Gabriel Mateus Bernardo Harrington
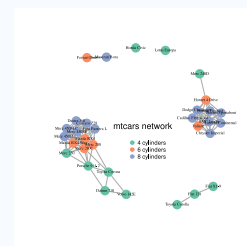
Research profile

Currently a final-year PhD student at Keele University based in the OsKOR group at
The RJAH Orthopaedic Hospital. Spinal cord injury (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.

🎓 EDUCATION

2016

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

Dissertation: 5-prime genotyping of Enterovirus 71

2017 | present (Expected submission 2021)

Keele University
PhD Student   📍 Oswestry, UK

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

💼 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

CONTACT INFO

✉ g.m.bernardo.harrington@keele.ac.uk

 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

🖥 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

2018

Biomarkers for SCI
Postgraduate Conference, 2018
📍 Keele University

Gabriel Mateus Bernardo Harrington

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