Curriculum Vitae – Melanie A. Woodin

Personal Information

NAME AND TITLE	Melanie A. Woodin, PhD Professor, Cell and Systems Biology Dean, Faculty of Arts & Science University of Toronto
ADDRESS	Department of Cell & Systems Biology 25 Harbord Street Toronto, ON, M5S 3G5 m.woodin@utoronto.ca

Academic Qualifications

1995	BSc	Biology	University of Toronto
1997	MSc	Zoology	University of Toronto
2001	PhD	Neuroscience	University of Calgary

Employment

2017	Full Professor	University of Toronto
2009	Associate Professor	University of Toronto
2004	Assistant Professor	University of Toronto
2001	Postdoctoral Fellow	UC Berkeley

Research Interests

Neuroscience, inhibitory synaptic transmission and plasticity, neuronal chloride regulation, learning and memory, neurological disorders, neurodegenerative diseases, electrophysiology, biochemistry, model organisms

Professional Appointments

2019-2024	Dean, Faculty of Arts and Sciences	University of Toronto
2018-2019	Vice-Dean, Faculty of Arts and Science Interdivisional Partnerships	University of Toronto
2018	Associate Dean, Faculty of Arts and Science Undergraduate Issues and Academic Planning	University of Toronto
2015-2017	Director, Human Biology Program	University of Toronto
2014-2015	Associate Chair, Undergraduate Cell and Systems Biology	University of Toronto

Honours and Awards

2021	Cumming School of Medicine Alumni of Distinction Award	University of Calgary
2014	Neuroscience Alumnus of the Year, Hotchkiss Brain Institute	University of Calgary
2013-2018	Dean's Excellence Award	University of Toronto
2010-2013	Discovery Accelerator Award	NSERC
2004-2009	University Faculty Award	NSERC
2001-2003	Postdoctoral Fellowship	CIHR
2001-2003	Postdoctoral Fellowship	Alberta Heritage Foundation for Medical Research
2000	Doctoral Research Award	Neuroscience Canada Foundation
1999-2000	Doctoral Research Award	Medical Research Council of Canada
1998-1999	Doctoral Research Award	Alberta Heritage Foundation for Medical Research
1999	PhD Studentship Award	Astra-Zeneca
1998-1999	PhD Studentship Award	Alberta Lung Association
1996-1997	Open Fellowship Graduate Award	University of Toronto

Professional Affiliations and Activities

BOARD MEMBERSHIP

2020-	Vector Institute	Toronto, Ontario
2020-	Palette Skills Inc	Toronto, Ontario
2021-2024	Scientific Advisory Board Neuroscience and Mental Health Institute	University of Alberta
2021-	Scientific Advisory Board UBC Djavad Mowafaghian Centre for Brain Health (DMCBH)	University of British Columbia

GRANT REVIEW

2018	BrainsCAN (CFREF) Accelerator Review Panel	Western University
2018	National Science Centre – Grant Reviewer	Poland
2017-2018	Scientific Officer, Project Grant Competition (Neuroscience A, C)	CIHR
2012-2016	Neurosciences A (NSA) Operating/Project Grant Committee Member	CIHR
2016	Foundation for Alzheimer Research	Belgium
2012-2017	National Research Agency ANR	France
2014-2015	Foundation Scheme Stage 1 Reviewer	CIHR
2012-2015	German Research Foundation	Germany
2006-2018	Discovery Grants External Reviewer (~2 grants/year)	NSERC
2011-2013	RTI 1501 (Genes, Cells & Molecules) Evaluation Committee Member	NSERC
2010	Italian Telethon Organization	Italy
2007	Scottish-Rite Charitable Organization	UK
2006-2007	China-Canada Joint Health Research Reviewer	CIHR

SCIENTIFIC SOCIETIES

2018-2019	Chair, Advocacy Committee	Canadian Association of Neuroscience (CAN)
2018-2019	US/Canada Committee Member	International Brain Research Organization (IBRO)
2013-2016	Executive Board Member	CAN
2015-2016	Meeting Organizer	CAN

2013	Symposium Organizer	International Union of Physiological Sciences, IUPS, UK
2012	President	Southern Ontario Neuroscience Association, SONA, SFN Chapter
2010-2013	Executive Council, Secretary	Canadian Physiological Society (CPS)
2012	Local Committee Organizer, Modern Therapeutics	Toronto
2009-2012	Nominating Committee	CPS
2011	Symposium Organizer	CAN
2006-2009	Councillor	CPS
2008	Symposium Organizer	CAN
1997-present	Member	Society for Neuroscience (SFN)
2005-present	Member	CAN

MANUSCRIPT REVIEW

Neuron, Nature Communications, Nature Neuroscience, Journal of Neuroscience, Cell Reports, Journal of Physiology, PNAS, Neuroscience Research, European Journal of Neuroscience, Developmental Neurobiology, British Journal of Pharmacology, BRAIN, Journal of Biological Rhythms, Neuroscience, Frontiers in Synaptic Neuroscience, Frontiers in Cellular Neuroscience, Journal of Neurophysiology, Journal of Physiology, Brain Research, Neural Plasticity, PLoS Computational Biology, PLoS One, eNeuro, Neuropharmacology, eNeuro

Grants

Funded:

2020-2025	NSERC Discovery Grant Inhibitory Synaptic Plasticity	Total amount: $290, 000
2019-2022	Medicine by Design (Operating) Gene Therapies to Promote Neuroregeneration and Enhance Neuroplasticity In collaboration with Dr. Cindi Morshead (Anatomy, U of T), Dr. Carol Schuurmans (Sunnybrook), Dr. Maryam Faiz (Anatomy, U of T), Dr. Isabelle Aubert (Sunnybrook)	Total amount to Woodin: $96,000
2018-2021	CIHR Operating Grant Joint Canada-Israel Health Research Program Synaptic mechanisms underlying perceptual learning In collaboration with Dr. Adi Mizhai (Israel) and Dr. Burgin (Argentina)	Total amount: $670, 000
2018-2023	CIHR Project Grant (Operating) Synaptic Inhibition in Huntington's Disease	Total amount: $879, 750
2018-2020	Medicine by Design (MbD) Using Chemogenetics to Repair the Primary Motor Cortex in ALS	Total amount: $200, 000
2017-2018	CIHR Project Grant (Operating) Inhibitory Synaptic Plasticity and Chloride Regulation	Total amount: $100, 000
2012-2017	CIHR Operating Grant Inhibitory Synaptic Plasticity and Chloride Regulation	Total amount: $584, 790
2015-2020	NSERC Discovery Grant Inhibitory Synaptic Plasticity	Total amount: $200, 000
2016-2018	Simons Foundation Autism Research Initiative (SFARI) Regulation of KCC2 as a target for treatment of Autism In collaboration with Dr. Yves De Koninck, Laval University $180, 000 to Woodin	Total amount: $300, 000

