

CURRICULUM VITAE

**Michael William SALTER
MD PhD FRSC**

Office Address:
Peter Gilgan Centre for Research and Learning
Hospital for Sick Children
686 Bay Street, 03-9707.
Toronto, Ontario
M5G 0A4

tel: 416-813-6272
e-mail: michael.salter@sickkids.ca

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EDUCATION:

1987 Ph. D. (Dean's Honour List),
Dept. of Physiology, McGill University, Montreal, Canada.

1982 M. D., The University of Western Ontario, London, Canada

OTHER QUALIFICATIONS

1982 LMCC Qualifying Examination - Medical Council of Canada

PRESENT POSITIONS:

Chief of Research (2015 – present)
Hospital for Sick Children

Senior Scientist (1996 - present)
Program in Neurosciences & Mental Health (formerly Programme in Brain and Behaviour)
Hospital for Sick Children

Professor (1999 - present)
Department of Physiology and
Institute of Medical Sciences and
Faculty of Dentistry
The University of Toronto

Member (1994 - present)
Faculty of Graduate Studies
The University of Toronto

PREVIOUS POSITIONS

Associate Chief, Science Strategy and Commercialization* (2010 - 2015)
* Commercialization – June 2014-2015
Research Institute
Hospital for Sick Children

Head (2006 - 2015)
Program in Neurosciences & Mental Health
Hospital for Sick Children

Director (1999 - 2009)

University of Toronto Centre for the Study of Pain

Scientist

Division of Neuroscience (1990-1996)
Hospital for Sick Children

Associate Professor

Dept of Physiology and Institute of Medical Science (1995-1999)
University of Toronto

Assistant Professor

Dept of Physiology (1991-1995), Institute of Medical Science (1994-1995)
University of Toronto

Associate Member

Faculty of Graduate Studies (1991-1994)
University of Toronto

Post-doctoral Fellow

Mt. Sinai Hospital Research Institute
September 1989 - July 1990
Laboratory of Dr. A. Roach/ Dr. J. Roder

Post-doctoral Fellow

Playfair Neuroscience Unit, The Toronto Hospital
July 1987 - August 1989
Laboratory of Dr. J.F. MacDonald

Ph.D. Candidate

Dept. of Physiology, McGill University
Sept. 1982 - July 1987
Laboratory of Dr. J.L. Henry
Ph.D. Thesis title:
Electrophysiological studies on the role of purines in the somatosensory system in the dorsal horn of the spinal cord of the cat.

Clinical Research Associate

Dept. of Education and Research, London Psychiatric Hospital
March - August 1982
Office of Dr. H. Merskey

Summer Research Student

Children's Psychiatric Research Institute and Dept. of Anatomy
The University of Western Ontario
June - August 1979
Laboratories of Dr. F. Sergovich and Dr. F.P.H. Chan

HONOURS AND AWARDS:

2015-present	Northbridge Chair in Paediatric Research
2011-2015	Anne and Max Tanenbaum Chair in Molecular Medicine
2004-2015	Canada Research Chair in Neuroplasticity and Pain (Tier I)
2014	Dr. Jean Hugill Lectureship, University of Alberta James E. Beall II Memorial Lectureship, Univ. Texas Medical Branch
2012	Excellence in Basic Science Research Award, Univ. Western Ontario H. Douglas McEwen and Ethel McEwen Lectureship, Queens University Genome Advance of the Month, National Human Genome Res. Institute
2011	Investigator Award - Association for Neurons and Disease
2007-2012	International Research Scholar - Howard Hughes Medical Institute
2009-2011	Pfizer Neuropathic Pain Research Award
2009	Province of Ontario Scientific Representative at BIO2009
2006	Distinguished Career Investigator Award - Canadian Pain Society
2005	Elected Fellow of the Royal Society of Canada
2004	The Marshall Lecturer
1998-2003	Investigator - Canadian Institutes of Health Research
1998	Canadian Delegate in Japan-Canada Neuroscience Collaborative Program Pfizer Travelling Fellow
1995	Early Career Investigator Award - Canadian Pain Society
1992-97	Scholarship - Medical Research Council of Canada
1989-90	Centennial Fellowship - Medical Research Council of Canada International Association for the Study of Pain Travel Award
1988-89	The John Charles Polanyi Prize in Physiology or Medicine Medical Research Council of Canada Fellowship
1987-88	The E.B. Eastburn Fellowship in Advanced Science Medical Research Council of Canada Fellowship (deferred)
1986-87	Dean's Honour List (Ph.D. thesis) Canadian Physiological Society Travel Award
1982-87	Medical Research Council of Canada Fellowship
1985-86	Graduate Student's Award, McGill University
1982-83	Alma Mater Fellowship, McGill University
1980-81	Elected Member of the Alpha Omega Alpha Medical Honour Society
1979-80	Dean's Honour List (second year Medicine, U.W.O.)
1978-79	Dean's Honour List (first year Medicine, U.W.O.) The Lange Award to an Outstanding Student
1977-78	Dean's Honour List (second year U.W.O.)
1976-77	Dean's Honour List (first year U.W.O.) Faculty Association Scholarship in Science
1975-76	University of Western Ontario Continuing Entrance Scholarship The Greg Anderson Award as the Outstanding Secondary School Athlete in London, Ontario The Labatt Award Ontario Scholar Selected for Canadian Youth Science Foundation Summer Program

OPERATING GRANT FUNDING HISTORY:

- 1991-2020 *P2 purinoceptors in the spinal dorsal horn*
Sole PI. Canadian Institutes of Health Research, \$3,992,929 MT-11219.
- 2016-2018 *Defining new horizons in neuropathic pain*
Sole PI. The Krembil Foundation, \$798,500 (option for additional 2 years)
- 1994-2017 *Regulation of NMDA receptors in synaptic transmission and plasticity*
Sole PI. Canadian Institutes of Health Research, \$3,815,728 MT-12682.
- 2014-2017 *Distinct neuro-immune interactions drive sex differences in chronic pain*
Co-PI. Lead PI- Jeffrey S Mogil. Brain Canada \$2.34M.
- 2012-2017 *Sex differences in spinal immune system involvement in chronic pain*
Co-PI. Lead PI- Jeffrey S Mogil. Canadian Institutes of Health Research, \$636,906. MOP-123307
- 2014-2017 *MeCP2 function and rescue in neurons derived from Rett syndrome patient iPS cells*
Co-PI. Lead PI- James Ellis. Canadian Institutes of Health Research, \$454,989. MOP-133423
- 2011-2016 *Infantile Spasms in Down Syndrome: Correction of the Epileptic Phenotype.* Co-I. Lead PI- O. Carter Snead. Canadian Institutes of Health Research, \$914,579. MOP-111162
- 2009-2014 *Novel Approaches to Treating Chronic Neuropathic Pain.*
Lead PI. Ontario Research Fund – Research Excellence. Ministry of Research and Innovation. \$3,487,470. RE-04-019.
- 2010-2013 *Induced Pluripotent Stem Cells to model human Rett Syndrome.* Co-I.
Lead PI- James Ellis. Canadian Institutes of Health Research. \$432,531
MOP-102649.
- 2007-2012 *Neuronal and neural-glia signaling mechanisms in pain neuroplasticity*
Sole PI. Howard Hughes Medical Institute, \$553,000.
- 2009-2012 *Krembil -ONF Team on Neuropathic Pain.*
Krembil Foundation and Ontario Neurotrauma Foundation
Lead PI (of 3), \$1,050,000
- 2009-2011 *Neuregulin ErbB4 signalling - a novel pathway to suppress peripheral neuropathic pain*
Sole PI. Pfizer Canada. \$148,884.
- 2008-2010 *Development of a Stroke Model in Non-Human Primates*
Co- PI (6 total), Canadian Stroke Network, \$528,000.

- 2008-2010 *Targeting Cell Death*
Co- PI (15 total), Canadian Stroke Network, \$1,000,000.
- 2007-2009 *A collaborative approach to clarify mechanisms of orofacial pain*
Japan-Canada Joint Health Research Program
Co-PI (3 total) - Canadian Institutes of Health Research, \$60,000.
- 2004-2008 *Transforming Research on Chronic Pain in Canada*
Lead PI - 5 members. Neuroscience Canada \$1,950,000.
- 2006-2008 *Neuroprotection: Preventing cell death and neuronal damage from stroke*
Co- PI (12 total), Canadian Stroke Network, \$1,000,020.
- 2006-2008 *Treatment of stroke with peptide and small molecule inhibitors of NMDA receptor-PSD95 interaction*
Co- PI (5 total), Canadian Stroke Network, \$924,500.
- 2004-2006 *Investigation of the mechanism of neuropathic pain: involvement of P2X4 receptors and spinal microglia*
Japan-Canada Joint Health Research Program
Canadian Institutes of Health Research, \$60,000 JOH-68156.
- 2002-2009 *Pain Research from Molecules to Community - Collaborative National Training Program*
(INMHA-CIHR Strategic Training Program in Pain, STP-53922)
Lead PI of Training Program (17 members), CIHR, \$2.1M.
- 2002-2009 *Pain in Child Health (PICH): An Innovative, Transdisciplinary, Cross-Canada, Research Training Consortium*
(IHDCYH-CIHR Strategic Training Program in Pediatric Pain)
Co-PI (Key Mentor), CIHR, \$1.9M.
- 2002-2009 *Health applications of cell signaling in mucosal inflammation & pain*
(IMHA-CIHR Strategic Training Program in Dental/Pain Biology)
Co-PI (Key Mentor), CIHR, \$2.05M.
- 2000-2008 *Glutamate receptor scaffolding and signaling protein interactions – targets for neuroprotective agents*
Lead PI (5 total), Canadian Stroke Network, \$1,870,000.
- 1999-2009 *Molecular and Cellular Analysis of Brain-enriched PTPs*
National Institutes of Health U.S.A. 2R01MH052711-11
Collaborator with Dr. Paul Lombroso, Yale University
my funding - CAN\$750,000.
- 2002-2006 *Dental and Orofacial Pain: Brainstem Mechanisms*
National Institutes of Health U.S.A.
Collaborator with Dr. Barry Sessle, University of Toronto

my funding - CAN\$300,000.

- 2000-2005 *Group on The Synapse*
Co-PI (11 total), Canadian Institutes of Health Research, \$2.7M.
- 2004 *Proof-of-Principle grant - Attenuation of neuronal hyperexcitability and neurotoxicity using novel Src kinase inhibitors*
CIHR. Sole PI (10 total). \$100,000.
- 2003-2004 *Equipment grant - Place cells*
CIHR. Co-PI (10 total). Lead PI - John C. Roder. \$102,000.
- 1998-2003 *Investigator*
Canadian Institutes of Health Research, \$385,000.
- 1998-2001 *Pyk2/CAK β and Src in a model of secondary neuronal injury*
Ontario Neurotrauma Foundation, \$179,187.
- 1997-1998 *Regulation of NMDA channels in human epilepsy*
Patient-based Research Competition, HSC, \$18,944 (Co-PI - Dr. J. Rutka).
- 1992-1997 *Scholarship*
Medical Research Council of Canada, \$331,252.
- 1993-1994 *Regulation of Excitatory Amino Acid Mediated Synaptic Transmission in the Spinal Dorsal Horn by Protein Kinases.*
The Banting Research Foundation, \$16,800.
- 1992-1993 *Cellular Mechanisms of Sensory Transmission in the Dorsal Horn of the Spinal Cord*
Dean's Fund - New Staff - University of Toronto, \$9,982.

INFRASTRUCTURE GRANT FUNDING HISTORY:

- 2015-2020 *Centre for Developmental Brain Plasticity & Repair (CDBPR)*
Lead PI - 10 members. Canadian Foundation for Innovation, \$6,328,890.
- 2015-2020 *Dynamic complexes and large-scale assemblies in neurobiology and disease*
Co-PI - 10 members. Canadian Foundation for Innovation, \$3,110,000.
- 2008-2013 *The SickKids Child Health Research Institute*
Leader, Theme 1 (seven themes total).
Canadian Foundation for Innovation, \$91,119,176.
- 2007-2012 *Facilities for Integrative Study of CNS Neuroplasticity*
Lead PI - 3 members. Canadian Foundation for Innovation, \$1,937,000.
- 2007-2012 *Centre for the Investigation of Neuroplasticity and Developmental Disorders*
Co-PI - 10 members. Canadian Foundation for Innovation, \$7,400,000.
- 2002-2005 *Molecular Imaging and Dynamics of Cell Signaling Networks*
Co-PI (10 total), Canadian Foundation for Innovation (total project \$3.1M)
- 2002-2005 *Signaling and Degradation Network of Toronto*
Co-PI (10 total), Canadian Foundation for Innovation (total project \$5.1M)

TRAINEE AWARDS:

Post-doctoral Fellows

2015-2017 Dr. Pragma Komal - Research Training Fellowship, SickKids, \$33,750/yr.
2013-2014 Dr. Stephen Kemp – Integrative Research Fellowship, SickKids, \$44,500/yr.
2012-2014 Dr. Avner Michaeli - Research Training Fellowship, SickKids, \$33,750/yr.
2010-2013 Dr. Michael Hildebrand - CIHR Fellowship, \$40,000/yr
Dr. Hubert van Tol Travel Fellowship award, \$5000
UTCSP Scientist Scholarship, \$12,500
2012 Dr. Tuan Trang – WCBR Travelling Fellowship, \$1500
Andrew Sass-Kortsak Award - SickKids Top Post-doctoral Fellow
IASP Travel Award \$1000
2012 Dr. Jessica Alexander – Trainee Startup Award, SickKids \$3000
2009-2011 Dr. Wenbo Zhang - UTCSP Clinician-Scientist Fellowship, \$25,000/yr.
2007-2010 Dr. Tuan Trang - CIHR Fellowship, \$40,000/yr.
2006-2009 Dr. Chun Kwan - CIHR Fellowship, \$40,000/yr.
2008-2009 Dr. Christiane Wetzel - Research Training Fellowship, HSC, \$31,750/yr.
2008-2009 Dr. David Ng - Juliusz, Dorat and Zofia Frist Memorial Prize in
Neuropsychopharmacology 2009, \$1,500
BrainStar – INMHA, CIHR – Oct. 2009, \$1000
2008-2009 Dr. Veronica Campanucci - Research Training Fellow, HSC, \$31,750/yr.
2006-2007 Dr. Gurpreet Dhani - CIHR Fellowship, \$40,000/yr.
2005-2007 Dr. Ameet Sengar - Research Training Fellowship, HSC, \$31,750/yr.
2005-2007 Dr. Mariana Vargas-Caballero - Wellcome Trust, UK, \$69,500/yr.
2005-2007 Dr. Tuan Trang - Research Training Fellowship, HSC, \$31,750/yr.
Exceptional Research Trainee Award, HSC, 2008, \$500
2005-2006 Dr. Gurpreet Dhani - Research Training Fellowship, HSC, \$31,750/yr.
2004-2006 Dr. Yina Dong - Fellowship, Ontario Neurotrauma Fdn, \$38,500/yr.
2004-2006 Dr. Xuejun Liu - Fellowship, Canadian Arthritis Network, \$20,000/yr.
IASP Travel Award 2005 - \$1,000
2004-2005 Dr. Xiang Wan - Fellowship, Heart and Stroke Foundation, \$38,000/yr.
2003-2005 Dr. Timothy Moran - Research Training Fellowship, HSC, \$30,000/yr.
2003-2005 Dr. Graham Pitcher - Merck Frosst Pharmacology Fellowship, \$85,000/yr
BrainStar – INMHA, CIHR – Oct. 2009, \$1000
2003-2005 Dr. Simon Beggs - Pain M2C Fellowship - \$24,000/yr.
Neuropathic Pain Travel Award 2005 - \$2,500
IASP Travel Award 2005 - \$1,000
2002-2004 Dr. Makoto Tsuda - Research Training Fellowship, HSC, \$30,000/yr.
2002 Dr. David L.S. Washburn -CIHR Post-doctoral Fellowship, \$35,000/yr.
2002-2004 Dr. W. Jephtha Davenport - CIHR Clinician-Scientist, \$50,000/yr.
2001-2002 Dr. W. Jephtha Davenport - CIHR Post-doctoral Fellowship, \$45,000/yr.
2001-2003 Dr. Xuejun Liu - CIHR/AstraZeneca Ronald Melzack Research Award
\$72,000/yr.
2000-2003 Dr. Graham Pitcher -CIHR Post-doctoral Fellowship, \$35,000/yr.
NSERC Post-doctoral Fellowship (Declined)
IASP Travel Award 2005 - \$1,000
2000-2002 Dr. Yi Nong - CIHR/AstraZeneca Ronald Melzack Research Award
\$58,000/yr.
BrainStar - INMHA, CIHR - Dec. 2003 - \$1,000

- 2000-2003 Dr. YueQiao Huang - Ont. Neurotrauma Fdn, and Heart and Stroke Fdn
\$35,000/yr.
Andrew Sass-Kortsak Award - HSC Top Post-doctoral Fellow 2001
BrainStar - INMHA, CIHR - Oct. 2001 - \$1,000
- 2000-2001 Dr. You Ming Lu - MRC Centennial Fellowship, \$52,000/yr.
- 1999-2000 Dr. Declan Ali - MRC Post-doctoral Fellowship, \$33,000/yr.
- 1998-2000 Dr. Franco Taverna - Research Training Fellowship, HSC, \$30,000/yr.
- 1998-1999 Dr. Yueqiao Huang - Spinal Cord Research Fdn., Paralyzed Veterans of
America, Fellowship, \$52,000/yr.
- 1996-1999 Dr. Rand Askalan - Rick Hansen Foundation Fellowship, \$30,000/yr.
- 1996-1997 Dr. Gary Keil - Restrcomp Fellowship, HSC, \$23,300/yr.
- 1994-1996 Dr. Xian-Min Yu - Spinal Cord Research Fdn., Paralyzed Veterans of
America, Fellowship, \$48,500/yr.
- 1992-1995 Dr. Yutian Wang - MRC Post-doctoral Fellowship, \$30,510/yr.

