

## **KATHERINE D DUNCAN**

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University of Toronto  
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### **EDUCATION**

*Ph.D. Psychology, New York University, New York, NY, USA* 2006 - 2011  
Advisor: Lila Davachi

*B.S. Specialist in Psychology and major in Cognitive Science*  
**University of Toronto, Toronto, ON, Canada** 2001 - 2006  
Advisor: Morris Moscovitch

### **POSITIONS HELD**

*Associate Professor, Department of Psychology, University of Toronto,* 2021-  
*Toronto, ON, Canada*

*Team Member, Center for Advancing Neurotechnological Innovation* 2020-  
*To Application (CRANIA)*  
*Toronto, ON, Canada*

*Associate Chair, Undergraduate, Department of Psychology, University* 2021-2022  
*of Toronto,*  
*Toronto, ON, Canada*

*Assistant Professor, Department of Psychology, University of Toronto,* 2015-2021  
*Toronto, ON, Canada*

*Postdoctoral Research Fellow, Columbia University,* 2011-2015  
*New York, NY, USA*  
Advisor: Daphna Shohamy

### **RESEARCH FUNDING**

**Using precisely timed deep brain stimulation to understand human memory**  
New Frontiers in Research Fund Exploration  
Start Date: 2020-03-31 Duration: 2 Years  
Primary Investigator Total Value: \$250,000

**Canada Research Chair (Tier 2) in Memory Modulation**  
Canada Research Chair Program  
Start Date: 2019-10-01 Duration: 5 Years  
Primary Investigator Total Value: \$600,000

**Understanding how neurochemicals shape human memory**  
Ministry of Research and Innovation Early Researcher Award

Start Date: 2019-04-01  
Primary Investigator

Duration: 5 Years  
Total Value: \$150,000

### **Comparing the Neural Basis of Memory Integration in Humans and Mice**

Canadian Institutes of Health Research

Project Grant

Start Date: 2018-07-01

Duration: 5 Years

Nominated Primary Investigator

Total Value: \$918,000

Co-Investigators: Meg Schlichting, Sheena Josselyn, Paul Frankland

### **How do Cholinergic Brain States Impact Memory Abilities as We Age?**

Connaught Fund

New Researchers Award

Start Date: 2018-04-26

Duration: 2 Years

Primary Investigator

Total Value: \$35,000

### **Investigating the Influence of Novelty on Learning and Memory**

National Sciences and Engineering Research Council

Discovery Grant

Start Date: 2016-04-01

Duration: 5 Years

Primary Investigator

Total Value: \$140,000

### **Dynamic Memory States in the Human Brain**

Canadian Foundation for Innovation

John R Evens Fund

Start Date: 2015-08-01

Duration: 3 Years

Primary Investigator

Total Value: \$100,000

### **Dynamic Memory States in the Human Brain**

Ontario Research Fund

Infrastructure Program

Start Date: 2015-08-01

Duration: 3 Years

Primary Investigator

Total Value: \$100,000

### **Can Novelty Structure Statistical Learning during Development?**

University of Toronto

Chair's Postdoc Program

Start Date: 2016-11-01

Duration: 2 Years

Primary Investigator

Total Value: \$40,000

Co-Investigators: Amy Finn & Chris Honey

### **Memory Dysfunction in Schizophrenia and Parkinson's Disease: Investigating the Role of Dopamine using Pharmacological fMRI**

Canadian Institutes of Health Research

Postdoctoral Fellowship

Start Date: 2013-06-01

Duration: 3 Years

Total Value: \$150,000

## **RECOGNITIONS**

CIHR Canada Research Chair	2019
Ontario Early Researcher Award	2019
Elected to Memory Disorders Research Society	2018
CIHR Postdoctoral Fellowship Award	2013-2016
GSAS Dean's Student Travel Grant	2010
NYU McCracken Graduate Fellowship	2006-2011
Alumni and Friends Award, Innis College	2005
Aiming for the Top Provincial Scholarship	2001-2004

Margaret McCullough Scholarship	2001-2002
Innis College Admission Scholarship	2001
John W. Browne Admission Award	2001
Governor General's Academic Medal	2001

