Amandine VÉBER

Date of birth: 22/01/1984
French nationality. Married, 2 children.
Mailing address: MAP5 - Université Paris Cité - 45 rue des Saints-Pères - 75006 Paris – FRANCE
Email address: amandine.veber@parisdescartes.fr
Website: `https://veberamandine.wixsite.com/maths`

EMPLOYMENT HISTORY

2024 –	**1st Class CNRS Senior Researcher** at MAP5 (Paris Cité University). *Research themes:* Measure-valued stochastic population models with various applications in biology, chemistry, ..., spatial population genetics models, coalescent theory, statistical inference, communication networks.
2020 – 2024	**2nd Class CNRS Senior Researcher** at MAP5 (Paris Cité University).
2010 – 2022	**Part-time Assistant Professor** (2010–2020), then **part-time Associate Professor** (2020–2022) at the Applied Mathematics Department of Ecole Polytechnique.
2010 – 2020	**CNRS Junior Researcher at CMAP, Ecole Polytechnique**. *Two maternity leaves: Oct. 2013–Jan. 2014, and March 2016– June 2016.*
2008 – 2010	**Teaching Assistant** at the Mathematics Department of ENS Paris.
2008 – 2010	**Member of the Mathematics Department** of ENS Paris, Paris-Sud University and **visiting student at the Statistics Department** of Oxford University.

ACADEMIC TRAINING

2017	**Habilitation to direct research (HDR)** in Mathematics (delivered by Paris-Sud University): *Structured models of transmission.*
2006 – 2009	**Ph.D. in Mathematics, jointly supervised by Jean-François Le Gall** (Paris-Sud Univ.) **and Alison Etheridge** (Oxford Univ.): *Limit theorems for branching and coalescing spatial processes.*
2005 – 2006	**Master 2 in probability and statistics** at Paris-Sud University. Dissertation supervised by Alison Etheridge and Jay Taylor (Oxford Univ.), entitled *Structured population models as measure-valued random evolutions.*
2004 – 2008	**Student at Ecole Normale Supérieure of Paris**.

ACADEMIC TRAINING ABROAD

2005 – 2008	**Three research visits** (3 to 5 months each) at the Statistics Department of Oxford University, supervised by Alison Etheridge.

PUBLICATIONS

Stochastic models in population genetics and evolution:

