

# JIVESH RAMDUNY

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## EDUCATION

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- Trinity College Dublin** 2019 - 2023  
Ph.D Psychology  
Thesis: Improving the robustness and reproducibility of functional connectomics-based biomarkers in neurodevelopmental and psychiatric conditions  
Advisor: Clare Kelly, Ph.D.
- King's College London** 2017 - 2018  
MSc Neuroimaging  
Thesis: Characterisation of the basal forebrain integrity and function along the ageing-MCI-AD continuum  
Advisor: Owen O'Daly, Ph.D.
- The University of Edinburgh** 2015 - 2016  
PgDip Artificial Intelligence
- Nanyang Technological University** 2011 - 2015  
BEng (Hons) Computer Science  
Thesis: Dynamic modelling of type 1 diabetic metabolism  
Advisor: Quek Hiok Chai, Ph.D.

## RESEARCH POSITIONS

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- Postdoctoral Associate** 2023 -  
Mechanisms for Disinhibition Lab Yale University  
Developed a resampling framework known as Bagging to salvage underrepresented high-motion developing youths for generating inclusive and robust brain-behaviour relationships from the ABCD Study;  
Quantified fingerprints of neurocognition derived from resting-state and task-based fMRI conditions using the ABCD Study by developing and testing a Bayesian non-parametric dimensionality reduction framework to capture individual substance use and impulsivity in youths.  
Advisor: Arielle Baskin-Sommers, Ph.D.
- Neuroimaging Research Assistant** 2018 - 2019  
Sir Peter Mansfield Imaging Centre University of Nottingham  
Performed unimodal (VBM, TBSS) and multimodal (Linked ICA) MRI analyses to examine the relationships between brain structure and sleep measures (PSQI, WASO) in 50 neurotypical elderly participants;  
Predicted brain ageing using 176 imaging-derived phenotypes (cortical and subcortical volumes, diffusion tractography) derived from the UK Biobank Pipeline and investigated its association with the sleep measures to establish a potential marker for pre-symptomatic cognitive decline.  
Advisors: Stamatios N. Sotiropoulos, Ph.D. & Magdalena Chechlacz, Ph.D.

## HONORS AND AWARDS

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- Society of Biological Psychiatry** 2023  
Predoctoral Travel Fellowship Award  
Amount Awarded: \$2,000
- Trinity College Dublin Postgraduate Teaching Award** 2022  
Nominated for Best Graduate Teaching Assistant for the academic year 2021/22
- Trinity College Dublin Trust Travel Grant** 2022  
OHBM Educational Symposium and Poster Presentation  
Amount Awarded: €300

<b>OHBM Open Science SIG Fellowship</b> Teaching fellow for the OHBM 2021 Hackathon Amount Awarded: €300	2021
<b>Neuroscience Ireland Young Investigator Symposium</b> Best Poster Presentation Prize	2020
<b>Trinity College Dublin Provost Award</b> Non-EU PhD Studentship awarded from 01/09/2019 to 31/08/2023 Amount Awarded: €130,000	2019
<b>Department of Neuroimaging Academic Excellence Award</b> Ranked 1st for highest distinction in the MSc Neuroimaging degree for the academic year 2017/18	2018
<b>King's College London Warden Award</b> Maintenance fees for the academic year 2017/18 Amount Awarded: £14,400	2017

## PUBLICATIONS

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- Ramduny, J.**, Garcia, M., & Kelly, C. (2023). Establishing a reproducible and sustainable analysis workflow. In R. Whelan & H. Lemaitre (Eds.). *Methods for Analyzing Large Neuroimaging Datasets*. Springer Nature. doi: 10.31219/osf.io/RCXG8.
- Brosnan, M., Shalev, N., **Ramduny, J.**, Sotiropoulos, SN., & Chechlacz, M. (2022). Right fronto-parietal networks mediate the neurocognitive benefits of enriched environments. *Brain Communications*, 4 (2). doi: 10.1093/braincomms/fcac080.
- Ramduny, J.**, Bastiani, M., Huedepohl, R., Sotiropoulos, SN., & Chechlacz, M. (2022). The association between inadequate sleep and accelerated brain ageing. *Neurobiology Of Aging*, 114, 1-14. doi: 10.1016/j.neurobiolaging.2022.02.005.

