## BIOGRAPHICAL SKETCH

**NAME: Trudeau, Louis-Eric** **POSITION TITLE: Professor**

**EDUCATION/TRAINING:**

| INSTITUTION AND LOCATION | DEGREE (if applicable) | YEAR(s) | FIELD OF STUDY |
|---|---|---|---|
| Concordia University, Montréal | B.Sc. | 1990 | Psychology |
| Université de Paris VI | D.E.A. | 1991 | Neuroscience |
| Université de Montréal | Ph.D. | 1994 | Neuroscience |
| Iowa State University | Postdoc | 1997 | Neuroscience |

**SECTION A: Positions and honors**:

**Positions:**

1997-2002 Assistant professor, Department of Pharmacology, Université de Montréal
2002-2008 Associate professor, Department of Pharmacology, Université de Montréal
2006: Visiting professor, University of California, Irvine
2008- Professor, Department of Pharmacology and Physiology, Department of neurosciences, Université de Montréal
2015: Visiting professor, University of Amsterdam

**Advisory committees and other appointments:**

2000-2004 Co-director, Schizophrenia Axis, FRSQ Mental Health Network
2002-2005 Internal member, CIHR Neuroscience B evaluation committee
2004-2009 Treasurer, Canadian Association for Neuroscience
2008-2014 Internal member, CFI grants committee, FRQS
2009-2012 Treasurer, Society for Neuroscience, Montreal Chapter
2009-present Scientific Advisory Board, Parkinson Society Canada
2012-2013 Internal review committee member, Michael J Fox Foundation
2014-2018 Internal member, CIHR Cell Physiology evaluation committee
2019-present Director, CNS Research Group (GRSNC), Université de Montréal
2021-present Co-director, UdeM Brain and Mental Health Initiative

**Honors:**

1990 J.W. Bridges medal awarded to the best graduating student in psychology, Concordia University
1990 Prize for the best graduating student of Concordia University, Science College
1990-1993 Science and Engineering "1967" graduate studies scholarship of the Natural Sciences and Engineering Research Council of Canada
1994-1996 Postdoctoral Fellowship from the Human Frontier Science Program (Long-term fellowship)
1995 Gold medal of the Governor General of Canada for the best Ph.D. thesis at Université de Montréal (1994-1995)
1997-2001 “Michael Smith” Scholar of the Medical Research Council of Canada.
1998-2000 EJLB Foundation Scholar.

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| 2001-2003 | NARSAD Young Investigator Award |
| 2002-2005 | Scholar (J-II level) of the Fonds de la Recherche en Santé du Québec. |
| 2004 | Bristol-Myers-Squibb Young Investigator Award, Canadian College of Neuropsychopharmacology |
| 2004-2006 | NARSAD Independent Investigator Award |
| 2005-2009 | Scholar (senior level) of the Fonds de la Recherche en Santé du Québec |

**SECTION B: Selected peer-reviewed publications** *(last 3 years, plus a few other representative, out of a total of 117)*