2015-2017	ALS-Brain Canada Bernice Ramsay Innovation Grant Synaptic Inhibition in the Motor Cortex of ALS	Total amount: $100, 000
2015-2016	NSERC RTI Equipment Grant Optical Uncaging of Neurotransmitters	Total amount: $118, 748
2013-2014	NSERC RTI Equipment Grant Multi-wavelength Patterned Illuminator for Optogenetic Stimulation of Neurons	Total amount: $4, 732
2010-2015	NSERC Discovery Grant Disinhibition-Mediated Long-Term Potentiation	Total amount: $200, 000
2010-2012	NSERC Accelerator Disinhibition-Mediated Long-Term Potentiation	Total amount: $120, 000
2010-2011	NSERC RTI Equipment Grant Nucleofection of Cultured Hippocampal Neurons	Total amount: $24, 623
2007-2010	NSERC Discovery Grant Spike-Timing Dependent Plasticity of GABAergic Synapses in the Hippocampus	Total amount: $85, 950
2004-2007	NSERC Discovery Grant Activity-Induced Plasticity of Inhibitory Synapses	Total amount: $103, 230

Publications (peer-reviewed publications)

2022

Bang JY, Sunstrum JK, Garand D, Parfitt GM, Woodin MA, Inoue W, Kim JC (2022) Hippocampal-hypothalamic circuit controls context-dependent innate defensive responses. eLife 11:e74736 DOI: 10.7554/eLife.7473

Pressey JC, Raveendran VA, De Saint-Rome M, Woodin MA (2022) Chloride transporters controlling neuronal excitability. Physiological Reviews. Under Review.

2021

Pressey JC and Woodin MA (2021) Kainate Receptor Regulation of Synaptic Inhibition in the Hippocampus. The Journal of Physiology 599 (2), 485-492 doi: 10.1113/JP279645

Serranilla M and Woodin MA (2021) Striatal chloride dysregulation and impaired GABAergic signaling due to CCC dysfunction in Huntington's disease. Frontiers in Cellular Neurocience. doi: 10.3389/fncel.2021.817013

2020

Raveendran VA, Pressey JC, Woodin MA (2020) A Novel Small Molecule Targets NKCC1 to Restore Inhibition. Trends in Pharmacological Sciences. 41(12):897-899. doi: 10.1016/j.tips.2020.10.002.

Khademullah S, Aqrabawi AJ, Place KM, Dargaei Z, Liang X, Pressey JC, Bedard S, Yang JW, Garand D, Keramidis I, Gasecka A, Cote D, De Koninck Y, Keith J, Zinman L, Robertson J, Kim JC, Woodin MA (2020) Cortical Interneuron-Mediated Inhibition Delays the Onset of Amyotrophic Lateral Sclerosis. Brain. 2020 Mar 1;143(3):800-810. doi: 10.1093/brain/awaa034.

Salmon CK, Pribiag H, Gizowski C, Farmer WT, Cameron S, Jones EV, Mahadevan V, Bourque CW, Stellwagen D, Woodin MA, Murai KK (2020) Depolarizing GABA Transmission Restrains Activity-Dependent Synapse Formation in the Developing the Developing Hippocampal Circuit. Frontiers in Cellular Neuroscience Feb 25;14:36. doi: 10.3389/fncel.2020.00036.

Gonatopoulos-Pournatzis T, Niibori R, Salter EW, Weatheritt RJ, Tsang B, Farhangmehr S, Liang X, Braunschweig U, Roth J, Zhang S, Henderson T, Sharma E, Quesnel-Vallières M, Permanyer J, Maier S, Georgiou J, Irimia M, Sonenberg N, Forman-Kay JD, Gingras AC, Collingridge GL, Woodin MA, Cordes SP, Blencowe BJ (2020) Autism-Misregulated eIF4G Microexons Control Synaptic Translation and Higher Order Cognitive Functions. Molecular Cell pii: S1097-2765(20)30006-X. doi: 10.1016/j.molcel.2020.01.006.

2019

Dargaei Z, Liang X, Serranilla M, Santos J, Woodin MA (2018) Alterations in hippocampal inhibitory synaptic transmission in the R6/2 mouse model of Huntington's disease. Neuroscience 404: 130-140

Garand D, Mahadevan V, Woodin MA (2019) Ionotropic and metabotropic kainate receptor signaling regulates Cl^- homeostasis and GABAergic inhibition. Journal of Physiology 597(6):1677-1690

2018

Dargaei Z, Bang JY, Mahadevan V, Khademullah CS, Bedard S, Parfitt GM, Kim JC, Woodin MA (2018) Restoring GABAergic inhibition rescues memory deficits in a Huntington's disease mouse model. PNAS 115 (7), E1618-E1626

2017

Maffei A, Charrier C, Caiati M, Barberis A, Mahadevan V, Woodin MA, Tyagaraja (2017) Emerging Mechanisms Underlying Dynamics of GABAergic Synapses. Journal of Neuroscience 37 (45), 10792-10799

Mahadevan V, Khademullah S, Dargaei Z, Pressey JC, Uvarov P, Kwan J, Ackloo S, Bagshaw R, Emili A, Airaksinen MS, Anggono V, DeKoninck Y, Woodin MA (2017) Network organization of native potassium-chloride cotransporter KCC2 interactome revealed by unbiased proteomic analysis. eLife 6. pii: e28270. doi: 10.7554/eLife.28270. *Recommended in F1000Prime as being of special significance in its field.*

Pressey JC, Mahadevan V, Khademullah CS, Chevrier J, Chauhan AK, Meas SJ, Uvarov P, Airaksinen MS, Woodin MA (2017) The Kainate Receptor Subunit GluK2 Promotes Recycling of KCC2 to the Surface Membrane in Hippocampal Neurons. Journal of Biological Chemistry 292(15):6190-6201