- P. Jay, A. Véber and T. Giraud (2025). **Stepwise expansion of recombination suppression on sex chromosomes and other supergenes through lower load advantage and deleterious mutation sheltering.** *Preprint*, bioRxiv 2025.06.27.661902.
- P. Jay, A. Véber et T. Giraud (2024). **Deleterious mutations can contribute to the evolution of recombination suppression between sex chromosomes.** *Preprint*, bioRxiv 2024.11.18.624013.
- L. Freoa, J.-M. Gibert and A. Véber (2024). **The impact of environmental fluctuations, sexual dimorphism, dominance reversal and plasticity on the pigmentation-related genetic and phenotypic variation in *D. melanogaster* populations – A modelling study.** *Preprint*, hal-04597232.
- P. Jay, D. Jeffries, F.E. Hartmann, A. Véber and T. Giraud (2024). **Why do sex chromosomes progressively lose recombination?** *Trends in Genetics*, 40(7):564–579.
- A. Louvet and A. Véber (2024). **Measure-valued growth processes in continuous space and growth properties starting from an infinite interface.** *Stochastic Process. Appl.*, 170:104291.
- N.H. Barton, A.M. Etheridge and A. Véber (2023). **The infinitesimal model with dominance.** *Genetics*, 225(2):iyad133.
- L. Freoa, L.-M. Chevin, P. Christol, S. Méléard, M. Rera, A. Véber and J.-M. Gibert (2023). **Drosophilids with darker cuticle have higher body temperature under light.** *Scientific Reports*, 13:3513.
- E. Tezenas, T. Giraud, A. Véber and S. Billiard (2023). **The fate of recessive deleterious or overdominant mutations near mating-type loci under partial selfing.** *Peer Community Journal*, 3:e14.
- P. Jay, E. Tezenas, A. Véber and T. Giraud (2022). **Sheltering of deleterious mutations explains the stepwise extension of recombination suppression on sex chromosomes and other supergenes.** *PLoS Biology*, 20(7):e3001698.
- A.M. Etheridge, A. Véber and F. Yu (2020). **Rescaling limits of the spatial Lambda-Fleming-Viot process with selection.** *Electron. J. Probab.*, 25(120):1–89.
- N.H. Barton, A.M. Etheridge and A. Véber (2017). **The infinitesimal model: definition, derivation and implications.** *Theor. Popul. Biol.*, 118:50–73.
- R. Sainudiin and A. Véber (2016). **A Beta-splitting model for evolutionary trees.** *R. Soc. open sci.*, 3:160016.
- J. Kelleher, A.M. Etheridge, A. Véber and N.H. Barton (2016). **Spread of pedigree versus genetic ancestry in spatially distributed populations.** *Theor. Popul. Biol.*, 108:1–12.
- R. Sainudiin, B. Thatte and A. Véber (2016). **Ancestries of a recombining diploid population.** *J. Math. Biol.*, 72:363–408.
- A. Véber and A. Wakolbinger (2015). **The spatial Lambda-Fleming-Viot process : an event-based construction and a look-down representation.** *Ann. Inst. H. Poincaré Probab. Statist.*, 51:570–598.
- N.H. Barton, A.M. Etheridge, J. Kelleher and A. Véber (2013). **Genetic hitchhiking in spatially extended populations.** *Theor. Popul. Biol.*, 87:75–89.
- N.H. Barton, A.M. Etheridge and A. Véber (2013). **Modelling evolution in a spatial continuum.** *JSTAT*, P01002.
- N. Berestycki, A.M. Etheridge and A. Véber (2013). **Large scale behaviour of the spatial Lambda-Fleming-Viot process.** *Ann. Inst. H. Poincaré Probab. Statist.*, 49:374–401.
- A.M. Etheridge and A. Véber (2012). **The spatial Lambda-Fleming-Viot process on a large torus: genealogies in the presence of recombination.** *Ann. Applied Probab*, 22:2165–2209.
- N.H. Barton, A.M. Etheridge and A. Véber (2010). **A new model for evolution in a spatial continuum.** *Electron. J. Probab.*, 15:162–216.
- J.E. Taylor and A. Véber (2009). **Coalescent processes in subdivided populations subject to recurrent mass extinctions.** *Electron. J. Probab.*, 14:242–288.

Statistical inference for population models:

- L. Kuwata, T. Chassereau, F. Chapeland-Leclerc, P. David, E. Herbert, G. Ruprich-Robert, M. Tomašević and A. Véber (2025). **Quantifying the impact of different forms of stress on fungal growth: an inference method based on high-resolution pictures of the mycelial network.** *Preprint*, hal-05149818.

- L. Cappello, A. Véber and J.A. Palacios (2024). **An efficient coalescent model for heterochronously sampled molecular data.** *Journal of the American Statistical Association*, 119(548):2437–2449.

- J.A. Palacios, A. Véber, L. Cappello, Z. Wang, J. Wakeley and S. Ramachandran (2019). **Bayesian estimation of population size changes by sampling Tajima's trees.** *Genetics*, 213:967–986.

- R. Sainudiin and A. Véber (2018). **Full likelihood inference from the site frequency spectrum based on the optimal tree resolution.** *Theor. Popul. Biol.*, 124:1–15.

- R. Sainudiin, T. Stadler and A. Véber (2015). **Finding the best resolution for the Kingman-Tajima coalescent: theory and applications.** *J. Math. Biol.*, 70:1207–1247.

- N.H. Barton, A.M. Etheridge, J. Kelleher and A. Véber (2013). **Inference in two dimensions: allele frequencies versus lengths of shared sequence blocks.** *Theor. Popul. Biol.*, 87:105–119.

Branching processes and population dynamics models:

- L. Popovic and A. Véber (2023). **A spatial measure-valued model for chemical reaction networks in heterogeneous systems.** *Ann. Applied Probab.*, 33(5):3706–3754.

- M. Tomašević, V. Bansaye and A. Véber (2022). **Ergodic behaviour of a multi-type growth-fragmentation process modelling the mycelial network of a filamentous fungus.** *ESAIM: Probability & Statistics*, 26:397–435.

- F. Robin, A. Van Gorp and A. Véber (2021). **The role of mode switching in a population of actin polymers with constraints.** *J. Math. Biol.*, 82(3):1–43.

