

# Anna Hutchinson

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A statistical geneticist committed to developing and applying statistical and computational methods to identify genetically validated drug targets in immune-mediated diseases, with excellent scientific research and communication skills widely recognised through first author publications and award-winning conference talks.

## EDUCATION

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### University of Cambridge, MRC Biostatistics Unit (Oct 2018 – Present)

Ph.D., Biostatistics (iCASE Studentship with GlaxoSmithKline)

Thesis: *Statistical methods to better understand the genetic basis of complex human diseases*

Supervised by Dr Chris Wallace and Dr David Willé.

(Thesis submitted, viva scheduled 14<sup>th</sup> Dec 2021, currently employed as Postdoctoral Fellow)

### University of Durham (Sept 2014 - June 2018)

BSc (Hons; 1<sup>st</sup> class), Mathematics and Biology with year abroad (Sept 2016 – Apr 2017) at the University of Calgary, Canada.

## RESEARCH EXPERIENCE

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### PUBLICATIONS

**Anna Hutchinson**, James Liley and Chris Wallace (2021). *fcfdr*: an R package to leverage continuous and binary functional genomic data in GWAS. *bioRxiv* (currently under peer-review): <https://www.biorxiv.org/content/10.1101/2021.10.21.465274v2>

**Anna Hutchinson**, Guillermo Reales, Thomas Willis and Chris Wallace (2021). Leveraging auxiliary data from arbitrary distributions to boost GWAS discovery with Flexible cFDR. *PLoS Genetics*: <https://doi.org/10.1371/journal.pgen.1009853>

**Anna Hutchinson**, Jenn Asimit and Chris Wallace (2020). Fine mapping genetic associations. *Human Molecular Genetics*: <https://doi.org/10.1093/hmg/ddaa148>

Boris P.Hejblum, ..., **Anna Hutchinson**, ..., Annemarie H. Eckes-Shepard (2020). Realistic and Robust Reproducible Research for Biostatistics. *Preprint.org*: <https://doi.org/10.20944/preprints202006.0002.v1>

**Anna Hutchinson**, Hope Watson and Chris Wallace (2020). Improving the coverage of credible sets in Bayesian genetic fine-mapping. *PLoS Computational Biology*: <https://doi.org/10.1371/journal.pcbi.1007829>

Christophe Bourges, ..., **Anna Hutchinson**, ..., James C Lee (2020). Resolving mechanisms of immune-mediated disease in primary CD4 T cells. *EMBO Molecular Medicine*: <https://doi.org/10.15252/emmm.202012112>

### PROJECTS

#### Summer intern, Centre for Computational Biology, University of Birmingham (July – Aug 2016)

Gathered information on the frequency of mutations associating with breast and ovarian cancer in Caucasian and Indian populations.

*Professor Jean-Baptiste Cazier*

#### Research assistant, Department of Mathematics and Statistics, University of Calgary (Jan – May 2017)

Investigated methods to improve efficiency of treatment effect estimation in RCTs, with application to AIDS clinical trial data.

*Dr Ying Yan*

#### Undergraduate research project, Department of Mathematics and Statistics, University of Durham (Oct 2017 – June 2018)

Examined dimensionality reduction techniques with application to RNA-seq data to study ageing in mice (1<sup>st</sup> class – 78%).

*Professor Steve Abel and Dr Sushma Grellscheid*

## PROGRAMMING

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### LANGUAGES

Proficient in R, Bash, LaTeX, version control (Git) and high-performance computing using a slurm-based Linux computing cluster.

Familiar with Python.

### SOFTWARE

#### **corrcoverage R package, creator and maintainer**

Source: <https://cran.r-project.org/web/packages/corrcoverage/index.html>

Webpage: <https://annahutch.github.io/corrcoverage/>

#### **fcfdr R package, creator and maintainer**

Source: <https://github.com/annahutch/fcfdr>

Webpage: <https://annahutch.github.io/fcfdr/>

## TEACHING EXPERIENCE

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#### University of Cambridge, MPhil in Computational Biology (2021-2022)

Lecturer on Genomics I module

#### University of Cambridge, Medicine (2020-2021)

Supervisor of 24 undergraduate students on the Foundations of Evidence-Based Practice course

## SCIENTIFIC ENGAGEMENTS

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### POSTER PRESENTATIONS

Building Bridges in Medical Sciences conference (March 2019)  
Genomic Medicine (GenMedCambridge) conference (Nov 2019)  
Immunogenomics of Disease: Accelerating to Patient Benefit virtual conference (Feb 2021)  
European Society of Human Genetics (ESHG) conference (Nov 2021)

### TALKS AND SEMINARS

Mathematical and Statistical Aspects of Molecular Biology (MASAMB) conference (April 2019), **awarded best talk**  
Quantitative Genomics conference (June 2019), **awarded best talk**  
Seminar to Human Genetics group at GSK (June 2019)  
South of England Genetics and Epidemiology Group (SEGEG) meeting (Nov 2019)  
Workshop on current and future trends in multiple hypothesis testing (June 2021)  
Seminar to Research Statistics Rx group at GSK (Nov 2021)

### COURSES

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A variety of bioinformatics training courses offered by the University of Cambridge including: An introduction to solving biological problems with Python, ChIP-Seq and ATAC-seq analysis, Open Targets: Integrating genetics and genomics for disease biology and translational medicine, High Performance Computing: An Introduction, Snakemake workshop and Analysis of mapped NGS data with SeqMonk.

### OTHER ACTIVITIES

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#### **PhD Student Representative at MRC Biostatistics Unit** (2019-2021)

Organised scientific meetings, social events and engagements with prospective students.  
Special emphasis on keeping students connected during the COVID-19 pandemic.

#### **Social Secretary at St Catharine's College, University of Cambridge** (2019-2021)

Organised social and academic events for postgraduate students.  
Significant focus on maintaining a college community when students were sent home during the COVID-19 pandemic.

#### **Events Planning**

Organiser of Biostatistics for Chronic Diseases Symposium 2021  
Organiser of St Catharine's Graduate Symposium 2019

#### **Journal peer-reviewer**

Including *Nature*, *Cell Press* and *Genetic Epidemiology*

#### **Hobbies**

International travel; cooking; private tutoring; board games.