2016

Aqrabawi A, Browne C, Dargaei Z, Garand D, Khademullah C, Woodin MA, Kim JC (2016) A bidirectional switch for olfaction: top-down modulation of olfactory-guided behaviours by the anterior olfactory nucleus pars medialis and ventral hippocampus. Nature Communications 7: 13721

Quesnel-Vallières M, Dargaei Z, Irimia M, Gonatopoulos-Pournatzis T, Ip J, Sterne-Weiler T, Nakagawa S, Woodin MA, Blencowe BJ, Cordes SP (2016) Misregulation of an activity-dependent splicing network as a common mechanism underlying autism spectrum disorders. Molecular Cell 64(6):1023-1034

Raimondo JV, Richards BA, Woodin MA (2016) Neuronal chloride and excitability – the big impact of small changes. Current Opinion in Neurobiology 43:35-42

Mahadevan V, Woodin MA (2016) Regulation of neuronal chloride homeostasis by neuromodulators. The Journal of Physiology 594(10):2593-605

2015

Mahadevan V, Dargaei Z, Ivakine EA, Hartmann AM, Ng D, Chevrier J, Ormond J, Nothwang HG, McInnes RR, Woodin MA (2015) Neto2-null mice have impaired inhibition and are susceptible to seizures. Frontiers in Cellular Neuroscience. 9:368 11 pages

Meyer M, Reimand J, Lan X, Head R, Zhu X, Pressey J, Kushida M, Bayani J, Lionel AC, Clarke I, Cusimano M, Squire J, Scherer SW, Bernstein M, Woodin MA, Bader GD & Dirks P (2015). Single cell derived clonal analysis of human gliobastoma links functional and genomic heterogeneity. PNAS 112(3):851-6.

2014

Nguyen R, Morrissey MD, Mahadevan V, Cajanding J, Woodin MA, Yeomans JS, Takehara-Nishiuchi K & Kim J (2014). Parvalbumin and GAD65 Interneuron Inhibition in the Ventral Hippocampus Induces Distinct Behavioral Deficits Relevant to Schizophrenia. The Journal of Neuroscience 34, 14948–14960.

Mahadevan V, Pressey JC, Acton BA, Uvarov P, Huang MY, Chevrier J, Puchalski A, Li CM, Ivakine EA, Airaksinen MS, Delpire E, McInnes RR & Woodin MA (2014). Kainate Receptors Coexist in a Functional Complex with KCC2 and Regulate Chloride Homeostasis in Hippocampal Neurons. Cell Reports 7, 1762–1770.

Richards BA, Xia F, Santoro A, Husse J, Woodin MA, Josselyn SA & Frankland PW (2014). Patterns across multiple memories are identified over time. Nature Neuroscience 17, 981–986.

Yiu AP, Mercaldo V, Yan C, Richards B, Rashid AJ, Hsiang H-LL, Pressey J, Mahadevan V, Tran MM, Kushner SA, Woodin MA, Frankland PW & Josselyn SA (2014). Neurons Are Recruited to a Memory Trace Based on Relative Neuronal Excitability Immediately before Training. Neuron 83, 722–735.

2013

Ivakine EA*, Acton BA*, Mahadevan V*, Ormond J, Tang C, Pressey JC, Huang MY, Ng D, Delpire E, Salter MW, Woodin MA†, McInnes RR (†CORRESPONDING AUTHOR) (2013) Neto2 is a KCC2 Interacting Protein Required for Neuronal Cl- Regulation in Hippocampal Neurons. PNAS 110:3561-6.

Takkala P and Woodin MA (2013) Muscarinic acetylcholine receptor activation prevents disinhibition-mediated LTP in the hippocampus. Frontiers in Cellular Neuroscience 7:16 8 pages

Vogels TP, Froemke RC, Doyon N, Gilson M, Haas JS, Liu R, Maffei A, Miller P, Wierenga C, Woodin MA, Zenke F, Sprekeler H (2013) Inhibitory Synaptic Plasticity – Spike timing dependence and putative network function. Frontiers in Cellular Neuroscience 7:119 11 pages

2012

Ben-Ari Y, Woodin MA, Sernagor E, Cancedda L, Vinay L, Rivera C, Legendre P, Luhmann HJ, Bordey A, Wenner P, Fukuda A, van den Pol A, Gaiarsa JL, Cherubini E (2012) Refuting the challenges of the developmental shift of polarity of GABA actions: GABA more exciting than ever! Frontiers in Cellular Neuroscience 6:35 18 pages

Sekeres MJ, Mercaldo V, Richards B, Sargin D, Mahadevan V, Woodin MA, Frankland PW, Josselyn SA (2012) Increasing CRTC1 Function in the Dentate Gyrus During Memory Formation or Reactivation Increases Memory Strength Without Compromising Memory Quality. The Journal of Neuroscience 32(49): 17857-68

Acton BA, Mahadevan V, Mercado A, Uvarov P, Ding Y, Pressey J, Airaksinen MS, Mount DB, Woodin MA (2012) Hyperpolarizing GABAergic Transmission Requires the KCC2 C-Terminal ISO Domain. The Journal of Neuroscience 32(25): 8746-51

2011

Pamenter ME, Hogg DW, Ormond G, Shin DS, Woodin MA, Buck LT (2011) Endogenous GABAA and GABAB receptor-mediated electrical suppression is critical to neuronal anoxia tolerance. PNAS 108(27):11274-9.

Ormond J, Woodin MA (2011) Disinhibition-mediated LTP in the hippocampus is synapse specific. Frontiers in Cellular Neuroscience 5:17.

2010

Lamsa K, Kullmann D, Woodin MA (2010) Inhibitory Synaptic Plasticity and Spike-Timing Dependent Plasticity. Frontiers in Synaptic Neuroscience 2:8

Balena T, Acton BA, Woodin MA (2010) GABAergic synaptic transmission regulates calcium influx during spike timing dependent plasticity. Frontiers in Synaptic Neuroscience 2:16

2009

Ormond J, Woodin MA (2009) Disinhibition Mediates a Form of Hippocampal Long-Term Potentiation in Area CA1. PLoS ONE 4(9):e7224

2008

Saraga F, Balena T, Wolansky T, Dickson CT, Woodin MA (2008) Inhibitory synaptic plasticity regulates pyramidal neuron spiking in the rodent hippocampus. Neuroscience 155:64-75.

