Personal Information
- Full name: Cécile Mailler
- Bio data: Born 3rd April 1987, French and British citizen
- Webpage: `http://people.bath.ac.uk/cdm37/`

Employment history
- Lecturer at the University of Bath (October 2018 – present)
- EPSRC postdoctoral research fellow (June 2018 – May 2021, extended to May 2022)
  Supported by the EPSRC fellowship EP/R022186/1 "Random trees, analysis and applications"
- Prize Fellow at the University of Bath, October 2016 – Sept 2018
  Researcher on a two-year contract funded by the University of Bath
- Postdoctoral researcher at the University of Bath, August 2013 – September 2016
  Supported by the project "Emergence of condensation in stochastic systems"
  PI: Prof. Peter Mörters, EPSRC Grant number EP/K016075/1

Education
- Ph.D. Student in Mathematics at the University of Versailles (France), September 2010 – August 2013.
  Title of the thesis: Random Boolean trees and Pólya urns: combinatoristic and probabilistic approaches.
  Supervisers: Prof. Brigitte Chauvin and Prof. Danièle Gardy
  Reviewers: Prof. Svante Janson (Uppsala) and Prof. Conrado Martínez (Barcelona)

PUBLICATIONS

Pre-prints
- **Fluctuations of balanced urns with infinitely many colours.**
  Svante Janson, Cécile Mailler and Denis Villemonais.
- **The trace-reinforced ants process does not find shortest paths.**
  Daniel Kious, Cécile Mailler and Bruno Schapira.
- **Parametrised branching processes: a functional version of Kesten and Stigum's theorem.**
  Cécile Mailler and Jean-François Marckert.
- **Large deviations principle for a stochastic process with random reinforced relocations.**
  Erion-Stelios Boci and Cécile Mailler.
- **Voronoi cells in random split trees**.
  Alexander Drewitz, Markus Heydenreich and Cécile Mailler.

Journal publications
21. **Finding geodesics on graphs using reinforcement learning.**
    Daniel Kious, Cécile Mailler and Bruno Schapira.
    Annals of Applied Probability (accepted for publication).

20. **Dynamical models for random simplicial complexes.**
    Nikolaos Fountoulakis, Tejas Iyer, Cécile Mailler and Henning Sulzbach.
    Annals of Applied Probability (accepted for publication).

19. **Strict monotonic trees arising from evolutionary processes: combinatorial and probabilistic study.**
    Olivier Bodini, Antoine Genitrini, Cécile Mailler and Mehdi Naima.
    Advances in Applied Mathematics, 133, 102284, February 2022.

18. **Competing growth processes with random growth rates and random birth times.**
    Cécile Mailler, Peter Mörters and Anna Senkevich.
    Stochastic Processes and Applications, 135, pp 183-226, 2021.

17. **Stochastic approximation on non-compact measure spaces and application to measure-valued Pólya processes.**
    Cécile Mailler and Denis Villemonais.
    Annals of Applied Probability, 30(5), pp 2393-2438, 2020.

16. **Characterising random partitions by random colouring**
    Jakob E. Björnberg, Cécile Mailler, Peter Mörters and Daniel Ueltschi.
    Electronic Communications in Probability, 25, paper no. 4, 12 pp, 2020.

15. **Unbiased on-lattice domain growth.**
    Cameron Smith, Cécile Mailler and Kit Yates.
    Physical Review E, 100(6), pp 063307, 2019.

14. **Random walks with preferential relocations and fading memory: a study through random recursive trees.**
    Cécile Mailler and Gerónimo Uribe Bravo.
    Journal of Statistical Mechanics: Theory and Experiment, September 2019.

13. **Multiple drawing multi-colour urns by stochastic approximation.**
    Nabil Lasmar, Cécile Mailler and Olfa Selmi.
    Journal of Applied Probability, 55(1), pp 254-281, 2018.

12. **Describing the asymptotic behaviour of multicolour Pólya urns via smoothing systems analysis.**
    Cécile Mailler.
    Latin American Journal of Probability and Mathematical Statistics - ALEA, XV, pp 375-408, 2018.

11. **And/or trees: A local limit point of view.**
    Nicolas Broutin and Cécile Mailler.
    Random Structures and Algorithms, 53(1), pp 15-58, 2018.