- J. Dikec, A. Olivier, C. Bobée, Y. D'Angelo, R. Catellier, P. David, F. Filaine, S. Herbert, C. Lalanne, H. Lalucque, L. Monasse, M. Rieu, G. Ruprich-Robert, A. Véber, F. Chapeland-Leclerc and E. Herbert (2020). **Hyphal network whole field imaging allows for accurate estimation of anastomosis rates and branching dynamics of the filamentous fungus *Podospora anserina*.** *Scientific Reports*, 10:3131.

- C. Bouillaguet, P.-A. Fouque and A. Véber (2013). **Graph-theoretic algorithms for the isomorphism of polynomials problem.** *Eurocrypt 2013*.

- J.-F. Le Gall and A. Véber (2012). **Escape probabilities for branching Brownian motion among mild obstacles.** *J. Theor. Probab.*, 25:505–535.

- A. Véber (2009). **Quenched convergence of a sequence of superprocesses in $\mathbb{R}^d$ among Poissonian obstacles.** *Stochastic Process. Appl.*, 119:2598–2624.

Communication networks:

- P. Robert and A. Véber (2019). **A scaling analysis of a star network with logarithmic weights.** *Stochastic Process. Appl.*, 129:1749–1781.

- P. Robert and A. Véber (2015). **A stochastic analysis of resource sharing with logarithmic weights.** *Ann. Applied Probab.*, 25:2626–2670.

Review articles and popularisation of science:

- A. Guillin, L. Saint-Raymond and A. Véber (2024). **Promouvoir les interactions entre mathématiques et sciences du vivant, de la Terre et de l'Homme.** *La lettre de CNRS Sciences humaines & sociales*, 89:24–26.

- T. Garaix, S. Gaubert, J. Josse, N. Vayatis and A. Véber (2022). **Decision-making tools for healthcare structures in times of pandemic.** *Anaesth. Crit. Care Pain Med.*, 41:101052.

- V. Bansaye, S. Méléard and A. Véber (2013). **Les différentes échelles de temps de l'évolution.** *MATAPLI*, 100:101–116.

- A. Véber (2010). **Théorèmes limites pour des processus de branchement et de coalescence spatiaux.** (Thesis summary) *MATAPLI*, 92:53–60.

RESEARCH ACTIVITIES

Doctoral and post-doctoral supervision

2023 – ...	Co-supervision (with Sylvain Billiard and Tatiana Giraud, evolutionary biologists at Lille Univ. and at CNRS & Paris-Saclay Univ., respectively) of the Ph.D. project of Ariel Offenstadt, *Modelling the stepwise cessation of recombination around sex-determining genes: identifying the temporal and genomic scales involved.*
2022 – ...	Co-supervision (with Florence Chapeland-Leclerc, mycologist at Paris Cité Univ.) of the Ph.D. project of Lena Kuwata, *Modelling the growth of an organised network: the case of filamentous fungi.*
2022 – 2024	Co-supervision (with Amaury Lambert, mathematician at ENS Paris) of the Ph.D. project of Elisa Couvert, *Evolutionary processes leading to species diversification.*
2022 – 2023	Scientific tutor of the post-doctoral project of Léonard Dekens at MAP5, *Evolutionary dynamics in non-local models with complex gene-trait associations and spatial structure.*
2020 – 2024	Co-supervision (with Jean-Michel Gibert, developmental biologist at CNRS & Sorbonne Univ.) of the Ph.D. project of Laurent Freoa, *Integrative analysis of the role of pigmentation in the adaptation of drosophila to spatial and temporal temperature heterogeneities.*
2020 – 2023	Co-supervision (with Sylvain Billiard and Tatiana Giraud) of the Ph.D. project of Emilie Tezenas du Montcel, *Mathematical models for the study of the interaction between recombination suppression and deleterious mutations in the vicinity of a mating type locus.*
2019 – 2022	Co-supervision (with Nathalie Machon, ecologist at Muséum National d'Histoire Naturelle) of the Ph.D. work of Apolline Louvet, *Probabilistic population genetics models for expanding populations.*
2018 – 2019	Scientific tutor of the post-doctoral project of Milica Tomašević at CMAP, *Modelling communication within an organised network: the case of filamentous fungi.*
2017 – 2022	Co-supervision (with François Robin, developmental biologist at INSERM & Sorbonne Univ.) of the Ph.D. project of Anne Van Gorp, *Multi-scale modelling of the intra-cellular actin dynamics.*
2014 – 2017	Co-supervision (with A. Etheridge, mathematician at Oxford Univ.) of the Ph.D. project of Raphaël Forien, *The spatial structure of genetic diversity under natural selection and in heterogeneous environments.*