Balena T, Woodin MA (2008) Coincident pre- and postsynaptic activity down-regulates NKCC1 to hyperpolarize ECl during development. European Journal of Neuroscience 27(9):2402-12.

Balena T, Acton BA, Koval D, Woodin MA (2008) Extracellular potassium regulates the chloride reversal potential in cultured hippocampal neurons. Brain Research 1205:12-20.

2007

Fiumelli H, Woodin MA (2007) Role of Activity-Dependent Regulation of Chloride Homeostasis in Development. Current Opinion in Neurobiology 17(1): 1-6.

2006

Cheung U, Moghaddasi M, Hall H, Smith JJB, Buck LT, Woodin MA (2006) Excitatory actions of GABA mediate severe-hypoxia induced depression of neuronal activity in the pond snail (Lymnaea stagnalis). Journal of Experimental Biology 209 (22):4429-4435.

2005 and prior

Woodin MA, Ganguly K, Poo MM (2003) Coincident pre- and postsynaptic activity modifies GABAergic synapses by postsynaptic changes in Cl- transporter activity. Neuron. 39(5):807-20.

Woodin MA, Munno DW, Syed NI (2002) Trophic factor-induced excitatory synaptogenesis involves postsynaptic modulation of nicotinic acetylcholine receptors. The Journal of Neuroscience 22(2): 505-514.

Munno DWM, Woodin MA, Lukowiak K, Syed NI, Dickenson PS (2000) Different extrinsic trophic factors regulate neurite outgrowth and synapse formation between identified Lymnaea neurons. The Journal of Neurobiology 44(1): 20-30.

Hamakawa T, Woodin MA, Bjorgum M, Painter S, Takasaki M, Lukowiak K, Nagle GT, Syed NI (1999) Excitatory synaptogenesis between identified Lymnaea neurons requires extrinsic trophic factors and is mediated by receptor tyrosine kinases. The Journal of Neuroscience 19(21): 9306-9312.

Woodin MA, Hamakawa T, Takasaki M, Syed NI (1999) Trophic factor-induced plasticity of synaptic connections between identified Lymnaea neurons. Learning and Memory 6(3): 307-316.

Woodin MA, Stephenson R (1998) Circadian rhythms in diving behavior and the ventilatory response to asphyxia in Canvasback ducks. American Journal of Physiology 274: R686-R693.

Stephenson R, Peever JH, Woodin MA, Jarsky TM (1997) Heat loss to water during head immersion in the Pekin duck. The Journal of Experimental Biology 278:429-434.

COMMENTARIES

Raveendran VA, Pressey JC, Woodin MA (2020) A Novel Small Molecule Targets NKCC1 To Restore Synaptic Inhibition. Trends Pharmacol Sci. 2020 (12):897-899

BOOKS AND CHAPTERS

Mahadevan V and Woodin MA. (2020). A Historical Overview of Chloride Transporter Research. In: Neuronal Chloride Transporters in Health and Disease. Edited by: Xin Tang. Published by: Elsevier Pages: 1-17

Pressey JC, Mahadevan V and Woodin MA (2020) KCC2 is a Hub Protein that Balances Excitation and Inhibition. In: Neuronal Chloride Transporters in Health and Disease. Edited by: Xin Tang. Published by: Elsevier, UK Pages: 159-179

Woodin MA (2013) Electrophysiological Methods for Investigating Inhibitory Synaptic Plasticity. In: Multidisciplinary Tools for Investigating Synaptic Plasticity (Nguyen P, editor). Humana Press, Springer.

Balena T, Acton B, Woodin MA (2011) Activity-dependent inhibitory synaptic plasticity mediated by chloride regulation. In: Inhibitory Synaptic Plasticity (Maffei A, Woodin MA, eds). Springer: New York.

Ormond J, Woodin MA (2008) Chloride Homeostasis and Development. In: Binder, M.D, Hirokawa, N, Windhorst, U, (eds). Encyclopedia of Neuroscience. Springer, Berlin, Heidelberg, New York.

Woodin MA, Poo MM (2003) Activity-dependent regulation of cation-chloride cotransporters. In: Excitatory-inhibitory balance: synapses, circuits and systems plasticity. Ed.: Takao K Hensch. Kluwer Academic Press.

BOOKS EDITED

Maffei A, Woodin MA. 2011. Inhibitory Synaptic Plasticity. Springer: New York.

ABSTRACTS PRESENTED (last 5 years)

Asgarihafshejani A, Serranilla M, Pressey JC, Woodin MA (2022) Federation of European Neuroscience Societies. Hippocampal GABAergic dysfunction in MeCP2 -/Y mice.

De Saint-Rome M, Woodin MA (2022) Federation of European Neuroscience Societies. Altered electrophysiological properties and excitatory network function of corticomotor neurons in C9orf72 loss-of-function mice.

Serranilla M, Pressey JC, Woodin MA (2022) Federation of European Neuroscience Societies. KCC2 function is altered in the indirect pathway of the basal ganglia in Huntington's Disease.

Liang X, Liu B, Woodin MA (2022) Federation of European Neuroscience Societies. Dissecting the neural circuits underlying experience-dependent plasticity in the mouse primary visual cortex.

C Asgarihafshejani A, Serranilla M, Pressey JC, Woodin MA (2022) Canadian Association for Neuroscience. Hippocampal GABAergic dysfunction in MeCP2 -/Y mice.

Raveendran VA, Pressey JC, Nim S, Corbi-Verge C, Kim PM, Woodin MA (2021) Society for Neuroscience, Virtual Conference. Enhancing potassium-chloride co-transporter-2 (KCC2)functionin neurons by targeting protein-protein interactions.

Raveendran VA, Pressey JC, Nim S, Corbi-Verge C, Kim PM, Woodin MA (2021) Canadian Association for Neuroscience, Virtual Conference. Enhancing potassium-chloride co-transporter-2 (KCC2)functionin neurons by targeting protein-protein interactions.

