

# Linden Parkes, Ph.D.

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 lindenmp

 LindenParkes

## Research Interests

I am a **computational neuroscientist** seeking to uncover the pathways that track the emergence of psychopathology. I approach this goal from a neurobiological perspective by studying how complex neural systems shape behavior and cognition, and how dysfunction in these systems predicts psychopathology.

## Academic Positions

### Assistant Professor

Rutgers University, Department of Psychiatry

Piscataway, NJ

August 2023 - present

### Postdoctoral Research Fellow

University of Pennsylvania, Department of Bioengineering

Philadelphia, PA

July 2019 - June 2023

Advisors: Prof. Dani S. Bassett, Associate Prof. Theodore D. Satterthwaite

### Visiting Scholar

Donders Institute for Brain, Cognition and Behaviour

Nijmegen, The Netherlands

Sept. 2018 - Oct. 2018

Advisors: Prof. Christian Beckmann, Dr. Andre Marquand

## Education

### Doctor of Philosophy, Neuroscience & Psychiatry

Monash University

Melbourne, Australia

March 2014 - June 2019

Thesis: Mapping brain networks in health and mental disorder with structural and functional Magnetic Resonance Imaging

Advisors: Prof. Murat Yucel, Prof. Alex Fornito, Dr. Ben Fulcher

### Bachelor of Science (with Honors), Psychology/Psychophysiology

Swinburne University of Technology

Melbourne, Australia

2009 - 2013

Thesis: Mapping language processes using Magnetoencephalography.

Advisor: Associate Prof. Conrad Perry

Honors: First Class. Dux

## Funding

### Grants

#### K99/R00 Pathway to Independence Award

Sept. 2021 - 2026

National Institute of Mental Health (NIMH)

Project: Developing prognostic neuroimaging biomarkers of the psychosis spectrum using network control theory

#### Young Investigator Award

Jan. 2021 - Jan. 2023

Brain & Behavior Research Foundation

Project: Hybrid neurodevelopmental normative models for psychosis

#### Innovations Connections Grant

2016 - 2017

Department of Industry, Innovation and Science, Australia

### Fellowships & Scholarships

#### Monash University Postgraduate Publication Award

2018

Monash University

#### Monash University Graduate Research Scholarship

2014 - 2018

Monash University

#### Australian Postgraduate Award Research Scholarship

2014 - 2018

Australian Government

### Travel Awards

#### Domestic Travel Fellowship Award

2022

Society of Biological Psychiatry

<b>Abstract Merit Award</b> Organization for Human Brain Mapping	2021
<b>Abstract Merit Award</b> Organization for Human Brain Mapping	2020
<b>Donders-Monash Erasmus Travel Award</b> Donders Institute for Brain, Cognition and Behaviour   Monash University	2018
<b>Future Leaders Travel Award</b> Monash Institute of Cognitive and Clinical Neurosciences	2015

## Select Publications

For a full list of my publications, see my [Google Scholar](#).

### First author

**Parkes L**, & Bassett DS (2023). Tracking Disordered Brain Dynamics in Psychiatry. *Biological Psychiatry*, 94 (7), 528-530.

**Parkes L**, Kim JZ, ..., Satterthwaite TD, & Bassett DS (2023). Using network control theory to study the dynamics of the structural connectome. *bioRxiv*.

**Parkes L**, ..., Satterthwaite TD & Bassett DS (2021). Network controllability in transmodal cortex predicts positive psychosis spectrum symptoms. *Biological Psychiatry*, 90 (6), 409-418.

**Parkes L**, ..., Satterthwaite TD & Bassett DS (2021). Transdiagnostic dimensions of psychopathology explain individuals' unique deviations from normative neurodevelopment in brain structure. *Translational Psychiatry*, 11 (1), 1-13.

**Parkes L**, Satterthwaite TD & Bassett DS (2020). Towards precise resting-state fMRI biomarkers in psychiatry: synthesizing developments in transdiagnostic research, dimensional models of psychopathology, and normative neurodevelopment. *Current Opinion in Neurobiology*, 65, 120-128.

**Parkes L**, ..., Fornito A, & Yucel M (2019). Transdiagnostic variations in impulsivity and compulsivity in obsessive-compulsive disorder and gambling disorder correlate with effective connectivity in cortical-striatal-thalamic-cortical circuits. *NeuroImage*, 202, 116070.

**Parkes L**, Fulcher B, Yucel M, & Fornito A (2018). An evaluation of the efficacy, reliability, and sensitivity of motion correction strategies for resting-state functional MRI. *NeuroImage*, 171, 415-436.

