Alexandra L. Decker
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www.deckerlab.com

Employment

Assistant Professor, Washington University in St. Louis 2026-
Department of Psychological and Brain Sciences

Post-doctoral Fellow, Massachusetts Institute of Technology 2022-
Department of Brain and Cognitive Sciences
Advisor: John D.E. Gabrieli

Education

Ph.D., University of Toronto 2022
Department of Psychology
Advisors: Katherine Duncan, Amy Finn
Committee: Keisuke Fukuda, Lynn Hasher, Michael Esterman, Jay Pratt

M.A., University of Toronto, and the Hospital for Sick Children 2016
Department of Psychology
Advisor: Donald Mabbott
Committee: Morgan Barense, Amy Finn

B.A., McGill University 2013
Major: Psychology and Behavioural Science

Research Interests

Social Determinants of Health, Socioeconomic Status, Academic Achievement, Cognitive and Brain Development, Learning and Memory, Sustained and Selective Attention, ADHD, Neural Plasticity, Neuromodulators (acetylcholine, norepinephrine)

Awards, Scholarships, and Grants

MIT Building 46 Community Impact Award 2025

Banting Postdoctoral Fellowship ($140,000; 10% success rate) 2025-2027

Flux “People’s Choice” Poster Award 2024

Flux Travel Award (Conference Registration + $500) 2024

MIT Spot Award (for community members who enhance the workplace) 2024

Natural Sciences and Engineering Research Council of Canada ($90,000) 2022-2024
(Top 20% of awarded proposals)

William Line Memorial Graduate Scholarship, University of Toronto ($8000) 2020-2021

Doctoral Completion Award ($8000), University of Toronto	2020-2021
Ontario Graduate Scholarship ($15,000), Ontario, Canada	2020-2021
Dataquest Underrepresented Genders Scholarship	2020
Ontario Graduate Scholarship ($15,000), Ontario, Canada	2019-2020
Canadian Institutes of Health Research Project Grant ($1,147,500)	2018-2022
Brain Canada-Kids Brain Health Network Training Award ($70,000)	2018-2020
School of Graduate Studies Conference Grant ($450), University of Toronto	2017
School of Graduate Studies Conference Grant ($1,100), University of Toronto	2016

Peer-Reviewed Publications

[+]equal contributions
[^] trainees

Biba, T., **Decker, A**., Herrmann, B., Fukuda, K., Katz, C., Valiante, T., Duncan, K. Memory's pulse: episodic memory formation is theta rhythmic. 2025. Accepted *at Nature Human Behaviour*

Decker A., Tandoc, M., Cho, H.[^], Rebello, G., Mabbott, D., Duncan, K.[+], Finn, A.S.[+] Children's Darting (Not Diffuse) Attentional Spotlight Reduces Memory Selectivity for Relevant Content. 2025. Accepted at *Developmental Science*.

Decker, A. L., Leonard, J., Romeo, R., Itiat, J., Hubbard, N. A., Bauer, C. C. C., Grotzinger, H., Giebler, M. A., Torres, Y. C., Imhof, A., & Gabrieli, J. D. E. (2025). Exploration is associated with socioeconomic disparities in learning and academic achievement in adolescence. *Nature Communications*, *16*(1), 6342. https://doi.org/10.1038/s41467-025-61746-6

Treves, I. N., Marusak, H. A., **Decker, A**., Kucyi, A., Hubbard, N. A., Bauer, C. C. C., Leonard, J., Grotzinger, H., Giebler, M. A., Torres, Y. C., Imhof, A., Romeo, R., Calhoun, V. D., & Gabrieli, J. D. E. (2024). Dynamic functional connectivity correlates of trait mindfulness in early adolescence. *Biological Psychiatry Global Open Science*, 100367. https://doi.org/10.1016/j.bpsgos.2024.100367