10. **Non extensive condensation in reinforced branching processes.**
    Steffen Dereich, Cécile Mailler and Peter Mörters.
    Annals of Applied Probability 27(4), pp 2539-2568, 2017.

9. **Measure-valued Pólya processes.**
   Cécile Mailler and Jean-François Marckert.
   Electronic Journal of Probability 22, paper no. 26, pp 33, 2017.

8. **A bijective study of Basketball walks.**
   Jérémie Bettinelli, Éric Fusy, Cécile Mailler and Lucas Randazzo.
   Séminaire Lotharingien de Combinatoire, 77, Art. B77a, pp 1–24, 2017.

7. **Condensation and symmetry-breaking in the zero-range process with weak site disorder.**
   Cécile Mailler, Peter Mörters and Daniel Ueltschi.
   Stochastic Processes and their Applications, 126 (11), pp 3283-3309, 2016.

6. **Generalised and quotient models for random and/or trees and application to satisfiability.**
   Antoine Genitrini and Cécile Mailler.
   Algorithmica, 76:1106, 2016.

5. **The relation between tree size complexity and probability for Boolean functions generated by uniform random trees.**
   Antoine Genitrini, Bernhard Gittenberger, Veronika Kraus and Cécile Mailler.
   Applicable Analysis and Discrete Mathematics, Volume 10(2), pp 408-446, 2016.

4. **Associative and commutative tree representations for Boolean functions.**
   Antoine Genitrini, Bernhard Gittenberger, Veronika Kraus and Cécile Mailler.
   Theoretical Computer Science, 570, pages 70–101, 2015.

3. **A sprouting tree model for random Boolean functions.**
   Brigitte Chauvin, Danièle Gardy and Cécile Mailler.
   Random Structures and Algorithms, 47(4), page 635, 2014.

2. **Smoothing equations for large Pólya urns.**
   Brigitte Chauvin, Cécile Mailler and Nicolas Pouyanne.
   Journal of Theoretical Probability, 28, pages 923–957, 2013.

1. **Probabilities of Boolean functions given by random implicational formulas.**
   Antoine Genitrini, Bernhard Gittenberger, Veronika Kraus and Cécile Mailler.
   Electronic Journal of Combinatorics, 19, nb. 2, P37, 2012.

Peer-reviewed conference papers

- **The Disordered Chinese Restaurant and Other Competing Growth Processes.**
  Cécile Mailler, Peter Mörters and Anna Senkevich.
  In proc. 31st International Meeting on Probabilistic, Combinatorial and Asymptotic Methods for the Analysis of Algorithms (AofA), LIPIcs 21:1-21:13, 2020.

- **No Shannon effect induced by And/Or trees.**
  Antoine Genitrini, Bernhard Gittenberger et Cécile Mailler.
  In proc. 25th International Meeting on Probabilistic, Combinatorial and Asymptotic Methods for the Analysis of Algorithms (AofA), DMTCS, pages 109–120, 2014.

- **The Catalan satisfiability problem.** Antoine Genitrini et Cécile Mailler.
  In proc. 11th Latin American Theoretical INformatics Symposium (LATIN), LNCS 8392, pp 466-477, 2014.
- **The growing tree distribution on Boolean functions.**
  Brigitte Chauvin, Danièle Gardy et Cécile Mailler.
  In proc. 8th SIAM Workshop on Analytic and Combinatorics (Analco), pages 45–56, 2011.

SUPERVISION
PhD students
- Christopher Dean (2020 – present): "Pólya urns with growing initial composition", funded by the EPSRC CDT "Statistical Applied Mathematics at Bath" (SAMBa): 2016-2019.
- Stelios-Erion Boci (2018 – present): "Large deviations for the Monkey random walk".
- Anna Senkevich (2016-2019): funded by the EPSRC CDT 'SAMBa, co-supervised with P. Mörters.

