Thomas M. Morin, Ph.D.

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Academic History

July, 2022 – Present
A. A. Martinos Center for Biomedical Imaging
Massachusetts General Hospital
Department of Radiology
Postdoctoral Research Fellow
Mentor: Jacob Hooker, PhD

July, 2022 – Present
Brandeis University
Department of Neuroscience
Visiting Research Scientist
Mentor*:* Anne Berry, PhD

Fall 2022
Tufts University
Department of Psychology
Lecturer

2017-2022
Boston University
Ph.D., Computational Neuroscience
Mentor: Chantal Stern, DPhil

2013-2017
Tufts University
B.S., *magna cum laude*, Thesis Honors
Cognitive & Brain Science, Computer Science

Additional Training

Summer 2023
Neurohackademy, **eScience Institute, University of Washington**
Summer school in neuroimaging and data science

Spring 2020
MIT IMPACT Program
Fellow

2017-2018
Department of Psychological & Brain Sciences, Boston University
Attention & Perception Neuroimaging Lab
Lab Rotation & Collaborating PhD Student
Mentor: David Somers, PhD

2015-2017
A. A. Martinos Center for Biomedical Imaging,
Massachusetts General Hospital, Harvard Medical School
Hooker Research Group

Research Intern
Mentors: Hsiao-Ying Wey, PhD, and Jacob Hooker, PhD

2014-2015 **Department of Psychology, Tufts University**
Memory and Cognition Lab
Undergraduate Research Assistant
Mentor: Richard Chechile, PhD

Honors & Awards

2023	Travel Award, 4th Workshop on Reserve & Resilience in Cognitive Aging & Dementia
2022	First Prize, Russek Student Achievement Award, BU Grad. Prog. for Neuro.
2020	Third Prize, BU Grad. Prog. for Neuro. Recruitment Poster Session
2017	Honorable Mention, NSF Graduate Research Fellowship Program
2017	Joanne Mary Sullivan Prize, Tufts University Psychology Department
2017	Barton Term Scholar for Arts and Sciences, Tufts University
2016	SpaceX People's Choice Award for Best Presentation, Out for Undergrad Conference
2016	Greg Ellenoff Internship Grant, Tufts University Career Center
2016	Psi Chi Honor Society, Tufts University Chapter

Publications

Selected manuscript PDFs are available at https://www.tmmorin.com/work

Isenburg, K.I., **Morin, T.M.**, Rosen, M.L., Somers, D.C., & Stern, C.E. (2023). Default mode precuneus and its role in long term memory-guided versus stimulus-guided attention. *Cerebral Cortex*. https://doi.org/10.1093/cercor/bhad073 *(Accepted for Publication)*

Morin, T.M., Moore, K.N., Isenburg, K.I., Ma, W., & Stern, C.E. (2022). Functional reconfiguration of task-active frontoparietal cortex facilitates abstract reasoning. *Cerebral Cortex*. https://doi.org/10.1093/cercor/bhac457

Morin, T.M., Chang, A.E., Ma, W., McGuire, J.T. & Stern, C.E. (2021). Dynamic network analysis demonstrates the formation of stable functional networks during rule learning. *Cerebral Cortex*. https://doi.org/10.1093/cercor/bhab175

Gilbert, T.M., Zurcher, N.R., Wu, C.J., Bhanot, A., Hightower, B.G., Kim, M., Albrecht, D.S., Wey, H.Y., Schroeder, F.A., Rodriguez-Thompson, A., **Morin, T.M.**, Hart, K.L., Pellegrini, A.M., Riley, M.M., Wang, C., Stufflebeam, S.M., Haggarty, S.J., Holt, D.J., Loggia, M.L., Perlis, R.H., Brown, H.E., Roffman, J.L., Hooker, J.M. (2019). PET neuroimaging reveals histone deacetylase dysregulation in schizophrenia. *The Journal of Clinical Investigation*. https://doi.org/10.1172/JCI123743

Strebl, M.G., Campbell, A., Zhao, W.N., Riley, M.M., Chindavong, P., **Morin, T.M.**, Haggarty, S.J., Wagner, F.F., Ritter, T., Hooker, J.M. (2017). HDAC6 Brain Mapping with [^{18}F]Bavarostat Enabled by a Ru-Mediated Deoxyfluorination. *ACS Central Science*. 3(9), 1006-1014 http:/dx.doi.org/ 10.1021/acscentsci.7b00274

Placzek, M.S., Zhao, W., Wey, H.Y., **Morin, T.M.**, & Hooker, J.M. (2015). PET neurochemical imaging modes. *Seminars in Nuclear Medicine*, 46(1), 20-27 http://dx.doi.org/10.1053/j.semnuclmed.2015.09.001

Manuscripts in Preparation

Ciampa, C.J., **Morin, T.M.**, Murphy, A., La Joie, R., Jagust, W.J., Landau, S.M., & Berry, A.S. DAT1 and BDNF polymorphisms interact to predict AB and tau pathology. *(Under Review)*.