## PREPRINTS AND MANUSCRIPTS IN PREPARATION

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- Ramduny, J.**, Weng, Y., Whelan, R., Vanderwal, T., & Kelly, C. Testing connectome-based fingerprinting pipelines for robust connectome-based phenotype predictions in developing youths.
- Ramduny, J.**, MacSweeney, N., Petkova, E., Kellaghan, E., Lahert, N., Gallagher, L., Vanderwal, T., & Kelly, C. Naturalistic emotional processing in adolescent females with depressive symptoms.
- Ramduny, J.**, Vanderwal, T., Garavan, H., Biswal, BB., & Kelly, C. Towards data salvage in high-movement cohorts: bagging yields robust and reproducible brain-behaviour relationships.
- Ramduny, J.**, Vanderwal, T., & Kelly, C. Refining the fingerprint: towards improving the sensitivity of functional connectomics-based biomarkers of neurodevelopmental and psychiatric conditions.

## INVITED TALKS

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- Ramduny, J.** (2023). Using functional connectome fingerprint to investigate the robustness of connectome-based phenotype predictions in developing youths. Contributed Talk for the Development and Lifespan Session at the Computational Psychiatry Conference, Dublin, Ireland.
- Ramduny, J.** (2023). Improving connectome-based fingerprinting for predicting robust and reliable brain-behaviour relationships. Presentation conducted at the meeting of the Brain Connectivity and Cognition Lab, UCLA, Los Angeles, California, USA.
- Ramduny, J.** (2022). Improving the robustness and reproducibility of functional connectomics-based analyses in neurodevelopmental and psychiatric conditions. Presentation conducted at the 9th meeting of the Predictive Brain Health Modelling Group, Trinity College Dublin, Dublin, Ireland.
- Whelan, R., Lemaitre, H., **Ramduny, J.**, Madhyastha, T., Hoffstaedter, F., Esteban, O. et al. (2022). An Introduction to Methods for Analyzing Large Neuroimaging Datasets. Educational Symposium conducted at the 28th annual meeting of the Organisation for Human Brain Mapping, Glasgow, Scotland.
- Ramduny, J.** (2022). Getting Started with Reproducible Neuroimaging Analyses. Presentation conducted for the degree of MSc Neuroscience, King's College London, London, UK.

**Ramduny, J.** (2021). Improving the reproducibility of functional connectomics-based biomarkers using resting-state and naturalistic fMRI. Presentation conducted at the meeting of the Modinos Lab, King's College London, held virtually due to COVID-19.

**Ramduny, J.** (2020). Improving the sensitivity and reproducibility of functional connectomics-based biomarkers in neurodevelopmental conditions. Presentation conducted at the annual meeting of The Psychological Society of Ireland EGG, held virtually due to COVID-19.

**Ramduny, J.** (2020). Why should we care about the reproducibility crisis in research? Presentation conducted at the 1st meeting of the ReproducibiliTea Journal Club, Dublin, Ireland.

## CONFERENCE POSTERS

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**Ramduny, J.,** Weng, Y., Whelan, R., Vanderwal, T., & Kelly C. (2023). Testing the use of fingerprinting-informed pipelines to enhance brain-behaviour predictions in developing youths. Poster presented at the 29th annual meeting of the Organisation for Human Brain Mapping, Montreal, Canada.

**Ramduny, J.,** Weng, Y., Whelan, R., Vanderwal, T., & Kelly C. (2023). Delineating the functional brain as fingerprints to predict robust brain-behaviour relationships in developmental youths. Poster presented at the 79th annual meeting of the Society of Biological Psychiatry, San Diego, California, USA.

