

# Elvisha Dhamala, PhD

Feinstein Institutes for Medical Research

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## ACADEMIC APPOINTMENTS

- 2023- **Assistant Professor of Psychiatry**  
Institute of Behavioral Science  
Feinstein Institutes for Medical Research, Manhasset, NY
- 2021-2023 **Postdoctoral Associate**  
Yale University, New Haven, USA  
Advisor: Avram Holmes

## EDUCATION

- 2021 **Ph.D. (Neuroscience)**  
Weill Cornell Medicine, New York, USA  
*Multimodal Connectome Mapping of Sex Differences and Cognitive Abilities:  
A Machine Learning Approach*
- 2017 **B.Sc. (Neuroscience)**  
McGill University, Montreal, Canada

## FELLOWSHIPS

- 2023-2025 **Early Investigator Career Enhancement Program**  
Yale School of Medicine SCORE on Sex Differences in Alcohol Use Disorder  
*Declined*
- 2021-2023 **Postdoctoral Fellowship for Academic Diversity**  
Kavli Institute for Neuroscience, Yale University  
*Amount awarded: \$130,000 USD*

## HONORS AND AWARDS

- 2022 **Rising Star in Engineering in Health**  
Johns Hopkins University and Columbia University
- 2022 **Travel Award**  
Big Data Neuroscience Workshop
- 2020 **Graduate Student Award**  
Cognitive Neuroscience Society

## PEER-REVIEWED PUBLICATIONS

\* denotes equal contributions. † denotes mentee co-author.

1. **Dhamala E**, BTT Yeo, Holmes AJ. (In Press). One Size Does Not Fit All: Methodological Considerations for Brain-Based Predictive Modelling in Psychiatry. *Biological Psychiatry*. PMID: 36577634 | DOI: 10.1016/j.biopsych.2022.09.024
2. \*Ricard JA, \*Parker TC, **Dhamala E**, Kwasa J, Allsop AS, Holmes AJ. 2023. Confronting racially exclusionary practices in the acquisition and analyses of neuroimaging data. *Nature Neuroscience* 26, pp 4-11. PMID: 36564545 | DOI: 10.1038/s41593-022-01218-y

3. Ooi LQR, Chen J, Shaoshi Z, Kong R, Tam A, Li J, **Dhamala E**, Zhou JH, Holmes AJ, Yeo BTT. 2022. Comparison of individualized behavioral predictions across anatomical, diffusion and functional connectivity MRI. *NeuroImage*, 263, pp. 119636. PMID: 36116616 | DOI: 10.1016/j.neuroimage.2022.119636
4. **Dhamala E**, Ooi LQR, Chen J, Kong R, Anderson KM, Yeo BTT, Holmes AJ. 2022. Proportional intracranial volume correction differentially biases behavioral predictions across neuroanatomical features and populations. *NeuroImage*, 260C. PMID: 35843514 | DOI: 10.1016/j.neuroimage.2022.119485
5. **Dhamala E**, Jamison KW, Jaywant A, Kuceyeski A. 2022. Shared functional connections within and between cortical networks predict individual cognitive abilities in males and females. *Human brain mapping*, 43(3), pp.1087-1102. PMID: 34811849 | DOI: 10.1002/hbm.25709
6. **Dhamala E**, Jamison KW, Jaywant A, †Dennis S, Kuceyeski A. 2021. Distinct functional and structural connections predict crystallised and fluid cognition in healthy adults. *Human brain mapping*, 42(10), pp.3102-3118. PMID: 33830577 | DOI: 10.1002/hbm.25420
7. Cha J, Speaker S, Hu B, Altinay M, Koirala P, Karne H, Spielberg J, Kuceyeski A, **Dhamala E**, Anand A. 2021. Neuroimaging correlates of emotional response-inhibition discriminate between young depressed adults with and without sub-threshold bipolar symptoms (Emotional Response-inhibition in Young Depressed Adults). *Journal of affective disorders*, 281, pp.303-311. PMID: 33341013 | DOI: 10.1016/j.jad.2020.12.037
8. **Dhamala E**, Jamison KW, Sabuncu MR, Kuceyeski A. 2020. Sex classification using long-range temporal dependence of resting-state functional MRI time series. *Human brain mapping*, 41(13), pp.3567-3579. PMID: 32627300 | DOI: 10.1002/hbm.25030
9. **Dhamala E**, Abdelkefi I, Nguyen M, Hennessy TJ, Nadeau H, Near J. 2019. Validation of in vivo MRS measures of metabolite concentrations in the human brain. *NMR in Biomedicine*, 32(3), p.e4058. PMID: 30663818 | DOI: 10.1002/nbm.4058  
*Top 10% most downloaded papers in NMR in Biomedicine 2018-2019.*