Graduate Students

- 2015-2018 Josiane Mapplebeck – CIHR Doctoral Award - \$30,000/yr
- 2015-2018 Erika Harding – CIHR Doctoral Award - \$30,000/yr
- 2013-2015 Josiane Mapplebeck - Ontario Graduate Scholarship \$15,000/yr
- Research Training Studentship HSC, \$20,000/yr.
- UTCSP Pain Scientist Scholarship – \$12,500/yr
- 2012-2015 Erika Harding – Queen Elizabeth II /Purdue Pharma Graduate Scholarship
in Science and Technology – MSc \$15,000/yr
- UTCSP Pain Scientist Scholarship – \$6,250/yr
- 2006-2008 Shazeen Suleman- CIHR Banting & Best Grad.Scholarship - MSc \$15,000
- Research Training Studentship HSC, \$17,000/yr.
- 2004-2007 Natalia Fedianina - CIHR Canada Grad. Scholarship - MSc Award, \$15,000
- Research Training Studentship HSC, \$17,000/yr.
- Ontario Graduate Scholarship \$12,000/yr.
- 1999-2003 Lorraine Kalia (née Hajdur)
- MRC MD/PhD Studentship \$16,300/yr.
- CFUW/FCFDU Marion Elder Grant Fellowship, \$9,000/yr.
- Laidlaw Prize 2003, Institute of Medical Sciences
- 1999-2003 Jeff Gingrich - Research Training Studentship HSC, \$15,295/yr.
- 1997-2002 Sami Fam - MRC Studentship Voucher, \$15,295/yr.
- 1996-2002 Kenneth Pelkey - CIHR Doctoral Student Award, \$19,030/yr.
- Savoy Foundation, \$13,000/yr.
- Connaught Scholarship \$14,500/yr.
- BrainStar - INMHA, CIHR - Oct. 2002 - \$1,000
- 1996-2003 Conor Gallagher - HSC Clinician-Scientist Award - \$28,000/yr.
- Ontario Neurotrauma Initiative Program \$20,000/yr.
- University of Toronto Open Scholarship \$3,600.
- Rick Hansen Foundation Studentship, \$15,000.
- 1995-1996 Christopher Idestrup - Rick Hansen Foundation Studentship, \$20,500.
- Life Science Graduate Summer Award, \$1,500.

Undergraduate Students

- 2012 Hareem Naveed – VIC One Student, University of Toronto

MICHAEL W. SALTER

2007 Clare Tao - HHMI Summer Undergraduate Scholarship, \$6,000.
2002 Roberto Diaz - Canadian Stroke Network Summer Scholarship, \$5,000.
2000 Jennifer Cheung - U. Alberta Faculty of Medicine Summer Research
Award, \$2,400.
2000 Blythe Owen - Life Sciences Summer Scholarship, \$1,500.
1997 Jon Davidow - Novartis Summer Research Bursary, McGill University,
Faculty of Medicine, \$2,500.
1997 Jennifer Forsdike - HSC Summer Undergraduate Scholarship, \$1,400.
1995&1996 Daniel Wiesbrod - John D. Schultz Science Scholarship, OHSF \$3,500/yr.
1996 Michael Szeto - HSC Summer Undergraduate Scholarship, \$1,400.
- Life Sciences Summer Scholarship, \$1,200.
1995 Patrick Shing - HSC Summer Undergraduate Scholarship, \$1,400.
1993&1994 Cheryl Ho - John D. Schultz Science Scholarship, OHSF \$3,500.
1992 Paul Perlon - John D. Schultz Science Scholarship, OHSF \$3,500.
1991 Lise Aasheim - Life Sciences Summer Scholarship, \$1,000.

PUBLICATIONS:

Papers

(members of my lab are underlined, * - co-first author; #- senior or co-senior author when not last Number after citation is PubMed UI)

1. Sorge, R.E.*, Mapplebeck, J.C.S.*, Rosen, S., Beggs, S., Taves, S., Alexander, J.K., Martin, L.J., Austin, J.S., Sotocinal, S.G., Chen, D., Yang, M., Shi, X.Q., Huang, H., Pilon, N.J., Bilan, P.J., Tu, Y.S., Klip, A., Ji, R.R., Zhang, J., Salter, M.W.#, and Mogil, J.S.: Different immune cells mediate mechanical pain hypersensitivity in male and female mice. *Nature Neuroscience* **18**:1081-1083, 2015. 26120961
2. Trang, T., Al-Hasani, R., Salvemini, D., Salter, M.W., Gutstein, H., Cahill, C.M.: Pain and Poppies: The Good, the Bad, and the Ugly of Opioid Analgesics. *Journal of Neuroscience* **35**:13879-88, 2015. 26468188
3. Fang, X.-Q. Qiao, H., Groveman, B.R., Feng, S., Pflueger, M., Xin, W.-K., Ali, M.K., Shuang-Xiu Lin1, Xu, J., Duclot, F., Kabbaj, M., Wang, W., Ding, X., Santiago-Sim, T., Jiang, X.-H., Salter, M.W. and Yu, X.M.: Regulated internalization of NMDA receptors drives PKD1-mediated suppression of the activity of residual cell-surface NMDA receptors. *Molecular Brain* **8**:e75, 2015. 26584860
4. Khattak, S., Brimble, E., Zhang, W., Zaslavsky, K., Strong, E., Ross, P.J., Hendry, J., Mital, S., Pasceri, P., Salter, M.W., Osborne, L.R. and Ellis, J.: Human induced pluripotent stem cell derived neurons as a model for Williams-Beuren syndrome. *Molecular Brain* **8**:e77, 2015. 26603386
5. Djuric, U.*, Cheung, A.Y.L.*, Zhang, W.*, Mok, R., Lai, W., Piekna, A., Hendry, J.A., Ross, P.J., Pasceri, P., Kim, D-S., Salter, M.W. and Ellis, J.: MECP2e1 isoform mutation affects the form and function of neurons derived from Rett syndrome patient iPS cells. *Neurobiology of Disease* **76C**:37-45, 2015. 25644311
6. Kemp, S.W., Szykaruk, M., Stanoulis, K.N., Wood, M.D., Liu, E.H., Willand, M.P., Morlock, L., Naidoo, J., Williams, N.S., Ready, J.M., Mangano, T.J., Beggs, S., Salter, M.W., Gordon, T., Pieper, A.A. and Borschel, G.H.: Pharmacologic Rescue of Motor and Sensory Function by the Neuroprotective Compound P7C3 Following Neonatal Nerve Injury. *Neuroscience* **284**:202-216, 2015. 25313000
7. Alexander, J.K., Beggs S., and Salter, M.W., Neuropathic Pain. In *Microglia in Health and Disease*. Ed. M. Tremblay and A. Sierra. Springer, pp. 273-297, 2014.
8. Bennett, D.L.H., McMahon, S.B., and Salter, M.W. Neuroimmune Interactions in Pain. In *Pain 2014: Refresher Courses, 15th World Congress on Pain*, Ed. S.N. Raja and C.L. Sommer. IASP Press, 2014.
9. Salter, M.W. Neurobiology of Acute and Persistent Pain: Spinal Cord Mechanisms. In *Pain 2014: Refresher Courses, 15th World Congress on Pain*, Ed. S.N. Raja and C.L. Sommer. IASP Press, 2014.

10. Salter, M.W. and Beggs, S.: Sublime microglia: expanding roles for the guardians of the CNS. *Cell* **158**:15-24, 2014. 24995975
11. Salter, M.W.: Deepening understanding of the neural substrates of chronic pain. *Brain* **137**: 651-653, 2014. 24549811
12. Cahill, L.S., Laliberté, C.L., Liu, X.J., Bishop, J., Nieman, B.J., Mogil, J.S., Sorge, R.E., Jones, C.D., Salter, M.W. and Henkelman, R.M.: Quantifying blood-spinal cord barrier permeability after peripheral nerve injury in the living mouse. *Molecular Pain* **10**(1):e60, 2014. 25216623
13. Hildebrand, M.E., Pitcher, G.M., Harding, E., Li, H., Beggs, S. and Salter, M.W.: GluN2B and GluN2D NMDARs dominate synaptic responses in the adult spinal cord. *Scientific Reports* **4**:e4094, 2014. 24522697
14. Bourinet, E., Altier, C., Hildebrand, M.E., Trang, T., Salter, M.W. and Zamponi, G.W.: Calcium-permeable ion channels in pain signaling. *Physiological Reviews* **94**:81-140, 2014. 24382884
15. Wyeth, M., Pelkey, K.A., Petralia, R., Salter, M.W., McInnes, R.R and McBain, C.J.: Neto auxiliary protein interactions regulate kainate & NMDA receptor subunit localization at mossy fiber-CA3 pyramidal cell synapses. *Journal of Neuroscience* **34**:622-628, 2014. 24403160
16. Alexander, J.K., Beggs, S. and Salter, M.W.: Microglia and pain. In *Microglia in Health and Disease*. Editors Marie-Eve Tremblay and Amanda Sierra. pp 273-297. Springer, New York, 2014.
17. Ferrini, F.*, Trang, T.*, Mattioli, T.M., Laffray, S., Del'Guidice, T., Lorenzo, L.E., Castonguay, A., Doyon, N., Zhang, W., Godin, A.G., Mohr, D., Beggs, S., Vandal, Beaulieu, J.M., Cahill, C., Salter, M.W. and De Koninck, Y.: Morphine hyperalgesia gated through microglia-mediated disruption of neuronal Cl⁻ homeostasis. *Nature Neuroscience* **16**:183-194, 2013. 23292683
18. Han, L., Campanucci, V.A., Cooke, J. and Salter, M.W.: Identification of a single amino acid in GluN1 that is critical for glycine-primed internalization of NMDA receptors. *Molecular Brain*, **6**(1):e36, 2013. 23941530
19. Paltser, G., Liu X.J., Yantha, J., Winer, S., Tsui, H., Wu, P., Maezawa, Y., Cahill, L.S., Laliberté, C.L., Ramagopalan, S.V, Deluca, G.C., Sadovnick, A.D., Astsurov, I., Ebers, G.C., Henkelman, R.M., Salter, M.W. and Dosch, H.M.: TRPV1 gates tissue access and sustains pathogenicity in autoimmune encephalitis. *Molecular Medicine*, **19**:149-5, 2013. 23689362
20. Ivakine, E.A., Acton, B.A., Mahadevan V., Ormond, J. Tang, M., Pressey, J. Huang, M.Y., Ng, D., Delpire, E., Salter, M.W., Woodin, M.A. and McInnes, R.R.: Neto2 is a KCC2 Interacting Protein Required for Neuronal Cl⁻ Regulation in Hippocampal Neurons. *Proceedings of the National Academy Sciences USA* **110**:3561-6, 2013. 23401525

21. Sengar, A.S., Ellegood, J., Yiu, A.P., Wang, H., Wang, W., Juneja, S.A., Lerch, J.P., Josselyn, S.A., Henkelman, R.M., Salter, M.W.# and Egan, S.E.: Vertebrate Intersectin1 is repurposed to facilitate cortical midline connectivity and higher order cognition. *Journal of Neuroscience*, **33**:4055-4065, 2013. 23447614
22. Beggs, S. and Salter, M.W.: The known knowns of microglia-neuronal signaling in neuropathic pain. *Neuroscience Letters* **557**:37-42, 2013. 23994389
23. Tsuda, M., Beggs, S., Salter, M.W., and Inoue, K.: Microglia and intractable chronic pain. *Glia* **61**:55-61, 2013. 22740331
24. Beggs, S., Trang, T. and Salter, M.W.: P2X4R⁺ microglia drive neuropathic pain. *Nature Neuroscience* **15**:1068-73, 2012. 22837036
25. Sorge, R.E.*, Trang, T.*, Dorfman, R., Smith, S.B., Beggs, S., Ritchie, J., Austin, J.S., Zaykin, D.V., Vander Meulen, H., Costigan, M., Herbert, T.A., Yarkoni-Abitbul, M., Tichauer, D., Livneh, J., Gershon, E., Zheng, M., Tan, K., John, S.L., Slade, G.D., Jordan, J., Woolf, C.J., Peltz, G., Maixner, W., Diatchenko, L., Seltzer, Z., Salter, M.W.# and Mogil, J.S.: Genetically determined P2X7 receptor pore formation regulates variability in chronic pain sensitivity. *Nature Medicine* **18**:595-599, 2012. 22447075
26. Trang, T. and Salter, M.W.: P2X4 purinoceptor signaling in chronic pain. *Purinergic Signalling*, **8**:621-628, 2012. 22528681
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Abstracts (prior to 2009 only)

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72. Askalan, R., Ngyuen, T.H., Salter, M.W. and Lombroso, P.:The tyrosine phosphatase STEP is associated with NMDA receptors from rat spinal cord. *Soc. Neurosci. Abs.* **23**: 2758, 1997.
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74. Salter, M.W.:Modulation of NMDA channels by protein tyrosine kinase and phosphatase. *ISN/ASN '97*.
75. Salter, M.W., Keil, G.J., Jia, Z., Abramow-Newerly, W. and Roder, J.: Behavioural responses to nociceptive and non-nociceptive stimuli in GluR2 knockout mice. *Soc. Neurosci. Abs.* **22**: 120 1996.
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77. Keil, G.J. and Salter, M.W.: Differential regulation of synaptic NMDA and non-NMDA currents in dorsal horn neurons by endogenous src kinase activity. *Soc. Neurosci. Abs.* **22**: 1702, 1996.
78. Yu, X.-M. and Salter, M.W.: Modulation of NMDA channel gating by tyrosine phosphorylation is through endogenous src kinase in spinal cord dorsal horn neurons. *Soc. Neurosci. Abs.* **22**: 1762, 1996.
79. Xiong, H., Wojtowicz, J.M. and Salter, M.W.: Involvement of protein tyrosine phosphorylation in synaptic transmission and LTP in the dentate gyrus. *Soc. Neurosci. Abs.* **22**:1513, 1996.
80. Salter, M.W.: Multiple roles for adenosine and ATP in somatosensory processing. *Drug Development Research*, **37**: 111, 1996.
81. Idestrup, C. and Salter, M.W.: G protein mediation of P_{2Y} and P_{2U}-purinceptor Ca²⁺ responses in dorsal spinal astrocytes. *Drug Development Research*, **37**: 123, 1996.
82. Yu, X.-M. and Salter, M.W.: Characterization of NMDA single-channel activity in spinal dorsal horn neurons. *8th World Congress on Pain Abs.* **9**:240, 1996.
83. Keil, G.J. and Salter, M.W.: Evidence for NMDA receptor-mediated miniature excitatory synaptic currents and modulation by tyrosine phosphorylation in spinal dorsal horn neurons. *8th World Congress on Pain Abs.* **9**: 241, 1996.
84. Idestrup, C. and Salter, M.W.: P_{2Y} and P_{2U}-purinergic receptors on dorsal spinal astrocytes cause release of intracellular Ca²⁺ through a G-protein via the phospholipase C/IP₃ pathway. *Soc. Neurosci. Abs.* **21**: 581, 1995.
85. Yu, X.-M. and Salter, M.W.: NMDA channel function is regulated by tyrosine phosphorylation in spinal dorsal horn neurons. *Soc. Neurosci. Abs.* **21**: 78, 1995.

