

# Benjamin A. Robinson

## Academic Employment

- 2024–2030 **Postdoc Assistant**, *Department of Statistics, University of Klagenfurt, Austria*.  
Working in the Stochastic Processes group.
- 2020–2024 **Postdoc**, *Faculty of Mathematics, University of Vienna, Austria*.  
Employed in the Mathematical Finance and Stochastic Analysis group of Mathias Beiglböck and Walter Schachermayer. Funded by the Austrian Science Fund (FWF) [10.55776/Y782], [10.55776/P35519], [10.55776/P34743].
- 2020 **Research Associate**, *Institute for Mathematical Innovation, University of Bath, UK*.  
Conducted research on mathematical and statistical aspects of interdisciplinary and industrial projects, collaborating with academics from varied fields and external partners.
- 2020 **Research Assistant**, *Department of Psychology, University of Bath, UK*.  
Provided data analysis, modelling and programming expertise to a collaborative project with NHS RUH Bath on sustainable transport — EPSRC *Reimagining Recruitment* grant EP/S012168/1.

## Education

- 2020 **PhD in Statistical Applied Mathematics**, *University of Bath, UK*.  
*Stochastic Control Problems for Multidimensional Martingales*, supervised by Alexander Cox. Funded by EPSRC Centre for Doctoral Training in Statistical Applied Mathematics at Bath (SAMBa) EP/L015684/1. Member of leading probability research group Prob-L@b.
- 2016 **MRes in Statistical Applied Mathematics**, *Distinction, University of Bath, UK*.  
Graduate-level courses: *Applied SDEs, Rough Paths, Optimal Stochastic Control and BSDEs, Lévy Processes, Applied Statistical Inference, Bayesian and Large Scale Methods, Scientific Computing, Numerical Solution of Elliptic PDEs, Inverse Problems and Data Assimilation, Sobolev Spaces, Advanced PDEs*.  
Masters Dissertation: *Constrained Optimal Stopping Problems*, supervised by Alexander Cox.
- 2015 **MSci in Mathematics**, *First Class, University of Bristol, UK*.  
Masters Dissertation: *Ergodicity of Stochastic Processes and the Markov Chain Central Limit Theorem*, supervised by Márton Balázs.

## Publications

- [1] Alexander M. G. Cox and Benjamin A. Robinson. SDEs with no strong solution arising from a problem of stochastic control. *Electronic Journal of Probability*, 28:1–24, 2023.
- [2] Alexander M.G. Cox and Benjamin A. Robinson. Optimal control of martingales in a radially symmetric environment. *Stochastic Processes and their Applications*, 159:149–198, 2023.
- [3] Benjamin A. Robinson and Michaela Szölgényi. Bicausal optimal transport for SDEs with irregular coefficients. *arXiv:2403.09941*, 2024.
- [4] Gudmund Pammer, Benjamin A. Robinson, and Walter Schachermayer. A regularized Kellerer theorem in arbitrary dimension. *arXiv:2210.13847*.
- [5] Julio Backhoff-Veraguas, Sigrid Källblad, and Benjamin A. Robinson. Adapted Wasserstein distance between the laws of SDEs. *arXiv:2209.03243*, 2024.

## Supervision

- Present **PhD Statistics**, *University of Klagenfurt*, Alexander Söllinger (with Michaela Szölgényi and Stefan Thonhauser).
- 2024 **MSc Mathematics**, *University of Vienna*, Ralf Stoiber (with Julio Backhoff-Veraguas), The Skorokhod Embedding Problem and its Financial Applications.

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## Teaching

- 2024 Winter **Stochastics for Engineers**, *Bachelor, Department of Statistics, University of Klagenfurt*.  
Lecturer — Delivering lectures and exercise classes, coordinating teaching, preparing material.
- 2024 Summer **Stochastic Processes**, *Master, Department of Statistics, University of Klagenfurt*.  
Lecturer — Delivering lectures and exercise classes, preparing course material.
- Methodology 2: Statistics**, *Bachelor, Department of Statistics, University of Klagenfurt*.  
Teaching Assistant (TA) — Delivering exercise classes and preparing exercise sheets.
- 2023 Winter **Stochastics for Engineers**, *Bachelor, Department of Statistics, University of Klagenfurt*.  
Teaching Assistant — Delivering online exercise classes and preparing exercise sheets.
- 2019 Winter **Mathematics and Statistics**, *Mathematics Resource Centre (MASH), University of Bath*.  
Senior Peer Tutor — Leading a team of tutors, running drop-in sessions for first year mathematics undergraduates, providing mathematical and statistical support at drop-in sessions for all disciplines.
- 2016 Winter **Financial Derivatives**, *Master, School of Management, University of Bath*, TA.
- 2015–2019 **Analysis 1, Probability 1, Analysis 2**, *Bachelor, Department of Mathematical Sciences, University of Bath*, TA.
- 2015 Summer **Statistics 1**, *Bachelor, School of Mathematics, University of Bristol*, TA.  
**Linear Algebra 1B**, *Bachelor, School of Mathematics, University of Bristol*, TA.
- 2014 Winter **Probability 1**, *Bachelor, School of Mathematics, University of Bristol*, TA.  
**Linear Algebra 1A**, *Bachelor, School of Mathematics, University of Bristol*, TA.