## PRE-PRINTS AND MANUSCRIPTS IN PREPARATION

\* denotes equal contributions. † denotes mentee co-author.

1. \*†Bukhari H, \*Su C, **Dhamala E**, Gu Z, Jamison KW, Kuceyeski A. (Submitted). A graph-matching based metric of functional connectome distance between pairs of individuals varies with their ages, cognitive performances and familial relationships. *BioRxiv preprint*. DOI: 10.1101/2022.10.03.510660
2. Chopra S, Labache L, **Dhamala E**, Orchard ER, Holmes AJ. (Submitted). Moving Towards Reproducible and Programmatic Generation of Neuroimaging Visualizations. *GitHub Preprint*: <https://github.com/sidchop/RepoNeuroVis/blob/main/manuscript.pdf>.
3. Patrick LM, Kong R, **Dhamala E**, Anderson KM, Yeo BTT, Holmes AJ. (Submitted). Spatial variability in cortical thickness reflects the large-scale functional architecture of the human brain.
4. **Dhamala E**, Ooi LQR, Chen J, Ricard JA, †Berkeley E, Chopra S, Qu Y, Lawhead C, Yeo BTT, Holmes AJ. (Submitted). Brain-based prediction of psychiatric illness-linked behaviors across the sexes. *BioRxiv preprint*. DOI: 10.1101/2022.12.18.520947

5. Chopra S, **Dhamala E**, Lawhead C, Ricard JA, Orchard E, Levi P, Aquino K, Fornito A, Anandh P, Rubenstein A, Chen L, Moses J, Harpaz-Rotem I, Germine LT, Baker JT, Yeo BTT, Holmes AJ. (Submitted). Reliable and generalizable brain-based predictions of cognitive functioning across common psychiatric illness. *MedRxiv preprint*. DOI: 10.1101/2022.12.08.22283232

### TEXTBOOK CHAPTERS

1. Thompson JW, Kosofsky B, **Dhamala E**, Duggan, R. 2020. Electrophysiology monitoring. *Biomarkers for Traumatic Brain Injury*, pp.113-142. ISBN: 9780128163467

### PRESENTATIONS: TALKS, SYMPOSIA

\* denotes equal contributions. † denotes mentee co-author.