86. Salter, M.W., Ho, C. Idestrup, C. and Hicks, J.L.: Two P₂-receptors coupled via G-proteins to release of Ca²⁺ from IP₃-sensitive intracellular stores in dorsal spinal astrocytes. *ASPET Symposium on Structure and Function of P₂-purinoreceptors*, April 7-9,1995.
87. Wang, Y.T. and Salter, M.W.: Rundown of NMDA currents in rat spinal dorsal horn neurons is due to alteration of protein tyrosine phosphorylation. *Soc. Neurosci. Abs.* **20**: 743, 1994.
88. Pak, Y.S. and Salter, M.W.: Adenosine reduces accommodation and a transient outward current in rat spinal dorsal horn neurons in culture. *Soc. Neurosci. Abs.* **20**: 1549, 1994.
89. Salter, M.W., Ho, C. and Hicks, J.L.: P2U and P2Y purinergic receptors coupled to release of intracellular Ca²⁺ in astrocytes from the dorsal spinal cord. *Drug Development Research* **31**: 316, 1994.
90. Salter, M.W. and Wang, Y.T.: Regulation of NMDA receptors in rat spinal dorsal horn neurones: phosphorylation vs [Ca²⁺]_i during intracellular dialysis. *7th World Congress on Pain Abs.* **8**: 1993.
91. Salter, M.W., Perlon, P. and Hicks, J.L.: Diadenosine polyphosphates cause release of Ca²⁺ from intracellular stores in astrocytes from the dorsal spinal cord. *Soc. Neurosci. Abs.* **19**: 88, 1993.
92. De Koninck, Y., Henry, J.L. and Salter, M.W.: A purinergic IPSP in the spinal dorsal horn caused by activation of ATP-sensitive K⁺ channels. *ATP-Sensitive Potassium Channels* 1993.
93. Wang, Y. T., Pak, Y. and Salter, M.W.: ATP prevents 'rundown' of whole-cell NMDA currents by supporting phosphorylation rather than by lowering [Ca²⁺]_i in cultured rat spinal dorsal horn neurons. *Soc. Neurosci. Abs.* **19**: 1358, 1993.
94. Salter, M.W., De Koninck, Y. and Henry, J.L.: Adenosine-mediated IPSP in nociceptive neurones in the spinal dorsal horn is caused by activation of ATP-sensitive K⁺ channels. *Int. J. Purine Pyrimidine Res.* **3**: 21, 1992.
95. Salter, M.W. and Hicks, J.L.: Second messenger pathway for ATP-evoked increases in intracellular Ca²⁺ in glia cultured from the dorsal spinal cord. *Soc. Neurosci. Abs.* **18**: 1000, 1992.
96. Radhakrishnan, V., Salter, M.W. and Henry, J.L.: Nitric oxide mediation of mechanical and thermal nociceptive inputs to spinal dorsal horn neurones in the cat. *Can. Phys. Soc. Meeting*, 1992.
97. Hodaie, M., Salter, M.W. and Roach, A.: A system for the electrical stimulation and measurement of *c-fos* and PPT gene expression in rat superior cervical ganglion cells. *Soc. Neurosci. Abs.* **18**: 1992.
98. Hochman, S., Salter, M.W., Livingston, C.A., Jordan, L.M. and MacDonald, J.F.: Patch clamp recordings of neurons around the central canal in *thick* slices of rat spinal cord: effects of serotonin and N-methyl-D-aspartate. *Soc. Neurosci. Abs.* **18**: 1992.

99. Salter, M.W., De Koninck, Y. and Henry, J.L.: Adenosine mediates the inhibition of nociceptive dorsal horn neurones evoked by vibration. *4th INWIN*, Geneva, April 14-18, 1991.
100. Salter, M.W., De Koninck, Y. and Henry, J.L.: ATP-sensitive K⁺ channels mediate the purinergic IPSP in nociceptive dorsal horn neurones in the cat spinal cord. *Soc. Neurosci. Abs.* **17**: 1991.
101. Wang, L.-Y., Fletcher, E.J., Salter, M.W. and MacDonald, J.F.: Kainate currents are regulated by cyclic AMP-dependent kinase in cultured hippocampal neurones. *IBRO World Congress*, Montreal, Aug. 4-8, 1991.
102. Salter, M.W.: Adenosine blocks a GTP-dependent inward current in mouse spinal neurones in culture. *Pain Suppl.* **5**: S457, 1990.
103. Bartlett, M.C., Salter, M.W. and MacDonald, J.F.: Modulation of NMDA currents by intracellular phosphorylation. *Soc. Neurosci. Abs.* **15**: 535, 1989.
104. Spielman, A.I., MacDonald, J.F., Salter, M.W., Mody, I., Brand, J.G. and Whitney, G.: A method for isolating individual mammalian taste cells. *Soc. Neurosci. Abs.* **15**: 752, 1989.
105. Salter, M.W. and Henry, J.L.: Adenosine- and GABA-mediated inhibition of nociceptive dorsal horn neurones in the spinal cord of the cat by non-noxious mechanical stimulation. *Joint Meeting Can. and Amer. Pain Soc.*, Toronto, Nov. 10-13, 1988.
106. Salter, M.W. and Henry, J.L.: Physalaemin potentiates vibration-induced depression of spinal dorsal horn neurones in the cat. *Regulatory Peptides* **22**: 164, 1988.
107. Salter, M.W., Mody, I. and MacDonald, J.F.: Organization of mammalian retinal neurons in culture. *Internat. Symposium Retinal Develop. Degeneration*, Banff, Sept. 9-12, 1988.
108. Salter, M.W., Mody, I., Bartlett, M.C. and MacDonald, J.F.: Whole-cell voltage-clamp recordings from murine retinal neurons in culture. *Soc. Neurosci. Abs.* **14**: 296, 1988.
109. Salter, M.W., Mody, I., Bartlett, M.C. and MacDonald, J.F.: Electrophysiological investigation of murine retinal neurons in culture. *Canadian Physiological Soc. Meeting*, Mt. Tremblant, Quebec, Jan. 17-20, 1988.
110. Mody, I., Heinemann, U., MacDonald, J.F. and Salter, M.W.: Recruitment of NMDA receptors into synaptic transmission following kindling-induced epilepsy and its possible mechanism. *WONIEP IV Meeting*, Bresa, Italy, Oct. 9-12, 1988.
111. MacDonald, J.F., Salter, M.W. and Mody, I.: Intracellular high-energy phosphates prevent wash out of NMDA currents in cultured hippocampal neurons. *Soc. Neurosci. Abs.* **14**: 94, 1988.
112. Reynolds, J.N., Mody, I., Salter, M.W., Carlen, P.L. and MacDonald, J.F.: Calcium currents in dentate gyrus granule cells after kindling. *Soc. Neurosci. Abs.* **14**: 134, 1988.

113. Mody, I., Salter, M.W. and MacDonald, J.F.: Steady maintenance of aspartate-induced currents requires intracellular 'support system' in cultured hippocampal neurons. *Canadian Physiological Soc. Meeting*, Mt. Tremblant, Quebec, Jan. 17-20, 1988.
114. MacDonald, J.F., Salter, M.W. and Mody, I.: Rundown of N-methyl-D-aspartate currents is prevented by intracellular high-energy phosphates. *Neurochem. Int.* **12 (Suppl 1)**: 5 1988.
115. MacDonald, J.F., Pennefather, P., Salter, M.W., Mody, I. and Schneiderman, J.H.: Use dependent block of the NMDA receptor permits dissociative anaesthetics to target abnormal excitatory activity. *Can. Coll. Neuropsychopharm.*, Annual Meeting, Montreal, April 12-14, 1988.
116. Salter, M.W.: Update of neuropharmacological aspects of pain and pain modulation. *Can. Pain Soc.*, Annual Meeting, Toronto, Oct. 31-Nov. 1, 1986.
117. Salter, M.W. and Henry, J.L.: Differential effects of peripheral vibration on nociceptive versus non-nociceptive neurones in the lumbar dorsal horn of the cat. *Soc. Neurosci. Abs.* **12**: 376, 1986.
118. Salter, M.W. and Henry, J.L.: Caffeine attenuates depression induced in nociceptive dorsal horn neurones by cutaneous vibration in the cat. *Proc. Internat. Union Physiol. Sci.* **16**: 205, 1986.
119. Salter, M.W. and Henry, J.L.: Physalaemin potentiates the depression of dorsal horn neurones by ATP, AMP and low intensity cutaneous stimulation in the cat. *Joint Meeting Can. Pain Soc. and Intractable Pain Soc. of Great Britain & Ireland*, Halifax, Aug. 28-31, 1985.
120. Salter, M.W. and Henry, J.L.: Effects of physalaemin on functionally identified spinal dorsal horn neurones in the cat. *Soc. Neurosci. Abs.* **11**: 966, 1985.
121. Salter, M.W. and Henry, J.L.: ATP may be a mediator of low threshold sensory input to the spinal cord of the cat. *Pain Suppl.* **2**: 146, 1984.
122. Salter, M.W. and Henry, J.L.: Effects of AMP and ATP on dorsal horn neurones in the spinal cord of the cat. *Can. J. Physiol. Pharmacol.* **62**: AXXV, 1984.
123. Salter, M.W., Brooke, R.I. and Merskey, H.: Psychological studies on myofascial pain and dysfunction syndrome. *Can. Pain Soc.*, Annual Meeting, Toronto, Oct. 16-17, 1982.

PATENTS

Belmares M.P., Garman J.D., Lu P.S., Salter M.W., Tymianski M. Methods for inhibiting pain. (US Patent 8,324,168 B2 – Dec. 4, 2012)

Belmares M.P., Garman J.D., Lu P.S., Salter M.W., Tymianski M. Treating Stroke and Other Diseases Without Inhibiting N-Type Calcium Channels. (US Patent 8,288,345 – Oct. 16, 2012)

Coull, J., De Koninck, Y, Salter, M.W., Beggs, S. Modulation of Neuroglia-Derived BDNF in the Treatment and Prevention of Pain. (US Patent 8,187,823 – May 29, 2012)

Salter, M.W. and Gingrich, J.R. Method for ameliorating pain by modification of NMDA receptors through inhibition of Src. (US Patent 8,003,609 B2 – Aug. 23, 2011)

Dosch, H-M, Tang, L, Chan, Y., Salter, M.W. TRPV1+ Sensory neurons control of β -cell stress and islet inflammation in diabetes (US Patent 7,544,365 June 9, 2009).

Salter, M.W. and Gingrich, J.R. Method for modification of NMDA receptors through inhibition of Src. (US Patent 7,425,540 B2 - Sept. 16, 2008)

Dosch, H-M, Tang, L, Chan, Y., Salter, M.W. Stimulation of TRPV1+ sensory neurons to control beta-cell stress and inflammation in diabetes. (filed)

Salter, M.W., Trang, T. Peptides for the treatment of chronic pain (filed).

Liu, X.J., Garman, D., Tymianski, M., Salter M.W. A method for inhibiting pain following nerve injury. (In preparation)

MEETING ORGANIZATION

International Meetings

Member of the Scientific Advisory Committee, Gairdner Foundation Symposium
"New Insights into the Brain" – Toronto Oct 26, 2012

Member of the Scientific Advisory Board - *Purines 2012: Adenine Nucleosides and Nucleotides in Biomedicine~Purinergic Signalling in New Strategy of Drug Discovery* – Fukuoka Japan – May 31- June 2, 2012

Member of the Scientific Program Committee - *Fukuoka Purine 2009* – Fukuoka Japan – July 23-25, 2009

Member of the Scientific Program Committee - *NeupSIG Symposium* - London, UK - Aug.13-15, 2008

Member of the Organizing Committee for *Great Lakes G Protein Coupled Receptor Conference* - Bromont, Quebec. - Nov. 5-8, 2004.

Member of the Organizing Committee for *Great Lakes G Protein Coupled Receptor Conference* - Honey Harbor, Ont. - Oct. 17-19, 2003.

Session Organizer *The many faces of protein kinase modulation of NMDA receptors*
Winter Conference on Brain Research - Snowbird, Utah - January 25-31, 2003

Member of the Organizing Committee for *Great Lakes G Protein Coupled Receptor Conference* -
Ann Arbor, Michigan - Oct. 18-20, 2002.

Workshop Organizer of Session on *Cell Signalling and Central Synaptic Plasticity* at the Xth
World Congress on Pain- San Diego, California - Aug. 17-22, 2002

Session Chair on "Glutamate Receptors - NMDA Receptors" - *Society for Neuroscience 2001*
Annual Meeting - San Diego, CA - November 10-15, 2001

Member of the Organizing Committee for *Great Lakes G Protein Coupled Receptor Conference* -
Bromont, Quebec - Oct. 26-28, 2001.

Member of the Organizing Committee for *Great Lakes G Protein Coupled Receptor Conference* -
London, Ontario - Oct. 20-22, 2000.

Member of Scientific Advisory Committee for *International Symposium on Adenosine and*
Adenine Nucleotides: Purines '96 - Milan, Italy, July 5-8, 1996.

Co-Organizer of Session on *Purines and Nociception* at the VIth World Congress on Pain-
Adelaide, Australia, April 2, 1990.

National Meetings

Member of Program Committee for *Canadian Association for Neuroscience Annual Meeting* -
Vancouver, BC – May 2012
Quebec City, PQ - May, 2011
Montreal PQ – May, 2008

Member of Scientific Program Committee for *Canadian Pain Society Annual Meeting* -
Calgary, Alberta – May, 2010
Quebec City, PQ - May, 2009
Victoria, BC - May, 2008
Edmonton, Alberta - May, 2006
Toronto, Ont. - May, 2003

Organizer of Workshop Session on *G-protein coupled receptors in pain: novel mechanisms*
and therapeutic targets at the Canadian Pain Society, Annual Meeting - Banff, Alta.,
May 12-13, 2000.

Member of Scientific Program Committee for *Canadian Pain Society Annual Meeting* -
Niagara-on-the-Lake, Ont. - May 22-24, 1997

Organizer of Workshop Session on *Mechanisms of Neuroplasticity* at the Canadian Pain Society
Annual Meeting - Halifax, N.S., May 27, 1994.

Local Meetings

Organizer of *Tanenbaum Symposium*, University of Toronto October 7, 2012

Organizer of *Neuroscience & Mental Health Minisymposia*, quarterly 2006-present.

Organizer of *University of Toronto Centre for the Study of Pain Research Day*, March 21, 2001.

Chair, Organizing Committee of *Physiology 2000 - A Century of Excellence*, University of Toronto, Toronto, November 16-17, 2000.

Co-organizer of *Second Hospital for Sick Children Brain and Behaviour Research Day*, University of Toronto, Toronto November, 1999.

Co-organizer of *Hospital for Sick Children Brain and Behaviour Research Day*, University of Toronto, Toronto November 20, 1998.

Co-organizer of *Fourth Hospital for Sick Children Neuroscience Day*, University of Toronto, Toronto June 6, 1997.

Co-organizer of *Annual Meeting of the Southern Ontario Neuroscience Association*, University of Toronto, Toronto June 7, 1996.

Organizer of *Third Hospital for Sick Children Neuroscience Day*, University of Toronto, Toronto May 17, 1995.

Organizer of *Second Hospital for Sick Children Neuroscience Day*, University of Toronto, Toronto, April 19, 1994.

Organizer of *Third Annual Summer Student Symposium Day*, Hospital for Sick Children, Toronto, July 27, 1993.

Organizer of *First Hospital for Sick Children Neuroscience Day*, University of Toronto, Toronto, October 16, 1992.

Organizer of *Second Annual Summer Student Symposium Day*, Hospital for Sick Children, Toronto, July 28, 1992.

MAJOR INVITED LECTURES, SEMINARS, SYMPOSIA

- Gairdner Foundation Lecturer, York University – Toronto, ON – Oct 21, 2015
Presidential Lecture, 25th Internat'l Conference on Cannabinoid Research- Wolfville NS-
June 29, 2015
Plenary Speaker, *Canadian Association for Neuroscience Meeting* - Vancouver, BC- May 26, 2015
Keynote Lecture, *Fifth Internat'l Congress on Neuropathic Pain* – Nice, France – May 14-17, 2015
Grass Lecturer, Carleton University – Ottawa, ON – April 8, 2015
Keynote Speaker, *19th HKU Research Postgraduate Symposium, The University of Hong Kong* –
Hong Kong, China – December 10-11, 2014
Keynote Speaker, *International Symposium on Synaptic Transmission and Plasticity* – Wuhan,
China – June 27-30, 2014
Keynote Speaker, *The Brain: Adaptation and Maladaptation in Chronic Pain* – Keystone, CO –
June 15-20, 2014
Hugill Lecturer, University of Alberta – Edmonton, Alberta, April 15, 2014
Keynote Speaker, *European Molecular Biology Laboratory Conference on Microglia* –
Heidelberg, Germany March 26-29, 2014
Gairdner Foundation Lecturer, Lakehead University – Thunder Bay, ON – March 6, 2014
Keynote Speaker, *ISCLR 2013* – Kyoto, Japan - Aug 25-30, 2013
James E. Beall II Memorial Lectureship, Univ. Texas Medical Branch - January 15, 2014
Keynote Speaker, *Immune System in Neurological Disease*, Charlottetown, PEI – July 7, 2013
Keynote Speaker, *OMV Chapter of the Society for Neuroscience* – Cincinnati, June 7, 2013
Keynote Speaker, *86th Japanese Pharmacology Society Meeting*–Fukuoka, Japan- Mar 21, 2013
Keynote Speaker, *IBBME 50th Anniversary Symposium* – Toronto, October 10, 2012
Plenary Speaker, *Joint Annual Meeting of the Scandinavian Association for the Study of Pain and
the Danish Pain Society* – Aarhus, DN, April 19-21, 2012
McEwen Lecturer, Queens University – Kingston, ON, April 9-10, 2012
Keynote Speaker, *MaRS Future of Medicine 2011 Annual Conference*, Toronto Nov. 17, 2011
Invited Speaker, *IASP Research Symposium "Understanding Mechanisms of Chronic Pain"*
Shanghai China - October 15-18, 2011
Invited Speaker, Marian Kies Symposium "*Microglia-synapse interactions in health and
disease*"— American Society of Neurochemistry – St. Louis, MO – March 19-23, 2011
Invited Speaker, Gordon Research Conference *Glial Biology: Functional Interactions among Glia
& Neurons* -- Ventura, CA – March 6-11, 2011
Invited Speaker, *CRC 10th Anniversary Symposium*, Toronto, ON – Nov. 25, 2010
Keynote Speaker, *Conquering the Hurt: The Trajectory from Acute to Chronic Pain* – Toronto,
- November 4, 2010
Invited Speaker, *57th Benzon Foundation Symposium: Acute Pain - Pathophysiology and Risk
Factors for Chronification* - Copenhagen, Denmark - Oct. 4-7, 2010
Invited Speaker, *FENS Forum 2010* - Amsterdam, Netherlands - July 3-7, 2010
Keynote Speaker, *Canadian Society of Pharmacology and Therapeutics* –Toronto - June 4, 2010
Plenary Speaker, *Purines 2010* – Tarragona, Spain – May 30-June 2, 2010
Plenary Speaker, *New York Academy of Science Symposium "Unmet needs in pain therapeutics"*
- New York, NY - April 27, 2010
Featured Speaker, 8th *International Symposium on Diabetic Neuropathy* Toronto-Oct 15-18, 2009
Plenary Speaker, *Fukuoka Purines 2009* - Fukuoka Japan, July 23-24, 2009
Invited Speaker, *Pain, Degeneration and Development* Kuopio, Finland - June 15-16, 2009
Plenary Speaker, *Canadian Association for Neuroscience Annual Meeting* - Vancouver, BC
- May 25, 2009
Plenary Speaker, *Quebec Pain Research Network Meeting* - Lac Dulage, PQ- March 28, 2009