Organisation of conferences and workshops

Mar. 2025	Workshop *Modelling tools for vaccination* at Sorbonne University, Paris.
Mar. 2025	Workshop *Mathematical modelling and biodiversity: challenges and tools* at the Institute of Complex Systems, Paris.
Oct. 2024	Conference on *Bayesian Methods for the Social Sciences II* at the Univ. of Amsterdam.
Aug. 2024	Invited session on *Mathematics for planet Earth* during the MAS Scientific Days 2024, Poitiers.
Mar. 2024	Conference on *Spatial population models: recent progress and new challenges* at the Statistics Department of Oxford Univ.
Dec. 2023	Workshop on *How modelling can help public health practioners* at Santé publique France, Saint Maurice.
Sep. 2023	Workshop on *The scales of epidemic modelling* at the Institute of Complex Systems, Paris.
Oct. 2022	Conference on *Bayesian Methods for the Social Sciences* at Institut Henri Poincaré, Paris.
Oct. 2022	Research school of the institute of Mathematics for planet Earth *Climate change and biodiversity* at the Pascal Institute, Orsay.
Mar. 2022	Conference on *Mathematical models in ecology and evolution* at IHP, Paris.
2021 – ...	Scientific Days of the ANRS Coordinated Action on *Modelling infectious diseases* (annual).
June 2021	Two mini-symposia at the *10th French Biennial of Applied and Industrial Mathematics (SMAI 2021)*, La Grande-Motte.
June 2019	*Journées de Probabilités 2019*, Dourdan.
Sep. 2018	Conference on *Populations: Interactions and Evolution* at IHP, Paris.
May 2018	Conference on *Stochastic analysis with applications in biology and finance* at the Institute of Complex Systems, Paris.

June 2016	*Fourth Paris-Bath workshop on branching structures* at IHP, Paris.
Sep. 2011	*Second Paris-Bath workshop on branching structures* at IHP, Paris.

Organisation of recurring seminars

2020 – ...	Meetings of the chair programme *Mathematical Modelling and Biodiversity* (∼4 each year).
2020 – 2022	MODCOV19 seminar (monthly).
2017 – 2020	Annual Scientific Day of CMAP.
2013 – 2019	CMAP lab seminar (every 2 weeks).
2010 – 2020	Seminar of the PEIPS group at CMAP (variable frequency).
2008 – 2010	Probability seminar of the Mathematics Department of ENS Paris.

Participation in scientific committees of conferences

May 2024	*Probability and Evolution*, CIRM (Marseille).
Jul. 2023	*XVI Latin American Congress of Probability and Mathematical Statistics*, São Paulo.
Jul. 2023	Member of the Scientific Program Committee of *Stochastic Processes and their Applications 2023*, Lisbon.
June 2023	*INFORMS–Applied Probability Society Conference*, Nancy.
June 2023	Research school *Mean field models* at the Henri Lebesgue Centre, Rennes.
Oct. 2021	*Young Researchers in Applied Mathematics Congress*, Palaiseau.
June 2021	*Probability and Evolution*, CIRM (Marseille).
2019 – ...	*Statistical Methods for Post-Genomic Data* (annual).
June 2019	*Ecosystem dynamics: stakes, data and models* Programme at the Pascal Institute, Orsay (4 weeks).
Aug. 2018	*MAS Scientific Days 2018*, Dijon.
2011 – 2014	*IMS Meeting of New Researchers in Statistics and Probability* (annual).