1. Pergola G, Calhoun V, Passiatore R, **Dhamala E**, Wolfers T, Truelove-Hill M. (Accepted) Interindividual variability in brain-behavior relationships supports individualized perspectives on mental health. Symposium Presenter. *Society for Biological Psychiatry*. April 2023; San Diego, USA.
2. **Dhamala E**. Methodological considerations for predictive modelling using big data. Lightning Talk. *Big Data Neuroscience Workshop*; September 2022; Austin, USA.
3. **Dhamala E**, Holmes AJ. Psychiatric neuroimaging: methods and applications. Oral Session Chair. *Organization for Human Brain Mapping*. June 2022; Glasgow, UK.
4. **Dhamala E**, Calhoun VD. Multivariate approaches: from methods to applications. Oral Session Chair. *Organization for Human Brain Mapping*. June 2022; Glasgow, UK.
5. **Dhamala E**, Holmes AJ, Chen J, Li J, Keller A. Machine learning in neuroimaging: from application to interpretation. Symposium Chair & Presenter. *Organization for Human Brain Mapping*. June 2022; Glasgow, UK.
6. Holmes AJ, Uddin LQ, **Dhamala E**, Bzdok D, Yip S. The future of psychiatry: promises and pitfalls in the use of big data. Symposium Presenter. *Society for Biological Psychiatry*. April 2022; New Orleans, USA.
7. **Dhamala E**. Modelling and Analysis - Connectivity. Poster Session Moderator. *Organization for Human Brain Mapping*; June 2021; Virtual due to COVID-19.
8. **Dhamala E**. Higher Cognitive Function. Poster Session Moderator. *Organization for Human Brain Mapping*; June 2021; Virtual due to COVID-19.
9. **Dhamala E**, Jamison KW, Jaywant A, Kuceyeski A. Shared functional connectivity features underlie cognitive abilities in males and females. Oral Presentation. *Weill Cornell Medicine, Vincent du Vigneaud Research Symposium*; April 2021; Virtual due to COVID-19.
10. **Dhamala E**, Jamison KW, †Dennis SM, Patel R, Chakravarty MM, Kuceyeski A. Hybrid structure-function connectome predicts individual cognitive abilities. Oral Power Pitch. *International Society of Magnetic Resonance in Medicine*; August 2020; Virtual due to COVID-19.
11. **Dhamala E**, Khosla M. Machine Learning in Neuroimaging. Breakout Session Leaders: Women in Machine Learning Un-Workshop. *International Conference on Machine Learning*. July 2020; Virtual due to COVID-19.

### PRESENTATIONS: POSTERS

\* denotes equal contributions. † denotes mentee co-author.

1. †Berkeley E, **Dhamala E**, Holmes AJ. The role of the amygdala in predicting aggression in children and adolescents. *Faculty for Undergraduate Neuroscience Poster Session at Society for Neuroscience*; November 2022; San Diego, USA.
2. Ricard JA, Labache L, Chopra S, **Dhamala E**, Harnett NG, Jones G, Yip SW, Holmes AJ. The network-level correlates of cocaine use disorder. *Society for Neuroscience*; November 2022; San Diego, USA.
3. **Dhamala E**, Ooi LQR, Qu Y, Ricard J, Berkeley E, Yeo BTT, Holmes AJ. White matter connectivity differentially predicts mental health traits in children and adolescent males and females. *Society for Neuroscience*; November 2022; San Diego, USA.
4. **Dhamala E**, Ooi LQR, Chen J, Kong R, Anderson KM, Yeo BTT, Holmes AJ. Intracranial volume correction differentially biases brain-behavior predictions across populations. *Organization for Human Brain Mapping*. June 2022; Glasgow, UK.
5. Wu E, Olafson E, **Dhamala E**, Pritschet L, Santander T, Jacobs E, Kuceyeski A. Estradiol and progesterone relate to brain state dynamics. *Organization for Human Brain Mapping*. June 2022; Glasgow, UK.
6. †Bukhari H, Su C, **Dhamala E**, Gu Z, Jamison KW, \*Fan Z, \*Kuceyeski A. A novel graph matching-based metric of the human connectome varies with age and sex. *Organization for Human Brain Mapping*. June 2022; Glasgow, UK.
7. **Dhamala E**, Ooi LQR, Chen J, Kong R, Anderson KM, Yeo BTT, Holmes AJ. Intracranial volume correction differentially biases behavioral predictions across neuroanatomical features and populations. *Society for Biological Psychiatry*. April 2022; New Orleans, USA.
8. **Dhamala E**, Kong R, Anderson KM, Ooi LQR, Chen J, Yeo BTT, Holmes AJ. Anatomical properties of individual-specific areal-level parcellations predict cognition and behaviour. *Society for Neuroscience*; November 2021; Virtual due to COVID-19.
9. **Dhamala E**, Jamison KW, Jaywant, A, Kuceyeski A. Shared functional connectivity features predict individual cognitive abilities in males and females. *Organization for Human Brain Mapping*; June 2021; Virtual due to COVID-19.  
*Featured in the Modelling and Analysis - Multivariate Approaches session.*
10. †Wu E, **Dhamala E**, Pritschet L, Santander T, Jacobs E, Kuceyeski A. Increased sex hormones are associated with increased segregation of functional connectivity networks. *Organization for Human Brain Mapping*; June 2021; Virtual due to COVID-19.  
*Featured in the Social Neuroscience, Emotion, and Motivation session.*
11. †Cai C, **Dhamala E**, Pritschet L, Santander T, Jacobs E, Kuceyeski A. Fluctuations in estradiol and progesterone are not related to high amplitude co-fluctuations in fMRI. *Organization for Human Brain Mapping*; June 2021; Virtual due to COVID-19.
12. **Dhamala E**, Jamison KW, †Dennis SM, Patel R, Chakravarty MM, Kuceyeski A. Integration of structural and functional connectomes to predict individual cognitive abilities. *Organization for Human Brain Mapping*; June 2020; Virtual due to COVID-19.
13. Simon A, Jamison KW, Tozlu C, **Dhamala E**, Gauthier S, Kuceyeski A. Temporal memory of resting-state fMRI time series activations are able to classify multiple sclerosis. *Organization for Human Brain Mapping*; June 2020; Virtual due to COVID-19.
14. **Dhamala E**, Jamison KW, Kuceyeski A. Hybrid structure-function connectome predicts sex. *Organization for the Study of Sex Differences*; Cancelled due to COVID-19.
15. **Dhamala E**, Jamison KW, †Dennis SM, Patel R, Chakravarty MM, Kuceyeski A. Hybrid-structure-function connectome predicts crystallised and fluid cognition. *Cognitive Neuroscience Society*; May 2020; Virtual due to COVID-19.