- Keynote Speaker, *30th Annual Meeting of Japan Association for the Study of Pain* - Fukuoka, Japan - July 19-20, 2008
- Keynote Speaker, *Visions in Pharmacology* - University of Toronto - Toronto - May 23, 2008
- Plenary Lecturer, *2nd Intern'l Congress on Neuropathic Pain* - Berlin, Germany - June 7-10, 2007
- Plenary Lecturer, *Canadian Pain Society Annual Meeting* - Ottawa, Ont - May 24, 2007
- Plenary Lecturer, *British Pain Society Annual Meeting* - Glasgow, Scotland - April 24-27, 2007
- Invited Speaker, *Symposium on Synapse, Memory and Pain* - Shanghai, China - June 30, 2006
- Invited Speaker, *Annual Meeting of the American Association of Rheumatology*, San Diego, California - Nov. 16, 2005.
- Invited Speaker, *Department of Neurobiology*, Harvard Medical School, Cambridge Massachusetts - Sept. 20, 2005.
- Keynote Lecturer, *11th World Congress of the International Association for the Study of Pain* - Sydney, Australia - August 21-26, 2005
- Plenary Speaker, *Brain and Behaviour Day 2005* - Toronto - May 25, 2005
- Invited Speaker, *Euroglia 2005* - Amsterdam, Netherlands - May 17-21, 2005
- Keynote Speaker, Annual Meeting of the Univ. Toronto Anaesthesia - Toronto - March 5, 2005
- Keynote Speaker, *Annual Meeting of American Society for Peripheral Nerves* - Fajardo, Puerto Rico - Jan 15-16, 2005
- Keynote Speaker, *9th International GPCR conference*, San Diego, California - Oct 18-21, 2004
- Plenary Lecturer, *3rd World Congress of the World Institute of Pain* - Barcelona, Spain - September 21-24, 2004
- Invited Speaker, *Beijing Neuroscience Symposium* - Beijing, China - July 7, 2004
- Keynote Speaker, *Quebec Pain Research Initiative Annual Meeting* - Stoneham, PQ - March 12-14, 2004
- Invited Speaker, *Gordon Conference on Excitatory Amino Acids* - South Hadley, MA - June 29-July 4, 2003
- Plenary Speaker, *Canadian Pain Society Annual Meeting* - Toronto, Ont - May 24, 2003
- Plenary Speaker, *7th Annual Meeting of Japan Glia Society*, Tokyo, Japan - November 30, 2002
- Keynote Speaker, *Robert Kline Symposium* - Univ. Western Ontario, London, ON - Oct. 21, 2002
- Plenary Speaker, *Zürcher Schmerzgespräche* - Zurich, Switzerland- July 11, 2002
- Distinguished Lecturer - *CurePain* - Univ. British Columbia - Vancouver, BC - Feb 18, 2002
- Keynote Speaker, *Centre for Research on Pain, Gala Launch* - Montreal, Que - Nov. 30, 2001
- Keynote Speaker, *Canadian Palliative Care Conference* - Victoria, BC - Oct. 20, 2001
- Keynote Speaker, *5th Triennial MyoPain World Congress* - Portland, Oregon - Sept. 9-13, 2001
- Keynote Speaker, *Grand Opening of Neurovirology and Neurogenerative Disorders*, St. Boniface Hospital Research Centre, Winnipeg, Manitoba - June 20-21, 2001
- Keynote Speaker, *New Frontiers in Pain*, 4th Annual National Pain Management Conference - Toronto, Ont. - June 7, 2001
- Killam Lecture, Montreal Neurological Institute - Montreal PQ - May 23, 2000
- Keynote Speaker at *McGill Pain Day* - McGill University - Montreal - January 20, 2000
- Invited Speaker at *U.S. National Academy of Sciences Colloquium on The Neurobiology of Pain* Irvine, California - December 11-13, 1998
- Plenary Speaker at *Nucleotides and Their Receptors in the Nervous System Symposium* - Leipzig, Germany - August 1-2, 1998
- Plenary Lecture at *Purines '96* - Milan, Italy - July, 14 1996
- Plenary Lecture at *4th International World Congress on Inflammation* - Geneva, Switzerland - April 15-18, 1991
- Plenary Lecture - *Canadian Pain Society Annual Meeting* - Montreal, Oct. 31, 1986

COMPLETE LIST OF INVITED LECTURES, SEMINARS, SYMPOSIA

- Symposium Speaker, *16th IASP World Congress*, Yokohama, Japan – Sept 26-30, 2016
Symposium on “Distinct forms and phases of neuroinflammation in chronic pain”
Symposium on “Mechanisms of synaptic plasticity in neuropathic pain”
- Invited Speaker, *2016 Keystone Symposia on Microglia in the Brain*, Sante Fe, New Mexico –
June 12-17, 2016
“A surprising twist in neuron-glia signalling in pain neuroplasticity”
- Invited Speaker, *Pain Mechanisms and Therapeutics Conference*, Taromina, Sicily –
June 5-10, 2016
“Pain: Genes and Gender”
- Invited Speaker, *Kyushu University*, Fukuoka, Japan – March 11, 2016
“A surprising twist in neuron-glia signalling in pain neuroplasticity”
- Invited Speaker, *The 89th Annual Meeting of the Japanese Pharmacological Society*, Yokohama,
Japan – March 9, 2016
- Invited Speaker, Univ. Texas Dallas, Dallas TX – Dec. 2, 2015
“A surprising twist in neuron-glia signalling in pain neuroplasticity”
- Invited Speaker, Univ. North Texas Health Science Center, Forth Worth TX – Dec. 1, 2015
“From Receptors to Pain: The Molecular Dynamics of Pain”
- Invited Speaker, *Duke Pain Seminar Series* – Duke University, Durham NC – Nov 12, 2015
“From Receptors to Pain: The Molecular Dynamics of Pain”
- Keynote Speaker, *Persistent Post-Surgical Pain: A Model for the Study of Chronic Pain* –
DeGroote School of Medicine, McMaster University, Hamilton, ON – Nov 7, 2015
“From Receptors to Pain: The Molecular Dynamics of Pain”
- Gairdner Foundation Lecturer, York University, Toronto Ont., Oct 21, 2015
“Chasing a Dream in Science”
“Chronic Pain: Genes and Gender”
- Invited Speaker, *Astrocytes and microglia, key partners in synaptic transmission* –
Bordeaux, France – Sept 30-Oct 2, 2015
“A surprising twist in neuron-glia signalling in pain neuroplasticity”
- Invited Speaker, *Universite Laval Seminar Series* – Quebec City, PQ – August 11, 2015
“Two Twists in Neuron-Glia Signalling in Pain Neuroplasticity”
- Presidential Lecture, *25th International Conference on Cannabinoid Research* –
Wolfville, NS – June 29, 2015
“From Receptors to Pain: The Molecular Dynamics of Pain”
- Invited Speaker, *10th International Conference for Neurons and Brain Diseases* – Xi’an China –
June 22-26, 2015

“A surprising twist in neuron-glia signalling in pain neuroplasticity”

Keynote Speaker, *Clinical Metabolic and Genetics Research Day*, SickKids Hospital –
Toronto, ON – May 29, 2015

“Pain: Genes and Gender”

Plenary Speaker, *Canadian Association for Neuroscience Annual Meeting* - Vancouver, BC –
May 26, 2015

“From Receptors to Pain: The Molecular Dynamics of Pain”

Keynote Lecture, *Fifth International Congress on Neuropathic Pain* – Nice, France –
May 14-17, 2015

“Understanding the neural substrates of chronic neuropathic pain: role of microglia”

Grass Lecturer, Carleton University – Ottawa, ON – April 8, 2015

“Src regulation of NMDA receptors in pain and schizophrenia”

Invited Speaker, *UTCSP Annual Scientific Meeting* – Toronto, ON – February 10, 2015

“A surprising twist in neuron-glia signalling in pain neuroplasticity”

Invited Speaker, *Brains for Brain Workshop* – Frankfurt, Germany – Feb 5-7, 2015

“Expanding roles of microglia in chronic pain: implications for therapy”

Invited Speaker, *9th Banff Inflammation Workshop* – Banff Alberta – Jan 29 - Feb 1, 2015

“Neurons, glia and plasticity in pain”

Invited Speaker, *University of Montreal GRSNC Seminar Series* – Montreal, PQ – Jan 23, 2015

“Src regulation of NMDA receptors in pain and schizophrenia”

Keynote Speaker, *19th HKU Research Postgraduate Symposium, The University of Hong Kong* –
Hong Kong, China – December 10-11, 2014

“From Receptors to Pain: The Molecular Dynamics of Pain”

Invited Speaker, *Neuroscience Seminar Series McMaster University* – Hamilton, ON –
December 2, 2014

“Microglia-neuron signaling in neuropathic pain”

Invited Speaker, *INC and Neuroscience Seminar Series, Université Paris Descartes* – Paris, France –
November 28, 2014

“From Receptors to Pain: The Molecular Dynamics of Pain”

Invited Session Chair, *IMHA: Science in Motion* – Toronto, ON – October 30, 2014

Invited Speaker, *Purines 2014* – Bonn, Germany – July 23-27, 2014

“P2X receptors in neuropathic pain hypersensitivity”

Invited Speaker, *9th International Conference for Neurons and Brain Diseases* – Madrid, Spain –
July 15-17, 2014

“Microglia-neuron signaling in neuropathic pain”

Keynote Speaker, *International Symposium on Synaptic Transmission and Plasticity* – Wuhan, China – June 27-30, 2014

“From Receptors to Pain: The Molecular Dynamics of Pain”

Keynote Speaker, *The Brain: Adaptation and Maladaptation in Chronic Pain* – Keystone, CO – June 15-20, 2014

“Neuron-glia Signalling in Pain Neuroplasticity”

Hugill Lecturer, *Dept. of Anaesthesiology*, University of Alberta – Edmonton, April 15, 2014

“From Receptors to Pain: The Molecular Dynamics of Pain”

EPIC Lecturer, University of Alberta – Edmonton, April 14, 2014

“Understanding Pain: What’s on the Horizon”

Invited Speaker, *International Symposium on Synaptic Plasticity and Brain Disorders*, Samuel Lunenfeld Research Institute – Toronto, April 8, 2014

“Src regulation of NMDA receptors in pain and schizophrenia”

Invited Speaker, *Pediatric Rheumatology Symposium*, Orlando, Florida, April 3-6, 2014

“From Receptors to Pain: The Molecular Dynamics of Pain”

Keynote Speaker, *European Molecular Biology Laboratory Conference on Microglia* – Heidelberg, Germany March 26-29, 2014

“Microglia-Neuron Signalling in Pain Neuroplasticity”

Keynote Speaker, *French Pain Society Annual Meeting* – Montpellier, France March 21-22, 2014

“From Receptors to Pain: The Molecular Dynamics of Pain”

Invited Speaker, *BioconferenceLive*, March 19, 2014

“NMDA receptor regulation in health and disease”

Keynote Speaker, *Areces Foundation Symposium* – Madrid, Spain, March 11-12, 2014

“Exploring purinergic receptors in neuron-glia crosstalk in pain”

Gairdner Foundation Lecturer, Lakehead University, Thunder Bay, Ont., March 6, 2014

“Chasing a Dream in Science”

“Understanding Pain: What’s on the Horizon”

Invited Speaker, *Neuroscience Colloquium Series*, University of South Carolina – Charleston, SC January 17, 2014

“NMDA receptor regulation in health and disease”

James E. Beall II Memorial Lecturer, *Department of Neuroscience and Cell Biology*, Univ. Texas Galveston, Texas, January 15, 2014

“From Receptors to Pain: The Molecular Dynamics of Pain”

Invited Speaker, *Department of Physiology & Pharmacology*, University of Calgary – Calgary,

Dec 6, 2013

“From Receptors to Pain: The Molecular Dynamics of Pain”

Invited Speaker, *Department of Pharmacology*, University of Pennsylvania – Philadelphia,
Nov 25, 2013

“Src regulation of NMDA receptors in pain and schizophrenia”

Invited Speaker, *Talk Change 2013: Dynamic Thinking in Healthcare*, McMaster University,
Hamilton Ont – Nov 23, 2013

“Understanding Pain: What’s on the Horizon”

Invited Speaker, *Institute on Advancing Pain Assessment and Management Across the Life Span* –
Toronto, ON – Nov 3, 2013

“Pain Biology 101”

Webinar Speaker, *Pain Research Forum*, Harvard University – October 30, 2013

“Exploring neuron-glia crosstalk in pain”

Invited Speaker, *26th European College of Neuropsychopharmacology Congress* – Barcelona,
Spain, Oct 5-9, 2013

“Schizophrenia susceptibility pathway neuregulin 1-ErbB4 suppresses Src upregulation of
NMDA receptors”

Invited Speaker, *EFIC Satellite Symposium: Neural Circuits underlying Nociception and Pain and
their Plasticity* – Heidelberg, Germany - Oct 7-10, 2013

“Neuronal and Glial Signalling in Pain Neuroplasticity”

Invited Speaker, *European Synapse Summer School* – Bordeaux, France, Sept 9-11, 2013

“Src regulation of NMDA receptors in pain and schizophrenia”

Keynote Speaker, *ISCLR 2013* – Kyoto, Japan - Aug 25-30, 2013

“Neuronal and Glial Signalling in Pain Neuroplasticity”

Invited Speaker, *PPRECISE Meeting*, ACTION –Washington, DC – July 11-12, 2013

Keynote Speaker, *Immune System in Neurological Disease Symposium*, Charlottetown, PEI –
July 7, 2013

“Neuro-Immune Signalling in Pain Neuroplasticity”

Invited Speaker, *XI European Meeting on Glial Cells in Health and Disease*, Berlin –
July 3-6, 2013

“P2X4 receptors and morphine hyperalgesia”

Keynote Speaker, *OMV Chapter of the Society for Neuroscience* – Cincinnati, June 7, 2013

“From Receptors to Pain: The Molecular Dynamics of Pain”

Invited Speaker, *IASP Congress on Neuropathic Pain* – Toronto, May 23-26, 2013

“What do studies of Animal Models/ Dorsal Horn Tell Us about Human Neuropathic Pain
Pathogenesis?”