Serranilla M, Pressey JC, Woodin MA (2021) Society for Neuroscience, Virtual Conference. Neuronal potassium – chloride cotransporter KCC2 function is impaired in the indirect pathway of the basal ganglia in Huntington's Disease.

de Saint-Rome M, Asgarihafshejani A, Pressey JC, Robertson J, Woodin MA (2021) Canadian Association for Neuroscience, Virtual Conference. Age-dependent alterations in electrophysiological properties of corticomotor neurons in C9orf72 heterozygous mice.

Serranilla M, Pressey JC, Woodin MA (2021) Canadian Association for Neuroscience, Virtual Conference. Neuronal potassium – chloride cotransporter KCC2 function is impaired in the indirect pathway of the basal ganglia in Huntington's Disease.

Asgarihafshejani A, Pressey JC, Serranilla M, Woodin MA (2021) Canadian Association for Neuroscience, Virtual Conference. The temporoammonic (TA) input to CA1 synapse is hyperexcitable in MeCP2 -/Y mice.

Singh J, Wong AHM, Shahabi K, Zhao LF, Woodin MA, Dockstader MA (2019) The Human Biology Program's LAB BOOTCAMP: An Experiential Learning Program for Independent Undergraduate Research at The University of Toronto. Society for Neuroscience, Chicago, Ill.

Khademullah CS, Aqrabawi AJ, Place KM, Dargaei Z, Liang X, Pressey JC, Bedard S, Yang JW, Garand DW, De Koninck Y, Keith J, Zinman L, Robertson R, Kim JC, Woodin MA. (2019) International Society for Neurochemistry, Montreal, QC.

Liang X, Pressey JC, Woodin MA (2019) Gordon Research Conference on Inhibition in the CNS, Newry, ME.

Serranilla M, Chen K, Pressey JC, Woodin MA (2019) Gordon Research Conference on Inhibition in the CNS, Newry, ME.

Liang X, Pressey JC, Woodin MA (2019) Canadian Association for Neuroscience, Toronto, ON.

Serranilla M, Chen K, Pressey JC, Woodin MA (2019) Canadian Association for Neuroscience, Toronto, ON.

Khademullah CS, Aqrabawi AJ, Place KM, Dargaei Z, Liang X, Pressey JC, Bedard S, Yang JW, Garand DW, De Koninck Y, Keith J, Zinman L, Robertson R, Kim JC, Woodin MA. (2019) Medicine by Design Symposium, Toronto, ON.

Woodin MA, Khademullah CS, Dargaei Z, Chevrier J, Uvarov P, Kwan J, Bagshaw R, Pawson T, Emili A, De Koninck A, Anggono V, Airaksinen M, Mahadevan V. 2017. Native Kcc2 interactome reveals PACSIN1 as a critical regulator of synaptic inhibition Society for Neuroscience, Washington D.C.

Mahadevan V, Khademullah CS, Dargaei Z, Chevrier J, Uvarov P, Kwan J, Bagshaw R, Pawson T, Emili A, De Koninck A, Anggono V, Airaksinen M, Woodin MA. 2017. Gordon Research Conference on Inhibition in the CNS, Les Diablerets, CH.

Dargaei Z, Khademullah CS, Bang JY, Parfitt GM, Mahadevan V, Kim JC, Woodin MA. 2017. Gordon Research Conference on Inhibition in the CNS. Les Diablerets, CH.

Garand D, Woodin MA. 2017. Canadian Association for Neuroscience, Montreal, QC.

Khademullah CS, Dargaei Z, Woodin MA. 2017. Canadian Association for Neuroscience, Montreal, QC.

Salmon C, Pribiag H, Quesseveur G, Kacerovsky JB, Woodin MA, Stellwagen D, Murai D. 2017. Canadian Association for Neuroscience, Montreal, QC.

Khademullah CS, Woodin MA. 2016. Inhibitory Synaptic Transmission and KCC2 Expression in the Motor Cortex of Presymptomatic ALS Mice. Amyotrophic Lateral Sclerosis and Frontotemporal Degeneration. In Vivo Experimental Models. Vol. 17 Iss. Sup1.

Carson A, Mahadevan V, Pressey J, Raimondo J, Woodin MA, Richards B. 2016. Canadian Association for Neuroscience, Toronto, Ont.

Chevrier J, Mahadevan V, Pellegrino C, Woodin MA. (2016) Canadian Association for Neuroscience, Toronto, Ont.

Dargaei Z, Woodin MA. 2016. Canadian Association for Neuroscience, Toronto, Ont.

Garand D, Woodin MA. 2016. Canadian Association for Neuroscience, Toronto, Ont.

Khademullah CS, Dargaei Z, Woodin MA. 2016. Canadian Association for Neuroscience, Toronto, Ont.

Chevrier J, Mahadevan V, Woodin MA. 2015. Society for Neuroscience, Chicago Ill.

Salmon CK, Pribiag H, Cameron S, Mahadevan V, Stellwagen D, Woodin MA, Murai K. 2015. Society for Neuroscience, Chicago Ill.

Garand D, Woodin MA. 2015. Society for Neuroscience, Chicago Ill.

Chevrier J, Mahadevan V, Woodin MA. 2015. Canadian Association for Neuroscience, Vancouver, BC.

Dargaei Z, Woodin MA. 2015. Canadian Association for Neuroscience, Vancouver, BC.

Khademullah CS, Mahadevan V, Woodin MA. 2015. Canadian Association for Neuroscience, Vancouver, BC.

Garand D, Mahadevan V, Woodin MA. 2015. Canadian Association for Neuroscience, Vancouver, BC.

Yan C, Yiu AP, Mercaldo V, Richards B, Rashid AJ, Pressey J, Tran MM, Kushner SA, Woodin MA, Frankland PK, Josselyn SA. 2014. Society for Neuroscience, Washington DC.

Mahadevan C, Pressey JC, Acton BA, Uvarov P, Ivakine EA, Airaksinen MA, Woodin MA. 2014. Federation of European Neurosciences Annual Meeting, Milan, IT.

Pressey JC, Mahadevan C, Acton BA, Woodin MA. 2014. Federation of European Neurosciences Annual Meeting, Milan, IT.

Pressey J, Mahadevan V, Acton BA, Woodin MA. 2014. Canadian Association for Neuroscience, Montreal, QC.

