

# ALYSSA H. SINCLAIR

## Curriculum Vitae

Duke University, Center for Cognitive Neuroscience, Durham, NC

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**Research Interests:** *Prediction error, episodic memory, belief updating, hippocampus, reconsolidation*

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## Education

- Ph.D., Duke University** — *Psychology & Neuroscience, Cognitive Neuroscience* 2018 — 2023  
Cumulative GPA: 4.0/4.0 (anticipated)  
Advisors: Dr. R. Alison Adcock & Dr. Gregory R. Samanez-Larkin  
Committee Members: Dr. Elizabeth Marsh & Dr. Felipe de Brigard
- M.A., Duke University** — *Psychology & Neuroscience, Cognitive Neuroscience* 2018-2021  
Cumulative GPA: 4.0/4.0
- B.Sc. with High Distinction, Valedictorian, University of Toronto** — *Research Psychology* 2014 — 2018  
Cumulative GPA: 4.0/4.0, recipient of the Governor General's Academic Medal  
Honors Thesis: *Prediction Error Influences Episodic Memory Reconsolidation*  
Advisors: Dr. Morgan Barense & Dr. William Cunningham

## Teaching Experience

- Lecturer** — Cognitive Neuroscience Research Internship, *Duke University* 2020-2021  
Topics: *Cog Neuro Methods, Memory & Motivation, Reinforcement Learning*
- Lecturer** — Duke Neuro Methods Workshops, *Duke University* 2020-2021  
Topics: *Mixed Effects Regression, Advanced Data Visualization*
- Teaching Assistantships** — Dep. of Psychology & Neuroscience, *Duke University*
- PSY444: Neuroscience Service Learning (Dr. Minna Ng) 2021
- NEUROSCI101: Biological Bases of Behavior (Drs. Karen Murphy & Minna Ng) 2020
- Teaching Assistantship** — Victoria College, *University of Toronto*
- VIC171: Method, Theory, & Practices in Natural Sciences (Dr. Brian Baigrie) 2017-2018
- Independent Tutor for University and High School Students** — *Toronto, ON* 2016-2018

## Fellowships & Research Grants

Charles Lafitte Foundation Outreach Grant, <i>Duke University, CNRI</i>	\$36,434, 2021–22
NSF Graduate Research Fellowship, <i>National Science Foundation</i>	\$138,000, 2019–23
Postgraduate Scholarship, <i>Natural Sci. and Eng. Research Council of Canada</i>	\$63,000, 2019–21
Special Topics COVID-19 Research Grant, <i>Duke University</i>	\$2,500, 2020
Research Germinator Award, <i>Duke Institute for Brain Sciences</i>	\$25,000, 2019–20
James B. Duke Graduate Fellowship, <i>Duke University</i>	\$20,000, 2018–2021
NSERC Canada Graduate Scholarship- Master's (Declined)	\$17,500, 2018
NSERC Undergraduate Student Research Award, <i>University of Toronto</i>	\$5,625, 2018
Undergraduate Research Grant, <i>University of Toronto</i>	\$1,500, 2018
George Mandler Research Fund, <i>University of Toronto</i>	\$550, 2018

## Awards & Honors

Trainee Professional Development Award, <i>Society for Neuroscience</i>	2019
SARMAC 2019 Travel Award, <i>Society for Applied Research on Memory &amp; Cognition</i>	2019
Charles Lafitte Foundation Travel Awards, <i>Duke University</i>	2018, 2019
Governor General's Academic Medal, <i>Government of Canada, University of Toronto</i>	2018
National award granted to the highest-performing undergraduate student.	
John Black Aird Scholarship, <i>University of Toronto</i>	2018
Awarded to the top student of the tri-campus graduating class.	
Rose Sheinin Award, <i>University of Toronto</i>	2018
Awarded for academic excellence in an undergraduate science program.	
Women's Centenary Silver Medal, <i>Victoria College, University of Toronto</i>	2018
Treble & Barber Travelling Scholarship, <i>Victoria College, University of Toronto</i>	2018
Dean's List Scholar, <i>University of Toronto</i>	2014–18
James Mark Baldwin Prize for Best Essay, <i>University of Toronto</i>	2017
Moscovitch Award for Outstanding Contribution to Discussion, <i>TAMeG Conference</i>	2017
Outstanding Poster Presentation, <i>NeuroXchange Conference</i>	2017
University of Toronto Scholars Award, <i>University of Toronto</i>	2014–17
Academic Merit Scholarships, <i>Victoria College, University of Toronto</i>	2014–17