- Invited Speaker, *APS 32nd Annual Scientific Meeting* – New Orleans, May 8-11, 2013
“From Receptors to Pain: The Molecular Dynamics of Pain”
- Invited Speaker, *NeuroColloquium Seminar Series*, Freie Universität, Berlin – May 3, 2013
“Src regulation of NMDA receptors in pain and schizophrenia”
- Plenary Speaker, *86th Japanese Pharmacology Society Meeting* –Fukuoka, Japan, March 21, 2013
“Neuronal and Glial Signalling in Pain Neuroplasticity”
- Invited Speaker, *UTCSP-IPC Lecture* – Toronto, March 18, 2013
“Pain: Mechanisms and Manifestations”
- Invited Speaker, *Department of Physiology*, McGill University – Montreal, March 14-15, 2013
“Src regulation of NMDA receptors in pain and schizophrenia”
- Invited Speaker, UTCSP Pain Day, Toronto – Feb 26, 2013
“Understanding Pain Mechanisms: What’s on the Horizon”
- Invited Speaker, *Neuroscience Seminar Series*, Miami University, Miami – February 4, 2013
“Neuronal and Glial Signalling in Pain Neuroplasticity”
- Invited Speaker, Pediatric Grand Rounds, Hospital for Sick Children – January 16, 2013
“Understanding Pain Mechanisms: What’s on the Horizon”
- Invited Speaker, *Er Yi Innovation Forum*, Shanghai Jiao Tong University School of Medicine, Shanghai, China, January 11, 2013
“Src regulation of NMDA receptors in pain and schizophrenia”
- Invited Speaker, *Cellular and Molecular Basis of Disease Seminar Series*, Univ. New Mexico Health Sciences Center – Albuquerque, NM, November 2, 2012
“Src regulation of NMDA receptors in pain and schizophrenia”
- Invited Speaker, Pediatric Neurocritical Care Research Group Annual Meeting - Toronto, ON October 27, 2012
“Neuron-Glia Signalling in Pain Neuroplasticity”
- Invited Speaker, Society for Neuroscience Neurobiology of Disease Workshop - *Persistent Pain: Too Much Plasticity?*- New Orleans, LA, October 12, 2012
“Neuronal and Glial Signalling in Pain Neuroplasticity”
- Keynote Speaker, *IBBME 50th Anniversary Symposium* – Toronto, October 10, 2012
“Understanding Pain Mechanisms: What’s on the Horizon”
- Invited Speaker, *Molecular Biology of Neurological Disorders* – Wuhan, China, Sept 26-29, 2012
“Src regulation of NMDA receptors”
- Invited Speaker, IASP Satellite Symposium *Current Concepts, Methods, and Progress in Pain Genetics Research* – Milan, Italy August, 26, 2012

“P2X7 in Chronic Pain Sensitivity”

Invited Speaker, *Association of Medical Illustrators* – Toronto, July 28, 2012

“Visualizing Neuroplasticity and Neuron-glia Signaling in Chronic Pain”

Invited Speaker, *International Conference of Neurons and Brain Diseases* – Montreal, June 26-28, 2012

“Role of Microglia in Morphine Hyperalgesia”

Invited Speaker, *International Neuroscience Symposium* – Nanjing, China, June 18-19, 2012

“Neuronal and Glial Signalling in Pain Neuroplasticity”

Invited Speaker, London Pain Consortium Annual Meeting – Eynsham, England, June 12, 2012

“A new twist in the saga of P2X7 receptors and chronic pain hypersensitivity”

Invited Speaker, *Adenine Nucleosides and Nucleotides in Biomedicine: Purinergic Signalling in New Strategy of Drug Discovery* – Fukuoka, Japan, May 30-June 2, 2012

“P2X4 receptors in neuropathic pain”

Invited Speaker, Annual Meeting of the Canadian Pain Society – Whistler, BC, May 23-26, 2012

“P2X receptors in neuropathic pain”

Invited Speaker, *Center for Neurobiology and Behavior*, Univ. Penn – Philadelphia, PA, May 17, 2012

“Src regulation of NMDA receptors in pain and schizophrenia”

Plenary Speaker, *Joint Annual Meeting of the Scandinavian Association for the Study of Pain and the Danish Pain Society* – Aarhus, DN, April 19-21, 2012

“Neuronal and Glial Signalling in Pain Neuroplasticity”

McEwen Lecturer, *Dept. of Pharmacology*, Queens University – Kingston, ON, April 9-10, 2012

“Src regulation of NMDA receptors in pain and schizophrenia”

“Exploring neuron-microglia signalling in pain plasticity”

Invited Speaker, *Pharmacology Seminar Series*, University of Toronto – March 28, 2012

“Neuronal and Glial Signalling in Pain Neuroplasticity”

Invited Speaker, *Neuroscience Seminar Series*, Tufts University, Boston – March 6-8, 2012

“Neuronal and Glial Signalling in Pain Neuroplasticity”

Invited Speaker, *Pharmacology Seminar Series*, University of Arizona, Tucson – Feb 28, 2012

“Neuronal and Glial Signalling in Pain Neuroplasticity”

Invited Speaker, *Perioperative Services Grand Rounds*, SickKids Hosp., Toronto –Feb. 10, 2012

“Pain: it's not what you think...”

Invited Speaker, *Laboratory Medicine and Pathobiology Seminar Series*, Toronto Feb. 6, 2012

“Exploring ‘Pain Space’”

- Keynote Speaker, *Canadian University Life Sciences Challenge*, Toronto, Feb. 4, 2012
“Exploring ‘Pain Space’”
- Invited Speaker, Chinese Bioscientists of America Annual Meeting, Toronto – Feb 3, 2012
“A new twist in the saga of P2X7 receptors and chronic pain hypersensitivity”
- Invited Speaker, *The Univ. Texas, MD Anderson Cancer Center*, Houston, TX – Jan, 18-19, 2012
“Exploring neuron-microglia signalling in pain plasticity”
- Invited Speaker, *50th American College of Neuropsychopharmacology Annual Meeting*, Waikoloa Beach, Hawaii, December 4-8, 2011
“Neuregulin 1- ErbB4 signalling suppresses Src enhancement of NMDA receptors”
- Keynote Speaker, *MaRS Future of Medicine 2011 Annual Conference*, Toronto Nov. 17, 2011
“Understanding Pain Mechanisms: What’s on the Horizon”
- Invited Speaker, *The Role of Research in Future Pain Management*, Montreal PQ – Oct. 27, 2011
“Exploring neuron-microglia signalling in pain plasticity”
- Invited Speaker, *Southeastern University Neuroscience Symposium*, Nanjing China– Oct. 18, 2011
“Src regulation of NMDA receptors in pain and schizophrenia”
- Invited Speaker, *9th IASP Research Symposium "Understanding Mechanisms of Chronic Pain"*
Shanghai China - October 15-17, 2011
“Neuronal and Glial Signalling in Pain Neuroplasticity”
- Invited Speaker, *Quli International Neuroscience Symposium at Shandong University*,
Jinan, China - October 14-15, 2011
“Regulating NMDA receptors by Src”
- Invited Speaker, *NMH Minisymposium on Channelopathies* – Toronto, ON – Sept. 26, 2011
“A new twist in the saga of P2X7 receptors and chronic pain hypersensitivity”
- Invited Speaker, *International Society of Neurochemistry, Annual Meeting 2011* – Athens, Greece
Protein Tyrosine Phosphorylation Signal and Brain Functions – August 28 – Sept 1, 2011
“Src regulation of NMDA receptors in pain and schizophrenia”
- Invited Speaker, *6th International Conference for Neurons and Brain Diseases* – Toyama, Japan –
August 2-5, 2011
“Src regulation of NMDA receptors in pain and schizophrenia”
- Grand Rounds Speaker, Trillium Health Centre – Mississauga ON – Jun 15, 2011
“Targeting Neuronal and Glial Signalling in Pain Neuroplasticity”
- Invited Speaker, *Sixth Scientific Meeting of the TMJ Association*, Bethesda MD – June 5-7, 2011
“Neuron-glia interactions in pathological pain”
- Invited Speaker, *17th Annual KSCHIRT Meeting* -- Louisville, Kentucky, May 18-20, 2011
“Neuron-glia interactions in Pain Neuroplasticity”

Invited Speaker, University of Indiana Pharmacology Seminar Series, -- Indianapolis, IN
May 3, 2011
“Neuronal and Glial Signalling in Pain Neuroplasticity”

Invited Speaker, University of Pittsburgh Pain Center Seminar Series, -- Pittsburgh, PA
April 20, 2011
“Neuronal and Glial Signalling in Pain Neuroplasticity”

Invited Speaker, *Experimental Biology 2011* – Washington DC – April 9-13, 2011
“Exploring neuron-microglia signalling in pain plasticity”

Invited Speaker, Marian Kies Symposium “*Microglia-synapse interactions in health and disease*”— American Society of Neurochemistry – St. Louis, MO – March 19-23, 2011
“Microglia-neuron signalling in pathological pain”

Invited Speaker, Gordon Research Conference *Glial Biology: Functional Interactions among Glia & Neurons* -- Ventura, CA – March 6-11, 2011
"Microglia and neuropathic pain"

Invited Speaker, MiNDS Seminar Series, McMaster University – Hamilton, ON
February 17, 2011
“Neuronal and Glial Signalling in Pain Neuroplasticity”

Invited Speaker, Neuroscience Seminar Series, University of Colorado – Denver, CO
January 7, 2011
“Neuronal and Glial Signalling in Pain Neuroplasticity”

Invited Speaker, *CRC 10th Anniversary Symposium*, “*Will we ever truly understand the human brain*” - Toronto, ON – Nov. 25, 2010

Invited Speaker, *CIHR Institute of Genetics New Investigator Symposium*, - Honey Harbor, ON –
Nov. 23, 2010
“Chasing a Dream in Science”

Keynote Speaker, *Conquering the Hurt: The Trajectory from Acute to Chronic Pain* – Toronto
-November 4, 2010
“Neurobiology of Pain”

Invited Speaker, *UNC Neuroscience Center Seminar Series* – Chapel Hill, North Carolina
- Oct 21, 2010
“Neural-glial interactions in Pain Hypersensitivity”

Invited Speaker, *57th Benzon Foundation Symposium: Acute Pain - Pathophysiology and Risk Factors for Chronification* - Copenhagen, Denmark - Oct. 4-7, 2010
“Central signalling systems in dorsal horn neuroplasticity”

Invited Speaker, *World Pharma 2010* - Copenhagen, Denmark - July 17-23, 2010
“NMDA receptors and chronic pain hypersensitivity”

Invited Speaker, *FENS Forum 2010* - Amsterdam, Netherlands - July 3-7, 2010
“Targeting protein-protein interactions in neurological disorder therapy”

Keynote Speaker, *Canadian Society of Pharmacology and Therapeutics* –Toronto - June 4, 2010
“Targeting Neuronal and Glial Signalling in Pain Neuroplasticity”

Plenary Speaker, *Purines 2010* – Tarragona, Spain – May 30-June 2, 2010
“P2X4 receptors in neuropathic pain”

Invited Speaker, *3rd International Congress on Neuropathic Pain*, Athens, Greece
- May 27-30, 2010
Session on “Persistent post-surgical pain – a neuropathic pain state?”
Session on “Genetics and Neuropathic Pain”

Invited Speaker, *UofT Pain Research Series* – Toronto, May 3, 2010
“Understanding the role of microglia in pain”

Plenary Speaker, *New York Academy of Science Symposium "Unmet needs in pain therapeutics"*
- New York, NY - April 27, 2010
"Targeting Neuronal and Glial Signalling in Pain Neuroplasticity "

Invited Speaker, *Spring Pain Research Conference* - Grand Cayman, BWI - April 17-24, 2010
“Targeting NMDA receptor interacting proteins in pain”
“Microglial signaling mechanisms: ATP receptors and BDNF”

Invited Speaker, *Wolfson Centre for Age Related Diseases and the MRC Centre for Developmental Biology* – London, UK - March 31, 2010
“Targeting Neuronal and Glial Signalling in Pain Neuroplasticity”

Invited Speaker, *Neuroscience Program Lecture Series*, Toronto, ON – January 29, 2010
“Exploring ‘Pain Space’”

Invited Speaker, *Abbott Laboratories*, Abbott Park, Illinois – January 26, 2010
“Targeting Neuronal and Glial Signalling in Pain Neuroplasticity”

Invited Speaker, *Cell Biology Seminar Series* – SickKids Hospital – Toronto, Nov. 20, 2009
“Targeting Neuronal and Glial Signalling in Pain Neuroplasticity”

Featured Speaker, 8th *International Symposium on Diabetic Neuropathy* - Toronto, ON
- Oct 15-18, 2009
“Diabetic neuropathic pain: Modern concepts”

Invited Lecturer, *Hunt-Curtis Frontiers in Neuroscience Seminar Series*, Dept. Neuroscience,
Ohio State University, Columbus OH - Oct. 5, 2009
"Molecular mechanisms of pain neuroplasticity"

Invited Speaker, *Pain Management Rounds* - Hamilton Health Sciences Centre, Hamilton, ON
- Sept 24, 2009

“Neurobiology of Pain”

Invited Speaker, *XXVI International Congress of Physiological Sciences* - Kyoto, Japan, July 27
- August 1, 2009

“Purinergic signaling in microglia-neuron signaling in neuropathic pain”

Plenary Speaker, *Fukuoka Purines 2009* - Fukuoka Japan, July 23-24, 2009

“Purinergic signaling in neuropathic pain hypersensitivity”

Invited Speaker, *London Pain Consortium Annual Meeting* - El Escorial, Spain - June 23, 2009

“Targeting Neuronal and Glial Signalling in Pain Neuroplasticity”

Invited Speaker, *Pain, Degeneration and Development - Signalling* - Kuopio, Finland -
June 15-16, 2009

“Pain: Challenges and Overview”

“Neuron-Glia interactions in Pain”

“Type I Diabetes: The Role of TRPV1 Sensory Neurons”

Plenary Speaker, *Canadian Association for Neuroscience Annual Meeting* - Vancouver, BC
- May 25, 2009

“Targeting Neuronal and Glial Signalling in Pain Neuroplasticity”

Invited Speaker, *American Pain Society Annual Meeting* - San Diego, CA - May 8, 2009

“Do glia matter?”

Invited Lecturer, Department of Pharmacology & Therapeutics, McGill University - Montreal, PQ
- May 4, 2009

"Molecular mechanisms of pain neuroplasticity"

Invited Speaker, *NIH-Wide Pain Interest Group* - Bethesda, MD - April 22, 2009

“Neuronal and Glial Signalling in Pain Neuroplasticity”

Invited Lecturer, *UTS Neurobiology Lecture Series*, Scarborough, ON - April 3, 2009

"Molecular mechanisms of pain neuroplasticity"

Plenary Speaker, *Quebec Pain Research Network Annual Meeting* - Lac Dulage, PQ
- March 28, 2009

“TRPV1 in C fibres: more than just nociception”

Invited Speaker, Canadian Pain Society Chronic Pain Refresher Course - Toronto, ON
- Feb 28, 2009

“Neurobiology of Pain”

Invited Speaker, *Symposium on Pain Mechanisms*, Nihon University - Tokyo, Japan
- Feb. 21, 2009

“Microglia-neuron signaling in neuropathic pain”

Invited Speaker, *J. Allyn Taylor Symposium* - Robarts Research Institute, London ON
- Nov 5, 2008

“Molecular Signalling in Pain Neuroplasticity”

Invited Speaker, Session on *ATP, cytokines, TLR-4 and more: what makes microglia a major player in neuropathic pain?* 12th World Congress of the International Association for the Study of Pain - Glasgow, Scotland - August 17-22, 2008

"BDNF from microglia in pain neuroplasticity "

Keynote Speaker, *30th Annual Meeting of Japan Association for the Study of Pain* - Fukuoka, Japan - July 19-20, 2008

“Molecular Signalling in Pain Neuroplasticity”

Keynote Speaker, *Visions in Pharmacology* - University of Toronto - Toronto - May 23, 2008

“Cell Signaling Pathways in the Spinal Cord in Pain Neuroplasticity”

Invited Speaker, *University of Buffalo Neuroscience Seminar Series*- Buffalo, NY - May 14, 2008

“Molecular Signalling in Pain Neuroplasticity”

Invited Speaker, *Spring Pain Research Conference* - Grand Cayman, BWI - April 27-May 3, 2008

“BDNF from spinal microglia in pain hypersensitivity after peripheral nerve injury”

Invited Speaker, *Le Groupe de recherche sur le système nerveux central Seminar Series*
- Université de Montréal - Montreal, PQ - April 4, 2008

“Cell Signaling Pathways in the Spinal Cord in Pain Neuroplasticity”

Invited Speaker, *University of Calgary* - Calgary, AB - March 14, 2008

“Plasticity of spinal inhibition through microglia to neuron signaling”

Invited Speaker, *Symposium on Pain Mechanisms*, Nihon University - Tokyo, Japan –
Feb. 29, 2008

“Src in NMDA receptor-mediated plasticity in pathological pain hypersensitivity”

Invited Speaker, *Neuropathic Pain Meeting* - Snowbird, Utah - Nov 1-2, 2007

“Immunological mechanisms in neuropathic pain”

Invited Speaker, *University of Alberta* - Edmonton, AB - Sept 13, 2007

“Molecular Signalling in Pain Neuroplasticity”

Invited Speaker, *2nd International Conference for Neurons and Brain Diseases* – Madrid, Spain –
August 27-29, 2007

“Plasticity of spinal inhibition through microglia to neuron signaling”

Invited Speaker, *Membrane Proteins and Molecular Therapeutics Symposium*, Toronto –
June 15, 2007

“Targeting a protein-protein interaction for analgesia”

Invited Speaker, *Max Delbrück Centre for Molecular Medicine*, Berlin, Germany - June 11, 2007

“Molecular Signalling in Pain Neuroplasticity”

Invited Speaker, *Trophic factors and Pain Workshop, 2nd International Congress on Neuropathic*