### **PEER REVIEWED PUBLICATIONS**

- Forest TA, Schlichting ML, **Duncan K**, Finn AS (Accepted) How statistical learning changes across development. *Nature Reviews Psychology*.
- Lalla A\*, Tarder-Stoll H\*, Hasher L, **Duncan K**. (2022) Aging shifts the relative contributions of episodic and semantic memory to decision-making. *Psychology and Aging*. 37, 667-680. [doi.org/10.1037/pag0000700](https://doi.org/10.1037/pag0000700)
- Katz CN, Schjetnan AG, Patel K, Barkley V, Hoffman KL, Kalia SK, **Duncan K**, Valiante TA (2022) A corollary discharge mediates saccade-related inhibition of single units in mnemonic structures of the human brain. *Current Biology*. <https://doi.org/10.1016/j.cub.2022.06.015>
- Sasikumar S, Cohn M, Harmsen IE, Loh A, Cho SS, Farret M, Maciel R, Soh D, Boutet A, Germann J, Elias G, Youm A, **Duncan K**, Rowland NC, Strafella AP, Kalia SK, Lozano AM, Fasano A. (2022) Single-Trajectory Multiple-Target Deep Brain Stimulation for Parkinsonian Mobility and Cognition. *Movement Disorders*. 37, 635-640. doi.org/[10.1002/mds.28870](https://doi.org/10.1002/mds.28870)
- Alsbury-Nealy K, Wang H, Howard C, Gordienko A, Schlichting ML, **Duncan K**. (2022) OpenMaze: An accessible yet powerful tool for building experiments in virtual 3D environments. *Behavioral Research Methods*. 54,1374–1387. doi.org/10.3758/s13428-021-01664-9
- Gravelsins L, **Duncan K**, Einstein G. (2021) Do oral contraceptives affect young women's memory? Dopamine-dependent working memory is influenced by COMT genotype, but not time of pill ingestion. *PLOS One*. 16(6) e0252807. doi.org/10.1371/journal.pone.0252807
- Jie R, Wharton-Shukster E, Brauer A, **Duncan K\***, Finn AS\*. (2021) Events structure information accessibility less in children than adults. *Cognition*. 217, 104878. doi.org/10.1016/j.cognition.2021.104878
- Sharp M, **Duncan K**, Foerde K, Shohamy D (2020). Dopamine is associated with prioritization of reward- associated memories in Parkinson's disease. *Brain*. 143, 2519-253. doi.org/10.1093/brain/awaa182
- Decker AL, **Duncan K\***, Finn AS\*, Mabbott D\* (2020). Income-related gaps in children's cognition mediated by anterior not posterior hippocampus. *Nature Communications*. 11, 4040. doi.org/10.1038/s41467-020-17854-6
- Bein O, **Duncan K**, Davachi L (2020). Mnemonic prediction errors bias hippocampal states. *Nature Communications*. 11, 3451. doi.org/10.1038/s41467-020-17287-1
- Decker AL, Finn AS\*, **Duncan K\*** (2020). Errors lead to transient impairments in memory formation. *Cognition*. 204, 1043382. doi.org/10.1016/j.cognition.2020.104338
- Decker AL, **Duncan K** (2020). Acetylcholine and the complex interdependence of memory and attention. *Current Opinion in Behavioral Sciences*, 32, 21-28. doi.org/10.1016/j.cobeha.2020.01.013
- Duncan K**, Semmler A, Shohamy D (2019). Modulating the use of multiple memory systems in value based decisions with contextual novelty. *Journal of Cognitive Neuroscience*, 31, 1455-1467. doi.org/10.1162/jocn\_a\_01447
- Lohnas L, **Duncan K**, Dowle WK, Dvinsky O, Davachi L (2018). Time-resolved neural reinstatement and separation during memory decisions in human hippocampus.