## **Publications**

- Sinclair, A.H.**, Manalili, G.M., Brunec, I.K., Adcock. R.A., & Barense, M.D. (revision requested, 2021). Prediction errors disrupt hippocampal representations and update episodic memories. *Proceedings of the National Academy of Sciences*. DOI: <https://doi.org/10.1101/2020.09.29.319418>
- Sinclair, A.H.\***, Hakimi, S.\*, Stanley, M.L., Adcock. R.A., & Samanez-Larkin, G.R. (in-press, 2021). Pairing facts with imagined consequences improves pandemic-related risk perception. *Proceedings of the National Academy of Sciences*. DOI: [10.31234/osf.io/53a9f](https://doi.org/10.31234/osf.io/53a9f) \*Denotes equal contribution.
- Sinclair, A.H.**, Stanley, M.L., Hakimi, S., Cabeza, R., Adcock. R.A., & Samanez-Larkin, G.R. (in-press, 2021). Imagining a personalized scenario selectively increases perceived risk of viral transmission for older adults. *Nature Aging*. DOI: [10.31234/osf.io/6m5p4](https://doi.org/10.31234/osf.io/6m5p4)
- Sinclair, A.H.**, Stanley, M.L., & Seli, P. (2020). Closed-minded cognition: Right-Wing Authoritarianism is negatively related to belief updating following prediction error. *Psychonomic Bulletin and Review*, 27, 1348–1361. DOI: [10.31234/osf.io/94a7v](https://doi.org/10.31234/osf.io/94a7v)
- Stanley, M.L., **Sinclair, A.H.**, & Seli, P. (2020). Intellectual humility and perceptions of political opponents. *Journal of Personality*, 88(6), 1-21. DOI: <https://doi.org/10.1111/jopy.12566>
- Sinclair, A.H.** & Barense, M.D. (2019). Prediction error and memory reactivation: How incomplete reminders drive reconsolidation. *Trends in Neurosciences*, 42. DOI: [10.31234/osf.io/h8fy9](https://doi.org/10.31234/osf.io/h8fy9)
- Sinclair, A.H.** & Barense, M.D. (2018). Surprise and destabilize: Prediction error influences episodic memory reconsolidation. *Learning & Memory*, 25(8), 369-381. DOI: [10.1016/j.tins.2019.08.007](https://doi.org/10.1016/j.tins.2019.08.007)

## **Conference Talks**

- Sinclair, A.H.**, Hakimi, S., Stanley, M.S., Adcock. R.A., Samanez-Larkin, G.R. (2021, July). Pairing facts with imagined consequences improves pandemic-related risk perception. *Society for Applied Research on Memory and Cognition*, Virtual Conference.
- Barense, M.D. & **Sinclair, A.H.** (2020, May). Past meets present: Prediction error drives episodic memory updating. *Cognitive Neuroscience Society*, Virtual Conference.
- Sinclair, A.H.**, Manalili, G.M., & Barense, M.D. (2019, June). Surprise drives episodic memory updating and distortion. *Society for Applied Research on Memory and Cognition*, Cape Cod, MA.
- Sinclair, A.H.** & Barense, M.D. (2018, May). Prediction error influences episodic memory reconsolidation. *Toronto Area Memory Group Conference*, Toronto, ON.
- Sinclair, A.H.** & Barense, M.D. (2018, May). Prediction error influences episodic memory reconsolidation. *Undergraduate Thesis Conference*, Toronto, ON. **\*Awarded Notable Presentation.**
- Sinclair, A.H.** & Barense, M.D. (2018, April). Surprise and destabilize: Prediction error influences episodic memory reconsolidation. *NeuroXchange Conference*, Hamilton, ON.