**Ramduny, J.,** Weng, Y., Whelan, R., Vanderwal, T., & Kelly C. (2023). Does maximising connectome fingerprint identifiability improve connectome-based phenotype prediction? Poster presented at the 1st meeting of the School of Psychology Symposium, Trinity Biomedical Sciences Institute, Dublin, Ireland.

**Ramduny, J.,** Vanderwal, T., & Kelly, C. (2022). Towards data salvage in high-movement cohorts: bagging yields robust brain-behaviour relationships. Poster presented at the 14th annual meeting of the Neuroscience Ireland Young Investigator Symposium, Dublin, Ireland.

**Ramduny, J.,** Vanderwal, T., & Kelly, C. (2022). Towards data salvage in high-movement cohorts: bagging yields robust brain-behaviour relationships. Poster presented at the 28th annual meeting of the Organisation for Human Brain Mapping, Glasgow, Scotland.

**Ramduny, J.,** & Kelly, C. (2021). Shifting towards movie-watching fMRI to investigate emotional processing in adolescent depression. Poster presented at the 27th annual meeting of the Organisation for Human Brain Mapping, held virtually due to COVID-19.

Brosnan, M., Shalev, N., **Ramduny, J.,** Sotiropoulos, SN., & Chechlacz, M. (2021). Cognitive enrichment prevents age-related axonal dispersion and mitigates attention deficits. Poster presented at the 27th annual meeting of the Organisation for Human Brain Mapping, held virtually due to COVID-19.

**Ramduny, J.,** & Kelly, C. (2021). Naturalistic emotional processing in adolescent depression. Poster presented at the 77th annual meeting of the Society of Biological Psychiatry, held virtually due to COVID-19.

**Ramduny, J.,** & Kelly, C. (2021). Shifting towards a naturalistic paradigm to investigate emotional processing in adolescent depression. Poster presented at the 26th biennial meeting of the British Neuroscience Association, held virtually due to COVID-19.

**Ramduny, J.,** & Kelly, C. (2020). Optimising the individual functional connectome for neurodevelopmental and psychiatric disorders. Poster presented at the 12th annual meeting of the Neuroscience Ireland Young Investigator Symposium, held virtually due to COVID-19.

**Ramduny, J.,** & Kelly, C. (2020). Refining the fingerprint: Optimising connectome fingerprinting for neurodevelopmental applications. Poster presented at the 26th annual meeting of the Organisation for Human Brain Mapping, held virtually due to COVID-19.

**Ramduny, J.,** Bastiani, M., Sotiropoulos, SN., & Chechlacz, M. (2020). The association between poor sleep and accelerated brain ageing in older adults. Poster presented at the 26th annual meeting of the Organisation for Human Brain Mapping, held virtually due to COVID-19.

## TEACHING

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**Graduate Teaching Assistant**

Department of Psychology

Led python-based lab sessions for the Research Methods (PSU11010) and Statistics (PSU11011) modules to

2020 - 2023

Trinity College Dublin

allow Year 1 Psychology students to develop scientific research skills and perform parametric and non-parametric statistical analyses in a reproducible manner using Google Colab.

Advisors: Clare Kelly, Ph.D. & Sven Vanneste, Ph.D.

## STUDENT ADVISEES

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**Klara Aastroem**, Yale University 2023 - 2024

BS Psychology Senior Thesis: An fMRI motion correction strategy to salvage underrepresented developing youths for brain-behaviour association studies.

**Carter Namkung**, Yale University 2023 - 2024

BS Psychology Senior Thesis: A bayesian modelling framework for quantifying neurocognitive fingerprints in developing youths.

**Abhimanyu Bhardwaj**, Trinity College Dublin 2022

MSc Neuroscience Thesis: Story-telling in autism: An fMRI neuroimaging analysis in a naturalistic paradigm.