- Proceedings of the National Academy of Sciences*, 115, 7418-7427.  
doi.org/10.1073/pnas.1717088115
- Duncan K**, Schlichting ML (2018). Hippocampal representations as a function of time, subregion, and brain state. *Neurobiology of Learning and Memory*, 153, 40-56.  
doi.org/10.1016/j.nlm.2018.03.006
- Duncan K**, Doll BB, Daw ND, Shohamy D (2018). More than the sum of its parts: a role for the hippocampus in configural reinforcement learning. *Neuron*, 98, 645-657.  
doi.org/10.1016/j.neuron.2018.03.042
- Patil A, **Duncan K** (2018). Lingering cognitive states shape fundamental mnemonic abilities. *Psychological Science*, 29, 45-55. doi.org/10.1177/0956797617728592
- Duncan K**, Shohamy D (2016). Memory states influence value-based decisions. *Journal of Experimental Psychology*, 145 1420-1426. doi.org/10.1037/xge0000231
- Tompary A, **Duncan K**, Davachi L (2016). High-resolution investigation of memory-specific reinstatement in the hippocampus and perirhinal cortex. *Hippocampus*, 26, 995-1007.  
doi.org/10.1002/hipo.22582
- Tompary A\*, **Duncan K\***, Davachi L (2015). Consolidation of associative and item memory is related to post-encoding functional connectivity between the ventral tegmental area and different medial temporal lobe subregions during an unrelated task. *Journal of Neuroscience*, 35, 7326-7331. doi.org/10.1523/JNEUROSCI.4816-14.2015
- Doll BB, **Duncan K**, Simon D, Shohamy D, Daw ND (2015). Model-based choices involve prospective neural activity. *Nature Neuroscience*, 18, 767-772. doi.org/10.1038/nn.3981
- Duncan K**, Tompary A, Davachi L (2014). Associative encoding and retrieval are predicted by functional connectivity in distinct hippocampal area CA1 pathways. *Journal of Neuroscience*, 34, 11188-11198. doi.org/10.1523/JNEUROSCI.0521-14.2014
- Duncan K**, Sadanand A, Davachi L (2012). Memory's penumbra: Episodic memory decisions induce lingering mnemonic biases. *Science*, 337, 485-487.  
doi.org/10.1126/science.1221936
- Duncan K**, Ketz N, Inati S, Davachi L (2012). Area CA1 as a match/mismatch detector: A high-resolution fMRI study of the human hippocampus. *Hippocampus*, 22, 389-398.  
doi.org/10.1002/hipo.20933
- Staresina BP, **Duncan K**, Davachi L (2011). Perirhinal and parahippocampal cortices differentially contribute to later recollection of object- and scene-related event details. *Journal of Neuroscience*, 31, 8739-8747. doi.org/10.1523/JNEUROSCI.4978-10.2011
- Duncan K**, Curtis C, Davachi L (2009). Distinct memory signatures in the hippocampus: intentional states distinguish match and mismatch enhancement signals. *Journal of Neuroscience*, 29, 131-139. doi.org/10.1523/JNEUROSCI.2998-08.2009

#### **NON-PEER REVIEWED PUBLICATIONS:**

- Duncan K**, Davachi L (2018) Disengagement with cognitive tasks decreases effect sizes. *Nature Human Behavior*, 2: 606.
- Duncan K**, Shohamy D. (2020). Memory, Reward and Decision Making. In ME Gazzaniga, GR Mangun, & D Poeppel (Ed.) *6th edition of The Cognitive Neurosciences* (pp: 617-630), Cambridge Massachusetts: MIT Press.
- Patel K\*, Katz CN\*, **Duncan KD**, Valiante TA. (2022). Developing a Neuroprosthesis for Memory: The Past, Present, and Future. *Handbook of Neuroengineering*, edited by Nitish T. DOI: 10.1007/978-981-15-2848-4\_64-2
- Duncan K**, Shohamy D. (2022). Dopamine and Learning. *Oxford Handbook of Human Memory*, edited by Kahana M & Wagner A.

**PEER REVIEWED CONFERENCE PRECEDINGS:**

Yu W, Schlichting ML\*, **Duncan K\*** (2020). Measuring memory integration: a metric tapping memory representation rather than inference. *Proceedings of the Annual meeting of the Cognitive Science Society*.

**PEER REVIEWED PUBLICATIONS: UNDER REVIEW AND IN REVISION**

Liu H, **Duncan K\***, Finn AS\*. The durability of statistical learning. In Revision at *Cognition*  
Forest TA, Schlichting ML, **Duncan KD**, Finn AS. Tracking changes in statistical learning inputs and outputs across development. Under Revision at *Nature Reviews Psychology*.  
Saito J, **Duncan K**, Fukuda K. Similarity judgments drive distortions in long-term memory. Submitted to *Psychological Science*.  
Dubois M\*, Decker A\*, **Duncan K\***, Finn AS\*. Pay attention and you might miss it: Greater learning during attentional Lapses.

**PEER REVIEWED PUBLICATIONS: IN PREPARATION**

Yu W, **Duncan K\***, Schlichting ML\*. Measuring memory integration: A metric tapping memory representation rather than inference. (Abridged version accepted for publication in the *Proceedings of the Annual meeting of the Cognitive Science Society*)  
Patil A, Ryan JD, **Duncan K**. Opposing mnemonic and decision biases in memory judgments.  
Decker L, **Duncan K\***, Finn AS\*. Developmental gains in sustained attention influence episodic memory formation.  
Braun EK\*, Girgis R, Wood S, Sharp M, van Geen C, Abi-Dargham A, **Duncan K\***, Shohamy D\*. Dopaminergic modulation of associative memory in healthy humans.

**THESIS:**

**Duncan K** (2011) Neural and cognitive mechanisms underlying human episodic memory encoding and retrieval. *Doctoral Thesis, New York University*.