Morin, T.M., Dunne, M.F., Chang, A.E., & Stern, C.E. Hierarchical gradients in prefrontal cortex and hippocampus support context-dependent rule learning *(in prep.)*

Conference Presentations & Invited Talks

Selected presentation slides are available at https://www.tmmorin.com/work

Morin, T.M. *Deciphering Dopamine: The Aging Brain's Unsolved Riddle*. Beacon Hill Seminars. 2023. Webinar.

Morin, T.M. *Functional reconfiguration of anterior hippocampus during context-dependent rule learning.* Neuroscience Postdoc Symposium. 2023. Brandeis University, Waltham, MA.

Morin, T.M. *2022 Year in Review: Clincal/Human Research in Neuromodulatory Subcortical Systems and Alzheimer's Disease*. International Society to Advance Alzheimer's Research and Treatment (ISTAART) Neuromodulatory Subcortical Systems Professional Interest Area (NSS PIA). 2023. Webinar.

Morin, T.M. *Brain Network Flexibility and Stability During Higher Order Cognition*. Joint Lab Meeting: Cognitive Aging & Memory Lab (P.I. Ayanna Thomas) and Integrative Cognitive Neuroscience Lab (P.I. Elizabeth Race). 2022. Tufts University. Medford, MA.

Morin, T.M., Isenburg, K., Moore, K., Ma, W., Stern, C.E. *Functional reconfiguration of a task-active frontoparietal control network facilitates abstract reasoning*. Henry I. Russek Student Achievement Day. 2022. Boston University. Boston, MA.

Morin, T.M. *Frontoparietal Control Network Contributions to Abstract Reasoning*. Boston University Graduate Program for Neuroscience Annual Retreat. 2019. Essex, MA.

Morin, T.M. *Branching Out: What a Tree Can Teach You About Your Brain?* Out For Undergrad Engineering Conference. 2016. Stanford University, Palo Alto, CA.

Morin, T.M. *Creating a Computer Simulation Tool for PET Neuroimaging*. Tufts University Undergraduate Research and Scholarship Symposium. 2016. Tufts University, Medford, MA.

Conference Posters

Selected poster PDFs are available at https://www.tmmorin.com/work

Morin, T.M., Ciampa, C., Parent, J., Cowan, J. L., Adornato, A., O'Malley, K., Hooker, J., & Berry, A. *D2/3 receptor occupancy measured with [11C]-raclopride and functional brain network reconfiguration in healthy older adults.* Society for Neuroscience. 2023. Washington, D.C. (Accepted)

Morin, T.M., Dunne, M.F., Chang, A.E., & Stern, C.E. *Hierarchical gradients in prefrontal cortex and hippocampus support context-dependent rule learning*. Society for Neuroscience. 2022. San Diego, CA.

Dunne, M.F., Ling, S., Moore, K.E., **Morin, T.M.**, Chrastil, E., & Stern, C.E. *Exploring egocentric boundary sensitivity in humans using a virtual open field foraging paradigm with fMRI*. Society for Neuroscience 2022. San Diego, CA.

Isenburg, K., **Morin, T.M.**, Rosen, M.L., Somers, D.C., & Stern, C.E. *Network interactions during long-term memory guided versus stimulus-guided attention in humans*. Society for Neuroscience. 2021. (Online Meeting, Due to COVID-19)

Liapis, S.S.P., **Morin, T.M.**, McGuire, J.T., & Stern, C.E. *The dimensionality of representational space calibrates to abstract reasoning complexity.* Organization for Human Brain Mapping. 2021. (Online Meeting, Due to COVID-19)

Morin, T.M., Ma, W., Chang, A.E., & Stern, C.E. *Dynamic functional connectivity during context-dependent rule learning*. Organization for Human Brain Mapping. 2020. (Online Meeting, Due to COVID-19)

Morin, T.M., Moore, K.N., & Stern, C.E. *An fMRI investigation of functional network connectivity during abstract reasoning*. Henry I. Russek Student Achievement Day. 2020. Boston University, Boston, MA. (Online Meeting, Due to COVID-19).

Morin, T.M., Moore, K.N., & Stern, C.E. *An fMRI investigation of functional network connectivity during abstract reasoning*. Cognitive Neuroscience Society Annual Meeting. 2020. (Online Meeting, Due to COVID-19).