Participation in funded projects

2025 – 2030	Member of the PEPR Maths-Vives project *Maths-ArboV: Mathematical modelling and management of emerging arbovirose epidemics.*
2023 – 2028	Coordinator of the ANR project *ACTIPOP: Actin polymers in the cellular cortex: a population dynamics approach.*
2021 – 2025	Member of the ANR project *NEMATIC: analysis, modelling, simulation multiscale*, coordinated by Eric Herbert (Paris Cité Univ.).
2020 – 2022	Member of the CNRS MITI project *PigmTempAdapt*, coordinated by Jean-Michel Gibert (CNRS and Sorbonne Univ.).
2020 – 2021	Member of the CNRS PEPS–"Nature-inspired engineering" project *BioRés*, coordinated by Marc Durand (Paris Cité Univ.).
2020 – 2021	Member of the CNRS MITI project *Dynamics of Random Expanding networks: Analysis, modelling and simulation of Multi-Scale spatial exploration, spreading and morphogenesis under constraints – Studying the constrained hyphal growth in the filamentous fungus Podospora anserina*, coordinated by Yves D'Angelo (Univ. Côte d'Azur).
2018 – 2021	Member of the project *Population genomics of highly fecund codfish* (Icelandic Research Fund Grant of Excellence).
2015	Member of the INTEGER–CNRS PEPS–Equality project *Probability and Statistics for Ecology*, coordinated by Camille Coron (Paris-Saclay Univ.).
2009 – ...	Member of the chair programme *Mathematical Modelling and Biodiversity* (Ecole Polytechnique, Muséum National d'Histoire Naturelle and Véolia Environnement), coordinated by Sylvie Méléard (Ecole Polytechnique)
2009 – 2014	Member of the ANR project *Stochastic Models in Ecology, Genetics and Evolution*, coordinated by Sylvie Méléard (Ecole Polytechnique).

RECENT PRESENTATIONS AT SEMINARS

June 2025 **Scientific publishing – concepts and best practice.** "Tools for the young researchers of the Paris Federation of Mathematical Modelling" day, Paris 1 Panthéon-Sorbonne Univ.

May 2025 **Stochastic models for the growth of filamentous fungi.** Mathematics and Life Sciences Club, Bonn University.

Jan. 2025 **Fisher's infinitesimal model: a deep connection between quantitative genetics and population genetics.** SMILE seminar, Collège de France, Paris.

June 2024 **Modelling chemical reaction networks in heterogeneous continuous space.** "Modelling and Probability" seminar at LPSM, Sorbonne & Paris Cité Univ.

June 2024 **Growth properties of the "infinite-parent" spatial Lambda-Fleming-Viot process.** Probability and Statistics Mornings, Université Gustave Eiffel.

May 2024 **The interface between mathematics and life sciences: the richness and difficulties of the dialogue between different disciplines.** Presentation by the laureates of the 2023 prizes – Mechanical and computer sciences Section, French Academy of Sciences.

Feb. 2024 **A stochastic model for the growth of a filamentous fungus.** 31st Kovalevskaya Colloquium of the Berlin Mathematical School (Berlin).

Jan. 2024 **A multitype growth-fragmentation process to model the growth of a filamentous fungus.** Colloquium of the Mathematics Laboratory of Besançon.

Nov. 2023 **Fisher's infinitesimal model: a "microscopic" approach.** Seminar on mathematical modelling for the life sciences at IRMAR (Rennes).

Nov. 2023 **Growth properties of the "infinite-parent" spatial Lambda-Fleming-Viot process.** Probability seminar at IRMAR (Rennes).

Sep. 2023 **Modelling the dynamics of genetic diversity in a spatially structured population.** SaMMBA Seminar, Institut Pasteur.

Mar. 2023 **Modelling the evolution of genetic diversity in a population living in a spatial continuum.** One World Probability Seminar, online.

RECENT INVITED TALKS AT CONFERENCES

Aug. 2025 *Nick Barton anniversary conference*, ISTA (Vienna). Presentation: **Fisher's infinitesimal model and Barton's major effect**.

Mar. 2025 *German probability and statistics days 2025*, Dresde. Session keynote speaker: **A spatial measure-valued model for chemical reaction networks in heterogeneous systems**.

Nov. 2024 *Applied analysis and modeling: a conference in honor of Olivier Goubet*, Lille. Presentation: **Stochastic models for the growth of filamentous fungi**.

Oct. 2024 *Bayesian Methods for the Social Sciences II*, Amsterdam. Presentation: **Modelling expanding biological networks**.

Sept. 2024 *Conference for the 50th birthday of the CMAP*, Ecole Polytechnique. Presentation: **Modelling the growth of a filamentous fungus**.

Aug. 2024 *Bernoulli-IMS 11th World congress in probability and statistics*, Bochum. Presentation: **Stochastic models for the growth of filamentous fungi**.

Nov. 2023 *Inaugural conference of GdR Branchement*, Toulouse. Presentation: **A multitype growth-fragmentation process to model the growth of a filamentous fungus**.