16. **Dhamala E**, Jamison KW, †Dennis SM, Kuceyeski A. Prediction of individual cognitive ability using resting-state functional connectivity. *Society for Neuroscience*; October 2019; Chicago, USA.
17. **Dhamala E**, Jamison KW, Kuceyeski A. Sex differences in long-term temporal dependence of resting state fMRI time series. *Organization for Human Brain Mapping*; June 2019; Rome, Italy.
18. Duggan RC, **Dhamala E**, Kosofsky BE. Heart rate variability during exercise is a biomarker distinguishing between subjects with post-concussive syndrome following mild traumatic brain injury and healthy volunteers. *Society for Neuroscience*; November 2018; San Diego, USA.
19. Kassinosopoulos M, Ghosh A, **Dhamala E**, Boudrias MH, Mitsis G. Cardiac noise removal from BOLD fMRI based on a dynamic linear model. *Organization for Human Brain Mapping*; June 2017; Vancouver, Canada.

## INVITED RESEARCH TALKS

- |      |   |
|------|---|
| 2023 | NeuroPhysics and Systems Neuroscience Lab<br>Georgia State University, Atlanta, USA   |
| 2023 | Cognitive Neuroscience Seminar<br>Yale University, New Haven, USA   |
| 2023 | Yale Translational Alcohol Research Program & Yale SCORE on Sex Differences in Alcohol Use Disorder Seminar Series<br>Yale University, New Haven, USA |
| 2023 | Centre for Sleep and Cognition Seminar Series<br>National University of Singapore, Singapore  |
| 2022 | Symposium on Neuroimaging and Neurophysics Research<br>Georgia State University, Atlanta, USA   |
| 2022 | Neuromodulation and Neuroimaging Relevant to Affective Disorders Seminar Series<br>University of Pennsylvania, Philadelphia, USA                      |
| 2022 | Yale Magnetic Resonance Research Center Neuroscience Seminar Series<br>Yale University, New Haven, USA  |
| 2022 | Cornell NIH First Future Faculty Symposium<br>Cornell University, Ithaca, USA   |
| 2022 | Research Seminar Series<br>Feinstein Institutes for Medical Research/Zucker Hillside Hospital, New York, USA  |
| 2022 | Current Work in Behavior, Genetics, and Neuroscience Seminar Series<br>Yale University, New Haven, USA  |
| 2022 | Open Science Sciencepalooza<br>University of South Carolina, Columbia, USA  |
| 2021 | Yale Imaging and Psychopharmacology Lab<br>Yale University, New Haven, USA  |
| 2021 | Cognitive Neuroscience Seminar<br>Yale University, New Haven, USA   |
| 2021 | Brain Health Imaging Institute Seminar Series<br>Weill Cornell Medicine, New York, USA  |
| 2020 | Cerebral Imaging Centre Lecture Series<br>Douglas Mental Health University Institute, Montréal, Canada  |
| 2020 | Cognitive Neuroscience Seminar<br>Yale University, New Haven, USA   |
| 2020 | Rajah Lab<br>Douglas Mental Health University Institute, Montréal, Canada   |