1. Mendez, J.A., Bourque, M.-J., Bourdeau, M.L., Danik, M., Williams, S., Lacaille, J.-C., **Trudeau, L.-E.** (2008) Developmental and contact-dependent regulation of vesicular glutamate transporter expression in dopamine neurons. *Journal of Neuroscience*, 28(25): 6309-6318.
2. Birgner C, Nordenankar K, Lundblad M, Mendez JA, Smith C, le Grevès M, Galter D, Olson L, Fredriksson A, **Trudeau L.-E**, Kullander K, Wallén-Mackenzie A. (2010) VGLUT2 in dopamine neurons is required for psychostimulant-induced behavioral activation. *Proc Natl Acad Sci U S A*. 107(1):389-94.
3. El Mestikawy, S., Wallen-Mackenzie, A., Fortin, G., Descarries, L., **Trudeau, L.-E.** (2011) From glutamate corelease to vesicular synergy: new perspectives on the functions of vesicular glutamate transporters. *Nature Reviews Neuroscience* 12(4):204-16.
4. Alsiö J, Nordenankar K, Arvidsson E, Birgner C, Mahmoudi S, Halbout B, Smith C, Fortin GM, Olson L, Descarries L, **Trudeau L-E**, Kullander K, Lévesque D, Wallén-Mackenzie A. (2011) Enhanced Sucrose and Cocaine Self-Administration and Cue-Induced Drug Seeking after Loss of VGLUT2 in Midbrain Dopamine Neurons in Mice. *Journal of Neuroscience* 31(35):12593-12603.
5. Fortin GM, Bourque MJ, Mendez JA, Leo D, Nordenankar K, Birgner C, Arvidsson E, Rymar VV, Bérubé-Carière N, Claveau AN, Descarries L, Sadikot AF, Wallen-Mackenzie A, **Trudeau L-E.** (2012) Glutamate corelease promotes growth and survival of midbrain dopamine neurons. *Journal of Neuroscience*, 32(48) : 17447-17492.
6. Sanchez G., Varaschin RK, Bueler H, Marcogliese PC, Park DS, **Trudeau L-E** (2014) Unimpaired striatal dopamine release in juvenile Parkin knockout, Pink1 knockout, DJ-1 knockout and LRRK2 R1441G transgenic mice *PloS One* 9(4): e94826.
7. Pacelli C, Giguère N, Bourque MJ, Lévesque M, Slack RS, **Trudeau L-É**. (2015) Elevated Mitochondrial Bioenergetics and Axonal Arborization Size Are Key Contributors to the Vulnerability of Dopamine Neurons. *Current Biology* 25(18):2349-60.
8. Matheoud D, Sugiura A, Bellemare-Pelletier A, Laplante A, Rondeau C, Chemali M, Fazel A, Bergeron JJ, **Trudeau L-E**, Burelle Y, Gagnon E, McBride HM, **Desjardins M.** (2016) Parkinson's Disease-Related Proteins PINK1 and Parkin Repress Mitochondrial Antigen Presentation. *Cell* 166(2):314-27.
9. Doucet-Beaupré H, Gilbert C, Profes MS, Chabrat A, Pacelli C, Giguère N, Rioux V, Charest J, Deng Q, Laguna A, Ericson J, Perlmann T, Ang SL, Cicchetti F, Parent M, **Trudeau L-E**, Lévesque M. (2016) Lmx1a and Lmx1b regulate mitochondrial functions and survival of adult midbrain dopaminergic neurons. *Proc Natl Acad Sci U S A* 113(30):E4387-96
10. Gleave JA, Arathoon LR, Trinh D, Lizal KE, Giguère N, Barber JHM, Najarali Z, Khan MH, Thiele SL, Semmen MS, Koprich JB, Brotchie JM, Eubanks JH, **Trudeau L-E**, Nash JE (2017) Sirtuin 3 rescues neurons through the stabilisation of mitochondrial biogenetics in the virally-expressing mutant α-synuclein rat model of parkinsonism. *Neurobiology of Disease* 106:133-146.
11. Hryhorczuk C, Sheng Z, Décarie-Spain L, Giguère N, Ducrot C, **Trudeau L-E**, Routh V, Alquier T, Fulton S (2018) Oleic acid in the ventral tegmental area inhibits feeding, food reward and dopamine tone. *Neuropsychopharmacology* 43(3):607-616.
12. Koerich Varaschin R, Osterstock G, Ducrot C, Leino S, Bourque M-J, Prado MAM, Prado VA, Salminen O, Rannanpää S,**Trudeau L-E** (2018) Histamine H3 receptors decrease release in the

