



# Gabriel-Mateus Bernardo Harrington

RESEARCH ASSOCIATE

School of Medicine, Dementia Research Institute

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*Currently a Research Associate as a bioinformatician at the Dementia Research Institute, Cardiff University, working on Alzheimer's disease with a focus towards genomics.*

## Professional Overview

In my current role I proposed, built and maintain a PostgreSQL database of multiple large cohorts spanning over 20 years of data, which has enabled much more efficient and accurate access to this data, facilitating new and ongoing research projects. I have also built several extensible, well-documented pipelines for processing and analysis of data from multiple instruments and assays in a transparent, robust and reliable fashion. Most recently, I have proposed and lead on a push for more reproducible practises in research with colleagues, including the use of version control, project management strategies, containerisation and more. As part of this push I have also been promoting the use of registered reports to counter P-Hacking and HARKing.

My PhD at Keele University was based in the OsKOR group at The RJA Orthopaedic Hospital and focused on spinal cord injury (SCI). I generated statistical models of SCI using routine haematological data from electronic health records and examined the plasma proteome of human SCI patients to investigate biomarkers of neurological outcomes which is current unpredictable in all but the most severely injured patients. Lab rotations in my first year allowed me develop a range of bench skills, and exposed me to a diverse range of teams and working environments.

## Education

### Keele University

PHD IN BIOMEDICAL ENGINEERING

Keele

2018 - 2021

### Lancaster University

BSc (HONS) - BIOLOGICAL SCIENCES - 2:1

Lancaster

2013 - 2016

## Awards

### DEMON network

NEUROHACK 2022 - WINNING TEAM

London

2022

### Race Against Dementia

DEMENTIA RESEARCH MEETS MOTORSPORTS INNOVATION ACCELERATOR - WINNING TEAM

Cranfield University

2021

## Funding

### EPSRC Centre for Doctoral Training in Regenerative Medicine

CDT CONSUMABLE GRANT

- £5000 awarded

Loughborough

2021

## Talks

### ISCoS 2021

PROTEOMIC AND BIOINFORMATICS ANALYSES OF PLASMA FROM SCI NEUROLOGICAL IMPROVERS AND NON-IMPROVERS

Oswestry

2021

### Centre for Doctoral Training Conference, 2021

REPRODUCIBLE DATA ANALYSIS

Virtual

2021

## Skills

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### Bioinformatics

PROTEOMICS, GENOMICS, HIGH PERFORMANCE CLUSTER COMPUTING, SLURM, ELECTRONIC HEALTH DATA

### 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

### Language

PORTUGUESE

### Microsoft Office

EXCEL, OUTLOOK, ONENOTE, POWERBI, POWERPOINT, VISIO, WORD

## Publications

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1. Bernardo Harrington, G. M., Cool, P., Hulme, C., Fisher-Stokes, J., Peffers, M., El Masri, W., Osman, A., Chowdhury, J. R., Kumar, N., Budithi, S., & Wright, K. (2022). *A comprehensive proteomic and bioinformatics analysis of human spinal cord injury plasma identifies proteins associated with the complement cascade and liver function as potential prognostic indicators of neurological outcome* [Preprint]. Bioinformatics. <https://doi.org/10.1101/2022.07.12.499696>
2. 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>
3. 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>
4. 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>