- Pain* - Berlin, Germany - June 7-10, 2007
“BDNF in nerve-injured induced pain”
- Plenary Lecturer, 2nd *International Congress on Neuropathic Pain* - Berlin, Germany
- June 7-10, 2007
“Plasticity of spinal inhibition through microglia to neuron signaling”
- Invited Speaker, *Symposium on Structural and Functional Organization of the Synapse*
- Iowa City, IA - June 1-3, 2007
“Synapses in Pathological Pain”
- Plenary Lecturer, *Canadian Pain Society Annual Meeting* - Ottawa, Ont - May 24, 2007
“Cell Signaling Pathways in the Spinal cord in Pain Neuroplasticity”
- Invited Speaker, Canadian Association for Neuroscience Annual Meeting - Toronto, Ont
- May 23, 2007
“Targeting the Src-NMDA receptor interaction for analgesia”
- Invited Lecture, *Helix Lecture Series*, University of Toronto - Toronto, Ont - May 18, 2007
“Exploring New Frontiers in Diabetes”
- Invited Speaker, *Drexel University Seminar Series* - Philadelphia, PA - May 17, 2007
“Molecular Signalling in Pain Neuroplasticity”
- Invited Speaker, *University of Chicago Committee on Neurobiology Seminar Series* -
Chicago, IL - May 10, 2007
“Molecular Signalling in Pain Neuroplasticity”
- Plenary Lecturer, *British Pain Society Annual Meeting* - Glasgow, Scotland - April 24-27, 2007
“Cell Signaling Pathways in the Spinal cord in Pain Neuroplasticity”
- Invited Speaker, *New York University Department of Biochemistry Seminar Series*
- New York, NY - April 4, 2007
“Molecular Signalling in Pain Neuroplasticity”
- Invited Speaker, *University of Kentucky, Spinal Cord Research Center Seminar Series*
- Louisville, KY - February 26, 2007
“Molecular Signalling in Pain Neuroplasticity”
- Invited Speaker, *Department of Physiology Seminar Series*, University of Toronto - Jan. 18, 2007
“Sensory Neurons Control Diabetic Islet Inflammation”
- Invited Speaker, *University of Colorado Seminar Series* - Denver, CO - Dec. 14, 2006
“Molecular Signalling in Pain Neuroplasticity”
- Invited Speaker, *Children's Health Research Institute Seminar Series* - London, Ont. –
Nov. 30, 2006
“Molecular Signalling in Pain Neuroplasticity”

Featured Speaker, Medical Series for Learning Unlimited 2006, Toronto, ON - Nov. 14, 2006
"New vistas in pain and pain management"

Invited Speaker, *MiniSymposium on Pain*, Society for Neuroscience Annual Meeting,
Atlanta, GA - October 15, 2006
"Microglia-neuron signaling in neuropathic pain"

Invited Speaker, *Neuroscience Symposium*, Florida State University, Tallahassee, FL -
October 12, 2006
"Microglia-neuron signaling: plasticity of inhibition in neuropathic pain"

Invited Speaker, *Neuroscience Seminar Series*, University of Texas Medical Branch,
Galveston, Texas - October 4, 2006
"Microglia-neuron signaling: plasticity of inhibition in neuropathic pain"

Invited Speaker, *International Conference on Synapses, Memory, Drug Addiction and Pain* -
Toronto, ON - August 21-23, 2006
"Ins and outs of Src regulation of NMDA receptors and synaptic plasticity"

Invited Speaker, *Qinghua University Neuroscience Seminar Series* - Beijing, China -
July 11, 2006
"Molecular Signalling in Pain Neuroplasticity"

Invited Speaker, *4th International Neuroscience Symposium* - Kunming, China -
July 6-7, 2006
"Spinal Mechanisms Underlying Neuropathic Pain"

Invited Speaker, *Symposium on Synapse, Memory and Pain* - Shanghai, China -
June 30, 2006
"Microglia-neuron signaling in neuropathic pain"

Invited Speaker, *OHRI Distinguished Professor Seminar Series*, Ottawa Health Research Institute,
Ottawa, ON- May 17, 2006
"Microglia-neuron signaling: plasticity of inhibition in neuropathic pain"

Invited Speaker, *Program in Neuroscience Seminar Series*, University of Maryland
Baltimore, MD - May 11, 2006
"Microglia-neuron signaling in neuropathic pain"

Visiting Professor Lecture, *City-Wide Pain Rounds*, University of Toronto, Toronto -
April 27, 2006
"Pain Research: Present and Future"

Invited Speaker, *Multiprofessional Pain Group at the University of Toronto (MUPPUT)* -
April 20, 2006
"Spinal Mechanisms Underlying Neuropathic Pain"

Invited Speaker, *Johnson and Johnson Inc.*, La Jolla California - March 23, 2006.
"Microglia-neuron signaling: plasticity of inhibition in neuropathic pain"

Invited Speaker, *Neurobiology Seminar Series*, The Scripps Research Institute,
La Jolla, California - March 22, 2006.
"Cell signaling mechanisms in pain neuroplasticity"

Invited Speaker, Annual Meeting of the University of Toronto Anaesthesia Department, Toronto
- March 11, 2006
"Src regulation of NMDA receptors in pain hypersensitivity"

Invited Speaker, *Pediatric Grand Rounds*, Hospital for Sick Children, Toronto -
February 15, 2006
"Molecular mechanisms of pain: Why should clinicians care?"

Invited Speaker, Japan-Canada Neuroscience Workshop, Tokyo, Japan - Jan 17, 2006
"Microglia-neuron signaling: plasticity of inhibition in neuropathic pain"

Invited Speaker, *Pain Day 2005*, University of Toronto Centre for the Study of Pain,
Toronto, ON - Dec. 15, 2005
"The emerging role of microglia in neuropathic pain"

Invited Speaker, *Neurobiology & Behavior Seminar Series*, SUNY Stony Brook,
Stony Brook, New York - Dec. 8, 2005.
"Microglia-neuron signaling: plasticity of inhibition in neuropathic pain"

Invited Speaker, *Annual Meeting of the American Association of Rheumatology*, San Diego,
California - Nov. 16, 2005.
"Cell signaling mechanisms in pain neuroplasticity"

Invited Public Lecture, *First Annual Chronic Pain Health Forum*, Royal Botanical Gardens,
Burlington, ON - Nov. 6, 2005
"Understanding Pain Mechanisms: What's on the Horizon"

Invited Speaker, *Special Neurobiology Seminar*, University of Laval, Quebec City, QC
- Sept. 22, 2005.
"Ins and outs of Src regulation of NMDA receptors and synaptic plasticity"

Invited Speaker, *Department of Neurobiology Seminar Series*, Harvard Medical School,
Cambridge Massachusetts - Sept. 20, 2005.
"Microglia-neuron signaling: plasticity of inhibition in neuropathic pain"

Keynote Lecturer, *11th World Congress of the International Association for the Study of Pain* -
Sydney, Australia - August 21-26, 2005
"Cell Signaling Pathways in the Dorsal Horn in Pain Neuroplasticity"

Invited Speaker, Session on *Injury-dependent plasticity at multiple levels of nociceptive
transmission*, *11th World Congress of the International Association for the Study of
Pain* - Sydney, Australia - August 21-26, 2005
"Src in spinal pain neuroplasticity "

Invited Speaker, *Synaptic Function and Plasticity Conference* - Vancouver, BC -
July 21-24, 2005

“Ins and outs of Src regulation of NMDA receptors and synaptic plasticity”

Invited Speaker, John Roder 25th Anniversary Celebration - Toronto - June 24-25, 2005

“Microglia and pain: immunology and the brain?”

Invited Speaker, *Samuel Lunenfeld Research Institute 20th Anniversary Meeting* -
Toronto - June 23-24, 2005

“Ins and outs of Src regulation of NMDA receptors and synaptic plasticity”

Invited Discussant, *Novartis Symposium on Purinergic Signalling in Neuron-Glia Interactions* -
London, UK - June 7-9, 2005

Invited Speaker, *London Pain Consortium Seminar Series* - London, UK - June 6, 2005

"Microglia-neuron signaling in neuropathic pain"

Plenary Speaker, *Brain and Behaviour Day 2005* - Toronto - May 25, 2005

“Molecular mechanisms of synaptic plasticity”

Invited Speaker, *Euroglia 2005* - Amsterdam, Netherlands - May 17-21, 2005

"Microglia-neuron signaling in neuropathic pain"

Invited Lecturer, *Nebraska Neuroscience Lecture Series* -University of Nebraska Medical Center-
Omaha, Nebraska - April 25, 2005

"Molecular signalling pathways for synaptic plasticity"

Invited Participant, *Emerging Strategies for the Treatment of Neuropathic Pain: An
Interdisciplinary Colloquium* - Scottsdale Arizona - April 13-16, 2005

Invited Seminar, *Neuroscience Center Seminar Series*, University of Miami - Miami, Florida
March 18, 2005

"Microglia-neuron signaling in neuropathic pain"

Keynote Speaker, Annual Meeting of the University of Toronto Anaesthesia Department, Toronto
- March 5, 2005

“Molecular signaling in pain neuroplasticity”

Keynote Speaker, *Annual Meeting of American Society for Peripheral Nerves* - Fajardo, Puerto
Rico - Jan 15-16, 2005

"The cutting edge: microglia as mediators of nerve-injury pain"

Invited Seminar, *Department of Pharmacology Seminar Series*, University of Minnesota -
Dec 10, 2004

“Molecular signaling in pain neuroplasticity”

Invited Speaker, *Canadian Arthritis Network Annual Meeting*, Vancouver - Nov 11-14, 2004

“Molecular signaling in future management of pain”

Keynote Speaker, *9th International GPCR conference*, San Diego, California - Oct 18-21, 2004
"Src kinases in GPCR modulation of NMDA receptors"

Invited Speaker, *Anaesthesia Rounds, University Health Network*, Toronto - Oct 15, 2004
"Cell signaling pathways in pain neuroplasticity"

Plenary Lecturer, *3rd World Congress of the World Institute of Pain* - Barcelona , Spain -
September 21-24, 2004
"Molecular aspects of central sensitization"

Invited Speaker, *Shanghai - Toronto Neuroscience Exchange Symposium* - Shanghai, China -
July 10-11, 2004
"Tyrosine kinase/phosphatase modulation of NMDA receptors in synaptic signalling and
plasticity"

Invited Speaker, *Beijing Neuroscience Symposium* - Beijing, China - July 7, 2004
"Conventional and unconventional cell signaling pathways in chronic pain"

Plenary Lecturer, *American Pain Society/Canadian Pain Society Joint Annual Meeting* -
Vancouver, BC - May 6-9, 2004
"Cell signaling pathways in pain neuroplasticity"

Plenary Speaker, *Nerve Damage and Neuropathic Trigeminal Pain Symposium* -
Vancouver, BC - May 4-5, 2004
"Future of Molecular Biology in Management of Neuropathic Pain"

Invited Lecturer, *Brain Research Centre* - University of British Columbia -
Vancouver, BC - May 6, 2004
"Molecular signalling pathways for synaptic plasticity"

Invited Speaker, *Spring Pain Research Conference* - Grand Cayman, BWI - April 24-May 1, 2004
"P2X4 receptors induced in spinal microglia as mediators of pain following nerve injury"

Invited Speaker, *Spring Pain Research Conference* - Grand Cayman, BWI - April 24-May 1, 2004
"Tyrosine kinase/phosphatase in spinal cord pain plasticity"

Keynote Speaker, *Quebec Pain Research Initiative Annual Meeting* - Stoneham, PQ -
March 12-14, 2004
"Conventional and unconventional cell signaling pathways in chronic pain"

Invited Participant, *The Synapse: Molecular Mechanisms of Plasticity*, Celebration of the opening
of the Porter Neuroscience Research Centre at the National Institutes of Health,
Bethesda, Maryland - February 28 - March 2, 2004

Invited Speaker, *Mechanisms of nociception, from mice to medicine* Workshop, 37th Winter
Conference on Brain Research - January 24-30, 2004 - Copper Mountain Resort, Colorado
"Molecular mechanisms of central sensitization"

The 2004 Marshall Lecturer - Departments of Anesthesia and Neurosurgery - Toronto -

January 22, 2004

"Conventional and unconventional cell signaling pathways in chronic pain"

Invited Speaker, *Hospital for Sick Children Research Institute Annual Scientific Retreat* -
Toronto, ON - November 22, 2003

"Unconventional cell signaling pathways in pain neuroplasticity"

Invited Speaker, 13th Conference on Neuropharmacology - *Post-translational modifications of
protein structure and synaptic function* - New Orleans, LA - November 5- 7, 2003

"Tyrosine kinase/phosphatase modulation of NMDA receptors in synaptic signalling and
plasticity"

Invited Speaker, 5th Annual Great Lakes GPCR Retreat - Honey Harbor, ON - Oct 17-19, 2003

"Astrocyte purinoceptors - riding the wave"

Invited Speaker, *Hereditary Disease Foundation Electrophysiology and NMDA Receptor
Workshop on Huntington Disease* - Playa del Rey, California - Sept. 20-21, 2003

"Modulation of NMDA receptors"

Invited Speaker, *Gordon Conference on Excitatory Amino Acids* - South Hadley, MA -
June 29-July 4, 2003

"Ins and outs of regulating NMDA receptors"

Invited Speaker, AstraZeneca Seminar Series - Montreal, PQ - June 18, 2003

"Pain research in the genomics era"

Invited Speaker, Anatomy and Cell Biology Seminar Series, McGill University - Montreal, PQ -
May 28, 2003

"Molecular signalling pathways for synaptic plasticity"

Plenary Speaker, *Canadian Pain Society Annual Meeting* - Toronto, Ont- May 24, 2003

"Pain and the DREAM gene"

Plenary Speaker, *Pain Education Day* - Toronto, Ont- May 22, 2003

"The Neurobiology of Pain"

Invited Speaker, *Pain in Child Health and Pain: Molecules to Community, Joint Meeting* -
Alton, Ont- May 20, 2003

"Molecular mechanisms of pain: Why should clinicians care?"

Invited Speaker, *Cell Signaling Annual Meeting* - Toronto, Ont- April 11, 2003

"Pain research in the genomics era"

Invited Speaker, University College London - London, UK - February 25, 2003

"Molecular signalling pathways for synaptic plasticity"

Invited Speaker, Neuroscience Seminar Series, Université de Montréal - Montreal, PQ -
February 7, 2003

"Molecular signalling pathways for synaptic plasticity"

Invited Speaker, Society of Chinese Bioscientists in America, Toronto Chapter - Toronto, Ont
January 18, 2003

"Molecular mechanisms underlying synaptic plasticity and pain"

Plenary Speaker, *7th Annual Meeting of Japan Glia Society*, Tokyo, Japan -
November 30, 2002

"Astrocyte purinoceptors - riding the wave"

Invited Speaker, Department of Neuroscience, Jikei Univ. School of Medicine, Tokyo, Japan -
November 29, 2002

"Molecular signalling pathways for synaptic plasticity"

Keynote Speaker, *Robert Kline Symposium* - University of Western Ontario, London, ON -
October 21, 2002

"Molecular signalling pathways for synaptic plasticity"

Invited Speaker, *3rd Gordon Conference on Synaptic Transmission* - Meriden, NH -
Aug. 18-23, 2002

"Molecular signalling pathways for spinal synaptic plasticity"

Plenary Speaker, *Zürcher Schmerzgespräche* - Zurich, Switzerland- July 11, 2002

"The neurobiology of central sensitization"

CurePain Distinguished Lecturer, Centre de Recherche Université Laval Robert-Giffard-
Quebec, PQ - June 14, 2002

"Transcriptional regulation of pain? You must be DREAMing!"

Invited Speaker, *University of Toronto Symposium to Honour David Hubel*, Toronto, ON -
June 12, 2002

"Astrocyte purinoceptors - riding the wave"

Invited Speaker, University of Calgary, Neuroscience Research Group - Calgary, Alberta-
June 5, 2002

"Molecular signalling pathways for synaptic plasticity"

Invited Speaker, *Canadian Pain Society Annual Meeting* - Winnipeg, Manitoba - May 26, 2002

"Transcriptional regulation of pain? You must be DREAMing!"

Invited Speaker, *Canadian Pain Society Annual Meeting* - Winnipeg, Manitoba - May 25, 2002

"Post-translational changes in *in vitro* models of pain: opportunities for new analgesics?"

Invited Speaker, Kyoto Prefectural University of Medicine - Kyoto, Japan - May 13, 2002

"Molecular signalling pathways for synaptic plasticity"

Invited Speaker, *International Symposium on Plasticity of the Pain System*, Fukuoka, Japan -
May 9-10, 2002

"Astrocyte purinoceptors - riding the wave"

Invited Speaker, University of Tokyo Seminar Series - Tokyo, Japan - May 7, 2002
“Molecular signalling pathways for synaptic plasticity”

Invited Seminar, *Distinguished Lecturer Series*, Neuroscience Network, University of Toronto -
Toronto - April 25, 2002
“How to change a mammalian brain”

Invited Speaker, University of Maryland Pain Seminar Series - Baltimore, MD - April 16, 2002
“Transcriptional regulation of pain? You must be DREAMing!”

Invited Speaker, Cell Biology Seminar Series, Hospital for Sick Children -Toronto-April 12, 2002
"Kinase/phosphatase signalling in excitatory synaptic transmission and plasticity"

Invited Speaker, *Pain Bridge - 2002*, Steamboat Springs, Colorado - February 28-March 3, 2002
“Post-translational changes and pain: opportunities for new analgesics?”

