paris.
Bachelor in Biology and first year of Master in Ecology, Biodiversity, Evolution. Population dynamics/genetics, genome evolution, modeling approaches in ecology and evolution.
- 2010 – 2015 **École Normale Supérieure (ENS)**, Paris.
Successful candidate to the Ecole Normale Supérieure competitive exam.
- 2008 – 2010 **Undergraduate intensive training**, *Lycée Henri 4*, Paris.
Life sciences, Geology, Chemistry, Physics, Mathematics.

Research experience

- 10.2022 – . **Statistician – Statistics applied to clinical trials**, *Centre Hospitalo-Universitaire Grenoble Alpes (CHUGA)*, Grenoble, France.
Statistics and data analysis/vizualization for clinical trials. Teaching statistics in the University Hospital.
- 12.2021 – . **Freelance data scientist – Applied statistics and teaching**, Grenoble, France.
Data science for private contractors (including WHO) and teaching statistics.
- 11.2018 – 11.2021 **Postdoc position – Statistics for epidemiology**, *ETH Zürich*, Basel, Switzerland.
In Tanja Stadler's group.
Probabilistic modeling in epidemiology to study outbreaks using viral genetic sequences.
- 09.2014 – 08.2018 **PhD thesis – Mathematical modeling in macroevolution**, *École Normale Supérieure and Collège de France*, Paris.
Supervised by Hélène Morlon and Amaury Lambert.
Probabilistic modeling for the study of life evolution over long time scales.
- 09.2013 – 03.2014 **Internship (placement year) – Fieldwork on herpetofauna**, *Institut de Recherche pour le Développement (IRD)*, Nouméa, New Caledonia.
Supervised by Hervé Jourdan.
Study of the impact of invasive species on the endemic herpetofauna of New-Caledonia.
- 01.2013 – 08.2013 **Master thesis – Mathematical modeling of recombination**, *École des Ponts Paris-Tech*, Paris.
Supervised by Jean-François Delmas.
Taking into account recombination into coalescent models.
- 02.2012 – 08.2012 **Internship (M1) – Mathematical modeling**, *Collège de France*, Paris.
Supervised by Amaury Lambert and Hélène Morlon.
Individual-based modeling of diversification.

Grants

ETH Fellowship (Switzerland) obtained in 2019 for a total of 231 200 CHF (approximately 280 000 USD).

Teaching experience

- 01.2023 – . **Statistics for the Health**, *CHUGA*, Grenoble, France, ~20h.
Statistics for clinical trials or epidemiology: basic concepts, linear models (LM), generalized linear models (GLM), mixed models (LMM and GLMM), survival analysis.
- 05.2022 – . **Data Science and data visualisation**, *ESTIAM*, Lyon, France, ~80h.
Data visualisation and data manipulation using R, tidyverse and ggplot2. Summary statistics for central tendency, dispersion, and bivariate data. Discrete and continuous probability distributions. Linear regression.
- 09.2022 – 10.2022 **Time Series Analysis**, *ESTIAM*, Lyon, France, ~20h.
Time series analysis using R. Additive and multiplicative models, trend, seasonality, autocorrelation. Auto-regressive and moving average models (ARIMA). Forecasting.
- 10.2019 – 11.2021 **Computational Biology**, *ETH*, Zürich and Basel, ~50h.
Introduction to phylogenetic methods: sequence alignment, models of molecular evolution, models of continuous trait evolution, models of diversification, Bayesian framework.
- 10.2019 – 06.2021 **Student seminar Computational Biology**, *ETH*, Zürich and Basel, ~10h.
Choice and discussion of relevant papers around the modeling of life evolution.
- 09.2015 – 06.2018 **Informatics, Mathematics and Statistics**, *Université Pierre et Marie Curie*, Paris, ~180h.
Introduction to programming for second-year biology students: tutorials in Python. Mathematics and Statistics for third year biology students: dynamical systems for biology modeling, statistics and hypothesis testing in biology.
- 09.2015 – 06.2018 **Short Master courses on macroevolution modeling**, *École Polytechnique and ENS*, Paris, ~10h.
Modeling phenotypic evolution along a phylogenetic tree for the master Maths-SV. A short course on trait evolution modeling for the master EBE.
- 09.2014 – 06.2015 **Informatics**, *Lycée Henri 4*, Paris, ~60h.
Informatics basics for first year undergraduate students. Informatics projects for second year undergraduate students.
- 09.2010 – 06.2011 **Mathematics**, *Animaths*, Paris, ~10h.
Volunteering to teach mathematics to high school students in disadvantaged areas.

Supervision of students

- 03.2021 – 06.2021 **Zoé Vaquette**, *Research Project*.
A population genetics guide to better understand SARS-CoV-2 variants
- 11.2020 – 07.2021 **Antoine Zwaans**, *Master's thesis*.
Reconstructing cell lineage trees in developmental biology
- 07.2020 – 08.2020 **Remo Bättig**, *Research Project*.
Working on an inference method for a logistic birth-death process
- 02.2020 – 06.2020 **Jérémy Andréoletti**, *Research Project*.
Total-evidence inference of the cetacean diversity
- 02.2020 – 05.2020 **Antoine Zwaans**, *Research Project*.
Inferring the prevalence of outbreaks from viral sequences and occurrences

Publications

Léa Liaigre, Alicia Guigui, **Marc Manceau**, Jean-Luc Cracowski, Charles Khouri, Matthieu Roustit. 2025. *Trial-level surrogacy of non-high-density and low-density lipoprotein cholesterol reduction on the clinical efficacy of statins.*

European Heart Journal - Cardiovascular Pharmacotherapy.