\*Prochazkova L, \***Parkes L**, ..., Fontenelle LF, & Yucel M (2018). Unpacking the role of self-reported compulsivity and impulsivity in obsessive-compulsive disorder. *CNS spectrums*, 23 (1), 51-58.

\*These authors contributed equally

**Parkes L**, Fulcher B, Yucel M, & Fornito A (2017). Transcriptional signatures of connectomic subregions of the human striatum. *Genes, Brain and Behavior*, 16 (7), 647-663.

**Parkes L**, Perry C, & Goodin P (2016). Examining the N400m in affectively negative sentences. A magnetoencephalography study. *Psychophysiology*, 53 (5), 689-704.

### Senior author

Segrave RA, Hendrikse J, & **Parkes L** (2019). DBS, TMS and tDCS for obsessive compulsive disorder. In *A Transdiagnostic Approach to Obsessions, Compulsions and Related Phenomena*, 255-278. Cambridge University Press.

### Consortium papers

Richie-Halford A, Cieslak M, Ai L, Caffarra S, Covitz S, Franco AR, Karipidis II, Kruper J, Milham M, Avelar-Pereira B, Roy E, Sydnor VJ, Yeatman J, **Fibr Community Science Consortium**, Satterthwaite TD, & Rokem A (2022). An open, analysis-ready, and quality controlled resource for pediatric brain white-matter research. *bioRxiv*.

## Teaching Experience

<b>Teacher's Assistant</b> <i>University of Pennsylvania, Department of Bioengineering</i>	<b>Philadelphia, PA</b> 2020
<ul style="list-style-type: none"> <li>Class: Network Neuroscience</li> <li>Course evaluation score: 3.57/4</li> </ul>	
<b>Guest Lecturer</b> <i>University of Pennsylvania, Department of Bioengineering</i>	<b>Philadelphia, PA</b> 2019
<ul style="list-style-type: none"> <li>Class: Network Neuroscience</li> </ul>	

<b>Guest Lecturer</b> <i>Monash University</i> ○ Class: Neuroscience Methods	<b>Melbourne, Australia</b> 2017 - 2018
<b>Recitation Tutor</b> <i>Swinburne University</i> ○ Class: Undergraduate Psychology	<b>Melbourne, Australia</b> 2014 - 2015
<b>Recitation Tutor</b> <i>Swinburne University</i> ○ Class: Undergraduate Physiology	<b>Melbourne, Australia</b> 2013

## Research Employment





<b>Research Assistant</b> <i>Monash Biomedical Imaging</i> ○ Analysis of positron emission tomography (PET) data	<b>Melbourne, Australia</b> 2018
<b>Research Engineer</b> <i>Torus Games &amp; Cogstate</i> ○ Developed gamified cognitive tests for neuroscience research	<b>Melbourne, Australia</b> 2016 - 2017
<b>Magnetoencephalography Technician</b> <i>Swinburne University</i> ○ Collection, preprocessing, and analysis of Magnetoencephalography (MEG) data	<b>Melbourne, Australia</b> 2013

## Open Science Contributions

### Toolkits

<b>Network Control</b> <a href="https://github.com/BassettLab/control_package">https://github.com/BassettLab/control_package</a>	 Python
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### Reproducibility

<a href="https://github.com/lindenmp/nct_hierarchy">https://github.com/lindenmp/nct_hierarchy</a> ○ Code to reproduce results presented in <a href="#">Parkes et al. (2022) Science Advances</a>	 Python
<a href="https://github.com/lindenmp/neurodev_cs_predictive">https://github.com/lindenmp/neurodev_cs_predictive</a> ○ Code to reproduce results presented in <a href="#">Parkes et al. (2021) Biological Psychiatry</a>	 Python
<a href="https://github.com/lindenmp/normative_neurodev_cs_t1">https://github.com/lindenmp/normative_neurodev_cs_t1</a> ○ Code to reproduce results presented in <a href="#">Parkes et al. (2021) Translational Psychiatry</a>	 Python
<a href="https://github.com/lindenmp/rs-fMRI">https://github.com/lindenmp/rs-fMRI</a> ○ Code to reproduce results presented in <a href="#">Parkes et al. (2018) Neurolmage</a> and <a href="#">Parkes et al. (2019) Neurolmage</a>	 Matlab

