Gabriel Mateus Bernardo Harrington

Research profile

Currently a Research Associate Alzheimer's Disease group within the Dementia Research Institute at Cardiff University as a bioinformatician.

My PhD at Keele University based in the OsKOR group at The RJAH Orthopaedic Hospital focused on spinal cord injury (SCI). SCI is damage to the spinal cord due to trauma, degeneration or disease that results in a temporary/permanent change to neurological function, recovery from which is highly variable, stymieing development of novel therapies as powering clinical trials is extremely difficult. SCI can lead to devastating consequences for both the physical and mental health of patients, particularly due to the uncertainty of neurological outcomes in the first two weeks post-injury.

I endeavour to discover novel biomarkers of SCI outcomes, both to minimise this uncertainty and to expand our understanding of the underlying pathology of neurological recovery. I use a combination of modelling patient data and proteomic techniques to this end, and have identified a relationship between markers of liver health and SCI recovery.

The lab rotations in the first year of my PhD also allowed me to greatly develop my skills at the bench. At Loughborough University, I investigated genetic expression in hydrogels, gaining experience in 3D tissue culture, hydrogels and PCR. At Nottingham University I studied the effects of alternating current on interfacing wires grown via wireless electrochemistry and gained experience in 3D printing, electrodeposition and microscopy. At Keele University I cultured multiple cell types in 3D and compared viability and growth kinetics via cell staining, fluorescent microscopy. These experiences have given me a highly cross-disciplinary skillset making me a flexible and versatile scientist.

CURRENT ROLE

2021 | Present

Bioinformatician
Research Associate
Cardiff University, Wales

Dementia Research Institute - Alzheimer's Disease

EDUCATION

2016

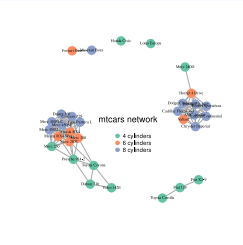
Lancaster University
BSc in Biological Sciences, 2:1
Lancaster, UK

Dissertation: 5-prime genotyping of Enterovirus 71

2017 | 2021

Keele University
PhD Student
Oswestry, UK

Thesis: Exploring the serum proteome of spinal cord injured patients: Identifying prognostic biomarkers and new treatment targets



CONTACT INFO

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GitHub: H-Mateus
Personal website

For more information, please see my personal website linked above, or contact me via email.

GRANTS AND AWARDS

Awarded £4,000 consumable grant from the Centre for Doctoral Training for metabolomics experiments, 2021

Awarded travel grant from the Keele Postgraduate Research Committee to attend an international conference, 2020 (switched to a virtual setting owing to COVID-19

Duke of Edinburgh silver award, 2010

Last updated on 2022-01-18.

SKILLS

Experience in:

- Statistical learning models
- Proteomics
- Electronic health data
- Use of super computers for modelling
- Submission for ethical approval of research
- Working under the jurisdiction of the Human Tissue Act
- Technical and lay-friendly science communication
- Highly skilled in R, Bash, Python, LaTeX, SQL, Linux
- Wet lab work including 3D tissue culture, microscopy and research animal handling

RESEARCH EXPERIENCE

2016 | 2017

Graduate Research Internship
Bionics Institute — Melbourne, Australia

- Began initial work towards building a next-generation cochlea implant
- Established the viability of using a viral vector for optogenetic modification of mouse cochlea
- Gained extensive experience in immunohistochemistry, cryosectioning, imaging, research animal handling

SELECTED PUBLICATIONS

2020

A Preliminary Cohort Study Assessing Routine Blood Analyte Levels and Neurological Outcome after Spinal Cord Injury
Journal of Neurotrauma 2020 Jan 9
Sharon J. Brown, **Gabriel Mateus Bernardo Harrington**, Charlotte H. Hulme, Rachel Morris, Anna Bennett, Wai-Hung Tsang, Aheed Osman, Joy Chowdhury, Naveen Kumar, and Karina T. Wright

2020

Routinely Measured Hematological Markers Can Help to Predict American Spinal Injury Association Impairment Scale Scores after Spinal Cord Injury
Journal of Neurotrauma 2020 Aug 28
Gabriel Mateus Bernardo Harrington, Paul Cool, Charlotte Hulme, Aheed Osman, Joy Roy Chowdhury, Naveen Kumar, Srinivasa Budithi, and Karina Wright

ORAL PRESENTATIONS

2019

Reproducible Research
Centre for Doctoral Training (CDT) Conference, 2019 — Manchester University
Gabriel Mateus Bernardo Harrington

2021

SCI and the liver
Research day, 2021
The Robert Jones and Agnes Hunt Orthopaedic Hospital, Virtual
Gabriel Mateus Bernardo Harrington

POSTER PRESENTATIONS

2020

Proteomic analysis of bloods from SCI patients
CDT Joint conference, 2020 — Virtual
Gabriel Mateus Bernardo Harrington, Charlotte H. Hulme, Paul Cool, Karina T. Wright