

# Debbie M. Yee

## *Curriculum Vitae*

September 2019

### Contact

Cognitive, Linguistics, & Psychological Sciences  
Brown University  
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### Education & Training

- 2019-            Postdoctoral Research Associate, Brown University  
                    Advisors: Amitai Shenhav, Michael Frank
- 2013-2019      Ph.D. in Psychological & Brain Sciences, Washington University in St. Louis  
                    Advisor: Todd Braver
- 2013-2015      M.A. in Psychological & Brain Sciences, Washington University in St. Louis  
                    Advisor: Todd Braver
- 2007-2011      B.S. in Brain & Cognitive Sciences, Massachusetts Institute of Technology

### Honors and Awards

- 2019            Teaching Citation, Washington University
- 2019            Mentorship/Collaboration Award, Scientific Research Network on Decision  
                    Neuroscience and Aging
- 2017            Outstanding Teaching Assistant Award, Psychological & Brain Sciences, WashU
- 2017            Summer School In Social Neuroscience and Neuroeconomics Fellow
- 2017-2019      NIH National Research Service Award Pre-Doctoral Fellowship (F31)
- 2016            NIH Aging and Development Training Fellowship (T32)
- 2016            Kavli Summer Institute for Cognitive Neuroscience Fellow
- 2015, 2017      Reinforcement Learning & Decision-Making Student Travel Fellowship
- 2014, 2015      National Science Foundation Graduate Research Fellowship, *Honorable Mention*
- 2014-2016      NIH Cognitive, Computational & Systems Neuroscience Training Fellowship (T32)
- 2010            MIT Undergraduate Research Opportunities Program Direct Funding

### Research Grants

NIA/NIH Yee (PI) 6/1/2017–8/31/2018  
Interactions of Motivational Incentives and Cognitive Control in Older Adult Decision-Making  
Pilot project examining the role of motivation and cognitive control in mediating changes in the  
psychological and neural mechanisms of older adult decision-making.  
Role: Subaward PI (on Samanez-Larkin R24-AG054355)  
Direct Costs: \$30,000

Mallinckrodt Institute Radiology/Washington University Braver (PI) 12/2017  
Dopaminergic and Neural Mechanisms of Incentive Integration and Motivated Cognitive Control  
Role: Co-wrote grant, planning/coordinating PET-MR pilot study and data collection.  
Direct costs: \$22,749

## Publications

Yee, D.M., Adams, S., Beck, A., Braver, TS. (2019). Age-Related Differences in Motivational Integration and Cognitive Control. *Cognitive, Affective, Behavioral Neuroscience*. 19(3):692-714. OSF directory: <https://osf.io/4urc6/>

Yee, DM., Braver, TS. (2018). Interactions of Motivation and Cognitive Control. *Current Opinion in Behavioral Sciences*. 19:83-90.

Yee, DM., Krug, MK., Allen, AZ., Braver, TS. (2016). Monetary and Liquid Incentives Combine to Motivate Cognitive Task Performance. *Frontiers in Psychology*. 6:2037. OSF directory: <https://osf.io/ajgp3/>

Solway, A., Diuk, C., Cordova, N., Yee, D., Barto, A., Niv, Y., Botvinick, M. M. (2014). Optimal Behavioral Hierarchy. *PLoS Computational Biology*. 10(8)

Blackburne, L.K., Eddy, M., Kalra, P., Yee, D., Sinha, P., Gabrieli, J.D.E. (2014). Neural Correlates of Letter Reversal in Children and Adults. *PLoS ONE*. 9(5)

## Book Chapters

Yee, DM., Braver, TS. (in press). Computational Models of Cognitive Control: Past and Current Approaches. To appear in P. Series (Ed.), *Computational Psychiatry* (pp.??). MIT Press.

## Preprints

Yee, D. M., & Braver, T. S. (2018, October 25). Computational Models of Cognitive Control: Past and Current Approaches. <https://doi.org/10.31234/osf.io/k4625>

## In Prep

Yee, DM., Dean Wolf, C., Shenhav, A., Braver, TS. A Hierarchical Drift Diffusion Model of Motivation-Cognitive Control Interactions.

Yee, DM., Shapiro, K., Braver, TS. Adolescent Motivation and Cognitive Control.

Yee, DM., Hallenback, H.W., Naumann, A., Shapiro, K., Thompson, R.J., Braver, TS. Monetary, Liquid, and Social Incentives and Cognitive Control: Individual Differences in Affect and Depressive Symptoms.

## Conference Talks

**Yee, DM.**, Braver, TS. Neural Mechanisms of Motivational Incentive Integration and Cognitive Control. *Cognitive Neuroscience Society Data Blitz*. (San Francisco, CA, Mar 22-26, 2019).