**INVITED AND CONFERENCE TALKS:**

“Memory inertia: Uncovering lingering states in human memory.” Cognitive Psychology Colloquium, Goethe University, 2021.  
“Memory inertia: Uncovering lingering states in human memory.” Center for Cognitive Neuroscience Colloquium, Duke University, 2020.  
“Can Recent Novelty Help You Form Distinctive Memories.” Context and Affective Memory Joint Meeting, Philadelphia, 2020.  
“Can Recent Novelty Help You Form More Distinctive Memories.” Context and Affective Memory Joint Meeting, Streamed Internationally, 2020.  
“Opening Windows of Opportunity to Modify Human Memory.” McMaster University Psychology Colloquium, Oakville, 2019.  
“The Lingering Influence of Novelty Shapes Fundamental Memory Processes.” Ryerson Psychological Science Seminar, 2019.  
“Opening Windows of Opportunity to Modify Human Memory.” Queens University Neuroscience Colloquium, Kingston, 2019.  
“Memory Recognition Shapes Future Learning and Remembering.” Memory Disorders Research Society, New York, 2019.

“The Lingering Costs and Benefits of Novelty Detection on Memory.” Context and Episodic Memory Symposium, Philadelphia, 2019.

“Opening Windows of Opportunity to Modify Human Memory.” Lake Ontario Visionary Establishment, Niagara Falls, 2019.

“Hippocampal Contributions to Configural Reinforcement Learning in Humans.” Winter Conference on the Neurobiology of Learning and Memory, Park City, 2019

“Opening Windows of Opportunity to Modify Human Memory.” Neuroscience & Mental Health Mini-Symposia Series, Hospital for Sick Children, Toronto, 2018.

“Reward, Memory and Decision Making.” Kavli Summer Institute in Cognitive Neuroscience, Lake Tahoe, 2018.

“Opening Windows of Opportunity for Enhancing Memory.” Pint of Science, Toronto, 2018.

“The lingering influence of novelty shapes fundamental memory processes.” Southern Ontario Neuroscience Society, Guelph, 2018.

“Memory States in the Human Brain and Behaviour.” Neurology Resident Education and Neuroscience Seminar Series, University of Ottawa, 2018

“Memory States in the Human Brain and Behaviour.” Plenary Symposium at Canadian Association for Neuroscience, Montreal, 2017.

“The lingering influence of novelty shapes fundamental memory processes.” Cognitive Neuroscience Society Annual Meeting, San Francisco, 2017.

“Learning from the unexpected to improve hindsight: Forming rich episodic memories may be particularly helpful when we don’t know what to learn.” Computational and Systems Neuroscience, Salt Lake City, 2017.

“Reading between the trials: How learning and memory relate to ongoing cognitive and neural processes.” Cognition and Circuits Seminar, Montreal Neurological Institute, Montreal, 2017.

“Reading between the trials: how learning and memory relate to background measures of functional connectivity.” Western University Colloquium, London, 2017.

“Reading between the trials: How ongoing cognitive and neural states influence memory performance.” Psychology Student Association Seminar, University of Toronto, Toronto, 2016.

“On the cutting edge of psychological science: Why we remember, why we forget, and why it matters.” University of Toronto Alumni Event, Toronto, 2016.

“Memory states influence value-based decision making.” University College London Affective Brain Seminar Series, London, 2016.

“Reading between the trials: How learning and memory relate to background measures of functional connectivity.” Toronto Western Research Institute Imaging Rounds, Toronto, 2016.

“The influence of ongoing cognitive and neural processing on learning and memory.” Ebbinghaus Empire Meeting, Toronto, 2016.

“Reading between the trials: how learning and memory relate to background measures of functional connectivity.” Rotman Research Institute Rounds, Toronto, 2016.

“The penumbra of memory: How lingering biases in mnemonic processing influence memory.” Neuroscience Association of Undergraduate Students Everything Neuroscience Conference,

Toronto, 2015.

"Hippocampal contributions to configural probabilistic learning." Manhattan Area Memory Meeting, Princeton, NJ, 2015.

"The penumbra of memory: How lingering biases in mnemonic processing influence memories and decisions." University of Toronto, Toronto, ON, 2013.

"Recent exposure to novelty influences how memory guides decisions." Manhattan Area Memory Meeting, New York University, NY, 2013.

"The penumbra of memory: How our memories and decisions are influenced by recent mnemonic processing." Cognitive Lunch Talk Series, Columbia University, NY, 2013.

"The distinct processing demands of episodic encoding and retrieval: behavioral consequences and hippocampal mechanisms." The Rotman Research Institute, Toronto, ON, 2012.

"The tension between encoding and retrieval: An investigation of behavioral consequences and hippocampal mechanisms." Motivated Memory Group Meeting, Duke University, Durham, 2010.

"The tension between encoding and retrieval: An investigation of behavioral consequences and hippocampal mechanisms." Learning Lab Group Meeting, Columbia University, New York, 2010.

"Characterizing the variability of hemodynamic responses in the medial temporal lobe: Functional significance and implications for modeling." Center for Brain Imaging Users Group Meeting, New York, 2010.

