

ALYSSA H. SINCLAIR, PH.D. | Curriculum Vitae

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Research Interests: learning & memory, prediction error, belief updating, behavior change, motivation

Employment

Joan Bossert Postdoctoral Research Fellow — *University of Pennsylvania* July 2023 — Present
Affiliation: Penn Center for Science, Sustainability, and the Media
Primary Advisor: Prof. Emily Falk, *Communication Neuroscience Lab*

Education

Ph.D., Duke University — *Psychology & Neuroscience, Certificate in Cognitive Neuroscience* Aug 2018 — May 2023
Cumulative GPA: 4.0/4.0
Dissertation: "[Pre-Learning Interventions Modulate Learning from Error](#)"
Co-Advisors: Prof. R. Alison Adcock & Prof. Gregory R. Samanez-Larkin
Committee Members: Prof. Elizabeth Marsh & Prof. Felipe De Brigard

B.Sc. with High Distinction, University of Toronto — *Psychology (Research Specialist)* Sep 2014 — May 2018
Cumulative GPA: 4.0/4.0, *Valedictorian*
Honors Thesis: "Prediction Error Influences Episodic Memory Reconsolidation"
Thesis Advisor: Prof. Morgan Barense
Independent Project Advisor: Prof. William Cunningham

Teaching Experience

Guest Lecturer — Cognitive Neuroscience Research Internship, *Duke University* 2020-2023
Topics: *Cog Neuro Methods, Memory & Motivation, Reinforcement Learning*

Guest Lecturer — Duke Neuro Methods Workshops, *Duke University* 2020-2021
Topics: *Mixed Effects Regression, Advanced Data Visualization*

Teaching Assistantships — Dep. of Psychology & Neuroscience, *Duke University*

NEUROSCI101: Biological Bases of Behavior (Profs. Karen Murphy & Minna Ng)	2020, 2021
PSY444: Neuroscience Service Learning (Prof. Minna Ng)	2021

Teaching Assistantship — Victoria College, *University of Toronto*

VIC171: Method, Theory, & Practices in Natural Sciences (Prof. Brian Baigrie)	2017-2018
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Tutor for University & High School Students — Independent, *Toronto, ON* 2016-2018

Publications

1. Kemp, P.L. *, Sinclair, A.H. *, Adcock, R.A., & Wahlheim, C.N. (2024). [Memory and belief updating following complete and partial reminders of fake news](#). In press at *Cognitive Research: Practice & Implications*. * equal contribution
2. Sinclair, A.H. *, Wang, Y.C. *, & Adcock, R.A. (2023). [Instructed motivational states bias reinforcement learning and memory formation](#). *Proceedings of the National Academy of Sciences of the U.S.A.*, 120(31). * equal contribution
3. Sinclair, A.H., Taylor, M.K., Brandel-Tanis, F., Davidson, A., Chande, A.T., Rishishwar, L., Andris, C., Adcock, R.A., Weitz, J.S., Samanez-Larkin, G.R., & Beckett, S.J. (2023). [Communicating COVID-19 exposure risk with an interactive website counteracts risk misestimation](#). *PLOS ONE*, 18(10).
4. Sinclair, A.H., Taylor, M.K., Davidson, A., Weitz, J.S., Beckett, S.J., & Samanez-Larkin, G.R. (2023). [Scenario-based messages on social media motivate COVID-19 information seeking](#). *Journal of Applied Research in Memory and Cognition*.
5. Sinclair, A.H., Taylor, M.T., Weitz, J.S., Beckett, S., & Samanez-Larkin, G.R. (2023). [Reasons for receiving or not receiving bivalent COVID-19 booster vaccinations among adults](#). *Morbidity & Mortality Weekly Report*, 72(3).
6. Sinclair, A.H., Manalili, G.M., Brunec, I.K., Adcock, R.A., & Barense, M.D. (2021). [Prediction errors disrupt hippocampal representations and update episodic memories](#). *Proceedings of the National Academy of Sciences of the U.S.A.* 118(51).
7. Sinclair, A.H., Hakimi, S., Stanley, M.L., Adcock, R.A., & Samanez-Larkin, G.R. (2021). [Pairing facts with imagined consequences improves pandemic-related risk perception](#). *Proceedings of the National Academy of Sciences of the U.S.A.*, 118(32).
8. Sinclair, A.H., Stanley, M.L., Hakimi, S., Cabeza, R., Adcock, R.A., & Samanez-Larkin, G.R. (2021). [Imagining a personalized scenario selectively increases perceived risk of viral transmission for older adults](#). *Nature Aging*, 1, 677-683.
9. 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.
10. Stanley, M.L., Sinclair, A.H., & Seli, P. (2020). [Intellectual humility and perceptions of political opponents](#). *Journal of Personality*, 88(6), 1-21.
11. Sinclair, A.H. & Barense, M.D. (2019). [Prediction error and memory reactivation: How incomplete reminders drive reconsolidation](#). *Trends in Neurosciences*, 42(10), 728-740.
12. Sinclair, A.H. & Barense, M.D. (2018). [Surprise and destabilize: Prediction error influences episodic memory reconsolidation](#). *Learning & Memory*, 25(8), 369-381.