Nguyen R, Mahadevan V, Cajanding J, Woodin MA, Yeomans J, Kim J. Canadian Association for Neuroscience, Montreal, QC.

Yiu AP, Mercaldo V, Yan C, Richards B, Rashid AJ, Hsiang L, Pressey J, Mahadevan V, Tran MM, Kushner SA, Woodin MA, Frankland PK, Josselyn SA. Canadian Association for Neuroscience, Montreal, QC.

Mahadevan V, Pressey JC, Acton BA, Huang MY, Puchalski A, Ivakine EA, Delpire E, McInnes RR, Woodin MA. 2013. Society for Neuroscience, San Diego CA.

Yiu AP, Mercaldo V, Tran C, Richards B, Woodin MA, Roth BL, Frankland PW, Josselyn SA. 2013. Society for Neuroscience, San Diego CA.

Pressey JC, Mahadevan V, Acton BA, Woodin MA. 2013. Society for Neuroscience, San Diego CA.

Acton BA, Ivakine EA, Mahadevan V, Ormond J, Tang C, Pressey JC, Huang MY, Ng D, Delpire E, Salter MW, Woodin MA, McInnes RR. 2013. Canadian Association for Neuroscience, Toronto, ON.

Acton BA, Mahadevan V, Mercado A, Uvarov P, Ding Y, Pressey J, Airaksinen MS, Mount DB, Woodin MA. Hyperpolarizing GABAergic Transmission requires the KCC2 C-terminal ISO Domain. 2012. Society for Neuroscience, New Orleans, LA

Pressey JC, Balena T, Woodin MA. 2011. Society for Neuroscience, Washington DC

Acton BA, Pressey J, Mercado A, Mahadevan V, Ivakine E, Mount DB, Woodin MA. 2011. Society for Neuroscience, Washington DC

Pressey JC, Balena T, Woodin MA. 2011. Canadian Association for Neuroscience, Quebec, QC

Ivakine E, Acton B, Mahadevan V, Woodin MA, McInnes RR. 2011. Canadian Association for Neurosci, Quebec, QC

Invited Presentations

2022	Canadian Association of Neuroscience (upcoming)	Toronto, ON
2022	5th Annual Brain in Flux Meeting (upcoming)	Japan
2022	Satellite Meeting of the FENS Forum (upcoming) The Neuroarcheology of brain disorders and GABA signals	Paris, FR
2021	Life Sciences Career Expo: Pathways to Success	Toronto, ON
2021	NeuroWire Virtual Club Universite de Laval (declined)	Laval, QC
2020	Queen's University – Experimental Medicine (cancelled)	Kingston, ON
2019	International Society for Neurochemistry	Montreal, QC
2019	Inhibition in the CNS Gordon Research Conference	Newry, ME
2019	Canadian Association of Neuroscience	Toronto, ON
2019	Biomedicine Research Institute of Buenos Aires	Argentina
2019	Sunnybrook Research Institute	Toronto, ON
2018	UBC Center for Brain Health	Vancouver, BC
2018	Univeriste de Montreal, Neuroscience	Montreal, QC
2018	UVic Division of Medical Sciences	Victoria, BC
2018	14th Andre-Delambre Symposium on ALS	Quebec City, QC
2018	ALS Canada Conference	Toronto, ON
2017	Universite de Laval Cervo Brain Research Centre	Quebec City, QC
2017	Tufts University Department of Neuroscience	Boston, MA
2017	Society for Neuroscience SFN Annual Meeting	Washington, DC
2017	Precision Medicine and Ion Channel Retreat	Aurora Biomed, BC
2016	MRC Centre for Developmental Neurobiology	Kings College London, UK
2016	Centre for Investigation of Neurological Disorders	Penn State University, PA
2016	MINDS Program	McMaster University, ON

2015	Canadian Association of Neuroscience	Vancouver, BC
2015	Department of Pathology and Cell Biology	University de Montreal, QC
2014	Hotchkiss Brain Insitute	University of Calgary, AB
2014	Neuropharmacology Conference GABAergic Signaling in Health and Disease	Arlington, VA
2013	International Union of Physiological Sciences, IUPS	Birmingham, UK
2013	Canadian Association of Neuroscience	Toronto, ON
2013	Montreal Neurological Institute	Montreal, QC
2013	Toronto Western Hospital Research Institute	Toronto, ON
2013	Italian Institute of Technology	Genoa, IT
2013	Institute of Neuroscience	Marseille, FR
2013	Institute of Neurobiology of the Mediterranean	Marseille, FR
2012	International Graduate School of Neuroscience, Rurh University	Bochum, DE
2012	COSYNE	Snowbird, Utah
2012	Fields Institute Workshop Towards Mathematical Modeling of Neurological Disease,	Toronto, ON
2011	York University, Graduate Program in Neuroscience	Toronto, ON
2011	SUNY- Stony Brook Department of Neurobiology & Behavior	Stony Brook, NY
2010	Department to Pharmacology	University of Oxford, UK
2010	Department of Neuroscience	University College London, UK
2010	Department of Physiology	Emory University, Atlanta
2009	Society for Neuroscience	Chicago, IL
2009	Winter Conference on Brain Research	Vail, CO
2008	Canadian Association of Neuroscience	Montreal, QC
2008	The Year of the Interneuron, CIFAR	Toronto, ON
2008	Centre for Neurobiology of Stress	University of Toronto Scarborough, ON
2008	Molecular Basis of Behaviour (invitation declined)	Korea
2007	Gordon Research Conference on Inhibition	Maine
2006	COSYNE Conference	Park City, UT
2006	Department of Biological Sciences	Brock University, ON
2006	Department of Cell Biology & Anatomy	University of Calgary, AB
2005	Neuroscience Center	University of Helsinki, Finland
2005	Department of Life Sciences	University of Toronto Scarborough, ON
2005	Molecular Basis of Behaviour	Toronto, ON
2004	American Epilepsy Society	New Orleans, LA
2004	Southern Ontario Neuroscience	St. Catharines, ON
2003	Department of Psychology	University of Toronto, ON
2003	Department of Zoology	University of Toronto, ON
2003	Department of Biology	McGill University, QC
2003	Department of Physiology	McGill University, QC
2001	The Salk Institute	San Diego, CA
2001	Department of Biology	University of California San Diego, CA
2001	Centre for Neuronal Survival	McGill University, QC
2001	Neuroscience Research Center	University of Texas at Houston, TX