Undergraduate research students
- Zoé Varin (5-month research project, 4th year student at the École Normale Supérieure de Lyon), Ben Hansard (10-week summer project 2018, student at Oxford, co-supervised with J. Davenport)
- 3rd year students at the École Polytechnique, summer projects (approx. 4-months long): Gabriel Athènes (2021), Yassine Hamdi (2020), Tristan Loisel (2019)
- MMath students at Bath, year-long research projects: Patryk Sienniak (2020-2021), Nicky Tolokonnikov (2019-2020), Vlad Brebeanu (2018-2019), Sean Sussex (2017-2018), Thomas Dellaportas (2016-2017)

INVITATIONS
Invited talks at conferences/workshops
- Plenary speaker at AofA (Analysis of Algorithms), Taipei, April 2023.
- Mini-conference on Self-Similar Random Processes, Mathematical Research and Conference Center (MRCC), Będlewo, April 2022.
- SPP2265 Workshop: Random spatial networks, Bonn, March 2022.
- Workshop Population Dynamics and Statistical Physics in Synergy, Oberwolfach, March 2022.
- One-day workshop on Branching, Random Walks, and Percolation, Paris, December 2021.
- Invited short talk at AofA (Analysis of Algorithms), online, June 2021.
- Invited session (chaired by D. Buraczewski and N. Gantert) on at the conference "Probability and Analysis", online, May 2021.
- Workshop on Regeneration, Branching And Decomposability in Kyiv, Ukraine, March 2021 (postponed).
- Workshop on Stochastic Processes under Constraints, Oberwolfach, Germany, September 2020.
- Invited session on Random Trees (organised by Christina Goldschmidt) at SPA, July 2019.
- Second ANR/SNSF MALIN meeting, Les Diablerets, Switzerland, June 2019.
- Séminaire de Combinatoire Philippe Flajolet, IHP, Paris, June 2019.
- Women in Probability, TU Munich, May 2019.
- Workshop on Random Graphs and Random Processes, King's college, London, April 2019.
- Mini-course "Pólya urns: probabilistic approaches" at the ALEA conference, March 2019.
- 41st annual Research Students Conference in Probability and Statistics, Sheffield, July 2018.
- 672. WE-Heraeus Seminar "Search and Problem Solving by Random Walks", Bad Honnef, Germany, May, 2018.
- Workshop on Probabilistic Approaches to Quantum Spin Systems, Göteborg, Sweden, April 2018.
- Oberwolfach workshop on Interplay of Analysis and Probability in Applied Mathematics, Feb 2018.
- XIII Simposio de Probabilidad y Procesos Estocásticos, December 2018
- Alea in Europe, Vienna, Austria, October 2017.
- Conference Modern Perspectives of Branching in Probability, September 2017.
- Complex System Dynamics (CoSyDy) meeting, Leeds, 25th July 2017.
- Special Topic Session on Urns at the 61st World Statistics Congress, Marrakech, July 2017.
- Probability and Combinatorics: twelfth annual workshop, Barbados, April 2017.
- Workshop on Analytic and Probabilistic Combinatorics, BIRS, Canada, October 2016.
- Mini-course on Reinforced Branching Processes at the Alea-Network Young Researchers' Workshop, September 2016.
- Fourth Bath-Paris branching meeting, Paris, June 2016.
- LMS-funded day workshop Probability in the North-East, Sheffield, January 2016.
- Conference in honour of Svante Janson's 60th birthday, Krusenberg (Sweden), June 2015.
- Probability and Combinatorics: tenth annual workshop, Barbados, April 2015.

- Oberwolfach workshop Probability, Trees and Algorithms, November 2014.
- Mini-course on Markov Chains and Martingales for the Analysis of Discrete Random Structures at the CIMPA summer school Random structures, Analytic and Probabilistic Approaches, Nablus, August 2014.
- Journées de combinatoire de Bordeaux, February 2014.
- Random Combinatorial Structures and Statistical Mechanics workshop, Venice, May 2013.
- Combinatorial Probability and Statistical Mechanics Workshop, QMUL, London, February 2013.

Invited talks at seminars and research visits
- UK: Cambridge, Warwick, Oxford, Brunel, Queen Mary University, Birmingham, University of Sussex, Lancaster, London School of Economics, King's College London, Durham
- Germany: Münster (one-month visit and seminar), Mainz, Cologne, Essen, Munich
- France: Nancy (several visits and one seminar), Bordeaux (several visits and one seminar), Tours, Paris 6, Nanterre, Grenoble, Lille, Lyon (three-day visit and seminar), Créteil.
- Rest of Europe: University of Zurich (one 3-month visit in 2021), ETH Zurich (two seminars), TU Vienna (several one-week visits), Uppsala (one-week visit and seminar)
- Canada: McGill University (one-week visit and seminar)
- Mexico: UNAM (two one-week visits)
- Tunisia: Monastir (10-day visit)

ACADEMIC SERVICE
Editorial duties
- Associate editor (starting in 2022) of Stochastic Processes and their Applications.
- Associate editor (since 2020) of the Applied Probability Trust (publisher of the Journal/Advances of Applied Probability).