Preprints

1. Sinclair, A.H., Wang, Y.C., & Adcock, R.A. (2024). [First impressions or good endings? Preferences depend on when you ask.](#) Revision resubmitted at *Journal of Exp. Psychology: General*.
2. Sinclair, A.H., Taylor, M., Beckett, S., Weitz, J., & Samanez-Larkin, G.R. (2023). [Personalized feedback about COVID-19 immunity corrects risk misestimation & motivates booster vaccination.](#)
3. Sinclair, A.H., Hsiung, A., Wright, R., Hakimi, S., & Adcock, R.A. (2023). [Pausing to reflect during news consumption counteracts negativity biases in memory.](#)

Fellowships

Joan Bossert Postdoctoral Research Fellowship, University of Pennsylvania	\$150,000, 2023–2025
Graduate Research Fellowship, National Science Foundation	\$138,000, 2019–23
Postgraduate Scholarship, Natural Sci. and Eng. Research Council of Canada	\$63,000, 2019–22
James B. Duke Graduate Fellowship, Duke University	\$20,000, 2018–2022
NSERC Canada Graduate Scholarship- Master's (Declined)	\$17,500, 2018
NSERC Undergraduate Student Research Award, University of Toronto	\$5,625, 2018

Grants

Applied Research on Intellectual Humility	Co-PIs: R. Hoyle, E. Davisson, & A. Sinclair	2023–26
Title: "Social and Psychological Mechanisms that Contribute to Humble Processing of Information that Challenges Personal Opinions and Beliefs"		\$250,000
Funding Agency: John Templeton Foundation		
Coronavirus Contract	Co-PIs: J. Weitz & G.R. Samanez-Larkin	2021–23
Title: "Modeling SARS-CoV-2 Risk, Interventions, and Impacts on Healthcare"		\$600,000
Funding Agency: Centers for Disease Control and Prevention (CDC)		
Role: Co-investigator, lead researcher for Aim 3 (interventions for risk perception)		
Psychology & Neuroscience Outreach Grant	Co-PIs: A. Hsiung & A. Sinclair	2021–22
Title: "Promoting Equitable Access to Cognitive Research: A Comprehensive Internship Program for Undergraduates"		\$36,434
Funding Agencies: Duke University, Charles Lafitte Foundation		
Research Germinator Grant	PI: A. Sinclair	2019–22
Title: "Learning from Error: Cognitive, Motivational, and Neural Mechanisms"		\$25,000
Funding Agency: Duke Institute for Brain Sciences		
Special Topics COVID-19 Research Grant	PI: A. Sinclair	2020–21
Title: "Affective States and Information Seeking During the COVID-19 Pandemic"		\$2,500
Funding Agency: Duke University, Charles Lafitte Foundation		

Academic Awards & Honors

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 (18,500 students).	
Rose Sheinin Award , <i>University of Toronto</i>	2018
Awarded for exemplary academic achievement by a woman in science.	
Women's Centenary Silver Medal , <i>Victoria College, University of Toronto</i>	2018
Treble & Barber Graduate Studies 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
University of Toronto Scholars Award , <i>University of Toronto</i>	2014–17
Academic Merit Scholarships , <i>Victoria College, University of Toronto</i>	2014–17

Conference Awards

Conference Travel Award , <i>Duke University</i>	2022, 2023
Trainee Professional Development Award , <i>Society for Neuroscience</i>	2019
SARMAC 2019 Travel Award , <i>Society for Applied Research on Memory & Cognition</i>	2019
Charles Lafitte Foundation Travel Awards , <i>Duke University</i>	2018, 2019
Moscovitch Award , <i>Toronto Area Memory Group Conference</i>	2017
Outstanding Poster Presentation , <i>NeuroXchange Conference</i>	2017

Selected Press

For an expanded list of press coverage, see <https://alyssasinclair.com//press/>

MedPage Today (2023): [Why Aren't People Getting the Bivalent COVID Booster?](#)

Survey shows lack of awareness on eligibility, availability, and some just think they're immune.