Undergraduate Teaching

2013-2018	CSB432H Advanced Topics in Neurophysiology Lectured 100%, developed course	Enrolment 40
2012-2015	CSB397H Research Abroad in Cell & Systems Biology Team Lead, developed course	Enrolment 15
2007-2013	BIO271H Animal Physiology II Lectured 50%, Course Leader	Enrolment 500
2004-12	CSB332H Neurobiology of the Synapse Lectured 100%, developed course	Enrolment 400
2003-present	CSB498Y Independent Research Project	~1 student/year
2014-present	HMB499Y Independent Research Project in Human Biology	~1 student/year
2017-2018	ANA498Y Independent Research project	1 student
2011-13	ROP299Y Research Opportunity Project	2 students/year

Graduate Teaching and Supervision

MSc STUDENTS

2017-2018	Kara Place The role of synaptic inhibition in the primary motor cortex of SOD1-ALS mice
2017-2018	Melissa Serranilla The role of Striatal Chloride Homeostasis and Inhibitory Synaptic Transmission in Huntington's Disease
2014-2016	Jonah Chevrier Cation-chloride cotransporters exist with NMDA receptors in macromolecular complexes
2013-2015	Annik Yalnizyan-Carson Modeling Ca^{2+}-Dependent Regulation of KCC2 Phosphorylation as a Mechanism for Inhibitory Synaptic Plasticity Co-supervised with Blake Richards
2010-2012	Petri Takkala Cholinergic Modulation of Inhibitory Synaptic Plasticity
2005-2007	Trevor Balena Calcium dynamics during the induction of spike-timing mediated GABAergic synaptic plasticity in the Hippocampus

PhD STUDENTS

2019 – present	Miranda De Saint-Rome Hyperexcitability in the C9orf72 mouse model of ALS
2018- present	Vineeth AR KCC2 protein interaction inhibtors for the treatment of neurological diseases
2018-present	Melissa Serranilla The role of Striatal Chloride Homeostasis and Inhibitory Synaptic Transmission in Huntington's Disease
2017-present	Xinyi (Lynn) Liang (co-supervisor) Spike-timing dependent inhibitory synaptic plasticity in cortical circuits
2013-2020	Danielle Garand Activity-dependent kainate receptor-mediated regulation of Cl^- homeostasis
2014-2018	Zahra Dargaei

	Aberrant chloride homeostasis and inhibitory synaptic transmission in Huntington's disease
2014-2018	Charline (Sahara) Khademullah Inhibitory Dysfunction in the SOD1-ALS Motor Cortex
2011-2015	Vivek Mahadevan Regulation of neuronal Cl- homeostasis and GABAergic inhibition by components of excitatory neurotransmission
2010-2015	Jessica Pressey Investigating protein interactions which regulate KCC2-mediated chloride homeostasis
2008-2013	Brooke Acton The cellular regulation of KCC2
2007-2011	Trevor Balena Ca^{2+} dynamics during the induction of inhibitory synaptic plasticity
2005-2009	Jake Ormond Bidirectional Spike-Timing Plasticity of GABAA Receptor Mediated Inhibition in the Hippocampus

GRADUATE COURSES TAUGHT

2009-2018	CSB1000H Molecular and Cellular Basis of Plasticity Co-taught with V. Tropepe; biennial	Enrolment 12
2017	CSB100H Current Techniques in Neuroscience Co-taught with V. Tropepe	Enrolment 16

Trainee Supervision (other) Teaching and Supervision

TECHNICIANS AND POSTDOCTORAL FELLOWS

2019-present	Azam Asgarihafshejani	Postdoctoral Fellow
2018-2020 -present	Dr. Jessica Pressey	Research Associate
2019-2020	Irving Rosas-Brugada	Lab Technican
2017-2018	Dr. Chinmaya Sadangi	Postdoctoral Fellow
2017-2018	Faiza Mahmud	Research Assistant
2015-present	Simon Bedard	Lab Technician
2013-2014	Ella Czerwinska	Lab Technician
2006-2008	Dr. Fernanda Saraga	Postdoctoral Fellow
2006	Una Cheung	Lab Technician
2004	Jahan Salma Lab Technician	

UNDERGRADUATE WORK STUDY AND SUMMER STUDENTS

2018	Sophia Lau	Work Study Student
2017	Janeane Santos	Work Study Student
2016	Justin Yang	Work Study Student
2015	Wendy Ye	Work Study Student
2015	Steven Meas	Work Study Student
2014	Alamjeet Chauhan	Work Study Student

2010	Adwitia Dey	Work Study Student
2010	Cynthia Chan	NSERC Summer Student
2010	Angela Brijmohan	Summer Student
2008	Brooke Acton	NSERC Summer Student
2008	Dmitrii Koval	NSERC Summer Student
2007	Dmitrii Koval	NSERC Summer Student
2007	Brooke Acton	University of Toronto Excellence Award
2006	Hannah Hall	NSERC Summer Student
2005	Sanaz Kermanshahi	NSERC Summer Student

Teaching Grants

2018-2020	Lab BootCamp; Funded by FAS Atlas and the CRF Co-applicant: Colleen Dockstader	$142, 319
2008-2009	Student Experience Fund, Faculty of Arts & Science Modern experimental approaches for animal physiology undergraduate laboratories	$75, 000
2011-2013	Writing Instruction for Teaching Assistants (WIT) Project Grant	$22, 500

Graduate Student Supervisory Committee Membership

PhD STUDENTS

2016-2021	Jordan Guerguiev (Dr. Blake Richards)	Cell and Systems Biology
2015-2020	Isabel MacKay-Clackett (Dr. van der Kooy)	Institute Medical Sciences
2015-2020	Alex Guet-McCreight (Dr. Frances Skinner)	Physiology
2015-2020	Sara Pinwalta (Dr. John Peever)	Cell & Systems Biology
2012-2015	Gabriela Rozanski (Dr. Elise Stanley)	Physiology
2012-2019	Simon Liu (Dr. John Peever)	Cell & Systems Biology
2010-2014	Sherri Thiele (Dr. Joanna Nash)	Cell & Systems Biology
2010-2017	Robert Chen (Dr. Elise Stanley)	Physiology
2010-2018	Peter Hawrysh (Dr. Les Buck)	Cell & Systems Biology
2009-2014	Ian Prescott (Dr. Bill Hutchison)	Physiology
2009-2015	Katie Ferguson (Dr. Frances Skinner)	Physiology
2008-2013	David Hogg (Dr. Les Buck)	Cell & Systems Biology
2008-2014	James Morrow (Dr. Belinda Chang)	Cell & Systems Biology
2007-2010	Youssef El-Hayek (Dr. Peter Carlen)	Physiology
2006-2011	Rob Bonin (Dr. Beverley Orser)	Physiology
2004-2009	Matt Pamenter (Dr. Les Buck)	Cell & Systems Biology