Oct. 2023 *Euro-Maghreb conference 2023 in Mathematics*, Levico Terme. Presentation: **A multitype growth-fragmentation process to model the growth of a filamentous fungus.**

June 2023 *21st INFORMS APS Conference*, Nancy. Presentation: **A multitype growth-fragmentation process to model the growth of a filamentous fungus.**

June 2023 *21st INFORMS Applied Probability Society Conference*, Nancy. Presentation: **Growth properties of the infinite-parent spatial Lambda-Fleming-Viot process.**

Sept. 2022 *Journée Aléatoire 2022*, Henri Poincaré Institute, Paris. Presentation: **A multitype growth-fragmentation process to model the growth of a filamentous fungus.**

INVITED COURSES AND PLENARY TALKS

Aug. 2024 — *MAS Scientific Days*, Poitiers. Plenary speaker: **Modelling the growth of a filamentous fungus.**

July 2024 — *Workshop for Junior Female Researchers in Probability*, Berlin. Keynote speaker: **A spatial measure-valued model for chemical reaction networks in heterogeneous systems.**

Apr. 2024 — *Models and Inference in Population Genetics IV: Fragmentation-coalescence and related models*, University of Warwick. Mini-course (3h): **Stochastic models of genealogies in spatially structured populations.**

Sep. 2023 — *2023 Young Researchers in Applied Mathematics Congress*, CentraleSupélec. Plenary speaker: **Evolution of the genetic diversity in a spatially structured population.**

Mar. 2023 — *2023 UK Easter Probability Meeting*, Manchester University. Mini-course (4h): **Stochastic models of evolution in a population living in a continuum.**

Nov. 2022 — *Mathematical methods for the study of self-organization in the biological sciences*, Schrödinger Institute, Vienna. Mini-course (4h): **Stochastic models of evolution in a population living in a continuum.**

June 2021 — *10th French Biennial of Applied and Industrial Mathematics (SMAI 2021)*, La Grande-Motte. Plenary speaker: **Genetic evolution in a spatially structured population.**

June 2021 — *Spring school of the chair programme MMB*, Aussois. Mini-course (4h): **Variations on effective population size inference based on genetic data.**

Mar. 2019 — *Seminar on Stochastic Processes*, Univ. of Utah. Plenary speaker: **Evolution in a spatially structured population – the effects of a weak selection pressure.**

July 2013 — *36th conference on Stochastic Processes and their Applications*, Boulder. Plenary speaker: **Evolution in a spatial continuum.**

Jan. 2012 — *SMPGD 2012*, University of Lyon 1. Plenary speaker: **Evolution in a spatial continuum**.

Mar. 2011 — *Young European Probabilists*, Eurandom, Eindhoven. Mini-course (4h): **Temporal and spatial scales in geographically structured population models**.

OTHER DISTINCTIONS

- Laureate 2023 of the **Pierre Faurre prize** from the French Academy of Sciences.
- Laureate of the **RIPEC-C3 award** (wage premium by CNRS) for the period 2023-2025.
- Laureate with Nick Barton (IST Austria) and Alison Etheridge (Oxford Univ.) of the **2020 Feldman prize**, awarded by the editorial committee of *Theoretical Population Biology* for the article *The infinitesimal model: definition, derivation and implications.*
- Laureate with Julia Palacios (Stanford Univ.) of a **Collaborative Research Project Grant from the *France-Stanford Center for Interdisciplinary Studies*** for the year 2018-19 (extended to 2019-2020).
- Laureate of the **2009 Jacques Neveu thesis prize** from the French Society of Applied and Industrial Mathematics.

TEACHING AND ADMINISTRATION

Teaching:

Ecole Polytechnique:

- Since 2013: **Master 2 course "Probabilistic and statistical tools for the study of the genetic diversity in a population"** (21h), for the Master 2 degree *Mathematics for the Life Sciences* – I.P. Paris and Paris-Saclay University.
- 2010–2022: **Tutorial sessions for the course "Stochastic models in biology, ecology and evolution"**. In 2018, tutorial sessions for the course **"Social and communication networks"**. Third year students at Ecole Polytechnique.
- 2020–2022: **Tutorial sessions for the course (MODAL) "Random numerical simulation for rare events"**, second year students.
- 2010–2017: **Tutorial sessions for the course "Stochastics"**, first year students.
- 2010–2022: **Supervision of *Collective Science Projects (PSC)***, second year students (9 month projects - 10 projects supervised), and of ***Specialised Teaching (Enseignements Approfondis)* projects**, third year students (3 to 6 month projects - 16 projects supervised).