**Yee, DM.**, Braver, TS. Neural mechanisms of motivational integration and cognitive control: Implications for healthy aging. *48<sup>th</sup> Annual Meeting for the Society for Neuroscience*. (San Diego, CA, November 3-7, 2018)

## Conference Posters

Leng, X., **Yee DM.**, Shenhav, A. The influence of positive and negative incentives on cognitive effort persistence. *7<sup>th</sup> International Symposium on Motivation and Cognitive Control*. (Berlin, Germany, Sept 16-18, 2019)

**Yee DM.**, Braver, TS. Neural Mechanisms of Motivational Incentive Integration and Cognitive Control. *7<sup>th</sup> International Symposium on Motivation and Cognitive Control*. (Berlin, Germany, Sept 16-18, 2019)

**Yee, DM.**, Braver, TS. Neural Mechanisms of Motivational Incentive Integration and Cognitive Control. *Cognitive Neuroscience Society Annual Meeting*. (San Francisco, CA, Mar 22-26, 2019).

Nauman, AN., **Yee, DM.**, Hallenback, HW., Thompson, RJ., Braver, TS. Motivational Integration and Cognitive Control: Dissociable Effects of Monetary, Liquid, and Social Incentives. *Society for Affective Science*. (Boston, MA, March 21-23, 2019).

Hallenback, HW., **Yee, DM.**, Nauman, AN., Thompson, RJ., Braver, TS. Depression and Motivation: Parsing Monetary, Social, and Liquid Incentives. *Society for Affective Science*. (Boston, MA, March 21-23, 2019).

**Yee, DM.**, Braver, TS. Neural Mechanisms of Motivational Incentive Integration and Cognitive Control. *Society for Neuroeconomics Annual Meeting*. (Philadelphia, PA, Oct 5-7, 2018)

**Yee, DM.**, Braver, TS. Neural Mechanisms of Motivational Incentive Integration and Cognitive Control. *Eighth International Symposium on Biology of Decision Making*. (Paris, France, May 24-26, 2018)

**Yee, DM.**, Braver, TS. Reward and Punishment Effects on the Integration of Monetary and Liquid Incentives on Cognitive Control: Effects of Age. *Cognitive Aging Conference*. (Atlanta, GA, May 3-6, 2018)

**Yee, DM.**, Dean Wolf, C., Braver, TS. Reinforcement and Punishment Effects on Incentive Integration and Motivated Cognitive Control. *25<sup>th</sup> Annual Cognitive Neuroscience Society Meeting*. (Boston, MA, March 24-27, 2018)

**Yee, DM.**, Braver, TS. Reinforcement and Valence Effects on Incentive Integration and Motivated Cognitive Control. *Multi-Disciplinary Conference on Reinforcement Learning and Decision Making*. (Ann Arbor, MI, June 11-14, 2017)

**Yee, DM.**, Adams, S., Weiss, J., Braver, TS. Motivation-Cognition Interactions in Older and Younger Adults. *Association for Psychological Science*. (Boston, MA, May 25-27, 2017)

**Yee, DM.**, Adams, S., Weiss, J., Braver, TS. Motivation-Cognition Interactions in Older and Younger Adults. *The Society for Affective Science*. (Boston, MA, April 27, 2017)

**Yee, D.**, Braver, T. Monetary and Liquid Incentives Combine to Modulate Cognitive Task Performance. *56<sup>th</sup> Annual Meeting of The Psychonomic Society*. (Chicago, IL, November 21, 2015)

**Yee, D.**, Braver, T. Monetary and Liquid Incentives Combine to Modulate Cognitive Task Performance. *Society for Neuroeconomics Annual Meeting*. (Miami, FL, September 25, 2015)

Oksanen, K., **Yee, D.**, Koller, J., Black, K., Braver, T. Applying simultaneous PET/MR to Explore Relationships Between Task-Evoked BOLD Signals and Dopamine. *Organization of the Human Brain Mapping Meeting*. (Honolulu, HI, June 15, 2015).

Botvinick, M. M., Diuk, C., **Yee, D.**, Cheong, J., Weinstein, A., Niv, Y. & Barto. A. A general form for state-space representations in frontal and temporal cortex. *44<sup>th</sup> Annual Meeting of the Society for Neuroscience*. (Washington D.C., November 18, 2014).

Solway, A., Diuk, C., Cordova, N., **Yee, D.**, Barto, A., Niv, Y., Botvinick, M. Optimal Task Decomposition. *Multi-Disciplinary Conference on Reinforcement Learning and Decision Making Meeting*, (Princeton, NJ, October 25, 2013).

Diuk, C., **Yee, D.**, Ribas-Fernandes, J, Cordova, N., Schapiro A., Niv, Y., Botvinick., M. Divide and Conquer: Task Decomposition in Humans. *42<sup>nd</sup> Annual Meeting of the Society for Neuroscience*, (New Orleans, LA, October 16, 2012).

Blackburne, L.K., Eddy, M., Kalra, P., **Yee, D.**, Del Tufo, S., Sinha, P., Gabrieli, J.D.E. Neural Correlates of Letter Reversal in Children and Adults. *19<sup>th</sup> Annual Cognitive Neuroscience Society Meeting*, (Chicago, IL, April 2, 2012).

Blackburne, L.K., Palti, D., Perea, M., Kim, J., Huang, C., **Yee, D.**, Gabrieli, J.D.E. Attention and Reading Skill Modulate Selectivity of the Left Occipitotemporal Region. *Organization of Human Brain Mapping Meeting*, (Barcelona, Spain, June 6, 2010).

