

# Maedbh King

· PH.D. CANDIDATE ·

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## Summary

Current Ph.D. candidate in Cognitive Neuroscience at the University of California, Berkeley. 5+ years experience doing neuroimaging research, building predictive models of brain function. Passionate about science policy and improving transparency and accountability in academia.

## Education

### University of California, Berkeley

Berkeley, California

PH.D. IN COGNITIVE NEUROSCIENCE (GPA: 3.96/4.00)

Sep. 2017 - Expected: May. 2022

- **Advisor: Richard Ivry, Ph.D.**
- Applied Data Science Certificate, School of Information. Awards: Mark R. Rosenzweig Graduate Fellowship (2021); Cognitive Computational Neuroscience Travel Award (2020)

### Western University

London, Ontario

M.Sc. IN NEUROSCIENCE (GPA: 4.0)

Sep. 2015 - May. 2017

- **Advisor: Joern Diedrichsen, Ph.D.** Awards: Gordon Cerebellum Student Travel Award (2017)

### Trinity College Dublin

Dublin, Ireland

B.A. IN PSYCHOLOGY AND FRENCH (DOUBLE MAJOR; GPA: 4.0)

Sep. 2010 - May. 2014

- **Advisor: Redmond O'Connell, Ph.D.** Awards: Irish Research Council Postgraduate Scholarship (2015); Ussher Fellowship, Trinity College Dublin (2015); US Fulbright Program (shortlisted); Wellcome Trust Biomedical Scholarship (2014); Entrance Scholarship, Trinity College Dublin

## Work Experience

### Thesis: Mapping cerebro-cerebellar networks of the human brain during learning

[Github \[Link\]](#)

GRADUATE STUDENT RESEARCHER (2017-)

University of California, Berkeley

- The aim of my thesis is to use *machine learning* to predict cognitive function across learning in the *human cerebellum* using features from the *cerebral cortex*.
- Led a team of 9 (3 Ph.D. students, 5 research assistants, 1 postbac student) to design and collect 300 experimental hours of fMRI and eye-tracking data.
- Created a widely adopted *mentorship agreement* for research assistants to ensure *transparency and accountability* in mentoring practices. Co-led a *journal club* for undergraduate research assistants, *instructing* them on the *scientific method*.
- Mentored two undergraduate students in designing and writing up honors thesis projects. One student was awarded a Swann prize for their work. Prioritized *recruitment* of research assistants from *marginalized demographics*.

### Thesis: Understanding the functional organization of the human cerebellum

[Paper \[Link\]](#)

GRADUATE STUDENT RESEARCHER (2015-2017)

Western University

- My thesis used *machine learning* to map cognitive sub-domains of the human cerebellum.
- Led a team of 2 (1 research assistant and one post-doctoral fellow) to design and collect a 26-task fMRI experiment.
- Initiated a collaboration with scientists from Stanford University to use *natural language processing and regularized regression* to assign cognitive labels ( *cognitiveatlas.org*) to the human cerebellum.
- Passionate about *open-source science*, my data are publicly available on *openneuro.org*. The dataset has been downloaded by *hundreds of researchers*.

## Public Service & Outreach

### POLICY

#### Graduate Assembly Students of Psychology

Member and RSO Signatory

UNIVERSITY OF CALIFORNIA, BERKELEY

Sep. 2018 -

- Co-organized *faculty fundraisers* in Silicon Valley as well as Psychology "Big Give" to fund-raise for Berkeley Psychology.
- Assembled *working committee* to create policy to improve *lab culture* and mentor-mentee relationships, co-wrote *mentorship and lab policy agreements* resulting in new departmental *policies*.
- Created, managed, and edited Berkeley Psychology blog to *spotlight* graduate student research.
- Co-founded and operated Twitter account for Berkeley Psychology.
- Writer and contributor of Berkeley Psychology *newsletter*.
- Data analysis, statistics and visualization for Berkeley Psychology *state of the department* annual meeting.

