

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

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

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## 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

**Course in College Teaching** — Center for Excellence in Teaching, *University of Pennsylvania* 2024

**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

**Tutor for University & High School Students** — Independent, *Toronto, ON* 2016-2018

## Publications (in order of recency)

1. Sinclair, A.H., Wang, Y.C., & Adcock, R.A. (2024). [First impressions or good endings? Preferences depend on when you ask](#). In press at *Journal of Exp. Psychology: General*.
2. 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](#). *Cognitive Research: Practice & Implications*, 9(28). \* equal contribution
3. 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
4. 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).
5. 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*.
6. 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).
7. 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).
8. 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).
9. 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.
10. 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.
11. Stanley, M.L., Sinclair, A.H., & Seli, P. (2020). [Intellectual humility and perceptions of political opponents](#). *Journal of Personality*, 88(6), 1-21.
12. Sinclair, A.H. & Barense, M.D. (2019). [Prediction error and memory reactivation: How incomplete reminders drive reconsolidation](#). *Trends in Neurosciences*, 42(10), 728-740.
13. 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., Taylor, M., Beckett, S., Weitz, J., & Samanez-Larkin, G.R. (2023). [Personalized feedback about COVID-19 immunity corrects risk misestimation & motivates booster vaccination.](#)
2. 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, <i>University of Pennsylvania</i>	2023–25
Graduate Research Fellowship, <i>National Science Foundation</i>	2019–23
Postgraduate Scholarship, <i>Natural Sci. and Eng. Research Council of Canada</i>	2019–22
James B. Duke Graduate Fellowship, <i>Duke University</i>	2018–2022
NSERC Canada Graduate Scholarship- Master's (Declined)	2018
NSERC Undergraduate Student Research Award, <i>University of Toronto</i>	2018

## Grants

<b>Applied Research on Intellectual Humility</b>	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		
<b>Coronavirus Contract</b>	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)		
<b>Psychology &amp; Neuroscience Outreach Grant</b>	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		
<b>Research Germinator Grant</b>	PI: A. Sinclair	2019–22
Title: "Learning from Error: Cognitive, Motivational, and Neural Mechanisms"		\$25,000
Funding Agency: Duke Institute for Brain Sciences		
<b>Special Topics COVID-19 Research Grant</b>	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

<b>Governor General's Academic Medal</b> , <i>Government of Canada, University of Toronto</i>	2018
National award granted to the highest-performing undergraduate student.	
<b>John Black Aird Scholarship</b> , <i>University of Toronto</i>	2018
Awarded to the top student of the tri-campus graduating class (18,500 students).	
<b>Rose Sheinin Award</b> , <i>University of Toronto</i>	2018
Awarded for exemplary academic achievement by a woman in science.	
<b>Women's Centenary Silver Medal</b> , <i>Victoria College, University of Toronto</i>	2018
<b>Treble &amp; Barber Graduate Studies Scholarship</b> , <i>Victoria College, University of Toronto</i>	2018
<b>Dean's List Scholar</b> , <i>University of Toronto</i>	2014–18
<b>James Mark Baldwin Prize for Best Essay</b> , <i>University of Toronto</i>	2017
<b>University of Toronto Scholars Award</b> , <i>University of Toronto</i>	2014–17
<b>Academic Merit Scholarships</b> , <i>Victoria College, University of Toronto</i>	2014–17

## Conference & Society Awards

<b>Conference Travel Award</b> , <i>Duke University</i>	2022, 2023
<b>Trainee Professional Development Award</b> , <i>Society for Neuroscience</i>	2019
<b>SARMAC 2019 Travel Award</b> , <i>Society for Applied Research on Memory &amp; Cognition</i>	2019
<b>Charles Lafitte Foundation Travel Awards</b> , <i>Duke University</i>	2018, 2019
<b>Moscovitch Award</b> , <i>Toronto Area Memory Group Conference</i>	2017
<b>Outstanding Poster Presentation</b> , <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 the *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. Workshop led 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*.
- Sinclair, A.H.,** Manalili, G.M., & Barense, M.D. (2017, Oct). Surprise and destabilize: Prediction error triggers episodic memory updating. *Society for Neuroscience*.



## Skills

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

## Affiliations

- Cognitive Neuroscience Society
- Society for Applied Research in Memory & Cognition
- Society for Neuroscience
- Psychonomic Society
- Social and Affective Neuroscience Society

## 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, Frontiers in Public Health*

**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, administrated, 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

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