

# Thomas M. Morin, Ph.D.

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*Updated March, 2023*

## Academic History

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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

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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

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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

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*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 [<sup>18</sup>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

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- 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

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

- Morin, T.M.** 2022 Year in Review: Clinical/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

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

- 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

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| 2022<br>Fall        | <b>Lecturer, Tufts University</b><br>PSY 195: Senior Seminar in Cognitive & Brain Science  |
| 2018-2023<br>Spring | <b>Guest Lecturer, Tufts University</b><br>PSY 9: Introduction to Cognitive & Brain Sciences<br>Instructor: Aniruddh Patel, PhD<br>Guest Lecture: "Introduction to Neuroimaging"       |
| 2021-2022<br>Spring | <b>Guest Lecturer, Boston University</b><br>NE 742: Neural Systems: Cognition and Behavior<br>Instructor: Chantal Stern, DPhil<br>Guest Lecture: "Cognitive Neuroscience of Reasoning" |
| 2017                | <b>Teaching Assistant, Tufts University</b><br>PSY 9: Introduction to Cognitive & Brain Science (~100 undergraduates)<br>Instructor: Aniruddh Patel, PhD                               |
| 2016                | <b>Teaching Assistant, Tufts University</b><br>CD 124, 125, 126: American Sign Language I, II, and III (~60 undergraduates)  |

## Mentorship

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| 2022      | Carolyn Kinsella, Boston University, Undergraduate Research Assistant  |
| 2020-2021 | Bliss Cui, Boston University, Neuroscience Student Organization Mentee<br><i>Current Position: PhD Student, Northeastern University</i>    |
| 2020-2021 | Jiahe Nu, Boston University, High School RA, Undergraduate Research Assistant<br><i>Current Position: Undergraduate, Boston University</i> |
| 2019-2020 | Roberto Luis-Fuentes, Boston University, BME Senior Thesis Project<br><i>Current Position: Software Engineer, Broad Institute</i>          |
| 2019-2020 | Vincent Chang, Boston University, BME Senior Thesis Project<br><i>Current Position: Technical Program Manager, Google</i>                  |
| 2019      | Sheila Yee, Boston University, Undergraduate Directed Study Student  |

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|           | <i>Current Position: Graduate Student in Bioinformatics, Boston University</i>   |
| 2018-2020 | Weida Ma, Boston University, Undergraduate Research Assistant, BME Senior Thesis |
|           | <i>Current Position: Medical Student, University of Vermont</i>                  |
| 2018      | Neoreet Braha, Boston University, Undergraduate Research Assistant               |

## Service & Additional Experience

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| 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

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- 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

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### 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