## Schulich School of Medicine Graduate Council

WESTERN UNIVERSITY

- Oversaw a *budget of \$5000*, did note-taking at biweekly meetings, and *voted on council plans*.

Secretary

2015 - 2016

## Niteline (Student Helpline)

TRINITY COLLEGE, DUBLIN

- *Publicized* student helpline services at *national events* and fund-raised to increase the yearly budget.

Publicity Officer

2011 - 2013

## EDUCATION

### Prison University Project

RICHMOND, CALIFORNIA

- *Designed and lectured* a course in General Psychology to incarcerated students in *San Quentin State Prison*.
- Created care packages and holiday art for incarcerated people in California prisons during the *COVID-19 pandemic*.

Volunteer and Lecturer

Sep. 2019 - Mar. 2021

### Bay Area Scientists in Schools (BASIS)

UNIVERSITY OF CALIFORNIA, BERKELEY

- *Presented* multiple lectures on the "Feel Human Brains" to *elementary school children* in Bay Area schools.

Volunteer

Jan. 2018 - Jan. 2020

### Journal of European Psychology Students

EUROPEAN FEDERATION OF PSYCHOLOGY STUDENTS' ASSOCIATION

- *Edited* research/review paper submissions, *recruited* reviewers, copy editors, and *communicated* decision outcomes to authors.

Junior Editor

2014 - 2016

## WOMEN IN STEM

### Inspiring Young Women in STEM Inaugural Conference

WESTERN UNIVERSITY

- *Co-organized* the first conference, *recruited* keynote speakers, and *evaluated* student research.

Organizing Member

2016

### Western Women Neuroscientists in Schools

WESTERN UNIVERSITY

- *Presented* multiple lectures on "Myths and the Brain" to *secondary school children* in London, Ontario schools.

Volunteer

Oct. 2015 - May 2017

## Selected Communication

Google Scholar [Link]

- |      |  |                         |
|------|--|-------------------------|
| 2021 | <b>Educational Symposium: Neuroanatomy for Neuroimaging</b> , Organization for Human Brain Mapping                 | <a href="#">Video</a>   |
| 2020 | <b>Transcriptomic Gradients Of The Human Cerebellum</b> , BioRxiv  | <a href="#">Paper</a>   |
| 2019 | <b>Functional boundaries in the human cerebellum revealed by a multi-domain task battery</b> , Nature Neuroscience | <a href="#">Press</a>   |
| 2019 | <b>Graduate School Advice: What we wish we had known</b> , Berkeley Blog   | <a href="#">Blog</a>    |
| 2017 | <b>Welcome to My Place, Berkeley, California</b> , The Irish Times   | <a href="#">Article</a> |

## Teaching

### General Psychology; English Literature

LECTURER; TUTOR

Sep. - Dec. 2019; Jan - Mar. 2021

Mount Tamalpais College

San Quentin State Prison

### Biological Psychology, PSYCH 110; Cognitive Neuroscience, PSYCH 127

GRADUATE STUDENT INSTRUCTOR

Aug. - Dec. 2018; Aug. - Dec. 2017

University of California, Berkeley

Berkeley, California

### Introduction to Statistics, STAT 1024; Probability and Statistics, STAT 2857

GRADUATE STUDENT INSTRUCTOR

Jan. - May. 2017; Sep. - Dec. 2016

Western University

London, Ontario

## Skills

### Programming Languages

Python, SQL, R, MATLAB, HTML, Bash

### Frameworks and Tools

Keras, OpenCV, Git, Vim, Blender, Numpy, PsychoPy, Pyglet, Pandas, NumPy, Scikit-learn, Scipy

### Conceptual

High performance computing (Savio), MRI certificate from Henry H. Wheeler Jr. Brain Imaging Center

### Languages

English (Native), Irish (Native), French (Proficient), German (Basic)