MSc STUDENTS

2017-2020	Victoria Dawson (Dr. JC Kim)	Cell & Systems Biology
2017-2019	Francine Milone (Dr. John Calarco)	Cell & Systems Biology
2016-2018	Linda Yang (Dr. John Peever)	Cell & Systems Biology
2015-2018	Farah Al-Dajani (Dr. Les Buck)	Cell & Systems Biology
2015-2019	Varshinie Pillai (Dr. Les Buck)	Cell & Systems Biology
2014-2017	Ashley Miles (Dr. Les Buck)	Cell & Systems Biology

2014-2015	Alex Guet-McCreight (Dr. Frances Skinner)	Physiology
2011-2013	Louise Lannoy (Dr. David Lovejoy)	Cell & Systems Biology
2011-2013	Tom Curry (Dr. John Yeomans)	Cell & Systems Biology
2011-2013	Hilary Bond (Dr. Les Buck)	Cell & Systems Biology
2011-2014	Salvador Alcaire (Dr. Mei Zhen)	IMS
2010-2012	Zoltan Torontali (Dr. John Peever)	Cell & Systems Biology
2008-2010	Aqsa Malik (Dr. Les Buck)	Cell & Systems Biology
2006-2008	Brian Khoo (Dr. Vince Tropepe)	Cell & Systems Biology
2005-2007	Gavin Tse (Dr. John Peever)	Zoology
2005-2006	Saba Mir (Dr. John Peever)	Zoology
2007-2009	Ian Prescott (Dr. Bill Hutchison)	Physiology

PhD Proposal/Transfer Exam Committees at U of T	~3/year
MSc and PhD Final Oral examination Committees at U of T	~3/year
External Examiner of PhD Committees outside of U of T	~1/year

ADMINISTATION

UNIVERSITY

2016-2017	UTM Biology Faculty Search Committee Member
2016-present	Facilitator for 'Unconscious Bias' workshops
2015-2017	New College Academic Affairs Committee and New College Council
2013-2018	Centre for Biological Timing & Cognition Advisory Committee
2013-present	Collaborative Program in Neuroscience Academic Program Committee
2011-2013	Peer-review Committee on Animal Care
2010	Speaker "New Academic Administrators Orientation and Leadership Retreat" Office of the Vice Provost Faculty and Academic Life
2009-2013	FLC (First Year Learning Communities) Faculty Mentor, New College
2009	Invited Speaker for the "Top Ten Tips to Tenure" Series Status of Women Office Office of the Vice President
2005-2008	University Tribunal, Office of the Governing Council, Simcoe Hall

FACULTY OF ARTS AND SCIENCE

2015-2017	Director, Human Biology Program
2017	FAS DDAH Steering Committee
2017-2018	FAS Postdoctoral Fellowship Selection Committee
2015-2017	FAS Committee on Admissions
2014-2016	FAS International Advisory Committee
2015-2017	Life Sciences Executive Committee
2014-2017	Life Sciences Curriculum (Planning) Committees
2015	Advisory Committee member for the Appointment of CSB Chair
2010-2013	FAS POSt Advisory Committee
2010-2013	FAS Undergraduate Research Fund Committee
2010-2013	FAS Student Awards Committee
2008	"Speaking-up" Working Group on Gender Differences
2008	Invitation to speak at the New Faculty Orientation
2007-present	Centre for Biological Timing & Cognition Planning & Steering Committee

DEPARTMENT OF CELL AND SYSTEMS BIOLOGY

2018-2019	CSB Executive Committee
2018	CSB PTR Committee
2017-present	CSB Promotions and Appointment Committe
2017-2018	Assistant Professor Search Committee (Plant-Microbial)
2016-2017	Tenure Promotion Review Committee
2015-2016	Internal Reading Committee Member for Tenure
2014-2015	Associate Chair of Undergraduate Studies
2012-2014	CSB Executive Committee
2014-2015	Chair, Undergraduate Affairs Committee
2012-2013	UTSC Faculty Search Committee
2011	Lecturer Search Committee Member
2011-2012	Internal Reading Committee Member for Tenure (2 candidates)
2010-2015	CSB Writing Committee
2009-present	CSB Undergraduate Studies Committee
2006-2015	CSB Imaging Committee
2009-2010	Department of Cell & Systems Biology Faculty Position Search Committee
2009-2010	Department of Cell & Systems Biology Lecturer Position Search Committee
2008	Department of Cell & Systems Biology Faculty Position Search Committee
2007	Advancement Committee for Sessional Lecturer
2006-2008	Executive Committee
2006-2007	Seminar Committee
2006	Department of Cell & Systems Biology Chair Search Committee
2004-2006	Graduate Admissions Committee Member
2004-2006	Organizer of the 'Physiophest' Seminar Series)

EQUITY, DIVERSITY & INCLUSION (EDI; formal demonstrations of commitment)

2018-2019	Decanal Working Group on EDI (Co-Chair)
2018	Gender Summit in Montreal (Decanal Representative)
2017-2018	CIHR Project Grant Review Panel Scientific Officer (Responsibility to ensure adherence to EDI principles during grant reviw)
2017	Guest Speker; Canadian Association of Neuroscience EDI Mentorship Lunch
2016-present	Unconscious Bias Worshop Facilitator (Provostial)
2016-present	CSB Female Graduate Student Mentorship Group (Founder; Currently member)
2008	Decanal Working Group on Gender 'Speaking-Up' (Member)

LEAVES

2008-2009	Maternity leave (6 months)
2004	Parental leave (6 months)
2002	Maternity leave (3 months)