CurePain Distinguished Lecturer - Univ. British Columbia - Vancouver, BC - Feb 18, 2002-
“Molecular signalling pathways for central synaptic plasticity”

Invited Speaker, Neuroscience Seminar Series, Massachusetts General Hospital, Harvard Medical
School - Charleston, MA - February 4, 2002
“DREAMing about Pain”

Invited Speaker, Georgetown Univ. Interdisciplinary Program in Neuroscience Seminar Series -
Washington, D.C. - December 12, 2001
"Tyrosine kinase signalling in excitatory synaptic transmission and plasticity"

Keynote Speaker, *Centre for Research on Pain*, Gala Launch - Montreal, Que - Nov. 30, 2001 -
“The Promise from Pain Research”

Keynote Speaker, *Canadian Palliative Care Conference* - Victoria, BC - Oct. 20, 2001 -
“Central Molecular Mechanisms in Chronic Pain”

Keynote Speaker, *5th Triennial MyoPain World Congress* - Portland, Oregon - Sept. 9-13, 2001 -
“The neurobiology of central sensitization”

Invited Participant, *The Role of Coxibs in Successful Pain Management*, New York, NY -
August 17-18, 2001

Keynote Speaker, *Grand Opening of Division of Neurovirology and Neurogenerative Disorders*,
St. Boniface Hospital Research Centre, Winnipeg, Manitoba - June 20-21, 2001 -
“Molecular signalling pathways for synaptic plasticity”

Keynote Speaker, *New Frontiers in Pain*, 4th Annual National Pain Management Conference -
- Toronto, Ont. - June 7, 2001 -
“Central Mechanisms in Chronic Pain - Treatment Implications”

Invited Speaker, Brain and Behaviour Day - Toronto, April 27, 2001 -
"Tyrosine kinase signalling in excitatory synaptic transmission and plasticity"

- Invited Seminar, National Institutes of Health - Bethesda, MD - April 25, 2001 -
"Regulation of glutamate transmission by protein kinase C-CAK β /Pyk2-Src signaling"
- Invited Seminar, Washington University Pain Center - St. Louis, MO - April 17, 2001 -
"Molecular signalling pathways for central synaptic plasticity"
- Invited Seminar, Neurobiology Seminar Series, University of Illinois at Chicago
- Chicago, IL - April 9, 2001 -
"Molecular signalling pathways for excitatory synaptic plasticity"
- Invited Seminar, McKnight Brain Institute of the University of Florida - Gainesville, FL -
March 23, 2001 -
"Regulation of glutamate transmission by protein kinase C- Pyk2/CAK β -Src signalling"
- Invited Lecture, Department of Anatomy & Physiology, University of Prince Edward Island -
Charlottetown, PEI - October 13, 2000 -
"Molecular signalling pathways for central synaptic plasticity"
- Invited Lecture, Department of Pharmacology, Dalhousie University - Halifax NS -Sept. 7, 2000 -
"Astrocyte purinoceptors - riding the wave"
- Invited Participant in Neurobiology Working Group "*Can neuropathic pain be diagnosed by
patient symptoms?*" - Stockholm, Sweden - July 14-16, 2000
- Invited Speaker in Symposium on *Tyrosine kinases and synaptic transmission* at the *Forum of
European Neuroscience 2000*, Brighton UK - June 24-28, 2000 -
"Src and Na⁺ in control of glutamatergic synaptic transmission"
- Invited Lecture, Section of Neuropharmacology, National Institute of Health - Tokyo, Japan -
June 6, 2000 -
"Regulation of glutamate transmission by protein kinase C- Pyk2/CAK β -Src signalling"
- Invited Speaker in Symposium on *Neuronal signaling and protein phosphorylation-
dephosphorylation*, Fukuoka, Japan - June 3-5, 2000 -
"Regulation of NMDA receptors by tyrosine phosphorylation"
- Killam Lecture, Montreal Neurological Institute - Montreal PQ - May 23, 2000 -
"Astrocyte purinoceptors - riding the wave"
- Invited Presentation at Canadian Pain Society Meeting - Banff, Alta. - May 12, 2000 -
"Regulation of NMDA receptors by protein kinase C- Pyk2/CAK β -Src signalling cascade"
- Invited Seminar Department of Zoology, University of Toronto - February 17, 2000 -
"Molecular substrates for modulating synaptic transmission"
- Invited Lecture at *33rd Winter Conference on Brain Research* - Breckenridge Colorado -
January 25, 2000 -
"Regulation of NMDA receptors by STEP"

Invited Lecture at *33rd Winter Conference on Brain Research* - Breckenridge Colorado -
January 24, 2000 -
"Src and Na⁺ regulation of NMDA receptors"

Keynote Speaker at *McGill Pain Day* - McGill University - Montreal - January 20, 2000
"Molecular signalling pathways for central synaptic plasticity"

Invited Seminar at Neuropsychiatric Rounds - Toronto Western Hospital - January 13, 2000
"Pain transmission and modulation"

Invited Speaker in *Great Lakes GPCR Retreat '99* - London - November 19-21, 1999 -
"Src-kinase regulation of ionotropic glutamate receptors"

Invited Participant in *Pain: New Targets – New Treatments* - Boca Raton, Fla. - October 21, 1999

Invited Lecture at Pediatric Grand Rounds, Hospital for Sick Children - October 20, 1999 -
"Glutamatergic synaptic transmission and epilepsy"

Invited Lecture in Department of Cellular and Molecular Medicine Seminar Series-University of
Ottawa, Ont. - Sept. 28, 1999 -
"Src and sodium regulation of NMDA receptor activity in synaptic plasticity"

Invited Lecture in the Molecular and Cellular Pharmacology Seminar Series - Miami University -
Miami, Florida - May 6, 1999 -
"Src regulation of NMDA receptor activity in synaptic plasticity"

Invited Lecture in the Neuroscience Seminar Series - University of British Columbia -
Vancouver, B.C. - April 29, 1999 -
"Src and sodium in gain control of excitatory synaptic transmission"

Invited Lecture in the Biochemistry Seminar Series - University of Toronto, Scarborough Campus-
Scarborough, Ont - March 26, 1999 -
"Molecular substrates for modulating synaptic transmission in the CNS"

Invited Lecture in the Neuroscience Seminar Series - Montreal General Hospital - Montreal, P.Q.
March 24, 1999 -
"Src regulation of NMDA receptors in synaptic plasticity"

Invited Lecture in the Neuroscience Seminar Program - Queen's University - Kingston, Ontario -
March 3, 1999 -
"NMDA receptors and Src in synaptic plasticity"

Invited Lecture in the Neuroscience Seminar Series - Dalhousie University - Halifax, NS -
January 11, 1999 -
"Src and sodium in synaptic plasticity"

Invited Speaker at *U.S. National Academy of Sciences Colloquium on The Neurobiology of Pain*
Irvine, California - December 11-13, 1998 -

"Src and NMDA receptors in synaptic plasticity"

Invited Speaker at the *Japan-Canada Neuroscience Partnership Symposium on Neural Development and Plasticity* - Tokyo, Japan - August 21, 1998 -

"Regulation of NMDA channels by tyrosine phosphorylation and its role in synaptic plasticity"

Invited Seminar at the Max-Planck-Institute for Medical Research, Heidelberg Germany - August 3, 1998 -

"Src regulation of NMDA receptors in synaptic plasticity"

Plenary Speaker at *Nucleotides and Their Receptors in the Nervous System Symposium* - Leipzig, Germany - August 1-2, 1998 -

"P2 receptors and calcium signalling in astrocytes"

Invited Lecture in the Program in Neuroscience - University of Western Ontario - London, Ontario - June 18, 1998 -

"Regulating NMDA receptor function"

Invited Speaker at the University of Toronto/Hebrew University of Jerusalem Symposium on *Pain Research and Therapy* - Toronto - June 2-3, 1998 -

"NMDA receptors and plasticity in the spinal cord"

Invited Seminar in the Lung Research Seminar Series - Toronto - May 12, 1998 -

"Regulation of NMDA receptors by intracellular Na⁺"

Invited Lecture at the Department of Pharmacology Seminar Series - University of Virginia - Charlottesville, VA - March 12, 1998 -

"Src regulation of NMDA receptors in synaptic plasticity"

Invited Seminar in Playfair Neuroscience Unit Rounds - Toronto - March 5, 1998 -

"Tyrosine phosphorylation in hippocampal long-term potentiation"

Invited Seminar at Astra Research Center - Montreal, PQ - February 3, 1998 -

"Intracellular regulation of NMDA receptors: a molecular substrate for synaptic plasticity"

Invited Lecture at the Institut de Recherches Clinique Pfizer Seminar Series - Montreal, PQ - February 2, 1998 -

"Src, NMDA receptors and synaptic plasticity"

Invited Lecture at the *International Society of Neurochemistry Annual Meeting* - Boston, MA - July 22-26, 1997 -

"Regulation of NMDA receptors by tyrosine kinase and phosphatase"

Invited Speaker at the *ASPET Excitatory Amino Acid Symposium 1997* - Waterville Valley, NH - July 17-19, 1997 -

"NMDA channel regulation by Src tyrosine kinase"

Invited Lecture in the Department of Neuroscience Seminar Series - University of Calgary - Calgary, Alberta. - June 27, 1997

"Regulation of NMDA receptors by tyrosine phosphorylation"

Invited Lecture in the Department of Pharmacology Research Seminar Series -
University of Alberta - Edmonton, Alberta. - June 26, 1997

"NMDA receptor regulation by Src tyrosine kinase"

Invited Lecture in the Cell Biology Seminar Series - Toronto - March 28, 1997

"Regulation of NMDA channels by Src tyrosine kinase"

Invited Lecture in the Department of Physiology Research Seminar Series -
University of Western Ontario - London, Ont. - March 24, 1997

"Regulation of NMDA receptors by tyrosine phosphorylation"

Invited Lecture at *30th Winter Conference on Brain Research* - Breckenridge Colorado -
January 26, 1997 -

"Tyrosine phosphorylation and regulation of NMDA receptors"

Invited Seminar at Abbott Labs - Chicago Illinois - Oct. 23, 1996 -

"Purines and pain"

Invited Lecture at *Plasticity of Glutamate Receptors: Cellular and Molecular Mechanisms* -
Banbury Center, Cold Spring Harbor Laboratory - Oct. 6-9, 1996 -

"Regulation of NMDA receptors by tyrosine phosphorylation"

Plenary Lecture at *Purines '96* - Milan, Italy - July, 14 1996 -

"Multiple roles for purinoceptors in somatosensory processing"

Invited Lecture in the Pharmacology Research Seminar Series - McGill University -
Montreal, P.Q. - March 12, 1996

"Regulation of NMDA receptor function by tyrosine phosphorylation"

Invited Lecture at Department of Anaesthesia Rounds - Jewish General Hospital -
Montreal, P.Q. - June 22, 1995

"Regulation of excitatory amino acid receptors by phosphorylation"

Invited Lecture in the Committee on Neurobiology Seminar Series - University of Chicago -
Chicago, Illinois- April 20, 1995

"Regulation of NMDA receptors by tyrosine phosphorylation"

Invited Lecture in the Visiting Professor Program - Memorial University -
St. Johns, Newfoundland - January 13, 1995

"Regulation of excitatory amino acid receptors by phosphorylation"

Invited Lecture in the Hospital for Sick Research Institute Scientific Retreat -
Toronto, Dec. 20, 1994

"Role of phosphorylation of excitatory amino acid receptors in synaptic transmission"

Invited Lecture in the Research Seminar Series - Mount Sinai Hospital Research Institute -
Toronto, October 12, 1994

- "Regulation of NMDA receptor function by tyrosine phosphorylation"
- Invited Lecture in the Department of Pharmacology Visiting Professor Program - University of Manitoba - Winnipeg, Man. - June 10, 1994
"ATP and Calcium Signalling in the Central Nervous System"
- Invited Presentation at Canadian Pain Society Meeting - Halifax N.S. - May 27, 1994
"Phosphorylation of excitatory amino acid receptors in dorsal horn neurones as a mechanism of neuroplasticity in pain pathways"
- Invited Lecture in Membrane Seminar Series on Hormonal Action and Signal Transduction- Hospital for Sick Children - Toronto, February 4, 1994
"Regulation of NMDA Receptors by Phosphorylation"
- Invited Lecture in the Neuroscience Seminar Series - Montreal General Hospital - Montreal, P.Q. Dec. 8, 1993
"Phosphorylation Regulates NMDA Channels in Dorsal Horn Neurons"
- Invited Seminar in Respiratory Research Rounds - Hospital for Sick Children - Toronto, Nov. 22, 1993
"ATP and Calcium Signalling in Astrocytes"
- Invited Seminar in Faculty of Pharmacy - University of Toronto - Toronto, Nov. 19, 1993
"Calcium Signalling in Astrocytes: ATP and other purines"
- Invited Seminar in Playfair Seminar Series - The Toronto Hospital - Toronto, Oct. 21, 1993
"NMDA Receptors in Doral Horn Neurones are Regulated by Phosphorylation"
- Invited Lecture in Dept. of Physiology, Queen's University - Kingston, Ont. - Sept. 30, 1993
"Regulation of NMDA Receptors by Phosphorylation"
- Invited Seminar in Playfair Seminar Series - The Toronto Hospital - Toronto, Nov. 24, 1992
"Roles for ATP and Adenosine in the Spinal Dorsal Horn"
- Invited Lecture in Dept. of Pharmacology, Dalhousie University - Halifax, N.S. - Oct. 2, 1992
"Physiological Roles for Adenosine and ATP in the Spinal Dorsal Horn"
- Invited Lecture in Dept. of Neurology, Stanford University - Stanford, CA - Mar. 12, 1992
"ATP-evoked Increases in Intracellular Ca^{2+} in Spinal Cord Glia"
- Invited Lecture in Neuroscience Seminar Series - Hospital for Sick Children - Toronto - Jan. 28, 1992
"Actions of Purines on Membrane Currents and $[Ca^{2+}]_i$ in Spinal Cord Neurones and Glia"
- Plenary Lecture at *4th International World Congress on Inflammation* - Geneva, Switzerland - April 15-18, 1991 -
"Adenosine Mediates the Inhibition of Nociceptive Dorsal Horn Neurones evoked by Vibration."
- Invited Lecture at Department of Zoophysiology, Unversity of Göteborg - Göteborg, Sweden -

- April 10, 1991 -
"The Roles of Tachykinins in Modulating Neuronal Activity in Spinal Sensory Pathways"
- Invited Lecture in Membrane Seminar Series on Hormonal Action and Signal Transduction-
Hospital for Sick Children - Toronto, February 15, 1991 -
"Regulation of Excitatory Amino Acid Receptors by Phosphorylation"
- Invited Lecture in Neuroscience Seminar Series - Hospital for Sick Children -
Toronto, Oct. 23, 1990-
"Adenosine and Analgesia"
- Invited Lecture in Session on *Spinal Nociceptive Mechanisms* at the Annual Meeting of the
Canadian Pain Society - London, Ontario, October 13, 1990 -
"Roles of Purines and Tachykinins in the Control of Nociception at the Spinal Level"
- Invited Lecture in Session on *Purines and Nociception* at the VIth World Congress on Pain-
Adelaide, Australia, April 2, 1990 -
"Adenosine Mediates Inhibition of Spinal Nociceptive Neurones by Vibration"
- Invited Lecture in International Symposium on *Adenosine and ATP* - Royal College of Physicians-
London, England, Sept. 25-26, 1989 -
"Role of Purines in the Spinal Modulation of Pain - Therapeutic Potential"
- Invited Lecture in Mini-Symposium on *The Retina: Cellular and Molecular Aspects* - The Toronto
Hospital - Toronto, April 14, 1989 -
"Electrophysiological Characterization of Mammalian Retinal Cells in Culture"
- Invited Lecture in Workshop Session at the Joint Meeting of the Canadian and American Pain
Societies - Toronto, Nov. 12, 1988 -
"Purines and Nociception"
- Invited Lecture in Neuroscience Seminar Series - Department of Physiology, McGill University,
Montreal, Oct. 13, 1988 -
"Purine/Tachykinin Interaction: A Possible Basis for Modulation in Sensory Pathways"
- Presentation to Pain Management Rounds - Royal Victoria Hospital, Montreal, Dec. 9, 1986 -
"Two Types of Low Threshold-Induced Inhibition of Nociceptive Dorsal Horn Neurones"
- Plenary Lecture to Canadian Pain Society Annual Meeting - Montreal, Oct. 31, 1986 -
"Update of Neuropharmacological Aspects of Pain and Pain Modulation"
- Presentation to Pain Management Rounds - Royal Victoria Hospital, Montreal, Dec. 17, 1985
"Purinergic Modulation in Spinal Pain Pathways"
- Seminar in Research and Training Seminar Series - Allan Memorial Institute of Psychiatry,
Montreal, Nov. 1, 1985 -
"Evidence that Purines Mediate Vibration-Induced Depression of Dorsal Horn Neurones"
- Invited Lecture in Neuroscience Seminar Series - Department of Physiology, McGill University,

Montreal, Sept. 26, 1985 -
"Peptide/Purine Interactions: Possible Significance in Sensory Physiology"

Presentation to Pain Management Rounds - Royal Victoria Hospital, Montreal, April 30, 1985-
"Neurochemistry of Synaptic Transmission in the Spinal Cord"