- 2020      Jacobs Lab  
University of California Santa Barbara, Santa Barbara, USA
- 2020      Early Career BIPOC Scholars Neuropsychology Lecture Series  
Ohio State University, Columbus, USA
- 2020      Frontiers in Neuropsychiatry Seminar  
Weill Cornell Medicine, New York, USA
- 2020      Progress in Neuroscience Seminar  
Weill Cornell Medicine, New York, USA
- 2019      Matteson Lab  
Cornell University, Ithaca, USA
- 2019      Psychiatric and Developmental Imaging Lab  
University of Pennsylvania, Philadelphia, USA

**INVITED PANELS**

- 2023      Women in Psychology Panel  
Yale University, New Haven, USA
- 2022      Neurathon Neuroscience Workshop Series: Science Communication  
Simply Neuroscience, Virtual
- 2022      From ACE to Home Base: Alumni Panel on Preparing for Career Paths Post PhD  
Weill Cornell Medicine, New York, USA
- 2021      Building Allyship Series: Understanding and Combating Anti-Asian Racism  
Cornell University, Ithaca, USA
- 2021      Open Science Room Emergent Sessions: Challenges with Different Meeting Formats  
Organization for Human Brain Mapping Annual Conference, Virtual
- 2021      BrainHack: Data Visualisation and Machine Learning  
Organization for Human Brain Mapping Annual Conference, Virtual
- 2020      Building Allyship Series: Dangers of Performative Allyship  
Cornell University, Ithaca, USA

**TEACHING**

- 2020-2021      **Instructor, HD 2200 Human Brain and Mind** (Enrolment: ~15 per semester)  
Spring 2020: Auburn Correctional Facility  
Fall 2021: Cayuga Correctional Facility  
Spring 2021: Five Points Correctional Facility  
Cornell University - Cornell Prison Education Program

**MENTORING**

**Yale University**

- 2022      Lucy Jane Arce (undergraduate research mentor)
- 2022      Emily Berkeley (summer undergraduate research fellow mentor)

**Weill Cornell Medicine**

- 2021-2022      Hussain Bukhari (graduate rotation student mentor)

**Cornell University**

- 2020-2021      Catherine Cai, Elaine Wu (undergraduate research mentor)
- 2020-2021      Saanvi Somani (high school capstone project mentor)
- 2020      Jason Chen (undergraduate research mentor)
- 2019      Sarah Dennis (undergraduate research mentor)

## **McGill University**

2017 Afuad Hossain (undergraduate research mentor)  
2016-2017 Bennet Desormeau (undergraduate research mentor)  
2016 Sharif Ahmed, Natalie Sun (undergraduate research mentor)

## **Other**

2020- Organization for Human Brain Mapping (international mentoring program)

## **HONORS AND AWARDS TO MENTEES**

2022 Yale Kavli Institute for Neuroscience Summer Undergraduate Research Fellowship (SURF; Emily Berkeley)

## **AD HOC REVIEWER**

American Journal of Psychiatry	IEEE Access
Cerebral Cortex	Human Brain Mapping
Communications Biology	Network Neuroscience
Computational Psychiatry	Neuroimage
Developmental Cognitive Neuroscience	Neuropsychopharmacology
eNeuro	PLOS ONE
Frontiers in Neuroscience	PNAS
Heliyon	Translational Psychiatry