Ecole Normale Supérieure of Paris:

- 2021–2024: **Lecture on "Population genetics and the infinitesimal model"** (1h30) as part of the module on "Quantitative Genetics" of the Master 2 degree *Evolution of Genomes, Populations and Species: Data and Models* (EvoGEM, jointly proposed by ENS Paris, Paris-Saclay Univ. *et al.*).
- Since 2017: **Lecture on "Genealogies of diploid populations"** (1h30) as part of the module on "Population genetics" of the EvoGEM Master 2 degree.
- Since 2010: **Co-organisation of the reading group on "Mathematical modelling of biological systems"** (25h), first and second year students (in maths and biology) at ENS, and third year bachelor students from CPES (PSL Univ.).
- 2009: **Course on Mathematical modelling for biology** (4h+ student presentations).
- 2008–2010: **Teaching Assistant** at the Mathematics Department (64h/year).

Paris Cité University:

- Since 2025: **Tutorial sessions in Probability theory** (21h), 2nd year students at the University Institute of Technology of Paris-Rives de Seine.
- Since 2021: **Course "Stochastic models for the life sciences"** (7h) as part of the Liliane Bettencourt INSERM School for second year medical students selected across French universities.

Additional courses and supervision:

- 2021: **participation in the doctoral training "Writing a research article"** (6h) for Ph.D. students in mathematics, Paris-Saclay Univ. and EDP Sciences.
- **Supervision of bachelor (L) and master (M) projects** (since 2010): 1 L1 project, 2 L3 projects, 16 M1 projects, 18 M2 projects, 1 pre-doctoral project (pre-Ph.D. rotation).

Popularisation of science:

- Since 2008:
  - **Presentations to secondary school students**: Saint-Cyr military high school (2), Mathematic Park, "Filles et Maths: une équation lumineuse" meetings at Ecole Polytechnique (2), ENSTA, Pau Univ., Le Mans Univ. and IHP, visiting students at CMAP, "Rendez-vous des Jeunes Mathématiciennes" at ENS Paris (4), "Mathematics and movement" meeting at IHP (2018), award ceremony of the Science Olympiads in Nantes (2021), conference in the series "Un objet, des mathématiques" at Musée des Arts et Métiers (2023), high school students in La Courneuve (2023) and Nanterre (2024), junior high school students in Aulnay-sous-Bois, Summer university "Open Science at Paris Nord" in Bobigny (2025).
  - **Presentation** at the 2024 Days of the Union of Teachers of Preparatory Classes for agronomy, biology, geology and veterinary schools.
  - **Co-supervision of one week visits** of (junior) high school students, **help for TPE or TIPE** (high school science projects).
- Since 2023: Content writing for the **website of the institute of Mathematics for Planet Earth** (including pages of resources for the general public and academics).
- June 2021: participation in the **video report** "Mathematicians on the front line of COVID-19" (CNRS – Le Journal).
- Aug. 2016: **Presentation, and conception of two science activities for the school "Mathinfoly"** at ENS Lyon (high school students in 1ère and Terminale).
- 2015– 2019: **Activity for the general public** "Mathematics and Ecology" during the annual Festival of Science at Ecole Polytechnique.
- 2015: **Co-author of the booklet** of science popularisation "La Recherche en mathématiques appliquées - Pourquoi? Par qui? Comment?" (funded by the PEPS-Equality project *Probability and Statistics for Ecology*).
- 2013: **Guest editor for "Un jour, une brève" (One day, one short text)**, organised on the occasion of the *Year of Mathematics of Planet Earth*. Author of two texts.
- 2005–2008: **Member of the *Science Academy* programme**, which gives secondary school students the opportunity to discover research through short internships in a lab and scientific conferences and visits.

Administration, service to the community:

In my lab or university:

- 2025– . . . : Member of the **scientific committee of the Inidex project ComplexCité** of Université Paris Cité.
- 2022– . . .: Member of the **committee on gender equality** of MAP5.
- 2020– . . .: Member of the **MAP5 lab council**.
- 2020: Local representative for **science popularisation activities** at CMAP.
- 2019–2020: Local representative for the "**Year of Mathematics**" at CMAP, in charge of the training day for secondary school teachers proposed by CMAP.
- 2019–2020: Member of the **committee on gender equality** of CMAP.
- 2017–2020: Writing and maintenance of the CMAP **website**.
- 2016–2020: Member of the **management committee of the maths library** of CMAP. Main manager in 2019–2020.
- 2011–2020: Member of the **CMAP lab council**.
- 2011–2017: Member of the **Applied Mathematics Department council**.
- 2008–2010: Representative of the Ph.D. students at the **DMA lab council**.