"Relational 'match' and 'mismatch' signals in the human hippocampus are differentially modulated by active maintenance and perceptual novelty." Brown Bag Series, New York University, New York, 2008.

## **CONFERENCE PRESENTATIONS**

Doyal L, Ferber S, **Duncan K**. Encoded Chunks in Visual Working Memory are Vulnerable to Proactive Interference. Poster presented at Visual Science Society Annual Meeting, 2022, Pete Beach.

Youm A, Cohn M\*, **Duncan K**\*. Pattern separation and pattern completion share distinct associations with cholinergically-mediated sustained attention. Poster presented at the Cognitive Neuroscience Society Meeting, 2022, San Francisco [co-senior author]

Biba T, Herrmann B, Fukuda K, **Duncan K**. Rhythmic sampling underlies episodic memory formation. Poster presented at the Cognitive Neuroscience Society Meeting, 2022, San Francisco [senior author]

Cho H, Berger S, Gordienko A, **Duncan K**. Minimizing stimulus variability in episodic memory: The object memorability image normed database software (O-MINDS). Poster presented at the Cognitive Neuroscience Society Meeting, 2022, San Francisco [senior author]

Fang X, Alsbury-Nealy K, Wang Y, Josselyn S, Frankland P, Schlichting ML\*, **Duncan K**\*. Temporal Proximity Does Not Influence Behavioral Integration of Spatial Memories across Experiences in Humans. Poster presented at the Society for Neuroscience Virtual Meeting, 2021, [virtual]

Dubois, M, Decker A, **Duncan K**\*, Finn AS\*. Lapses in attention facilitate peripheral learning. Poster presented at 2021 Workshop on Mental Effort, 2021. [virtual]. [co-senior author]

Youm A, Koh J, Cho R, Williams, E., Vaziri, M., Lee, H., Simpson, R., **Duncan, K.**\*, Cohn, M.\* *Episodic memory impairments in Parkinson's disease: a meta-analysis*. Poster presented at Krembil Research Day, 2021, Toronto. [co-senior author]

- Youm A, **Duncan K\***, Cohn M\*. Episodic memory impairments in parkinson's disease: a meta-analysis. Poster presented at: Cognitive Neuroscience Virtual Meeting, 2021
- Youm A, **Duncan K\***, Cohn M\*. Episodic memory impairments in parkinson's disease: a meta-analysis. Poster presented at: Society for Neuroscience Virtual Meeting, 2021
- Yu W, Schlichting M, **Duncan K**. Measuring memory integration: A metric tapping memory representation rather than inference. Poster presented at: Cognitive Science Society Meeting, 2020, Toronto.
- Jie R, Bauer A, **Duncan K\***, Finn AS\*. Events structure information accessibility less in children than adults. Poster presented at: Cognitive Science Society Annual Meeting, 2020, Toronto.
- Decker A, Finn AS\*, **Duncan K\***. We don't learn from our mistakes: Errors lead to transient impairments in memory formation. Poster presented at: Visual Science Society Annual Meeting, 2020, Pete Beach.
- Dubois M, Decker A, **Duncan K**, Finn AS. Learning more when attending less: Poor attentional states enhance peripheral learning. Poster presented at: Cognitive Neuroscience Society Annual Meeting, 2020, Boston.
- Jie R, Bauer A, **Duncan K\***, Finn AS\*. Events structure information accessibility less in children than adults. Poster presented at: Cognitive Neuroscience Society Annual Meeting, 2020, Boston.
- Jie R, Bauer A, **Duncan K\***, Finn AS\*. Events structure memory less in children than adults. Poster presented at: Cognitive Development Society, 2019, Louisville.
- Decker A, **Duncan K**, Finn A. Children's Attentional States Shape Their Memory More Than Adults'. Poster presented at: Society for Research in Child Development, 2019, Baltimore.
- Decker A, **Duncan K**, Finn A, Mabbot D. Parental Income Alters Development of Anterior, but not Posterior, Hippocampus. Talk delivered at: Society for Research in Child Development, 2019, Baltimore.
- Yu W, **Duncan K**, Schlichting M. How Does the Similarity of Related Experiences Impact Memory Representation Over Development? Poster presented at: Society for Research in Child Development, 2019, Baltimore.
- Bein O, Duncan K, Davachi L. Mnemonic prediction errors bias hippocampal states. Talk delivered at: Society for Neuroscience, 2019, Chicago.
- Gravelsins, L., Ma De Sousa, A., McNamee, C., MachLab, K., Tsai, P., Velikonja, L., Demircan, B., **Duncan, K.**, Einstein, G. (2019, June). *Synthetic Estrogen and Cognition: Do Time of Oral Contraceptive Ingestion and the COMT Val158Met Polymorphism Affect Working Memory?* Talk delivered at: the Canadian Society for Brain, Behaviour, and Cognitive Science, Canada, Waterloo, ON.
- Decker L, **Duncan K\***, Finn AS\*. Attentional states predict memory success better in kids than adults. Poster presented at: Context and Episodic Memory Symposium, Philadelphia, 2019.
- Nealy K, Wang H, Howard C, Gordienko A, Schlichting M, **Duncan K**. OpenMaze: 3D Experiment Design Software. Poster presented at: Context and Episodic Memory Symposium, Philadelphia, 2019.
- Patil A, **Duncan K**. Measuring the neural underpinnings of lingering mnemonic states. Poster presented at: Context and Episodic Memory Symposium, Philadelphia, 2019.
- Gravelsins, L., Ma De Sousa, A., McNamee, C., MachLab, K., Tsai, P., Velikonja, L., Demircan, B., **Duncan, K.**, Einstein, G. Synthetic Estrogen and Cognition: Do Time of Oral Contraceptive Ingestion and the COMT Val158Met Polymorphism Affect Working Memory? Poster presented at the Canadian Association for Neuroscience, 2019, Canada, Toronto, ON.