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## Invited Seminar and Conference Talks

- Feb 2024 **Probability Seminar**, *University of Leeds, UK*.  
Bicausal optimal transport for SDEs with irregular coefficients
- Nov 2023 **Vienna Probability Seminar**, *Institute of Science and Technology, Austria*.  
A regularized Kellerer theorem in arbitrary dimension
- Jun 2023 **SIAM Conference on Financial Mathematics and Engineering**, *Philadelphia, USA*,  
Minisymposium *Optimal Transport*.  
An adapted distance between laws of SDEs
- May 2023 **AAU Doctoral Seminar**, *Universität Klagenfurt, Austria*.  
Distances between stochastic processes
- Apr 2021 **Vienna Seminar in Mathematical Finance and Probability**, *Vienna*.  
Optimal control of martingales in a radially symmetric environment
- Jun 2020 **Internal Probability Seminar**, *University of Bath (Online)*.  
Optimal control of martingales in a radially symmetric environment and an SDE with no strong solution
- Apr 2020 **Probability Seminar**, *University of Manchester*, Cancelled.

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## Contributed Conference Talks

- Sep 2024 **Numerical analysis and applications of SDEs**, *Beđlewo Conference Centre, Poland*.  
Bicausal optimal transport between the laws of SDEs
- Sep 2024 **12<sup>th</sup> Austrian Stochastic Days**, *University of Innsbruck, Austria*.  
Bicausal optimal transport for SDEs with irregular coefficients
- Jun 2024 **Klagenfurt–Berlin Workshop on Multiple Perspectives in Optimization**, *University of Klagenfurt, Austria*.  
Bicausal optimal transport for SDEs with irregular coefficients
- Jan 2024 **Stochastic and Deterministic Analysis for Irregular Models**, *CIRM, France*.  
Bicausal optimal transport for SDEs with irregular coefficients
- Sep 2023 **11<sup>th</sup> Austrian Stochastic Days**, *University of Klagenfurt, Austria*.  
A regularized Kellerer theorem in arbitrary dimension
- May 2023 **Mathematical Finance and Stochastics**, *San Sebastian, Spain*.  
A regularized Kellerer theorem in arbitrary dimension

- Mar 2023 **German Probability and Statistics Days**, *Essen, Germany*.  
Adapted Wasserstein distance between the laws of SDEs
- Sep 2022 **10<sup>th</sup> Austrian Stochastic Days**, *University of Vienna, Austria*.  
Adapted Wasserstein distance between the laws of SDEs
- July 2022 **PIMS-IFDS-NSF Summer School on Optimal Transport**, *University of Washington, Seattle, USA*.  
Bicausal transport between laws of SDEs
- May 2022 **Stochastic Games and Martingale Optimal Transport**, *Università degli Studi di Milano, Italy*.  
A regularized Kellerer theorem in arbitrary dimension
- Aug 2020 **Bernoulli-IMS One World Symposium**, *Online*.  
Optimal control of martingales in a radially symmetric environment
- Jan 2020 **Winter School on Theory and Practice of Optimal Stopping and Free Boundary Problems**, *University of Leeds, UK*.  
An SDE with no strong solution arising from the stochastic control of martingales in a radially symmetric environment
- Apr 2019 **Stochastic Control and Games under Ambiguity**, *University of Leeds*.  
Optimal control of martingales in a radially symmetric environment
- Jun 2017 **BUC-VIII: Stochastic Optimal Control**, *CIMAT, Mexico*.  
Stochastic optimal control problems related to martingale optimal transport

## Poster Presentations

- Jan 2024 **21<sup>st</sup> Winter School on Mathematical Finance**, *Soesterberg, The Netherlands*.  
Bicausal optimal transport for SDEs with irregular coefficients
- Jan 2023 **20<sup>th</sup> Winter School on Mathematical Finance**, *Soesterberg, The Netherlands*.  
Adapted Wasserstein distance between the laws of SDEs
- Sep 2017 **Conference on Stochastic Control, Ambiguity and Games**, *University of Leeds*.  
Stochastic optimal control problems related to martingale optimal transport