ventral striatum by reducing the activity of striatal cholinergic interneurons. *Neuroscience*, 376:188-203.
13. Giguère N, Pacelli C, Saumure C, Bourque M-J, Matheoud D, Lévesque D, Slack RS, Park D, **Trudeau L-E** (2018) Comparative analysis of Parkinson's disease–associated genes in mice reveals altered survival and bioenergetics of Parkin deficient dopamine neurons. *Journal of Biological Chemistry* 293(25):9580-9593.
14. Giguère N, Burke Nanni S, **Trudeau LE**. (2018) On Cell Loss and Selective Vulnerability of Neuronal Populations in Parkinson's Disease. *Frontiers in Neurology* Jun 19;9:455.
15. **Trudeau LE**, El Mestikawy S. (2018) Glutamate Cotransmission in Cholinergic, GABAergic and Monoamine Systems: Contrasts and Commonalities. *Frontiers in Neural Circuits*. 18;12:113.
16. Fortin GM, Ducrot C, Giguère N, Kouwenhoven W, Bourque M-J, Pacelli C, Varaschin RK, Brill M, Singh S, Wiseman PW, **Trudeau L-E** (2019) Segregation of dopamine and glutamate release sites in dopamine neuron axons: regulation by striatal target cells. *FASEB Journal* 33(1):400-417.
17. Zhu H, Lussier F, Ducrot C, Bourque MJ, Spatz JP, Cui W, Yu L, Peng W, **Trudeau LE**, Bazuin CG, Masson JF. (2019) Block copolymer brush layer-templated gold nanoparticles on nanofibers for surface-enhanced Raman scattering optophysiology. *ACS Appl Mater Interfaces*. 11(4):4373-4384.
18. Apergis-Schoute J, Burnstock G, Nusbaum MP, Parker D, Morales MA, **Trudeau L-E**, Svensson E (2019) Editorial: Neuronal Co-transmission, *Frontiers in Neural Circuits* 13:19.
19. Matheoud D, Cannon T, Voisin V, Penttinen A-M, Ramet L, Fahmy AM, Ducrot C, Laplante A, Bourque M-J, Zhu L, Cayrol R, Le Campion A, McBride HM*****, Gruenheid S*****, **Trudeau L-E***, Desjardins M***** (2019) Intestinal infection triggers Parkinson's disease-like symptoms in Pink1-/- mice. *Nature*, 571(7766):565-569 (* co-corresponding authors)
20. Giguère N, Delignat-Lavaud B, Herborg F, Voisin A, Li Y, Jacquemet V, Anand-Srivastava M, Gether U, Giros B, **Trudeau LÉ**. (2019) Increased vulnerability of nigral dopamine neurons after expansion of their axonal arborization size through D2 dopamine receptor conditional knockout. *PLoS Genetics*, 15(8):e1008352
21. Wong Y, Luk K, Purtell K, Burke Nanni S, Stoessl AJ, **Trudeau LE**, Yue Z, Krainc D, Oertel W, Obeso JA, Volpicelli-Daley L (2019) Neuronal Vulnerability in Parkinson Disease and Putative Therapeutics: Should the focus be on axonal and synaptic terminals? *Movement Disorders,* 34(10): 1406-1422.
22. Anilkumar U, Khacho M, Cuillerier A, Harris R, Patten DA, Bilen M, Iqbal MA, Guo DY, **Trudeau LE**, Park DS, Harper ME, Burelle Y, Slack RS. (2020) MCL-1 Matrix maintains neuronal survival by enhancing mitochondrial integrity and bioenergetic capacity under stress conditions. *Cell Death and Disease*, 11(5):321.
23. Wallace G, Delignat-Lavaud B, Zhao X, **Trudeau LE**, Masson JF (2020) A Blueprint for Performing SERS Measurements in Tissue with Plasmonic Nanofibers. *Journal of Chemical Physics* 153(12):124702.
24. Allain F, Delignat-Lavaud B, Beaudoin MP, Jacquemet V, Robinson TE, **Trudeau LE**, Samaha AN. (2020) Amphetamine maintenance therapy during intermittent cocaine self-administration in rats attenuates psychomotor and dopamine sensitization and reduces addiction-like behavior. *Neuropsychopharmacology;*46(2):305-315.
25. Kouwenhoven WM, Fortin G, Penttinen AM, Florence C, Delignat-Lavaud B, Bourque MJ, Trimbuch T, Luppi MP, Salvail-Lacoste A, Legault P, Poulin JF, Rosenmund C, Awatramani R, **Trudeau LÉ**. (2020) VGluT2 Expression in Dopamine Neurons Contributes to Postlesional Striatal Reinnervation. *Journal of Neuroscience* 40(43):8262-8275.
26. Cannon T, Sinha A, **Trudeau LE**, Maurice CF, Gruenheid S (2020) Characterization of the intestinal microbiota during Citrobacter rodentium infection in a mouse model of infection-triggered Parkinson's disease. *Gut Microbes* 12(1):1-11.
27. Ducrot C, Bourque MJ, Delmas CVL, Racine AS, Guadarrama Bello D, Delignat-Lavaud B, Lycas MD, Fallon A, Michaud-Tardif C, Burke Nanni S, Herborg F, Gether U, Nanci A, Takahashi H, Parent M, **Trudeau L-E** (2021) Dopaminergic neurons establish a distinctive axonal arbor with a

majority of non-synaptic terminals. *FASEB Journal*, Aug;35(8):e21791. doi: 10.1096/fj.202100201RR.

28. Tanguay W, Ducrot C, Giguère N, Bourque MJ, **Trudeau L-E**. (2021) Neonatal 6-OHDA lesion of the SNc induces striatal compensatory sprouting from surviving SNc dopaminergic neurons without VTA contribution. *European Journal of Neuroscience* Oct;54(7):6618-6632. doi: 10.1111/ejn.15437.
29. Delignat-Lavaud B, Ducrot C, Kouwenhoven W, Feller N, **Trudeau L-E** (2022) Implication of synaptotagmins 4 and 7 in activity-dependent somatodendritic dopamine release. *Open Biology*, Mar;12(3):210339. doi: 10.1098/rsob.210339. Epub 2022 Mar 2.
30. Delignat-Lavaud B, Kano J, Ducrot C, Massé I, Mukherjee S, Giguère N, Moquin L, Lévesque C, Burke S, Bourque M-J, Rosa-Neto P, Lévesque D, De Beaumont L, **Trudeau L-E** (2022) The calcium sensor synaptotagmin-1 is critical for phasic axonal dopamine release in the striatum and mesencephalon, but is dispensable for basic motor behaviors in mice. *Nature Communications*, revisions requested. *BioRxiv* doi: https://doi.org/10.1101/2021.09.15.460511.