Blackburne, L.K., Palta, D., Perea, M., Kim, J., Huang, C., **Yee, D.**, Gabrieli, J.D.E. Functional Connectivity of Left Fusiform to Phonological Processing Regions Increases with Reading Skill. *39<sup>th</sup> Annual Meeting of the Society for Neuroscience*, (Chicago, IL, October 20, 2009).

## **Invited Articles**

Weston, SJ., **Yee, D.** Why You Should Become a User: A Brief Introduction to R. *The Observer* (29)3, Association for Psychological Science. (March 2017).

## Open Datasets

Etzel, J., Yee, D., Lamichhane, B., Jeffers, M., Di Rosa, E., Crawford, J., An, H., Braver, T. (2018). Multiband Acquisition Dataset.  
website: <https://openneuro.org/datasets/ds001399/versions/00002>

## Invited Talks

2018 Cognitive, Computational, and Systems Neuroscience Retreat (St. Louis, MO)  
2017 Shenhav Lab Meeting, Brown University (Providence, RI)  
Washington University Neuroscience Retreat (St. Louis, MO)

## Teaching Experience and Certifications

2019 Completed Teaching Citation at Washington University

2014-2017 Co-Instructor, Annual Introductory R & Advanced R workshops  
*Developed programming for and co-taught two-day workshop to introduce basics of R-Statistical programming language to students, postdoctoral fellows, and faculty in the Psychological and Brain Sciences Department. Additionally presented monthly 1-hour workshops to Psychology department on relevant packages, including R-markdown, psych, ggplot2, dplyr, tidyr, and yaRrr.*  
*Workshop materials can be found here: <https://debyeeneuro.com/r-tutorials/>*

2016 Fall Teaching Assistant, Psych 5066: Graduate Quantitative Methods I  
Guest Lecturer, Graduate Quantitative Methods I

2017 Spring Teaching Assistant, Psych 5067: Graduate Quantitative Methods II  
Guest Lecturer, Graduate Quantitative Methods II  
*NOTE: Quantitative Methods I and II are the requisite graduate level statistics courses for first year Psychological & Brain Sciences PhD students*

2018 Fall Guest Lecturer, Cognitive Neuroscience  
*Introductory survey course on cognitive neuroscience for undergraduate students*  
Title: “Executive functions (& its interactions with reward)”

2019 Spring Guest Lecturer, Advanced Cognitive Neuroscience  
*Upper level seminar course on cognitive neuroscience for undergraduate students*  
Title: “Performance Monitoring and the Anterior Cingulate Cortex”

## Undergraduate Mentoring

*At Washington University in St. Louis*

2014-2015 Harold Lee  
2015-2016 Jessica Weiss  
2015-2016 Carolyn Dean Wolf  
2015-2016 Rachel Lilenbaum  
2015-2018 Katie Shapiro  
2016-2017 Marisa Gong  
2016-2017 Aaditya Manirajan  
2017 Sarah Finlay (*Dartmouth*)  
2018 Casey Mason  
2018 Sara Hendrix

## Pre-Doctoral Research Experiences

2011-2013 Research Specialist, Princeton University  
PI: Matthew Botvinick M.D., Ph.D.  
2009-2010 Research Assistant, Massachusetts Institute of Technology  
PI: John Gabrieli, Ph.D.  
2008 Research Assistant, Massachusetts Institute of Technology  
PI: Edward Boyden, Ph.D.

## Professional Memberships

Association for Psychological Science  
Association for Women in Science, *St. Louis Chapter Co-President (2014-2017)*  
Cognitive Neuroscience Society  
Psychonomics  
Society for Affective Science  
Society for Neuroeconomics  
Society for Neuroscience

## Journal Reviewer

Social and Personality Compass; Collabra; Frontiers in Human Neuroscience; Neuropsychologia;  
Scientific Reports; Developmental Cognitive Neuroscience

## Additional Training

2013-2014 Completion of Cognitive, Computational, and Systems Neuroscience Pathway  
2016 Computational Psychiatry Course, *Translational Neuromodeling Unit, Zurich, CH*  
2017 AFNI Bootcamp  
2018 Computational Psychiatry Workshop, *San Diego, CA*  
2019 Harmonization Workshop, Scientific Research Network on Decision Neuroscience  
and Aging, *Miami, FL*

## University and Community Service

Teen Science Café Network Conference Panel: Understanding the Motivations of Scientist-Presenters, Panelist (2018)

Teen Science Cafe, *St. Louis Science Center, Academy of Science STL, Cahokia HS* (2018)

Washington University NIH Fellowship Writing Workshop Mentor (2017)

Cognitive, Computational Systems Neuroscience, *Steering Committee* (2015-2018)

Psychology Grad Student Association, *Diversity Committee* (2014-2016)

Association for Women in Science – St. Louis Chapter, *President* (2014-2017)

MIT Educational Counselor (2011-2018), *Regional Chair* (2015-2018)

## Other Skills

**Programming:** R (expert), Matlab (expert), bash/tcsh (intermediate), Python (beginner)

**Languages:** English (native), French (intermediate, conversational), Chinese (conversational)