<https://doi.org/10.1093/ehjcvp/pvaf016>

Eleonora Sosa Cuevas, Stéphane Mouret, Guillaume Vayssière, Siham Kerboua, Pauline Girard, Jean-Paul Molens, **Marc Manceau**, Julie Charles, Philippe Saas, Caroline Aspord. 2024.

Circulating immune landscape in melanoma patients undergoing anti-PD1 therapy reveals key immune features according to clinical response to treatment.

Frontiers in Immunology. 15.

<https://doi.org/10.3389/fimmu.2024.1507938>

B Revol, T Willeman, **M Manceau**, V Dumestre-Toulet, J-M Gaulier, H Eysseric-Guérin, et al. 2024.

Trends in fatal poisoning among medical users of analgesics in France from 2013 to 2022: an analysis of the DTA register.

Public Health. 236:381-385.

<https://doi.org/10.1016/j.puhe.2024.08.019>

Alicia Guigui, Léa Liaigre, **Marc Manceau**, Olivier Gaget, Jean-Luc Cracowski, Sophie Blaise, Charles Khouri, Matthieu Roustit. 2024.

Assessment of digital perfusion as a surrogate outcome in Raynaud's phenomenon clinical trials.

Rheumatology. 63:1502–1506.

<https://doi.org/10.1093/rheumatology/kead337>

Alex Hlavaty, Matthieu Roustit, **Marc Manceau**, Jean-Luc Cracowski, Charles Khouri. 2024.

The Christmas adverse event syndrome: An analysis of the WHO pharmacovigilance database.

Therapies. 79:675–679.

<https://doi.org/10.1016/j.therap.2023.11.004>

Julien Ghelfi, Zuzana Macek Jilkova, Christian Sengel, Bleuenn Brusset, Yann Teyssier, Charlotte Costentin, et al. 2024.

PD1 and TIM3 Expression is Associated with Very Early Hepatocellular Carcinoma Recurrence After Percutaneous Thermal Ablation.

Journal of Hepatocellular Carcinoma. 11:39–50.

<https://doi.org/10.2147/JHC.S443134>

Théo Willeman, Justine Grunwald, **Marc Manceau**, Frédéric Lapierre, Lila Krebs-Drouot, Coralie Boudin, Virginie Scolan, Hélène Eysseric-Guerin, Françoise Stanke-Labesque, Bruno Revol. 2024.

Smartphone swabs as an emerging tool for toxicology testing: a proof-of-concept study in a nightclub.

Clinical Chemistry and Laboratory Medicine (CCLM). 62:1845–1852.

<https://doi.org/10.1515/cc1m-2024-0242>

Bruno Revol, Théo Willeman, **Marc Manceau**, Véronique Dumestre-Toulet, Jean-Michel Gaulier, Nathalie Fouilhé Sam-Laï, Hélène Eysseric-Guérin, CNBAE Compagnie Nationale des Biologistes et Analystes Experts, FAN the French Addictovigilance Network. 2023.

Trends in Fatal Poisoning Among Drug Users in France From 2011 to 2021: An Analysis of the DRAMES Register.

JAMA Network Open. 6:e2331398-e2331398.

<https://doi.org/10.1001/jamanetworkopen.2023.31398>

Jérémy Andréoletti, Antoine Zwaans, Rachel C M Warnock, Gabriel Aguirre-Fernández, Joëlle Barido-Sottani, Ankit Gupta, Tanja Stadler, **Marc Manceau**. 2022.

The Occurrence Birth–Death Process for Combined-Evidence Analysis in Macroevolution and Epidemiology.

Systematic Biology. 71:1440-1452.

<https://doi.org/10.1093/sysbio/syac037>

Marc Manceau. 2021.

<https://doi.org/10.1101/2021.07.21.452479>

<https://doi.org/10.1016/j.epidem.2021.100480>

<https://doi.org/10.1016/j.jtbi.2020.110400>

<https://doi.org/10.1093/molbev/msaa144>

<https://doi.org/10.1016/j.jtbi.2019.110115>

<https://doi.org/10.1007/s11538-018-00536-2>

<https://doi.org/10.1093/sysbio/syw115>

<https://doi.org/10.1093/sysbio/syw020>

<https://doi.org/10.1111/2041-210X.12526>

<https://doi.org/10.1111/ele.12415>

Reviewing experience with numerous scientific journals, including: Annals of Applied Statistics, Bioinformatics, Bulletin of Mathematical Biology, Ecology Letters, Evolution, Nature, Proceedings of the Royal Society B, Science, Systematic Biology .

Specific skills

Programming

Science	Python, R, Scilab, Ocaml, C++
Web	PHP, HTML, CSS, SQL
Other	LaTeX, bash

Languages

French	Native language.
English	Good working command.
German	Basic knowledge.
Spanish	Basic knowledge.

Other interests

Water	Scuba diving (CMAS Instructor **), free diving, windsurfing.
Mountain	Ski touring, rock climbing, mountaineering, trekking.
Photography	Naturalist pictures.