Grade: Distinction

## LEADERSHIP

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**Representative** 2023 -

Psychology Committee on Racial Equity & Justice Yale University

Reviewed current policies and practices of the psychology research labs to increase inclusion, scholarly growth, and development of trainees from underrepresented racial/ethnic backgrounds as well as preventing the reproduction of psychology's legacy of scientific racism, and promoting equitable and just engagement with research participants from underrepresented racial/ethnic backgrounds.

**Member** 2023 -

Psychology Committee on Diversity and Inclusiveness Yale University

Contributed to fostering an equitable and inclusive departmental environment by supporting mentorship programmes for current and prospective graduate students from underrepresented backgrounds in addition to bridging the gap between postdoctoral researchers and graduate students.

**Founder & Co-Lead** 2020 - 2023

ReproducibiliTea Dublin Trinity College Dublin

Led the ReproducibiliTea Journal Club to encourage early career researchers to discuss the reproducibility crisis in research, barriers impacting replicability and reproducibility, how to make our own work open and accessible, and how to make open science the norm in research. OSF: <https://osf.io/za2y7/>. Twitter: @ReproTeaDublin.

**President** 2020 - 2022

Neuroscience Society Trinity College Dublin

Led the Neuroscience Committee to bring students and faculty members together along the broad spectrum of neuroscience via seminars presented by renowned academics and social events to bridge the gap between undergraduate and postgraduate students interested in neuroscience.

**MSc Neuroimaging Academic Representative** 2017 - 2018

Department of Neuroimaging King's College London

Empowered to make positive, student-led change by representing the views of students and actively engage with my peers to find out about the issues affecting them before consulting on changes proposed to the faculty.

**Warden** 2017 - 2018

King's College Residences King's College London

Maintained the welfare, well-being and discipline of undergraduate and postgraduate students in King's College London Residences by supporting them to settle into and cope with life at college via pastoral support.

## AFFILIATIONS

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Masonic Institute for the Developing Brain, University of Minnesota 2023 -

Flux Society 2022 -

Society of Biological Psychiatry 2020 -

Organisation for Human Brain Mapping (including Abstract Reviewer) 2019 -

## TECHNICAL SKILLS

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**Neuroimaging Softwares:** SPM, FSL, FreeSurfer, fMRIPrep, AFNI

**Programming Languages:** Linux, Bash, Python, R

## WORKSHOPS

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### **Brain Connectivity Workshop**

2021

4 day workshop

Participated in the annual brain connectivity workshop to gain specialised knowledge by looking at the tripartite relationship between anatomical connectivity, brain dynamics and cognitive functions.

### **NeuroHackademy Summer School**

2020

1 week workshop

Participated in a week-long summer school virtually to develop technical acumen in Python by analysing human neuroimaging data and making these analyses and the underlying findings shareable and reproducible.

### **Advanced Methods for Reproducible Science**

2020

1 week workshop

Selected as one of the 30 early career researchers to participate in a week-long workshop which covered the critical topics in reproducible and open science in addition to practical solutions implemented in R.

## REFERENCES

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### **Arielle Baskin-Sommers**

Associate Professor of Psychology & Psychiatry

Department of Psychology

Yale University

[arielle.baskin-sommers@yale.edu](mailto:arielle.baskin-sommers@yale.edu)

### **Clare Kelly**

Associate Professor of Functional Neuroimaging

Trinity College Institute of Neuroscience

Trinity College Dublin

[clare.kelly@tcd.ie](mailto:clare.kelly@tcd.ie)

### **Stamatios N. Sotiropoulos**

Professor of Computational Neuroimaging

Sir Peter Mansfield Imaging Centre

University of Nottingham

[stamatios.sotiropoulos@nottingham.ac.uk](mailto:stamatios.sotiropoulos@nottingham.ac.uk)

### **Owen O'Daly**

Senior Lecturer of Neuroimaging

Institute of Psychiatry, Psychology & Neuroscience

King's College London

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