

Alexandra L. Decker

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www.deckerlab.com

Employment

Assistant Professor, Washington University in St. Louis Department of Psychological and Brain Sciences	2026-
Post-doctoral Fellow, Massachusetts Institute of Technology Department of Brain and Cognitive Sciences Advisor: John D.E. Gabrieli	2022-2025

Education

Ph.D., University of Toronto Department of Psychology Advisors: Katherine Duncan, Amy Finn Committee: Keisuke Fukuda, Lynn Hasher, Michael Esterman, Jay Pratt	2022
M.A., University of Toronto, and the Hospital for Sick Children Department of Psychology Advisor: Donald Mabbott Committee: Morgan Barense, Amy Finn	2016
B.A., McGill University Major: Psychology and Behavioural Science	2013

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) (<i>Top 20% of awarded proposals</i>)	2022-2024
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>