- Nealy K, Schlichting M, **Duncan K**, Does the temporal proximity of related events modulate their integration in memory? Poster presented at: Lake Ontario Visionary Establishment, 2019, Niagara Falls.
- Braun EK\*, **Duncan K\***, Girgis R, Wood S, Sharp M, van Geen C, Abi-Dargham A, Shohamy S. Dopaminergic enhancement of associative memory in healthy humans. Talk delivered at: Society for Neuroscience, 2018, San Diego.
- Gravelsins, L, Ma De Sousa, A, McNamee, C, Machlab, K, **Duncan, K**, Einstein, G. Synthetic Estrogen and Cognition: Does Time of Oral Contraceptive Pill Ingestion Affect Working Memory? Poster presented at the Canadian Society for Brain, Behaviour and Cognitive Science, 2018, St. John's, NFL
- Patil, A., Ryan, J.D., **Duncan, K.** (May 2018) *Opposing Mnemonic and Decision-making Biases in Recognition Memory Judgments*. Talk delivered at: Annual Toronto Area Memory Group Meeting, Toronto, Canada
- Decker, A.L., **Finn, A.S.\***, **Duncan, K.\***, (May 2018). *Attentional states influence memory encoding*. Talk delivered at: Annual Toronto Area Memory Group Meeting, Toronto, Canada
- Yu, W., **Duncan K.\***, **Schlichting, AS.\***, (May 2018). *Measuring memory integration*. Talk delivered at: Annual Toronto Area Memory Group Meeting, Toronto, Canada
- Lalla A, Patil A, Ryan JD, **Duncan K**. Opposing mnemonic and decision-making biases in recognition memory judgments. Poster presented at: Cognitive Neuroscience Society, 2018, Boston
- Decker A, Finn AS, **Duncan K**. How do developmental shifts in attentional control influence memory encoding? Poster presented at: Cognitive Neuroscience Society, 2018, Boston
- Braun EK, **Duncan K**, Girgis R, Wood S, Sharp M, van Geen C, Abi-Dargham A, Shohamy S. Dopaminergic modulation of associative memory in healthy humans. Poster presented at: Cognitive Neuroscience Society, 2018, Boston
- Tarder-Stoll H, Lalla A, Hasher L, **Duncan K**. Does aging influence the use of episodic memory in decision making? Poster presented at: Cognitive Neuroscience Society, 2018, Boston
- Liu H, **Duncan K**, Finn AS. The Durability of Statistical Learning: Direct and Indirect Measures. Poster presented at: Cognitive Neuroscience Society, 2018, Boston
- Katz C, Barkley V, **Duncan K**, Valiante T. Memory framework for testing deep brain stimulation, augmenting memory and investigating long term accelerated forgetting in patients with epilepsy. Poster presented at: Society for Neuroscience, 2017, Washington DC
- Gerraty RT, **Duncan K**, Doll BB, Daw ND, Shohamy S. Common and distinct neural contributions to episodic and incrementally-learned value. Poster presented at: Society for Neuroscience, 2017, Washington DC.
- Sun SS, Gias M, Magen N, **Duncan K**, Ferber S. Lingering mnemonic states influence the precision of working memory. Poster presented at: Object Perception and Memory, 2017, Vancouver
- Patil, A., **Duncan, K.** (May 2017) *Memory recognition criteria depend on recent experience*. Talk delivered at: Annual Toronto Area Memory Group Meeting, Toronto, Canada
- Bauer, A., **Duncan, K\***, Finn AS\* (May 2017) *Developmental changes in the impact of event segmentation on memory*. Talk delivered at: Annual Toronto Area Memory Group Meeting, Toronto, Canada
- Bein O, **Duncan K**, Davachi L, "Mnemonic Prediction errors modulate hippocampal connectivity patterns", Poster presented at: Cognitive Neuroscience Society Annual Meeting, 2017, San Francisco.
- Duncan K**, Gerraty RT, Doll BB, Daw ND, Shohamy D, "Disentangling the contributions of episodic memory and incremental learning to value-based decisions", Poster presented

at: Society of Neuroscience Annual Meeting, 2016, San Diego.

