

# Nathan Constantine-Cooke

## Curriculum Vitae

### Education

- 2019–present **PhD, Precision Medicine**, *University of Edinburgh*, Edinburgh, Scotland.  
Survival analysis, inflammatory bowel disease, longitudinal modelling, Bayesian modelling, high-dimensional data, and machine learning.
- 2018–2019 : **Master of Science, Statistics for Computational Biology (Distinction)**, *Aberystwyth University*, Aberystwyth, Wales.
- 2014–2018 : **Bachelor of Science (Hons), Mathematics (2:1)**, *Aberystwyth University*, Aberystwyth, Wales.

### Publications

#### Journal Articles

- 2022 Mathew Lyons, Lauranne A. A. P. Derikx, James Fulforth, Sophie McCall, Nikolas Plevris, Philip W. Jenkinson, Kathryn Kirkwood, Spyros Siakavellas, Laura Lucaciu, **Nathan Constantine-Cooke**, Ian D. Arnott, Paul Henderson, Richard K. Russell, David C. Wilson, Charlie W. Lees, and Gareth-Rhys Jones. Patterns of emergency admission for IBD patients over the last 10 years in Lothian, Scotland: A retrospective prevalent cohort analysis. *Alimentary Pharmacology & Therapeutics*. Wiley, March 2022.
- 2022 Lauranne A.A.P. Derikx, Nikolas Plevris, Shanna Su, Beatriz Gros, Mathew Lyons, Spyros I. Siakavellas, **Nathan Constantine-Cooke**, Philip Jenkinson, Claire O'Hare, Colin Noble, Ian D. Arnott, Gareth-Rhys Jones, and Charlie W Lees. Rates, predictive factors and effectiveness of ustekinumab intensification to 4- or 6-weekly intervals in Crohn's disease. *Digestive and Liver Disease*, October 2022.
- 2021 **Nathan Constantine-Cooke**, Laura A. Lucaciu, Nikolas Plevris, Spyros Siakavellas, Lauranne A.A.P. Derikx, Gareth-Rhys Jones, and Charles W. Lees. Real-world experience with tofacitinib in ulcerative colitis: a systematic review and meta-analysis. *Therapeutic Advances in Gastroenterology*, volume 14, page 17562848211064004, December 2021. PMID: 34987608.
- 2021 Lauranne A A P Derikx, Heather W Dolby, Nikolas Plevris, Laura Lucaciu, Caitlin S Rees, Mathew Lyons, Spyros I Siakavellas, **Nathan Constantine-Cooke**, Philip Jenkinson, Shanna Su, Claire O'Hare, Laura Kirckpatrick, Lynne M Merchant, Colin Noble, Ian D Arnott, Gareth-Rhys Jones, and Charlie W Lees. Effectiveness and safety of adalimumab biosimilar SB5 in IBD: Outcomes in originator to SB5 switch, double biosimilar switch and bio-naïve SB5 observational cohorts. *Journal of Crohn's and Colitis*. Elsevier, June 2021.

#### Conference Proceedings

- 2023 **Nathan Constantine-Cooke**, Karla Monterrubio-Gómez, Nikolas Plevris, Lauranne A.A.P. Derikx, Matthew Lyons, Phillip W. Jenkinson, Beatriz Gros, Gareth-Rhys Jones, Catalina A Vallejos, and Charlie W. Lees. P789 Inflammatory Bowel Disease subgroups identified by longitudinal faecal calprotectin profiles: A 10-year retrospective analysis of the Lothian IBD Registry. *Journal of Crohn's and Colitis*, volume 17, pages i921–i924, 01 2023.

- 2022 **Nathan Constantine-Cooke**, Karla Monterrubio-Gomez, Nikolas Plevris, Laurantne A.A.P Derikx, Beatriz Gros, Gareth-Rhys Jones, Riccardo Marioni, Charlie Lees, and Catalina Vallejos. P0351 Latent Crohn's disease subgroups are identified by faecal calprotectin profiles: A retrospective analysis of the Lothian Crohn's disease inception cohort. *United European Gastroenterology Journal*, volume 10, pages S687–S688, 05 2022.

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## Research Experience

University of Edinburgh, Edinburgh, UK

2019 – **Longitudinal Modelling of a Disease Activity Biomarker in Inflammatory Bowel Disease.**

Present Using latent class mixed models to identify latent homogenous subgroups in the highly heterogenous inflammatory bowel disease patient population from faecal calprotectin profiles.

Advisor : **Dr Catalina Vallejos**, *Chancellor's Fellow, MRC Human Genetics Unit* ([Personal Web-page](#))

Advisor : **Professor Charlie Lees**, *Professor of Gastroenterology, Centre for Genomic and Experimental Medicine* ([Personal Web-page](#))

2020 – 2021 **Meta-Analysis of the Real-World Effectiveness and Safety of Tofacitinib.**

Advisor : **Professor Charlie Lees**, *Professor of Gastroenterology, Centre for Genomic and Experimental Medicine*

2020 – 2021 **Using Data Science to Answer Pressing Emergency Care Questions Surrounding COVID-19 (DECOVID).**

Advisor : **Dr Catalina Vallejos**, *Chancellor's Fellow, MRC Human Genetics Unit*

Aberystwyth University, Aberystwyth, UK

2018 – 2019 **Analysis Techniques Applicable to Time-Limited Gene Expression Data.**

Investigated approaches applicable to detecting rhythmic gene expression patterns when followup is limited and proposed a novel approach. Circadian, circatidal, and circalunar gene expression in *Talitrus saltator* was explored.

Advisor : **Dr Kim Kenobi**, *Lecturer, Department of Mathematics* ([Personal Web-page](#))

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## Computer Languages

Scripting R, Python, Bash

Programming C++, Rust

Markup  $\text{\LaTeX}$ , HTML 5 & CSS, Markdown

Other Tools GNU Make, Git (including CI workflows), Docker & Singularity, Unix, Hugo & Jekyll

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## Teaching

Ed-DaSH Workshops

Sep 2022 **Introduction to Statistics with R.**

Jun 2022 **Introduction to Statistics with R.**

May 2022 **High-Dimensional Statistics with R.**

Jan 2022 **Introduction to Statistics with R.**

Aberystwyth University

2018-2019 **Undergraduate Demonstrator (Mathematics).**

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## Referees

**Dr Catalina Vallejos**

*Chancellor's Fellow*

*MRC Human Genetics Unit*

University of Edinburgh

✉ cvallejo@ed.ac.uk

**Prof Charlie Lees**

*Professor of Gastroenterology*

*Centre for Genomic and Experimental Medicine*

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