For external bodies:

- 2025– ...: **Ordinary council member** of the Bernoulli Society for Mathematical Statistics and Probability.
- 2024– ...: **Director of the French institute of Mathematics for Planet Earth** (GIS iMPT). Member of the steering committee since 2021.
- 2024– ...: Member of the **programme committee** of PEPR Maths-Vives (Priority research programme on Mathematics in interaction for the living, the environment and the society).
- 2024– ...: Representative of the French Society of Applied and Industrial Mathematics (SMAI) in the organisation of the **Science and Media Days**, and co-organiser on behalf of SMAI of the **Jean-Pierre Demailly Prize for open science in mathematics**.
- 2023– ...: Member of the **scientific and prospective advisory board** of the Toulouse Mathematical Institute.
- 2022– ...: Member of the **scientific committee** of the CNRS thematic network Math-Bio-Santé (Maths-Life sciences-Health).
- 2021– ...: Member of the **scientific committee** of the GIS Obépine (Epidemiological monitoring in waste waters).
- 2021– ...: Member of the **steering committee** of the Coordinated Action on "Modelling infectious diseases" of ANRS-Emerging Infectious Diseases.
- 2020– ...: Member of the **steering committee** of the chair programme *Mathematical modelling and biodiversity* (Ecole Polytechnique, Muséum National d'Histoire Naturelle, Veolia Environnement and Foundation X).
- 2020–2023: Member of the **steering committee** of the MODCOV19 platform, aiming at charting and encouraging modelling work on many different subjects to help respond to the COVID-19 sanitary crisis. From 2022 to 2023, **co-director of the platform**.
- 2020-2025: **Deputy secretary general in charge of the publications** of SMAI; co-organiser with the publishing house EDP Sciences of the **Subscribe to Open advisory board** and SMAI representative at the **Science advisory board of EDP Sciences**.
- 2019– ...: **Board member** of the French Society of Applied and Industrial Mathematics (SMAI).
- 2019– ...: Member of the **Junior Scientific Visibility jury** of the Jacques Hadamard Mathematics Foundation (FMJH).
- 2019–2020: Member of the **committee on nominations** of the Institute of Mathematical Statistics (IMS).
- 2014– ...: Member of the **CCUSP committee** (advisory board on recruiting and promotions) at the Mathematics Department of Orsay (Paris-Sud/Paris-Saclay Univ.).
- 2013–2016 and 2020: Member of the **steering committee** of the Jacques Hadamard Mathematics Foundation and of the Hadamard Labex of Mathematics.
- 2011–2014: Member of the **committee on new researchers** of the Institute of Mathematical Statistics.

EXPERTISE ACTIVITIES

- **Associate editor** for *Stochastic Processes and their Applications* (since April 2018), of *Annals of Applied Probability* (2019–2024), of *Theoretical Population Biology* (since January 2020) and of *Mathematical Modelling of Natural Phenomena* (since March 2020).
- **Guest editor** for the special issue "Celebrating Alison Etheridge's contribution to mathematical population genetics" of the journal *Theoretical Population Biology* (2024).
- **Reviewer** for the *Annals of Applied Probability*, *Electronic Journal of Probability*, the *Annals of IHP Probability and Statistics*, *Theoretical Population Biology*, *Genetics* and *Journal of Mathematical Biology*.

- **Reviewer** of 13 Ph.D. theses and 1 habilitation (HDR) thesis.
- Participation in **22 hiring committees** (one in CNU section 65 – Cell biology), **35 Ph.D. defense juries** and **4 HDR defense juries**.
- **Project evaluation** for the Science European Foundation (1 eval., 2020), for the Emergence call for funding (1 eval., 2021).
- Since 2021, **president of the Maryam Mirzakhani Junior Prize** (annual, organised by the Jacques Hadamard Mathematics Foundation), rewarding the mathematics projects of 3 female students in third year of Bachelor (L3) or first year of Master (M1).