Patil A, Mian F, Lee J, Duncan K, "Shifting the balance between pattern separation and completion: Recent memory retrieval increases people's subsequent ability to recall associations", Poster presented at: Society of Neuroscience Annual Meeting, 2016, San Diego.

Patil, A., Duncan, K. Shifting the balance between pattern separation and completion: Recent memory retrieval increases people's subsequent ability to recall associations. *Talk delivered at: Annual Toronto Area Memory Group Meeting, 2016, Toronto, Canada.*

Patil A, Mian F, Sheikh J, Duncan K, "Shifting the balance between pattern separation and completion: Recent memory retrieval increases people's subsequent ability to recall associations", Poster presented at: Cognitive Neuroscience Society Annual Meeting, 2016, New York.

Sharp M, **Duncan K**, Foerde K, Kahane R, Shohamy D, "Effects of dopamine on the consolidation of learning and memory: Implications for Parkinson's disease", Poster presented at: Cognitive Neuroscience Society Annual Meeting, 2016, New York.

Lohans L, Duncan K, Thesen T, Devinsky O, Davachi L, "Modulation of mnemonic processing based on task relevance", Poster presented at: Cognitive Neuroscience Society Annual Meeting, 2016, New York.

Patil A, Mian F, Sheikh J, Duncan K, "Shifting the balance between pattern separation and completion: Poster presented at: Recent memory retrieval increases people's subsequent ability to recall associations", Lake Ontario Visionary Establishment, 2016, Niagara Falls.

**Duncan K**, Doll BB, Daw ND, Shohamy D, "Hippocampal Contributions to Configural Probabilistic Learning", Poster presented at: Society of Neuroscience Annual Meeting, 2015, Chicago.

Sharp M, Foerde K, **Duncan K**, Shohamy D. "Effects of dopamine on the consolidation of incremental learning: Implications for Parkinson's disease", Poster presented at: Society of Neuroscience Annual Meeting, 2015, Chicago.

**Duncan K**, Doll BB, Daw ND, Shohamy D, "Contributions of episodic memory to value-based decisions." Talk delivered at: Society for Neuroeconomics, 2014, Miami. (primary author).

**Duncan K**, Doll BB, Daw ND, Shohamy D, "Contributions of episodic memory to value-based decisions." Talk delivered at: Manhattan Area Memory Meeting, 2014, New York. (primary author)

Tomparry A, **Duncan K**, Davach L, "High-resolution investigation of trial-level and state-level similarity in the hippocampal subfields and MTL cortex", Poster presented at: Society for Neuroscience Annual Meeting, 2013, San Diego.

**Duncan K**, Doll BB, Daw ND, Shohamy D, "Interaction between the medial temporal lobe and the striatum during configural and elemental probabilistic classification learning", Poster presented at: Society for Neuroscience Annual Meeting, 2013, San Diego.

Doll, BB, **Duncan K**, Simon DA, Shohamy D, Daw ND, "Neural correlates of model-based and model-free reinforcement learning strategies", Poster presented at: Society for Neuroscience Annual Meeting, 2013, San Diego.

**Duncan K**, Shohamy D, "Recent exposure to novelty influences how memory guides decisions", Poster presented at: Multidisciplinary Conference on Reinforcement Learning and Decision Making, 2013, Princeton.

Doll, BB, **Duncan K**, Simon DA, Shohamy D, Daw ND, "Neural correlates of forward planning in model-based reinforcement learning", Poster presented at: Multidisciplinary Conference on Reinforcement Learning and Decision Making, 2013, Princeton.

**Duncan K**, Shohamy D, "Value-based decisions are modulated by exposure to familiar vs. novel cues", Poster presented at: Cognitive Neuroscience Society Annual Meeting, 2013, San

Francisco.

Tomparry A, **Duncan K**, Davachi L, “What counts as ‘rest’?: low–frequency correlations within the medial temporal lobe during an unrelated task predict memory”, Poster presented at: Cognitive Neuroscience Society Annual Meeting, 2013, San Francisco.