Morin, T.M., Chang, A.E., & Stern, C.E. *Cortical contributions to perceptual and symbolic reasoning using a one-dimensional raven's progressive matrices task.* Society for Neuroscience. 2019. Chicago, IL.

Ma, W., **Morin, T.M.**, Chang, A.E., & Stern, C.E. *An fMRI investigation of medial prefrontal network dynamics during a context-dependent rule learning task.* Society for Neuroscience. 2019. Chicago, IL.

Morin, T.M., Chang, A.E., & Stern, C.E. *An fMRI investigation of symbolic processing using a one-dimensional raven's progressive matrices task*. Henry I. Russek Student Achievement Day. 2019. Boston University, Boston, MA.

Cohen, J.E., **Morin, T.M.**, & Stern, C.E. *Theta oscillations at critical junctures of overlapping mazes*. Cognitive Neuroscience Society Annual Meeting. 2018. Boston, MA. [Poster]

Morin, T.M. & Wey, H.Y. *Optimizing fPET-FDG*. Cognitive & Brain Science Senior Symposium. 2017. Tufts University, Medford, MA.

Teaching

2022 Fall	**Course Instructor, Tufts University** PSY 195: Senior Seminar in Cognitive & Brain Science
2018-2023 Spring	**Guest Lecturer, Tufts University** PSY 9: Introduction to Cognitive & Brain Sciences Instructor: Aniruddh Patel, PhD Guest Lecture: "Introduction to Neuroimaging"
2021-2022 Spring	**Guest Lecturer, Boston University** NE 742: Neural Systems: Cognition and Behavior Instructor: Chantal Stern, DPhil Guest Lecture: "Cognitive Neuroscience of Reasoning"
2017	**Teaching Assistant, Tufts University** PSY 9: Introduction to Cognitive & Brain Science (~100 undergraduates) Instructor: Aniruddh Patel, PhD

2016 **Teaching Assistant, Tufts University**
CD 124, 125, 126: American Sign Language I, II, and III (~60 undergraduates)

Mentorship

2023 Ryan O'Leary, Brandeis University, Graduate Student
2022 Carolyn Kinsella, Boston University, Undergraduate Research Assistant
2020-2021 Bliss Cui, Boston University, Neuroscience Student Organization Mentee
Current Position: PhD Student, Northeastern University
2020-2021 Jiahe Nu, Boston University, High School RA, Undergraduate Research Assistant
Current Position: Undergraduate, Boston University
2019-2020 Roberto Luis-Fuentes, Boston University, BME Senior Thesis Project
Current Position: Software Engineer, Broad Institute
2019-2020 Vincent Chang, Boston University, BME Senior Thesis Project
Current Position: Technical Program Manager, Google
2019 Sheila Yee, Boston University, Undergraduate Directed Study Student
Current Position: Graduate Student in Bioinformatics, Boston University
2018-2020 Weida Ma, Boston University, Undergraduate Research Assistant, BME Senior Thesis
Current Position: Medical Student, University of Vermont
2018 Neoreet Braha, Boston University, Undergraduate Research Assistant

Service & Additional Experience

2023 Seminar Organizer, Science on Tap, MGH Martinos Center
2023 Mentor, Neuromatch Academy
2022 Seminar Organizer, Cog. & Brain Science Seminar Series, Tufts Psychology Department
2021-2022 Volunteer Editor, Application Statement Feedback Program
2020-2022 Graduate Coach, InGenius Prep | College Admissions Consulting
2020-2022 Volunteer Mentor, BU Graduate Mentors
2018-2019 Volunteer, Visiting Prospective Student Days, BU Graduate Program for Neuroscience
2017-2019 Volunteer Mentor to a High School Student, Big Brothers Big Sisters
2015-2017 Class of 2017 Representative, Tufts Psychology Society

Professional Membership

- International Society to Advance Alzheimer's Research and Treatment (ISTAART)
- Society for Neuroscience
- Cognitive Neuroscience Society
- Organization for Human Brain Mapping
- Psy Chi Honor Society

Skills

Programming Languages

- Fluent in Python, R, MATLAB, Shell Scripting (bash)
- Comfortable with C, C++
- Experience with HTML/CSS

Neuroimaging & Experimental Software

- AFNI, FSL, Freesurfer, CONN Toolbox, PMOD
- BIDS-compatible pipelines including fMRIprep and NiBetaSeries
- PsychoPy; some experience with ePrime

Key Concepts

- Age-related changes in cognition, brain network connectivity, and neuromodulator systems
- Cognitive neuroscience of abstract reasoning, learning, and memory
- Network science and graph-based analysis of functional connectivity data
- Kinetic modeling and analysis of functional PET neuroimaging data
- fMRI and PET study design, data collection, and analysis