Duke Today (2023): [This One Simple Brain Hack Might Boost Learning and Improve Mental Health](#)

A simple shift from a high-pressure mindset to a curious one improves people's memory.

Big Think (2022): [How Trying to Predict the Future can Transform Your Memories](#)

Whenever you're surprised, there's a good chance that your brain is busy tweaking your memories.

Nature News & Views (2021): [Risks, Real and Imagined](#)

A new study finds that imagining a personalized disease transmission event amplifies perceived risk and bolsters risk-related information seeking in older age.

Invited Colloquia & Seminars

Sinclair, A.H. (2024, March). Cognitive interventions for real-world challenges. Talk presented at *Emory University, Department of Psychology*.

Sinclair, A.H. (2024, March). Lab and field experiments for communicating viral exposure risk. Talk presented at *University of Maryland, Pandemic Readiness Initiative*.

Sinclair, A.H. (2024, January). Cognitive interventions for real-world challenges. Talk presented at *Princeton University, Department of Psychology*.

Sinclair, A.H. (2023, Dec). Motivational states bias learning and memory. Talk presented at the *University of Pennsylvania, Department of Psychology, Philadelphia, PA*.

Sinclair, A.H. (2023, October). Lab and real-world interventions for communicating health risks. Talk presented at *Rutgers University Camden, Departments of Psychology, Prevention Science*.

Sinclair, A.H. (2022, Feb). Lab and real-world interventions to correct pandemic risk perception. Talk presented at *Duke University, Duke Institute for Brain Sciences*.

Conference Talks

Sinclair, A.H., Falk, E.B., Goodman, A., & Chesnes, M. (2024, April). Crafting impactful environmental narratives: Leveraging communication science, visuals, and technology in storytelling. Talk and workshop at the meeting of the *Society of Environmental Journalists, Philadelphia, PA*.

Sinclair, A.H., Wright, R., & Adcock, R.A. (2023, November). Reframing the value of errors mitigates anxiety-related learning deficits. Symposium talk at *Psychonomic Society, San Fran., CA*.

Sinclair, A.H., Taylor, M.K., & Samanez-Larkin, G.R. (2023, August). Scenario-based messages on social media motivate COVID-19 information seeking. Talk at *SARMAC, Nagoya, Japan*.

Sinclair, A.H., Wang, Y.C., & Adcock, R.A. (2023, Apr). Instructed motivational states bias reinforcement learning and memory formation. Symposium talk at *Learning & Memory, Huntington Beach, CA*.

Sinclair, A.H., Wang, Y.C., & Adcock, R.A. (2023, Mar). Instructed motivational states bias reinforcement learning and memory formation. Data blitz at *Cognitive Neuroscience Society, San Fran., CA*.

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. Talk at *SARMAC, virtual*.

Sinclair, A.H. & Barense, M.D. (2018, May). Prediction error influences episodic memory reconsolidation. Data blitz at *Toronto Area Memory Group Conference, Toronto, ON*.

Poster Presentations

- Sinclair, A.H.,** Cosme, D., Carreras-Tartak, J., Butler, T., Kostick, H., Mann, M., & Falk, E. (2024, April). Misperceptions of impact predict intentions to take action against climate change. *Cognitive Neuroscience Society*.
- Sinclair, A.H.,** Cosme, D., Carreras-Tartak, J., Butler, T., Kostick, H., Mann, M., & Falk, E. (2024, April). Cognitive and social factors shape intentions to take action against climate change. *Social and Affective Neuroscience Society*.
- Sinclair, A.H.,** Wang, Y.C., & Adcock, R.A. (2023, Nov). Neural correlates of motivational states that bias reinforcement learning and memory formation. *Society for Neuroscience*.
- Sinclair, A.H.,** Wang, Y.C., & Adcock, R.A. (2023, Mar). Instructed motivational states bias reinforcement learning and memory formation. *Cognitive Neuroscience Society*.
- Sinclair, A.H.,** Wang, Y.C., & Adcock, R.A. (2022, Nov). Early and late rewards bias value memory and preferences over distinct timescales. *Psychonomic Society*.
- Sinclair, A.H.,** Wang, Y.C., & Adcock, R.A. (2022, Apr). First impressions: Early rewards in episodes bias value memory and preferences. *Cognitive Neuroscience Society*.
- Sinclair, A.H.*,** Wright, R.*, Hsiung, A.*, Hakimi, S., & Adcock, R.A. (2022, Apr). Downside of doom scrolling: Pausing to reflect influences information seeking and enhances memory. *Cognitive Neuroscience Society*. *Denotes equal contribution.
- 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*.
- 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*.
- 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*.
- Sinclair, A.H.,** Manalili, G.M., & Adcock, R.A., & Barense, M. D. (2019, Nov). Surprising event boundaries modulate hippocampal activity & distort episodic memories. *Psychonomic Society*.
- Sinclair, A.H.,** Manalili, G.M., Adcock, R.A., & Barense, M. D. (2019, Oct). Prediction errors at event boundaries drive episodic memory reconsolidation. *Society for Neuroscience*.
- 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. (2017, Oct). Surprise and destabilize: Prediction error triggers episodic memory updating. *Society for Neuroscience*, Washington, DC.