**Duncan K**, Davachi L, “High-resolution fMRI measurements of hippocampal and medial temporal lobe subregion interactions during episodic memory formation and retrieval.” Poster presented at: Cognitive Neuroscience Society Annual Meeting, 2011, San Francisco.

**Duncan K**, Davachi L, “Carry-over effects provide evidence for pattern separation and completion biases.” Poster presented at: Society for Neuroscience Annual Meeting, 2010, San Diego.

**Duncan K**, Staresina B, Davachi L, “Temporal Dynamics of blood-oxygen-level dependent (BOLD) responses in the medial temporal lobe during associative encoding.” Poster presented at: Cognitive Neuroscience Society Annual Meeting, 2010, Montreal.

Staresina B, **Duncan K**, Davachi L, “Domain specificity in medial temporal lobe cortex during episodic memory formation.” Poster presented at: Cognitive Neuroscience Society Annual Meeting, 2010, Montreal.

**Duncan K**, Ketz N, Davachi L, “‘Match’ and ‘mismatch’ signals: A high-resolution fMRI study of the human hippocampus.” Talk delivered at Cognitive Neuroscience Society Annual Meeting, 2009, San Francisco.

**Duncan K**, Ketz N, Davachi L, “‘Match’ and ‘mismatch’ signals: A high-resolution fMRI study of the human hippocampus.” Poster presented at: Society for Neuroscience Annual Meeting, 2008, Washington DC.

**Duncan K**, Davachi L, “Relational ‘match’ and ‘mismatch’ signals in the human hippocampus are differentially modulated by active maintenance and perceptual novelty.” Poster presented at: Cognitive Neuroscience Society Annual Meeting, 2008, San Francisco.

**Duncan K**, Davachi L, “Relational ‘match’ and ‘mismatch’ signals in the human hippocampus.” Poster presented at: Society for Neuroscience Annual Meeting, 2007, San Diego.

## **PROFESSIONAL ACTIVITIES:**

**AD HOC REVIEWER:** *Nature Neuroscience, Nature: Human Behavior, Neuron, Trends in Cognitive Science, PNAS, Psychological Review, Current Biology, Journal of Neuroscience, Journal of Experimental Psychology: General, Cognition, Journal of Cognitive Neuroscience, Hippocampus, Neuropsychologia, Cerebral Cortex, Neuroimage, ELife, ENeuro, Journal of Neurophysiology, Journal of Memory and Language, Neurobiology of Learning and Memory, Social Cognitive and Affective Neuroscience, Memory & Cognition, Frontiers, and Neurocase*

**AD HOC GRANT REVIEWER:** *European Research Council.*

## **COMMITTEE MEMBERSHIP**

Psychology Undergraduate Teaching Committee, UofT, Chair	2021-
Toronto Neuroimaging Facility’s Education Committee, Chair	2018-2021
Toronto Neuroimaging Facility’s Policies and Procedures Committee, Chair	2017-2021
Toronto Neuroimaging Facility’s Education Committee, Member	2017-2018, 2021
Psychology Undergraduate Teaching Committee, UofT, Member	2017-2021
Psychology Graduate Program Review Committee, UofT, Member	2017-2018
Toronto Neuroimaging Facility’s Executive Committee, Member	2016-
Psychological Instruments Museum Committee, UofT, Chair	2016-

Cognitive Science Steering Committee, UofT, Psychology Representative 2015-2021

### **WORKSHOP AND TALK SERIES COORDINATION**

NSERC Doctoral Grant Writing Workshop 2019  
 Toronto Neuroimaging Facility User Meeting, Founder and Organizer 2017-  
 Neuroimaging in Python Pipelines and Interfaces Workshop, Co-organizer 2017  
 Introduction to Inquisit and MTurk for Online Data collection, Organizer 2016  
 MRI Method's Meeting, Columbia University, Founder and Organizer 2012  
 Advanced MRI Workshop, NYU, Founder and Co-organizer 2010  
 Brown Bag Talk Series, New York University, Co-organizer 2010

### **TEACHING EXPERIENCE:**

*Instructor, University of Toronto*, Research Specialist: Thesis 2021-2022  
*Instructor, University of Toronto*, Programming for Psychologists\* 2018-2022  
*Instructor, University of Toronto*, Introduction to Cognition 2018-2021  
*Instructor, University of Toronto*, Cognitive Neuroscience 2017-2019  
*Instructor, University of Toronto*, Cognitive Deficits in Neurological Disorders\* 2016,17,20  
*Instructor, New York University*, Cognition 2011  
*Teaching Assistant, New York University*, Cognition 2010  
*Teaching Assistant, New York University*, Intermediate masters statistics 2009  
*Teaching Assistant, New York University*, Lab in human cognition 2008  
*Teaching Assistant, New York University*, Introduction to psychology 2007

\* denotes new courses developed for my department