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

Email: asinclair@falklab.org   **Phone:** (919)-907-9338   **Website:** alyssasinclair.com

Google Scholar   @sinclair_allie   0000-0003-0447-3959

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

Employment

Joan Bossert Postdoctoral Research Fellow — *University of Pennsylvania*   July 2023 – Present

    Advisor: Prof. Emily Falk, *Communication Neuroscience Lab*

    Affiliations: *Penn Center for Science, Sustainability, and the Media; Communication Neuroscience Lab; Annenberg School for Communication*

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

Research Experience (selected)

Communication Neuroscience Lab (PI: Emily Falk)
Postdoctoral Fellow — University of Pennsylvania, 2023–Present
- Led a large-scale, collaborative "intervention tournament" for behavior change
- Led studies investigating how the motivational framing of news headlines increases engagement
- Analyzed neuroimaging (fMRI) data about conversations and social conformity
- Mentored three graduate students, served on a mentorship committee

Motivated Cognition & Aging Brain Lab (PI: G.R. Samanez-Larkin)
Graduate Student — Duke University, 2018–2023
- Led multiple projects about health beliefs and behavior, including (1) interventions to correct risk misestimation, reduce risky behaviors, and motivate vaccination (2) age differences in cognition and health communication, and (3) social media field experiments to motivate health information seeking
- Led an interdisciplinary team to develop a website with interactive COVID-19 risk assessment tools, reaching >16 million people and analyzing data from >11,000 users

Motivated Memory Lab (PI: R. Alison Adcock)

Graduate Student — Duke University, 2018–2023

- Led multiple lines of research investigating (1) how motivational states bias choices and memory, (2) how we summarize rewarding experiences to determine preferences, (3) how reminders of fake news help or hinder corrections, and (4) how reflecting on emotions changes memory for online news
- Led an fMRI study demonstrating that motivational states modulate the neural processes supporting decision making and memory formation

Memory & Perception Lab (PI: Morgan Barense)

Thesis Student, Research Assistant — University of Toronto, 2015–2018

- Led a series of three behavioral studies and an fMRI study investigating how prediction error (i.e., surprise) updates and distorts memories of narrative videos
- Assisted with studies on spatial navigation, memory and perception in older adults

Social Cognitive Science Lab (PI: William Cunningham)

Independent Project Student, Research Assistant — University of Toronto, 2016–2018

- Contributed to design, data collection, and analysis for studies investigating individual differences in a social reinforcement learning task

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. *Journal of Exp. Psychology: General*, 153(10).

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. (2024). [Personalized feedback about immunity corrects risk misestimation and motivates vaccination.](#)

2. **Sinclair, A.H.**, Cosme, D., Lydic, K., Reinero, D.A., Carreras-Tartak, J., Mann, M., & Falk, E.B. (2024). [Behavioral interventions motivate action to address climate change.](#)

3. **Sinclair, A.H.**, Cosme, D., Carreras-Tartak, J., & Falk, E.B. (2024). [Affective framing of environmental news headlines influences engagement, donations, and memory.](#)

4. **Sinclair, A.H.**, Hsiung, A., Wright, R., Hakimi, S., & Adcock, R.A. (2024). [Pausing to reflect during news consumption counteracts negativity biases in memory.](#)

5. Cosme, D., Chan, H.Y., **Sinclair, A.H.**, Benitez, C., Lydic, K., Martin, R., Resnick, A., Carreras-Tartak, J., Cooper, N., Paul, A.M., Koelle, D., McVay, J., Falk, E.B., & Scholz, C. (2024). [Perceived self and social relevance of content motivates news sharing across cultures and topics.](#)

Fellowships

Joan Bossert Postdoctoral Research Fellowship, *University of Pennsylvania*	**2023—25**
Graduate Research Fellowship, *National Science Foundation*	**2019—23**
Postgraduate Scholarship, *Natural Sci. and Eng. Research Council of Canada*	**2019—22**
James B. Duke Graduate Fellowship, *Duke University*	**2018—2022**
NSERC Canada Graduate Scholarship- Master's *(Declined)*	**2018**
NSERC Undergraduate Student Research Award, *University of Toronto*	**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 $250,000
>Information that Challenges Personal Opinions and Beliefs"
>**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 $36,434
>Internship Program for Undergraduates"
>**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

