ELLA KAYE

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EDUCATION

Postgraduate researcher, Oxford-Warwick Statistical Programme (OxWaSP) (2015-)
University of Warwick
Supervised by Dr Julia Brettschneider and Dr Anastasia Papavasiliou
- One year of statistical training through the EPSRC & MRC Centre for Doctoral Training (eight two-week modules and two two-month mini-projects)
- Participated in four residential weeks of the Academy for PhD Training in Statistics
- PhD research project developing statistical methodology for the analysis of educational trajectories

MSc, Applied Statistics, 1st (2014-15)
Jesus College, University of Oxford

PGCE, Secondary Mathematics (2009-10)
Linacre College, University of Oxford

MPhil, Mathematics Education, 1st (2007-8)
Hughes Hall, University of Cambridge

MA, History and Philosophy of Science and Technology (2005-7)
University of Toronto

MA, Mathematics and Philosophy, 2:1 (2001-5)
Balliol College, University of Oxford

R PACKAGES

- {BradleyTerryScalable} creator, author and maintainer: https://github.com/EllaKaye/BradleyTerryScalable
  For fitting the Bradley-Terry model to potentially large and sparse networks of comparison data
- {distilltools} creator, author and maintainer. https://github.com/EllaKaye/distilltools
  A collection of tools to support the creation and styling of content on websites created using the {distill} package
- {pregnancy} creator, author and maintainer (in development): https://github.com/EllaKaye/pregnancy
  For calculating dates and medications in pregnancy
- {EMK} creator, author and maintainer: https://github.com/EllaKaye/EMK
  A miscellaneous collection of functions I find useful
- {Admissions} creator, author and maintainer (due to data confidentiality, the package code is private)
  Data and functions for use in my post-graduate research on student trajectories into and through university

R COMMUNITY

- Co-organiser of the Oxford R User Group (2017-2019)
  - Instigated regular monthly meetings
  - Obtained sponsorship for the group (£100 per meeting)
  - Moved from only university attendees into the wider Oxford community
  - Doubled attendance at events
- Co-founder of the RainbowR group, a community for LGBTQ+ R users (2017)
  - Now co-leading the revival of the group after a period of dormancy, including organising and co-hosting open community calls, collaborating on a new website, producing a Code of Conduct and overseeing the administration and infrastructure of the group
- Member of the R Forwards Community team (2022-)
  - Primarily onboard for co-ordination with RainbowR, but looking forward to undertaking other projects with the group as well
- Developing involvement in contributing to the core R project:
  - Attended the Contributing to R tutorial during useR!2021
  - Participated in the Collaboration Campfires organised by the R Contribution Working Group
- Content creation for the R community through blog posts and talks

SOFTWARE SKILLS

- Advanced R knowledge, with over 7 years of experience
  - Proficient at package development
  - Proficient with {tidyverse} packages
  - Proficient with the R Markdown ecosystem of packages
  - Website development with {distill} and additional HTML and CSS
- Proficient with git and GitHub
- Developing competence with Shiny and Quarto
- Basic knowledge of Stan, Python, C, C++, HTML, CSS, SQL

TALKS

R USER GROUPS (https://ellakaye.rbind.io/talks.html)
- How to get help in R, bseeR (2021), RLadies Coventry (2020)
- Working with text in R, RLadies Toronto (2019), RLadies Tbilisi (2020)
- Setting up your PhD as an R package, Birmingham R User Group (2018)
- An overview of htmlwidgets, Warwick R User Group (2017)
- useR!2017 review, Warwick R User Group (2017)

CONFERENCES

- Undergraduate Statistics Admissions at the University of Warwick, Royal Statistical Society Conference, Cardiff, INVITED (September, 2018)
- Undergraduate Statistics Admissions at the University of Warwick, Young Statisticians Section, University of Oxford (July, 2018)
- Ranking items scalably with the Bradley-Terry model, useR!, Brussels (July, 2017)
- "Maths is not just maths": The aims of and responses to a history of mathematics videoconferencing project for schools, British Society for Research into the Learning of Mathematics, London (November, 2008)
- Explanation and proof in mathematics and mathematics education, Canadian Mathematics Education Study Group, Fredericton (June 2007)

SEMINARS

- Undergraduate statistics admissions at the University of Warwick, University of Warwick (June 2018)
- Modeling the UK university admissions process, University of Warwick (November 2017)
- Following Lakatos: Exploring the interplay between the philosophy of mathematics and mathematics education, History and Philosophy of Science and Technology (HAPSAT), University of Toronto, (August, 2007)
- Fibonacci's Liber Abaci and its role in the integration of Arabic mathematics into western mathematics, University of Toronto (March 2007)

UNIVERSITY TEACHING

- ST104 – Statistical Laboratory 1, University of Warwick (Spring/Summer 2018)
- ST219 – Mathematical Statistics Part B, University of Warwick (Spring 2017)
- N1a – Mathematics Education for Mathematics students, University of Oxford (Autumn 2012)

FUNDING, PRIZES AND AWARDS

- Early career Royal Statistical Society prize winner (2018)
- EPSRC grant EP/L016710/1 PhD studentship award (2015)
- Royal Statistical Society's Higher Certificate with distinction (2012)

MEMBERSHIP OF PROFESSIONAL SOCIETIES

- Royal Statistical Society (2011-present)

PUBLICATIONS

- Kaye, E. (2022). distilltools: creating a curated, collaborative, community package. In Martinez, C. (Ed.), The Future of Data Science - A collection of work by data designers, scientists, and artists. Data Science by Design. http://datasciencebydesign.org/book
- Hanna, G, Kaye, E., & Salojee, R. (2008). Explanation and proof in mathematics and mathematics education. In Liljedahl, P. (Ed.), Proceedings of the 2007 Annual Meeting of the Canadian Mathematics Education Study Group, (p. 147). Burnaby, BC: CMESG/GCEDM.

RESEARCH AND TEACHING RELATED EMPLOYMENT

Senior Research Executive, SPA Future Thinking, Oxford (2012-14)

- Involved in every stage of both quantitative and qualitative market research across a wide range of methodologies, including surveys, interviews, observation, focus groups and communities. I designed and conducted both online and in-field research.
- Analysed large data sets to provide clients with practical insights in response to their business needs.

Freelance Researcher and Data Analyst (2011-12)

- Hired by Buckinghamshire New University to complete a Social Return On Investment (SROI) analysis.

Mathematics Teacher, Comberton Village College, Cambridge (2010-11)

- Full-time secondary school maths teacher, across full age and attainment range, planning and delivering informative, engaging lessons every day.
- Excellent organisation skills to stay ahead of lesson preparation and marking as well as pastoral and administrative responsibilities.

Research Assistant to Professor Gila Hanna, OISE/University of Toronto (2007)

- Updated Prof. Hanna's 'Philosophical aspects of proof' bibliography, with extensive literature searches and website redesign
- Prepared the website for the ICMI 19 conference, Proof and proving in mathematics education

Mathematics Teacher, Seneca College, Toronto (2005-6)

- Part-time college mathematics and statistics teacher on a post-high school, pre-university program

Mathematics Tutor, London, Cambridge and Oxford (1997-2014)

- Over 600 hours, working with 5-18 year olds, tailoring my approach to each student, engaging them with the subject and helping many pass important exams.
- Volunteer for United Kingdom Mathematics Trust, mentoring students and assisting at events.