## Presentations

### Invited Lectures & Presentations

<b>Association for Psychological Science, Chicago, IL</b> Available on <a href="#">YouTube</a>	May 2022
<b>Feindel Virtual Brain and Mind Lecture Series, McGill University, Canada</b>	May 2022
<b>Mount Sinai, New York City, NY</b>	Mar. 2022
<b>Vanderbilt University, Nashville, TN</b>	Mar. 2022
<b>Rutgers University, New Brunswick, NJ</b>	Mar. 2022
<b>University of Manchester, Manchester, United Kingdom</b>	Feb. 2022
<b>The Douglas Research Centre, Montreal, Canada</b>	Feb. 2022
<b>University of California, Los Angeles, CA</b>	Feb. 2022
<b>Georgia State University, Atlanta, GA</b>	Nov. 2021
<b>University of Pittsburgh, Pittsburgh, PA</b> Available on <a href="#">YouTube</a>	Oct. 2021
<b>Organization for Human Brain Mapping, Oral Presentation</b>	Jun. 2021

<b>DataPhilly, Philadelphia, PA</b>	<i>Mar. 2021</i>
Available on <a href="#">YouTube</a>	
<b>Organization for Human Brain Mapping, Symposium</b>	<i>Jun. 2020</i>
<b>Organization for Human Brain Mapping, Oral Presentation</b>	<i>Jun. 2020</i>
<b>University of Pennsylvania, Philadelphia, PA</b>	<i>Sep. 2018</i>
<b>Centre of Excellence for Integrative Brain Function, Melbourne, Australia</b>	<i>Mar. 2018</i>
<b>Swinburne Univerisity, Melbourne, Australia</b>	<i>Jun. 2016</i>
<b>Students of Brain Research, Melbourne, Australia</b>	<i>Jun. 2015</i>
<b>Australasian Cognitive Neuroscience Conference, Melbourne, Australia</b>	<i>Jun. 2013</i>

## Academic Service

### Journal Peer Review

- PNAS, Science Advances, Nature Protocols, NeuroImage, Human Brain Mapping, Network Neuroscience, Scientific Reports, Biological Psychiatry, Psychological Medicine, Neuropsychologia, Developmental Cognitive Neuroscience, NeuroImage: Clinical, Psychiatry Research: Neuroimaging, Harvard Review of Psychiatry, International Gambling Studies, Journal of Cerebral Blood Flow & Metabolism

### Committees

<b>Organization for Human Brain Mapping, Open Science Special Interest Group</b>	<i>2022 - 2023</i>
Treasurer	
<b>Organization for Human Brain Mapping, Student and Postdoc Special Interest Group</b>	<i>2019 - 2021</i>
Treasurer	
<b>Australasian Cognitive Neuroscience Society, Early Career Researchers Committee</b>	<i>2017</i>
Committee Member	
<b>Australasian Cognitive Neuroscience Society, Executive Committee</b>	<i>2017</i>
ECR Representative	
<b>Students of Brain Research</b>	<i>2016</i>
Treasurer	

### Supervision & Mentorship

<b>Ahmad Beyh</b>	<i>2023 - present</i>
Postdoctoral Scholar, Rutgers University	
<b>Ashlea Segal</b>	<i>2023 - present</i>
Postdoctoral Scholar, Yale University	
<b>Ashlea Segal</b>	<i>2018 - 2022</i>
Graduate Student, Monash University	
<b>Tayla Currie</b>	<i>2018</i>
Undergraduate Honors Student, Monash University	
<b>John Fallon</b>	<i>2017</i>
Undergraduate Honors Student, Monash University	
<b>Luisa Prochazkova</b>	<i>2016</i>
International Visiting Scholar, Monash University	
<b>Kristina Sabaroedin</b>	<i>2016</i>
Undergraduate Honors Student, Monash University	
<b>Lauren Den Ouden</b>	<i>2016</i>
Undergraduate Honors Student, Monash University	
<b>Stuart Oldham</b>	<i>2016</i>
Undergraduate Honors Student, Monash University	
<b>Danielle Amiet</b>	<i>2016</i>
Undergraduate Honors Student, Monash University	

## Outreach & Community Engagement

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### Neuroimaging Best Practices Beyond Open Science

2021

Organization for Human Brain Mapping, Student and Postdoc Special Interest Group

- Moderator

### Link with Mentors

2021

Organization for Human Brain Mapping, Student and Postdoc Special Interest Group

- Moderator

### International Mentoring Programme

2021

Organization for Human Brain Mapping, Student and Postdoc Special Interest Group

- Mentor

### Network Control Theory for Neuroscientists, Education Workshop

2020

Organization for Human Brain Mapping

- Organizer, presenter

### Link with Mentors

2020

Organization for Human Brain Mapping, Student and Postdoc Special Interest Group

- Moderator

### NeuroDay

2018

Methodist Ladies' College, Melbourne, Australia

- Organizer, presenter

### BMH Mentor Forum

2018

Brain & Mental Health Research Hub, Monash University

- Organizer, mentor

### MBI Student Forum

2014 - 2015

Monash Biomedical Imaging, Monash University

- Organizer, mentor, presenter