Decker, A. L., Meisler, S. L., Hubbard, N. A., Bauer, C. C. C., Leonard, J., Grotzinger, H., Giebler, M. A., Torres, Y. C., Imhof, A., Romeo, R., & Gabrieli, J. D. E. (2024). Striatal and Behavioral Responses to Reward Vary by Socioeconomic Status in Adolescents. *Journal of Neuroscience*. https://doi.org/10.1523/JNEUROSCI.1633-23.2023

Hurtado, H.[+], Hansen, M.[+], Strack, J.[+], Vainik, U., **Decker, A. L**., Khundrakpam, B., Duncan, K., Finn, A. S., Mabbott, D. J., & Merz, E. C. (2024). Polygenic risk for depression and anterior and posterior hippocampal volume in children and adolescents. *Journal of Affective Disorders*, *344*, 619–627. https://doi.org/10.1016/j.jad.2023.10.068

Decker, A. L., Duncan, K.⁺, & Finn, A. S.⁺ (2023). Fluctuations in Sustained Attention Explain Moment-to-Moment Shifts in Children's Memory Formation. *Psychological Science*, *34*(12), 1377–1389. https://doi.org/10.1177/09567976231206767

Decker, A.⁺, Dubois, M.⁺, Duncan, K.⁺, & Finn, A. S.⁺ (2023). Pay attention and you might miss it: Greater learning during attentional lapses. *Psychonomic Bulletin & Review*, *30*(3), 1041–1052. https://doi.org/10.3758/s13423-022-02226-6

Decker, A., Duncan, K.⁺, Finn, A. S.⁺, & Mabbott, D. J.⁺ (2020). Children's family income is associated with cognitive function and volume of anterior not posterior hippocampus. *Nature Communications*, *11*(1), 4040. https://doi.org/10.1038/s41467-020-17854-6

Decker, A., Finn, A.⁺, & Duncan, K.⁺ (2020). Errors lead to transient impairments in memory formation. *Cognition*, *204*, 104338. https://doi.org/10.1016/j.cognition.2020.104338

Decker, A., & Duncan, K. (2020). Acetylcholine and the complex interdependence of memory and attention. *Current Opinion in Behavioral Sciences*, *32*, 21–28. https://doi.org/10.1016/j.cobeha.2020.01.013

Medeiros, C. B. de, Moxon-Emre, I., Scantlebury, N., Malkin, D., Ramaswamy, V., **Decker, A**., Law, N., Kumabe, T., Leonard, J., Rubin, J., Jung, S., Kim, S.-K., Gupta, N., Weiss, W., Faria, C. C., Vibhakar, R., Lafay-Cousin, L., Chan, J., Kros, J. M., … Mabbott, D. J. (accepted). Medulloblastoma has a global impact on health-related quality of life: Findings from an international cohort. *Cancer Medicine*. https://doi.org/10.1002/cam4.2701

Sekeres, M. J., Riggs, L., **Decker, A.**, Medeiros, C. B. de, Bacopulos, A., Skocic, J., … Frankland, P. W. (2018). Impaired recent, but preserved remote, autobiographical memory in pediatric brain tumor patients. *Journal of Neuroscience*, 1056–18. https://doi.org/10.1523/JNEUROSCI.1056-18.2018

Oyefiade, A. A., Ameis, S., Lerch, J. P., Rockel, C., Szulc, K. U., Scantlebury, N., **Decker, A.**, Jefferson, J., Spichak, S., & Mabbott, D. J. (2018). Development of short-range white matter in healthy children and adolescents. *Human Brain Mapping*, 39(1), 204–217. https://doi.org/10.1002/hbm.23836

Decker, A., Szulc, K. U., Bouffet, E., Laughlin, S., Chakravarty, M. M., Skocic, J., Mabbott, D. J. (2017). Smaller hippocampal subfield volumes predict verbal associative memory in pediatric brain tumor survivors. *Hippocampus*. https://doi.org/10.1002/hipo.22758