Skills

- fMRI data collection & analysis (FSL, SPM, bash, fMRIPrep)
- Data analysis with R & Python, multilevel modeling
- Experiment programming with Qualtrics, Psychopy, Pavlovia (Python, Javascript)
- Data visualization with R and Adobe Illustrator

Affiliations

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

Mentoring

Graduate Students: Christian Benitez* (2023–present), Taurean Butler* (2023–present), Thandi Lyew* (2023–present), Hannah Schwalberg (2023–present)

Honors Thesis Students: Alyssa Guthrie* (2020–2023), Yume Choi (2021–2022)

Undergraduate Research Assistants: Paul Kim* (2020–2022), Tolulemi Gbile* (2018–2020), Grace Manalili* (2017–2019), Carolyn Chung (2017–2018), Kayla Liu (2018)

Cognitive Neuro Research Interns: Paige Sevchik*, Nour Kanan*, Blaine Luebbering*, Dipali Arora*

* individuals who identify with groups that are underrepresented or historically disadvantaged in STEM

Service

Ad Hoc Reviewer — *Nature Human Behaviour, Psychological Science, Nature Communications, Current Biology, npj Science of Learning, Journal of Cognitive Neuroscience, Philos. Trans. Royal Society B, Learning & Memory, Cognition, Learning & Motivation, Memory & Cognition, Neuropsychologia, Journal of Applied Research in Memory and Cognition, WIREs Cognitive Science, Personality Science, Frontiers in Psychology*

Nominated Representative — *Graduate Student Affairs, Duke University* 2019-2023
Student Liaison to the Graduate School, representing Cognitive Neuroscience.

Departmental Event Planner — *Center for Cognitive Neuroscience, Duke University* 2021-2022
Contributed to planning the annual departmental retreat and solicited feedback from members of the department on culture, practices, and issues.

Journal Club Organizer — *Center for Cognitive Neuroscience, Duke University* 2019-2020
Organized and managed a weekly journal club for trainees in the Center.

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

Outreach

- Outreach Volunteer — University of Pennsylvania** 2023
Mentored graduate school applicants from underrepresented groups through the [MindCORE DivE In](#) initiative at Penn. Moderated a faculty panel, participated in a writing workshop, and mentored students.
- Outreach Lecturer — Duke University** 2023
Lectured on learning strategies and mental health as part of an NIH-funded outreach program for high-school students from underrepresented groups.
- Program Coordinator & Mentor — Cognitive Neuroscience Research Internship** 2020-2023
Contributed to founding and leading a [research internship program](#) that provides equitable and accessible research opportunities for undergraduate students from historically underrepresented backgrounds. Lectured, mentored, performed administration, and obtained funding.
- Service-Learning Facilitator — Neuroscience Service-Learning Course, Duke University** 2021
Contributed to developing a service-learning course and forging community partnerships. Oversaw the design, production, and donation of educational neuroscience activity kits for children in underserved neighborhoods.
- Mentor — Cientifico Latino: Graduate School Mentorship Initiative** 2019-2022
Guided STEM graduate school applicants from underrepresented minorities. Revised graduate and NSF-GRFP applications, conducted mock interviews.

References

- Emily Falk, PhD**
Professor, *University of Pennsylvania*
efalk@falklab.org
Postdoctoral advisor, 2023-Present
- Gregory R. Samanez-Larkin, PhD**
Jack H. Neely Associate Professor, *Duke University*
g.samanezlarkin@duke.edu
Graduate co-advisor, 2018-23
- R. Alison Adcock, MD/PhD**
Associate Professor, *Duke University*
alison.adcock@duke.edu
Graduate co-advisor, 2018-23
- Morgan D. Barense, PhD**
Professor & Canada Research Chair, *University of Toronto*
morgan.barense@utoronto.ca
Thesis advisor & collaborator, 2014-21