Program committee member (i.e. associate editor for conference proceedings)
- AofA (Analysis of Algorithms) 2022, 2020, and 2018
- Complex Networks 2021 and 2020
- Analco (Meeting on Analytic Algorithmics and Combinatorics) 2016

Organisation and co-organisation of conferences, workshops, and seminars
- Member of the organisation committee of the BMC meeting, Bath, April 2023.
- Workshop on "Stochastic reinforcement processes and graphs" accepted as the MATRIX-MFO Tandem workshop for March 2023.
- Workshop on "Analytic and probabilistic combinatorics" accepted by BIRS for November 2022.
- Workshop on "Pólya urns, stochastic approximation and quasi-stationary distributions: new developments", Bath April 2022, Funded by EPSRC (fellowship EP/R022186/1).
  https://sites.google.com/view/workshop-urns-bath/home
- LMS Research School on "Random structures: from the discrete to the continuous", Bath, July 2019. Funded by the LMS and the CDT SAMBa.
  https://sites.google.com/view/lms-research-school-bath2019/home
- BMS summer-school Probabilistic and statistical methods for networks, Berlin, August 2017. Funded by the Berlin Mathematical School and the CDT SAMBa.
  http://www.math-berlin.de/academics/summer-schools/2017/randgraph
- Workshop *Tours à grands pas* on Random Walks in the Quadrant, Tours, December 2016. Funded by the CNRS. http://www.fdpoisson.fr/tours-a-grands-pas/
- Condensation phenomena in stochastic systems, Bath, July 2016. Funded by the EPSRC.
  http://people.bath.ac.uk/cdm37/CondensationWorkshopBath.html
- Alea Network Young Researcher's Workshop, Bath, December 2015. Funded by Alea-Network and the CDT SAMBa. http://people.bath.ac.uk/cdm37/AE-YRW.html
- Since 2018, I have co-organised the weekly Probability seminar at Bath and the Bath-Bristol Probability Colloquium.
- Since 2020, I co-organise the Landscape seminar (monthly colloquium of the Department of Mathematical sciences at Bath).
- I founded and organised (2015–2018) the Prob-L@B Internal Monthly Seminar (PIMS); in this monthly seminar, members of the probability group at Bath present their work to the rest of the group.

Miscellaneous

- I am a member of the DFG-funded Research Network "Stochastic Processes on Evolving Networks" (2019-2021, extended to 2022).
- I have examined the following PhD thesis:
  - External examiner for Nan Kang (KCL, 2021).
  - Internal examiner for Bas Lodewijks (2021), Tsogii Saizmaa (2021), Tom Finn (2021).
  - Reviewer and member of the jury for Meghdad Mirebrahimi (Poitiers, 2019).
  - Member of the jury for David Corlin Marchand (Orsay, 2021), Mehdi Naima (Paris 6, 2020).

OUTREACH AND "WOMEN IN MATHS" ACTIVITIES

Outreach

- Royal Institution Masterclass on "Algorithms without a computer" (2-hour lecture co-hosted by Dr. S. Penington), Bath (online), March 2021.
  - Audience: Approx. 100 Year-8 students from local schools.
- 2-hour lecture on "Probability: permutations and combinations" for the widening-participation programs Pathways and Discover of the University of Bath. (One recorded version in 2020, one live version in 2021.)
  - Audience: Year 12 students who do not meet the standard offer of the University of Bath in maths can access an alternative offer to come and study at Bath.
- 45-minute talk on "The monkey walk" at the UCAS days at the University of Bath. (Two talks in 2020.)
  - Audience: Applicants to a maths degree at the University of Bath.

"Women in maths" activities

- Talk and Q&A session at the one-day workshop "Moi informaticienne, moi mathématicienne", Bordeaux (online), April 2021.
  - Audience: approx. 70 11-to-18 year-old students interested in a career in maths or computer science.
- Invited talk and Q&A session at the Women in Maths conference at the University of Bath, Bath (online), March 2021.
  - Audience: students at the University of Bath.
- Q&A session on education and careers in mathematics (academia and industry) at the Girls in Maths day at the University of Bath, January 2019 and January 2020.
  - Audience: Year 8 students from local schools.