

# Thomas M. Morin

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## Academic History

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Beginning July, 2022	<b>Brandeis University</b> Visiting Research Scientist Mentor: Anne Berry, PhD
Beginning July, 2022	<b>A. A. Martinos Center for Biomedical Imaging Massachusetts General Hospital</b> Postdoctoral Research Fellow Mentor: Jacob Hooker, PhD
Beginning Sept., 2022	<b>Tufts University</b> Lecturer
2017-2022	<b>Boston University</b> Ph.D., Computational Neuroscience Mentor: Chantal Stern, DPhil
2013-2017	<b>Tufts University</b> B.S., <i>magna cum laude</i> , Thesis Honors Cognitive & Brain Science, Computer Science

## Additional Training

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Spring 2020	<b>MIT IMPACT Program</b> <i>Fellow</i>
2017-2018	<b>Department of Psychological &amp; Brain Sciences, Boston University</b> Attention & Perception Neuroimaging Lab <i>Lab Rotation &amp; Collaborating PhD Student</i> Mentor: David Somers, PhD
2015-2017	<b>A. A. Martinos Center for Biomedical Imaging, Massachusetts General Hospital, Harvard Medical School</b> Hooker Research Group <i>Research Intern</i> 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>*

- 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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- Morin, T.M.**, Moore, K.N., Isenburg, K.I., Ma, W., & Stern, C.E. Functional reconfiguration of task-active frontoparietal cortex facilitates abstract reasoning. (*Under Review*)
- Isenburg, K.I., **Morin, T.M.**, Rosen, M.L., Somers, D.C., & Stern, C.E. Default mode precuneus and its role in long term memory-guided versus stimulus-guided attention. (*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.** *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. (Submitted).
- 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 Fall	<b>Lecturer, Tufts University</b> PSY 195: Senior Seminar in Cognitive & Brain Science
2018-2022 Spring	<b>Guest Lecturer, Tufts University</b> PSY 9: Introduction to Cognitive & Brain Sciences Instructor: Aniruddh Patel, PhD Guest Lecture: "Introduction to Neuroimaging"
2021-2022 Spring	<b>Guest Lecturer, Boston University</b> NE 742: Neural Systems: Cognition and Behavior Instructor: Chantal Stern, DPhil Guest Lecture: "Cognitive Neuroscience of Reasoning"
2017	<b>Teaching Assistant, Tufts University</b> PSY 9: Introduction to Cognitive & Brain Science (~100 undergraduates) Instructor: Aniruddh Patel, PhD
2016	<b>Teaching Assistant, Tufts University</b> 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 <i>Current Position: PhD Student, Northeastern University</i>
2020-2021	Jiahe Nu, Boston University, High School RA, Undergraduate Research Assistant <i>Current Position: Undergraduate, Boston University</i>
2019-2020	Roberto Luis-Fuentes, Boston University, BME Senior Thesis Project <i>Current Position: Software Engineer, Broad Institute</i>
2019-2020	Vincent Chang, Boston University, BME Senior Thesis Project <i>Current Position: Technical Program Manager, Google</i>
2019	Sheila Yee, Boston University, Undergraduate Directed Study Student <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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2020-2022	Graduate Coach, InGenius Prep   College Admissions Consulting
2020-2022	Volunteer Mentor, BU Graduate Mentors
2021	Volunteer Editor, Application Statement Feedback Program
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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- 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
- 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

- 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