## **PROFESSIONAL SERVICE**

### **Organization for Human Brain Mapping**

2021-2024 Program Committee: Ad Hoc Member  
2020-2021 Technology Task Force: Ad Hoc Member  
2020-2021 Program Committee: Student and Postdoc Liaison  
2020-2021 Sustainability and Environmental Action Group: Social Coordinator  
2020 Distance Based Education Taskforce: Student and Postdoc Liaison  
2019-2021 Student and Postdoc Group: Social Coordinator

## **INSTITUTIONAL SERVICE**

### **Yale University**

2023 Kavli Institute for Neuroscience: Scientific Grant Review Committee Member  
2022 Yale Biomedical Sciences Diversity/Inclusion Collective: Research Symposium Judge  
2022 Brain Education Day: Leader and Mentor

### **Weill Cornell Medicine**

2021 Machine Learning in Medicine Symposium: Organiser  
2020-2021 Machine Learning in Medicine Seminar Series: Organiser  
2020 CoCo Lab Professional Development Series: Organiser and Facilitator  
2020 BrainHack New York: Organiser  
2018-2019 Neuroscience Boot Camp: Organiser, Lecturer  
2017-2018 Vincent du Vigneaud Research Symposium: Alumni Outreach Coordinator

### **Cornell University**

2020-2021 Graduate and Professional Students Diversity Council: Member  
2020-2021 Graduate and Professional Students International: Co-President  
2019-2020 Multicultural Academic Council: Mentor

### **McGill University**

2015-2017 Neuroscience Undergraduates of McGill: Vice President Internal  
2015-2016 Kinesiology Games: Head of Sponsorship

### **OUTREACH ACTIVITIES**

2022 New Haven Science Fair: Scientific Judge  
2018- Skype A Scientist: Scientist Mentor  
2018 Cornell Cooperative Extension: Student Space Experiments Program: Mentor

### **PROFESSIONAL DEVELOPMENT AND TRAININGS**

2022 Cornell NIH FIRST Future Faculty Symposium  
Cornell University  
2022 New England Future Faculty Workshop  
Northeastern University, Harvard Medical School  
2022 Scientists Teaching Science  
New York Academy of Sciences  
2022 Postdoc Series: Chalk Talk  
Kavli Institute for Neuroscience, Yale University  
2022 Creating Connections: An Introduction to the Alda Method  
Kavli Foundation  
2022 Crafting a Compelling Diversity Statement  
Yale University  
2022 Grant Writing  
Yale University  
2022 Mental Health First Aid Certification  
National Council for Mental Wellbeing  
2021 Fundamentals of Scientific Writing  
Yale University  
2021 Colman Inclusive Leadership Program  
Cornell University  
2020-2021 NextGen Professor's Program  
Cornell University  
2020 Integrating Sex and Gender to Improve Human Health  
National Institutes of Health: Office of Research on Women's Health  
2020 Writing in the Sciences  
Coursera  
2020 Teaching and Learning in the Diverse Classroom  
Cornell University  
2019 Art of Scientific Writing  
Weill Cornell Medicine

### **PROFESSIONAL MEMBERSHIPS**

Cognitive Neuroscience Society  
Organization for Human Brain Mapping  
Organization for the Study of Sex Differences  
National Center for Faculty Development & Diversity  
Society for Neuroscience



## **PRE-DOCTORAL TRAINING**

2018 Weill Cornell Medicine: Rotation Student (Advisor: Barry Kosofsky)  
2017 Weill Cornell Medicine: Rotation Student (Advisor: Olivier Elemento)  
2017 Douglas Mental Health University Institute: Research Assistant (Advisor: Jamie Near)  
2016-2017 McGill University: Research Assistant (Advisor: Marie-Hélène Boudrias)  
2015-2016 McGill University: Research Assistant (Advisor: Maria Pompeiano)  
2014-2015 McGill University: Laboratory Assistant (Advisor: Rüdiger Krahe)