Awards & Honors

Conference Travel Awards, *Duke University*	**2022, 2023**
Trainee Professional Development Award, *Society for Neuroscience*	**2019**
Kazuo Mori Trainee Award, *Society for Applied Research on Memory & Cognition*	**2019**
Charles Lafitte Foundation Travel Awards, *Duke University*	**2018, 2019**
Governor General's Academic Medal, *Government of Canada*, *University of Toronto*	
National award granted to the highest-performing undergraduate student.	**2018**
John Black Aird Scholarship, *University of Toronto*	**2018**
Awarded to the top student of the tri-campus graduating class (18,500 students).	
Rose Sheinin Award, *University of Toronto*	**2018**
Awarded for exemplary academic achievement by a woman in science.	
Women's Centenary Silver Medal, *Victoria College, University of Toronto*	**2018**
Treble & Barber Graduate Studies Scholarship, *Victoria College, University of Toronto*	**2018**
Dean's List Scholar, *University of Toronto*	**2014—18**
Outstanding Poster Presentation, *NeuroXchange Conference*	**2017**
Moscovitch Award, *Toronto Area Memory Group Conference*	**2017**
James Mark Baldwin Prize for Best Essay, *University of Toronto*	**2017**
University of Toronto Scholars Award, *University of Toronto*	**2014–2018**
Academic Merit Scholarships, *University of Toronto, Victoria College*	**2014–2018**

Invited Colloquia & Seminars

Sinclair, A.H. (2024, December). Minds, brains, and mass media: Communication interventions for real-world challenges. *University of Michigan*, Communication & Media Department.

Sinclair, A.H. (2024, November). Psychological interventions to motivate preventative health behaviors. *University of Maryland*, Workshop on Disease Dynamics and Human Behavior.

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

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

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

Sinclair, A.H. (2023, Dec). Motivational states bias learning and memory. *University of Pennsylvania*, Department of Psychology.

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

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

Conference Talks

Sinclair, A.H., Cosme, D., Lydic, K., Reinero, D.A., Carreras-Tartak, J., Mann, M., & Falk, E.B. (2024, November). Behavioral interventions motivate action to address climate change. Talk, *Psychonomic Society*, New York, NY.

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, *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, *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, *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, *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, *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, *SARMAC*, virtual.

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

Poster Presentations

Sinclair, A.H., Wang, Y.C., & Adcock, R.A. (2024, Nov). Motivational states shape neural representations during reinforcement learning and memory formation. *Society for Neuroscience*.

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*.

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

Mentoring

Graduate Students: Christian Benitez* (2023—present), Thandi Lyew* (2023—present), Taurean Butler* (2023—present), Hannah Schwalberg (2023—2024)

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, NeuroImage, npj Science of Learning, Journal of Cognitive Neuroscience, Memory, 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*   2023–2024
 Mentored graduate school applicants from underrepresented groups through the MindCORE DivE In initiative at Penn. Moderated faculty panels, led workshops on writing and applying to graduate school, 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 — *Científico Latino: Graduate School Mentorship Initiative*   2019–2022
 Guided STEM graduate school applicants from underrepresented minorities. Revised graduate and NSF-GRFP applications, conducted mock interviews.

Selected Press

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

Duke Today (2024): [Yet Another Reason Why You Should Sleep on it Before Making an Important Decision](#)
 Science proves, once again, that we are easily deceived by first impressions.

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.

Skills

- fMRI data collection & analysis
  (**FSL**, **SPM**, **bash**, **fMRIprep**)

- Data analysis with **R** & **Python,** multilevel modeling

- Computational modeling (reinforcement learning,
  large language models)

- 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

References

Emily Falk, PhD
Professor, *University of Pennsylvania*

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Postdoctoral advisor, 2023-Present

R. Alison Adcock, MD/PhD
Associate Professor, *Duke University*

alison.adcock@duke.edu
Graduate co-advisor, 2018-23

Gregory R. Samanez-Larkin, PhD
Jerry and Patricia Crawford Hubbard Professor, *Duke University*

g.samanezlarkin@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