## Workshops and Schools

- Sep 2024 **Numerical analysis and applications of SDEs**, *Będlewo Conference Centre, Poland*.
- Jan 2024 **21<sup>st</sup> Winter School on Mathematical Finance**, *Soesterberg, The Netherlands*.
- Jan 2024 **Stochastic and Deterministic Analysis for Irregular Models**, *CIRM, France*.
- Jan 2023 **20<sup>th</sup> Winter School on Mathematical Finance**, *Soesterberg, The Netherlands*.
- July 2022 **PIMS-IFDS-NSF Summer School on Optimal Transport**, *University of Washington, Seattle, USA*.
- Jan 2020 **Winter School on Theory and Practice of Optimal Stopping and Free Boundary Problems**, *University of Leeds, UK*.
- Jul 2018 **Hausdorff School: Optimal Transport Meets Economic Theory**, *Hausdorff Centre for Mathematics, Universität Bonn, Germany*.
- Sep 2017 **Workshop on Martingale Optimal Transport**, *University of Oxford*.
- Jun 2017 **BUC-VIII: Stochastic Optimal Control**, *CIMAT, Mexico*.

## Industrial Research Projects

Participated in five workshops at University of Bath, UK. Collaborated with industrial partners to formulate mathematical problems from applied challenges, presenting outcomes orally and in research proposals.

- Jan 2019 **Optimal Stopping for Early Drought Detection**, *Willis Towers Watson, ITT9*.  
Investigated analytical and numerical properties of optimal stopping problems for time series climate data to minimise expected detection time, constraining probability of false alarm.
- Jun 2017 **Bayesian Inference on Nuclear Magnetic Resonance**, *Schlumberger, ITT6*.  
Adapted C code for Bayesian inference with atomic priors in order to estimate relaxation times for nuclear magnetic resonance in rocks and to quantify the uncertainty.

- Jan 2017 **Modelling Dermal Absorption of Chemicals**, *Syngenta*, ITT5.  
Investigated application of random walk models to describe the absorption of chemical particles through the inhomogeneous media of human skin and leaves of plants.
- Jun 2016 **Optimising the Drug Development Process**, *AstraZeneca*, ITT4.  
Designed a Bayesian decision framework for the end-to-end drug development process and investigated the application of measure-valued optimal stopping to adaptive clinical trials.
- Jan 2016 **Developing a Model for Sea Ice**, *Met Office*, ITT3.  
Reconstructed historical sea ice concentrations using a Bayesian hierarchical model, incorporating latent Gaussian random fields, implemented in R-INLA.

## Grants and Awards

- 2024 **Scientific Research Network of The Research Foundation Flanders Travel Grant.**  
Grant to attend *21<sup>st</sup> Winter School on Mathematical Finance*
- 2024 **Centre international de rencontres mathématiques (CIRM) Travel Grant.**  
Grant to attend research school *Stochastic and Deterministic Analysis for Irregular Models*
- 2023 **Scientific Research Network of The Research Foundation Flanders Travel Grant.**  
Grant to attend *20<sup>th</sup> Winter School on Mathematical Finance*
- 2019 **University of Leeds Travel Grant.**  
Grant to attend *2<sup>nd</sup> Leeds Conference on Stochastic Control and Games under Ambiguity*
- 2018 **Hausdorff Centre for Mathematics Travel Grant.**  
Grant to attend *Hausdorff School: Optimal Transport Meets Economic Theory*
- 2017–2018 **Grants for SIAM UKIE National Student Chapter Conference**, 6,350 GBP.  
Successfully applied for grants to organise this national conference from SIAM; the IMA; the University of Bath Doctoral College, Institute for Mathematical Innovation, Dept. Math. Sci.
- 2017 **SIAM Student Chapter Certificate of Recognition**, *University of Bath*.
- 2015 **Howell Peregrine Prize for Best Undergraduate Project**, *University of Bristol*.

## Academic Service

- Jul 2024 **Minisymposium Organiser — 12<sup>th</sup> Bachelier World Congress**, *Rio de Janeiro, Brazil*.
- May 2024 **Hiring Committee**, *Assistant Professor, Department of Statistics, University of Klagenfurt*.
- 2022–present **Referee**, *Annals of Applied Probability, Mathematics of Operations Research, SIAM Journal on Mathematical Finance, Stochastic Analysis and Applications*.
- Jun 2018 **Organiser of SIAM UKIE National Student Chapter Conference**, *University of Bath*.
- 2017–2018 **Organiser of Postgraduate Seminar Series**, *Dept. Math. Sciences, University of Bath*.
- Jun 2017 **Organiser of SAMBa Summer Conference**, *University of Bath*.
- Mar 2017 **Organiser of Bath SIAM-IMA Student Conference**, *University of Bath*.
- 2016–2018 **Treasurer of University of Bath SIAM-IMA Student Chapter**, *University of Bath*.

## Programming and Languages

Python, R, MATLAB, Fortran, C, HTML, CSS, SQL  
 English (Native), German (C1.1), French (B2)

*Last updated: October 14, 2024*