## Poster Presentations

- Sinclair, A.H.**, Hakimi, S., Stanley, M.S., Adcock. R.A., & Samanez-Larkin, G.R. (2020, October). Perceived vs. actual virus transmission risk during the COVID-19 pandemic. *Society for Neuroeconomics*, Virtual Conference.
- Sinclair, A.H.**, Hakimi, S., Adcock. R.A., & Barense, M. D. (2020, August). Effective connectivity among cortico-hippocampal regions predicts memory for naturalistic episodes. *Context and Episodic Memory Symposium*, Virtual Conference.
- Sinclair, A.H.**, Poh, J.H., Adcock. R.A., & Barense, M. D. (2020, May). Neural representations of emotional valence and intensity during naturalistic events. *Cognitive Neuroscience Society*, Virtual Conference.
- Sinclair, A.H.**, Manalili, G.M., & Barense, M. D. (2019, Nov). Surprising event boundaries modulate hippocampal activity and distort episodic memories. *Psychonomic Society*, Montreal, QC.
- Sinclair, A.H.**, Manalili, G.M., & Barense, M. D. (2019, Oct). Prediction errors at event boundaries drive episodic memory reconsolidation. *Society for Neuroscience*, Chicago, IL. **\*Trainee Prof. Dev. Award**
- Sinclair, A.H.**, Manalili, G.M., & Barense, M.D. (2019, Apr). Neural mechanisms of prediction error and episodic memory distortion. *Smokies Cognition and Neuroscience Symposium*, Asheville, NC.
- Sinclair, A.H.**, Manalili, G.M., & Barense, M.D. (2019, Mar). Neural mechanisms of episodic memory reconsolidation: A critical role for prediction error. *Cognitive Neuroscience Society*, San Fran., CA.
- Sinclair, A.H.** & Barense, M. D. (2017, Nov). Surprise and destabilize: Prediction error triggers episodic memory updating. *Society for Neuroscience*, Washington, D.C.
- Sinclair, A.H.** & Barense, M. D. (2017, Apr). Prediction errors in episodic memory reconsolidation. *NeuroXchange Conference*, McMaster University, Hamilton, ON. **\*Outstanding Poster Award.**

## Skills

- fMRI Data Collection & Analysis (FSL, SPM)
- Computational Neuroscience (NeuroHackademy 2020)
- Transcranial Magnetic Stimulation Certification
- Programming and statistics with R, Python, Bash, MATLAB, SPSS, PsychoPy/Pavlovia, & EyeLink
- Data Visualization with R and Adobe Illustrator

## Affiliations

- Society for Neuroscience
- Cognitive Neuroscience Society
- Society for Applied Research in Memory and Cognition
- Society for Neuroeconomics
- Psychonomic Society

## Service & Outreach

**Ad Hoc Reviewer** — *Psychological Science, Learning & Memory, Learning & Motivation, Memory & Cognition, WIREs Cognitive Science, Personality Science*

**Nominated Representative** — *Graduate Student Affairs, Duke University* 2019-Present  
Graduate Student Liaison representing the Cognitive Neuroscience Program.

**Project Coordinator & Mentor** — *Cognitive Neuroscience Research Internship* 2020-Present  
Contributed to developing and leading a research internship program that seeks to provide equitable and accessible research opportunities for undergraduate students from historically underrepresented backgrounds. Lectured, mentored, performed administration, and obtained funding (*Charles Lafitte Foundation Outreach Grant*).  
<https://sites.duke.edu/cogneuroresearchinternship/>

**Mentor** — *Científico Latino: Graduate School Mentorship Initiative* 2019-2021  
Guiding STEM graduate school applicants from underrepresented minorities. Revised graduate and NSF-GRFP applications, conducted mock interviews.

**Volunteer Editor** — *The Inkblot: Undergraduate Journal of Psychology* 2017-2018  
Reviewed & edited papers from undergraduate psychology students.

**Let's Talk Science Challenge** — *University of Toronto* 2017  
Outreach poster fair, communicating neuroscience to middle school students.

## References

Dr. R. Alison Adcock, <i>Duke University</i>	<a href="mailto:alison.adcock@duke.edu">alison.adcock@duke.edu</a>
Dr. Morgan D. Barense, <i>University of Toronto</i>	<a href="mailto:morgan.barense@utoronto.ca">morgan.barense@utoronto.ca</a>
Dr. Gregory Samanez-Larkin, <i>Duke University</i>	<a href="mailto:g.samanezlarkin@duke.edu">g.samanezlarkin@duke.edu</a>
Dr. William Cunningham, <i>University of Toronto</i>	<a href="mailto:cunningham@psych.utoronto.ca">cunningham@psych.utoronto.ca</a>