Gabriel-Mateus **Bernardo Harrington**

Research Associate

UK Dementia Research Institute, School of Medicine

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Experienced and motivated scientist with a strong publication track record. My multidisciplinary skills in both informatics and bench work gives me a unique perspective and has made me highly adaptable. Particularly passionate about reproducible research.

Professional Overview

Experienced bioinformatician with a strong track record in the field of spinal cord injury and Alzheimer's disease. Extremely adaptable with a highly interdisciplinary background of bench work, proteomics, genomics and bioinformatics. Accomplished in working with diverse teams, including clinical and patient-facing settings. My leadership with informatic colleagues as chair of the UK DRI ECR Informatics Committee has focused on working more cohesively and reproducibly by promoting the use of version control, containerisation and continuous integrations has streamlined our projects, reduced errors and improved quality. Related experience in training colleagues and students in the use of tools such as Git, GitHub/GitLab, R Markdown/Quarto, Nextflow and Docker/Singulatiry.

Employment

Cardiff University — *Cardiff*

Research Associate - Bioinformatician — *2021 - 2026*

Bionics Institute — *East Melbourne*

Research Assistant — *2016 - 2018*

Education

Keele University — *Keele*

PhD in Biomedical Engineering — *2018 - 2021*

Lancaster University — *Lancaster*

BSc (Hons) - Biological Sciences - 2:1 — *2013 - 2016*

Awards

Advance HE — *York*

Associate Fellowship — *2024*

DEMON network — *London*

Neurohack 2022 - Winning team — *2022*

Race Against Dementia — *Cranfield University*

Dementia research meets motorsports Innovation Accelerator - Winning team — *2021*

Funding

EPSRC Centre for Doctoral Training in Regenerative Medicine — *Loughborough*

CDT Consumable grant — *2021*

- £5000 awarded

Outreach & Teaching

Disseminating my research via lay talks, poster presentations and career talks with disadvantaged students. Most recently planned and hosted a livestream to raise money for ARUK in June 2024 (~10K views), raising awareness of the field by speaking to leaders and highlighting ECRs with our skydiving fundraising.

Teaching bioinformatics MSc students a lecture series on R. A trainer on the EMBL Data-driven approaches to understanding dementia course. Delivering ad-hoc workshops on approaches for reproducible research, including topics such as why one should learn to code for reproducible data analysis, the importance of version control, and how to organise research projects for reproducibility.

Talks & Posters

UKDRI Vascular ECR meeting 2024 — *York*
Reproducibility - A very brief overview — *2024*

UKDRI Vascular ECR meeting 2024 — *York*
Sequencing the blood brain barrier in Alzheimer's Disease — *2024*

UKDRI Connectome 2024 — *Harrogate*
ECR Informatics community — *2024*

UKDRI Connectome 2024 — *Harrogate*
Reproducibility Working group — *2024*

The Jackson Laboratory — *Bar Harbor*
The blood brain barrier in Alzheimer's Disease — *2024*

Advanced research computing at Cardiff - Research day 2023 — *Virtual*
An overview of high-performance computing in the Dementia Research Institute — *2023*

UKDRI Connectome 2023 — *Brighton*
A cellular atlas of regional neurovascular vulnerability and neurodegeneration — *2023*

DEMON Network Genetics working group — *Virtual*
Sequencing the blood brain barrier in AD — *2023*

CURE-ND Workshop for Early Career Researchers — *Leuven*
The impact of sex on Alzheimer's Disease risk — *2023*

ISCoS 2021 — *Oswestry*
Proteomic and bioinformatics analyses of plasma from SCI neurological improvers and non-improvers — *2021*

Centre for Doctoral Training Conference, 2021 — *Virtual*
Reproducible data analysis — *2021*

Centre for Doctoral Training Conference, 2020 — *Virtual*
Proteomic analysis of bloods from SCI patients — *2020*

Centre for Doctoral Training Conference, 2019 — *Manchester*
Reproducible Research — *2019*

Skills

Bioinformatics

Proteomics, Genomics, High performance cluster computing, SLURM, Electronic Health records, Statistics (Frequentist and Bayesian)

Programming Languages

R, BASH, Python, SQL, Nextflow

Wet Lab work

3D Tissue Culture, Microscopy, Animal handling, Histology

Markup Languages

Markdown, RMarkdown/Quarto, YAML, CSS, HTML, LaTeX

Version Control

Git, GitHub, GitLab

Additional Spoken Languages

Portuguese - Intermediate, Greek - Beginner

Microsoft Office

Excel, Outlook, OneNote, PowerPoint, Word

Publications

1. Bernardo Harrington, G. M., Sleven, H., Monzón-Sandoval, J., Robinson, L., Rokicki, M., Webber, C., & Cader, Z., M. (2025). Integrated vascular profiling uncovers EndoMT as a key player in Alzheimer's Disease. *In Preparation*.
2. Bernardo Harrington, G. M., Cool, P., Hulme, C., Fisher-Stokes, J., Peffers, M., Masri, W. E., Osman, A., Chowdhury, J. R., Kumar, N., Budithi, S., & Wright, K. (2024). A Comprehensive Proteomic and Bioinformatic Analysis of Human Spinal Cord Injury Plasma Identifies Proteins Associated with the Complement Cascade and Liver Function as Potential Prognostic Indicators of Neurological Outcome. *Journal of Neurotrauma*, neu.2023.0064. https://doi.org/10.1089/neu.2023.0064
3. Hulme, C. H., Peffers, M. J., Harrington, G. M. B., Wilson, E., Perry, J., Roberts, S., Gallacher, P., Jermin, P., & Wright, K. T. (2021). Identification of Candidate Synovial Fluid Biomarkers for the Prediction of Patient Outcome After Microfracture or Osteotomy. *The American Journal of Sports Medicine*, *49*(6), 1512–1523. https://doi.org/10.1177/0363546521995565
4. Bernardo Harrington, G. M., Cool, P., Hulme, C., Osman, A., Chowdhury, J., Kumar, N., Budithi, S., & Wright, K. (2020). Routinely measured haematological markers can help to predict AIS scores following spinal cord injury. *Journal of Neurotrauma*. https://doi.org/10.1089/neu.2020.7144
5. Brown, S. J., Harrington, G. M. B., Hulme, C. H., Morris, R., Bennett, A., Tsang, W.-H., Osman, A., Chowdhury, J., Kumar, N., & Wright, K. T. (2019). A preliminary cohort study assessing routine blood analyte levels and neurological outcome after spinal cord injury. *Journal of Neurotrauma*. https://doi.org/10.1089/neu.2019.6495