

Aretha L Teckentrup

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EMPLOYMENT

Reader in Mathematics of Data Science

University of Edinburgh (UK), August 2022 - present

Lecturer in Mathematics of Data Science

University of Edinburgh (UK), October 2016 - July 2022

Postdoctoral Research Associate, with Professor Andrew Stuart

University of Warwick (UK), September 2014 - September 2016

Postdoctoral Research Associate, with Professor Max Gunzburger

Florida State University (USA), July 2013 - July 2014

EDUCATION

PhD Mathematics, supervised by Professor Robert Scheichl

University of Bath (UK), October 2009 - June 2013

MMath Mathematics (*with first class honours*)

University of Bath (UK), October 2005 - June 2009

HONOURS AND AWARDS

- **SIAM Women's History Month Honoree**, 2023
- **LMS Whitehead Prize**, 2021
- **SIGEST Paper** (best paper in *SIAM/ASA Journal on Uncertainty Quantification*, Vol. 3-6, chosen on the basis of exceptional interest to the entire SIAM community), 2019
- Inaugural **Early Career Prize** of SIAM activity group Uncertainty Quantification, 2018
- **IMA Leslie Fox Prize** (second prize) in Numerical Analysis, 2017

RESEARCH FUNDING

- **EPSRC New Investigator Award**, EP/X01259X/1, £267k, PI 2023-2026
- **6-month research programme** at the Isaac Newton Institute (Cambridge, UK) on *The mathematical and statistical foundation of future data-driven engineering*, co-organised with Mark Girolami, Omar Matar, Eric Moulines, Sebastian Reich and Karen Willcox, 2023
- **EPSRC Centre for Doctoral Training** in Mathematical Modelling, Analysis and Computation (MAC-MIGS), EP/S023291/1, £6.1m, Co-I 2019-2028
- **Fellowship** from the Alan Turing Institute (50%), £50k, 2016-2018
- Funding from various sources (including Turing, EMS, GMJT, IMA, LMS) to organise **5 workshops**, £35k, 2017-2023

VISITING POSITIONS

- **Isaac Newton Institute programme** *The mathematical and statistical foundation of future data-driven engineering*, (Cambridge, UK), 6 months in 2023
- **Simons-CRM Fellowship** at CRM anniversary programme *Data Assimilation: Theory, Algorithms and Applications*, Centre de recherches mathématiques (University of Montreal, Canada), 5 weeks in 2019
- **Isaac Newton Institute programme** *Uncertainty quantification for complex systems: theory and methodologies*, (Cambridge, UK), 10 weeks in 2018
- **Research visit** to Prof Panayot Vassilevski at the Lawrence Livermore National Laboratory (USA), 4 weeks in 2012
- **RICAM Special Semester** *on Multiscale Simulation & Analysis in Energy and the Environment* (Linz, Austria), 10 weeks in 2011

PROFESSIONAL ACTIVITIES

- **Associate editor**, Statistics and Computing, January 2022 - present
- **Associate editor**, Information and Inference, January 2022 - present
- **Associate editor**, SIAM/ASA Journal on Uncertainty Quantification, January 2021 - present
- **Associate editor**, SIAM Review (Research Spotlights section), January 2019 - present
- Member of the **LMS Prizes Committee**, January 2022 - present
- Member of **SIAM Committee on Section Activities**, January 2021 - present
- Member of **Organising Committee** at MCQMC 2020 (14th International Conference in Monte Carlo and Quasi-Monte Carlo Methods in Scientific Computing)
- Member of **Events Steering Group** at the Alan Turing Institute, Sept 2017 - Sept 2018
- Elected **Secretary/Treasurer** of the SIAM UKIE section, April 2018 - March 2020
- External **PhD Examiner** (University of Oxford, KU Leuven, University of Sussex)
- **Reviewer** for Swiss National Science Foundation, Austrian Science Fund
- **Reviewer** for over 15 international journals in applied mathematics and statistics
- **Member** of SIAM since 2013

RECENT INVITED RESEARCH TALKS (since 2018)

- 4 invited* **plenary/keynote presentations** at major international conferences (SIAM UQ '18, 43rd Woudschoten Conference '18, CTAC '20, MCQMC '22)
 - 8 invited* **short courses and tutorials** (on Bayesian inverse problems/ Markov chain Monte Carlo/ Multilevel Monte Carlo)
 - Over 15 invited* seminar presentations at universities and research laboratories
 - Over 25 invited* presentations at international workshops and conferences
 - Over 5 mini-symposium presentations at international conferences
- * = fully funded (if in-person)

TEACHING EXPERIENCE

University of Edinburgh:

- Course organiser and lecturer for Year 3 UG course *Numerical Linear Algebra*, 2018/19 - present
- Course organiser and lecturer for PhD level course *Computational Methods for Data-driven Modelling*, 2019/20 - 2021/22
- Lecturer for Year 2 UG course *Several Variable Calculus and Differential Equations*, 2017/18 - 2018/19
- Lecturer for Year 2 UG course *Facets of Mathematics*, 2016/17
- 9 MSc theses in Applied and Computational Mathematics, 2019/20 - present
- 10 final year UG projects and dissertations, 2019/20 - present

University of Warwick:

- Course organiser and lecturer for Year 3 UG course *Matrix Analysis and Algorithms*, 2014/15 - 2015/16

PhD STUDENT SUPERVISION

- **Martin Brolly**, 05/20-present. *Inference of ocean dynamical properties from trajectory data*. Second supervisor, first supervisor Prof Jacques Vanneste (Mathematics, Edinburgh).
- **Jonathan Spence**, 05/20-present. *Hierarchical and adaptive methods for accurate and efficient risk estimation*. Second supervisor, first supervisor Dr Abdul-Lateef Haji-Ali (Actuarial Science and Statistics, Heriot-Watt).
- **Tianming Bai**, 09/20-present. *Gaussian process regression for inference with PDEs*. Jointly supervised with Dr Konstantinos Zygalakis (Mathematics, Edinburgh).
- **Conor Osborne**, 05/21-present. *Theory and application of deep Gaussian processes*.
- **Simon Urbainczyk**, 09/21-present. *Deep Gaussian processes for Bayesian inference*. Jointly supervised with Dr Jonas Latz (Actuarial Science and Statistics, Heriot-Watt).
- **Anastasia Istratuca**, 05/22-present. *Multilevel Monte Carlo methods for uncertainty quantification*.
- **Elliot Addy**, 09/22-present. *History matching to calibrate complex process-based simulators*. Jointly supervised with Dr Jonas Latz (Actuarial Science and Statistics, Heriot-Watt) and Dr Ken Newman (Mathematics, Edinburgh).