TEACHING EXPERIENCE

International

Progress 100 Program – Kyushu University – Fukuoka, Japan – Jan. 12-15, 2015
IASP Connection Rx Trainee Event – IASP World Pain Congress – Buenos Aires, Argentina – Oct. 8, 2014
IASP Refresher Courses – Buenos Aires, Argentina – Oct. 6, 2014
Neurobiology of Persistent Pain
Neuro-Immune Interactions
Molecular Signalling Course - Neuroscience School– Cortona, Italy – Jul 28-Aug 8, 2013
International Brain Research Organization Summer School – Toronto, ON- May 23-27, 2013
IASP Refresher Course - Neurobiology of Persistent Pain – Milan, Italy - Aug. 27, 2012
IASP Connection Rx Trainee Event – IASP World Pain Congress – Milan, Italy - Aug. 29, 2012
Second Global School on Translational Science – Sao Paulo, Brazil – June 19-24, 2011
IASP Refresher Course - Neurobiology of Persistent Pain - Montreal, PQ - Aug. 29, 2010
Pain, Degeneration and Development - Signalling Course - Kuopio, Finland - June 15-16, 2009
International Brain Research Organization Summer School - Montreal, PQ - May 27-31, 2008
HSC-Karolinska Cell Biology Workshop - Aga Khan Univ., Karachi Pakistan - Sept.22-26, 1996

National

Invited lecturer in Neurobiology 552-520B: Ion Channels - McGill University - March 14,2013
Organizing Committee Member and Instructor-Advanced Pain Research Methodologies School
Annual ‘Summer School’ of *Pain: Molecules to Community* (STIHR of CIHR) 2002-2006
Invited lecturer in Neurobiology 552-520B: Ion Channels - McGill University - March 25,1999

The University of Toronto

Section Head - Cell Signalling - Physiology 303Y/1303Y, 1997- 2000
Excitable Membranes - Physiology 422Y, 1991-1996

Co-organizer - Topics in Molecular and Cellular Neurobiology 1555H - Jan. 1995-2003

Lecturer - Physiology JYG1555H (30 hrs) Jan.-Apr. 1995,96,98,2000,03,05, 07, 09-13,15
Physiology PSL1047H (30 hrs) Jan-April 1994,96,98,2000,03,05,07,09,11-3,15
Physiology PSL190H (2 hrs) - Jan 2015
Human Biology HMB430 (2 hrs) - October 2010-12
Human Biology HMB420 (2 hrs) - March 2010
Human Biology HMB404H1S (2 hrs) - Jan. 2010-12
Med I Pain 2 hrs. - May 2009
Pain Theories NUR1045 (3 hrs), Nov. 2000, Oct. 2007, Sept. 2008, 09,12
Physiology PSL303/1303Y (16 hrs.), Jan. 1998-2008
Med I Diabetes/Sensory neurons lecture 1 hr - March 2007
BCH 2021 lecture 2 hrs, Oct 2006
IMS MSC1011Y - (2 hrs), October 2004
Neurosurgery Resident Training Course - (1 hr), December 2004
Developmental Biology JDB1025Y - (2 hrs.), October 2003
“Pain Week” - (2 hrs.), March 2002, 2003, 2011, 2012
Pharmacology JPY 1007 (2 hrs), Feb. 1998, 2000
Physiology PSL 422Y (10 hrs.), Sept. 1991-1996
Physiology PSL 497 (15 hrs.), Sept- Dec. 1995
Physiology JYG 1555H (30 hrs), Jan.-April 1995

MICHAEL W. SALTER

Biochemistry BCH 2021H (2 hrs.), Dec. 1993, April 1995
Physiology PSL 226 (9 hrs.), Jan. 1991
Neurology Resident Teaching Program (3 hrs.), Nov. 1990
Neuroscience NRO 444Y/JNR 1444Y (2 hrs.), Nov. 1987, 1988 and Jan 1991
Demonstrator - Med I - Brain and Behaviour (6 hrs/yr), Mar. 1993-1995
Neuroscience PSL 1052Y (3 hrs.), Jan. 1989, Nov. 1989
Pharmacology PCL 1011Y (6 hrs/yr), Jan. 1998-1989

McGill University (as post-MD Fellow)

Lecturer - Physiology 351B (6 hrs.), April 1985
Examiner - Oral Examination Physiology 351B, April 1985
Tutor - Med 1 Physiology (50 hrs./year), Sept. 1984 - Nov. 1986
Private tutor - Physiology graduate comprehensive examination (40 hrs.) April-June 1984
Demonstrator - Physiology 351B (15 hrs./year), 1984-1986

VISITING SCIENTIST

Mohammed Shamji M.D. (Queen's U.) Ph.D. (Duke U.)

August 2012 – present

Molecular mechanisms of pain plasticity

Dr. Nadezda Nedeljkovic, Dept. Physiology and Biophysics, Faculty of Biology, Univ. Belgrade.

IBRO Travelling Scholar Award, March -June 2002.

POST-DOCTORAL FELLOWS

Pragya Komal Ph.D. University of Victoria (2012)

August 2015 – present

Hippocampal Synaptic Plasticity

Stephen Kemp Ph.D. University of Calgary (2001)

August 2013 – March 2014

Neuron-glia interactions after peripheral nerve injury

Avner Michaeli Ph.D. Hebrew University of Jerusalem (2011)

October 2012 – July 2014

Neuregulin-ErbB4 signaling in synaptic plasticity

Lu Han Ph.D., University of Toronto (2012)

October 2012 – August 2013

Glycine priming of the NMDA receptor.

Hongbin Li Ph.D., Kunming Inst. Zoology, Chinese Academy of Science, China (2007)

April 2011 – Sept 2013.

Glycine-primed internalization of NMDA receptors in the hippocampus

James Cooke Ph.D., University of British Columbia (2010)

October 2010 – December 2011.

Molecular mechanisms of glycine-primed internalization of NMDA receptors

Jessica Alexander Ph.D., The Ohio State University, USA (2010)

Sept 2010 – May 2012.

Mechanisms of C-fibre induced opening of blood-brain barrier

Michael Hildebrand Ph.D., University of British Columbia (2008)

August 2010 – July 2013. CIHR Fellowship

Synaptic plasticity in the spinal dorsal horn

Yi Li Ph.D., Peking University, China (2009)

January 2010 – December 2012

Neuron-glia interactions in pain

David Scanlon Ph.D., University College Dublin, Ireland (2007)

October 2009 - present.

ND2-NMDA receptor interactions

- Dani Mohr Ph.D., University of Tübingen, Germany (2006)
October 2009 – July 2010.
Microglia in persistent pain hypersensitivity
- Wenbo Zhang M.D. Ph.D., Dept. Physiology, University of Saskatchewan, Saskatoon (2009)
March 2009 - present. UTCSP Clinician-Scientist Fellowship.
Src kinases regulating synaptic plasticity
- Dusan Jeftinija Ph.D., Department of Molecular and Biomedical Pharmacology, University of Kentucky, Lexington, KY (2008)
June 2008 - August 2009.
Src - ND2 interactions in the NMDA receptor complex
- Veronica Campanucci Ph.D., Department of Biology, McMaster University, Hamilton, (2004)
February 2008 - March 2009. Restrcomp Fellow.
Src kinases regulating synaptic plasticity
- Ignacio Lizarraga D.V.M., Mexico City, Mexico
February 2008 - July 2009.
Sensory neurons in the pathogenesis of diabetes
- Christiane Wetzel Ph.D., Max Delbrück-Center for Molecular Medicine, Berlin Germany (2006)
January 2008 - July 2009. Restrcomp Fellow.
Regulation of synaptic plasticity
- Daniel Bosch Ph.D. University of Tübingen, Germany (2006)
January 2008 – July 2010. (Co-supervised with Dr. Sheena Josselyn)
Molecular mechanisms of synaptic plasticity in the amygdala
- David Ng Ph.D., University of Toronto (2006)
January 2007- Dec. 2008.
Novel regulators of NMDA receptors
- Hua Wang Ph.D., Fudan University (2006)
Sept 2006 - August 2009.
Novel mechanisms of synaptic plasticity
- Chun Kwan Ph.D., University of Toronto (2005)
Sept 2005 – July 2010. CIHR Fellowship
Detection of microglial activation following peripheral nerve injury
- Gurpreet Dhali Ph.D., University of Western Ontario, London (2005)
Sept 2005 - 2007. Restrcomp and CIHR Fellow.
Regulation of metabotropic purinoceptor signaling
- Mariana Vargas-Caballero Ph.D., University of Cambridge, UK (2003)
March 2005 - August 2007. Wellcome Trust Fellow.
Molecular investigation of tyrosine phosphorylation on NMDA receptor gating

- Ameet Sengar Ph.D., University of Toronto (2004)
February 2005 - 2011. Restrcomp Fellow.
Molecular investigation of glycine-primed internalization of NMDA receptors
- Tuan Trang Ph.D., Queens University (2004)
January 2005 – June 2012. Restrcomp Fellow. CIHR Fellow.
Novel plasticity mechanisms in the spinal dorsal horn.
- Yina Dong Ph.D., Beijing University (1997).
November 2004 - July 2008. Ontario Neutrauma Foundation Fellow.
Src interacting proteins within the NMDA receptor complex.
- Xiang Wan Ph.D. University of British Columbia (2004)
October 2004 - August 2005. Heart and Stroke Fellow.
NMDA receptor regulation by kinases and phosphatases.
- Timothy Moran Ph.D., University of Alberta (2003)
June 2003 - 2007. Restrcomp Fellow.
Molecular mechanisms of plasticity in hippocampus and spinal cord.
- Simon Beggs Ph.D., University College London (2000)
May 2003 - June 2005. CIHR Molecules-to-Community Training Centre Fellow.
Development of nociceptive responses.
- Makoto Tsuda Ph.D., Hoshi University Tokyo (1998)
April 2002 - March 2004. Restrcomp Fellow.
P2 receptors in spinal cord glial cells.
- David L.S. Washburn Ph.D., Queens University (2001)
January - April 2002. CIHR Fellow.
Substance P in synaptic plasticity in the spinal dorsal horn
- W. Jephtha Davenport M.D., University of Illinois at Chicago (1996)
September 2001-August 2004. CIHR Fellow/ Clinician Scientist.
Molecular markers of spinal dorsal horn neurons
- Xuejun Liu Ph.D., Dalhousie University (2001)
August 2001 - 2007. Ronald Melzack Pain Research Fellow.
Src signaling in pain mechanisms
- Graham Pitcher Ph.D., McGill University (2000)
July 2000 - 2006. CIHR Fellow. Merck Fellow.
Modulating NMDA receptors in dorsal horn neurons
- You Ming Lu M.D., Nanjing University (1985) Ph.D., University of Toronto (1999)
April 2000 - March 2001. CIHR Centennial Fellow.
Plasticity of GABAergic synaptic transmission
- Yi Nong Ph.D., Tongji Medical University (1993)

December 1999 - 2004. Ronald Melzack Pain Research Fellow.
Excitatory synaptic plasticity in spinal dorsal horn.

Declan Ali Ph.D., University of Toronto (1996)
January 1999 - August 2000. MRC Fellow.
Regulation of NMDA single channels by tyrosine phosphorylation.

Franco Taverna Ph.D., University of Toronto (1996)
July 1998 - July 2000. Research Training Centre Fellow, HSC.
Role of CAK β /Pyk2 in long-term potentiation.

Yuequiao Huang Ph.D., Iowa State University (1997)
August 1997 - 2005. Fellow of the U.S. Spinal Cord Research Foundation.
Fellow of the Ontario Neurotrauma Foundation.
Modulation of NMDA receptors by Src kinase.

Rand Askalan Ph.D., University of Cambridge, UK (1994)
September 1995 - September 1999. Fellow of the Rick Hansen Man in Motion Foundation.
Tyrosine phosphorylation of NMDA receptors.

Xian-Min Yu M.D. Dr.Sc.H., Xuzhou Medical College (1977) University of Heidelberg (1989)
July 1994 - 1998. Fellow of the U.S. Spinal Cord Research Foundation.
Single channel properties of NMDA channels in dorsal horn neurones and modulation by tyrosine phosphorylation.

Gary Keil II Ph.D. R.P., Oregon State University (1995)
August 1995 - July 1997. Restracom Fellow, HSC.
Post-synaptic actions of adenosine in the spinal dorsal horn.

Neil Fisher Ph.D., University of London (1992)
August 1993 - July 1995. (Jointly supervised with J.F. MacDonald.)
Excitatory amino acid receptor channels in acutely isolated spinal cord neurones.

Yutian Wang M.D. Ph.D., Shandong Medical University (1982) Memorial University (1992)
September 1994 - August 1995. Fellow of the Medical Research Council of Canada.
Sites for tyrosine phosphorylation in cloned NMDA receptors.
August 1992 - August 1994. Fellow of the Medical Research Council of Canada.
Regulation of NMDA receptors by tyrosine phosphorylation.

STUDENTS

Graduate Students:

Josiane Mapplebeck – September 2013 – present. MSc Physiology
Microglia in neuropathic pain

Erika Harding - September 2012- present. PhD Physiology
Calcium imaging in dendrites of lamina I neurons in the spinal cord

Denis Osipov – September 2012-Oct 2014. MSc Physiology

Hippocampal LTP and LTD

Aaron Backx - August 2011- August 2014.

Theta burst stimulation at Schaffer collateral-CA1 synapses

Jeffrey Leung - August 2011- Dec 2012.

Fractal-based analysis of microglia motility in the spinal cord

Lu Han - Sept. 2006 – Sept. 2012. PhD Physiology.

Glycine priming of the NMDA receptor.

Robert Marciniak DDS – May 2010- June 2012. MSc Dentistry.

Characterizing Mac1-cre X floxed-BDNF mice

Maria Hersht - May 2008- Aug 2010.

The role of intersectin 1 in Down's syndrome

Shazeen Suleman - Sept. 2006- August 2008. MSc. Physiology.

Microglia signaling responses after peripheral nerve injury across mouse strains.

Supported by Research Training Studentship HSC

Natalia Fedianina - Sept. 2004 - Jan. 2007. MSc. - Institute of Medical Science.

NMDA receptor subunit composition in the regulation by Src kinase.

Supported by Research Training Studentship HSC and Ontario Graduate Scholarship.

Jason Raines - Sept. 2003- Nov. 2004. MSc - Dept. Biomedical Communication. (Co-supervisor)

A 3-D animation depicting the early molecular events underlying long term potentiation in pain pathways in the dorsal horn of the spinal cord.

Supported by the CIHR Pain: Molecules to Community Strategic Training Centre Grant.

Isabel Mendoza, December 2003 - January 2004. visiting PhD Student - The Center of Neuroscience, The University of Valparaíso, Chile.

Molecular determinants of NMDA receptor priming by glycine

W. Jephtha Davenport M.D., University of Illinois at Chicago (1996)

September 2002 - August 2004. CIHR Fellow/ Clinician Scientist.

Molecular markers of spinal dorsal horn neurons

Lorraine Kalia (née Hajdur)- Jan. 1999-April 2004- M.D./Ph.D. - Institute of Medical Science

The role of PSD-95 in the regulation of Src within the NMDA receptor complex.

Supported by an MRC MD/PhD Studentship.

Jeff Gingrich - Jan. 1999 - Dec. 2004 - Ph.D.- Dept. of Physiology.

Unique domain anchoring of Src to synaptic NMDA receptors via the mitochondrial protein NADH dehydrogenase subunit 2.

Supported by Hospital for Sick Children Research Training Centre Ph.D. Studentship.

Conor Gallagher - Sept. 1996- Nov. 2003 - Ph.D. - Institute of Medical Science Nov 2003.

Metabotropic P2 receptors on astrocytes from the spinal dorsal horn

Supported by Ontario Neurotrauma Initiative Program Studentship
and Hospital for Sick Children Clinician-Scientist Trainee Award.

Sami Fam - Sept. 1997 - July 2003 - Ph.D. - Dept. of Physiology, July 2003.
P2Y purinoceptor mediated inter- and intra-cellular Ca²⁺ signalling in dorsal spinal astrocytes.
Supported by MRC Studentship.

Kenneth Pelkey - Nov. 1996 - August 2002 - Ph.D. - Dept. of Physiology, July 2002.
Modulation of glutamate receptors.
Supported by the Savoy Foundation Studentship and CIHR Studentship.

Christopher Idestrup - Sept. 1994 - August 1996. M.Sc. - Dept. of Physiology, July 1996.
P2Y- and P2U-purinoceptor activations cause intracellular Ca²⁺ release in dorsal spinal astrocytes via the phospholipase C β /IP₃ pathway.
Supported by the Rick Hansen Foundation Studentship.

Youngshil Pak - Sept. 1992 - Sept. 1994. M.Sc.- Dept. of Physiology, Sept. 1994.
Characterization of voltage-activation K⁺ currents in rat spinal dorsal horn neurons in culture and modulation by adenosine.

Senior Undergraduates:

Heather Pessah – May 2012- August 2012. Queens U.
Glycine-primed internalization of NMDA receptors.

Denis Osipov - Sept 2010- August 2012. U. Toronto
Hippocampal LTP and LTD.

Malin Lindstrom – May – August, 2011. Gothenburg Sweden
Protein expression studies

Chris Yao – May – August, 2010. U Toronto Med Student
Microglia signalling in pain plasticity.

Preena Tanna - Jan – April 2010. Univ. Waterloo Co-op student.
Intersectin 1 expression studies.

Heather Vandermeulen - May - August 2008, 2009. McGill University.
TrpV1 variants expressed recombinantly.

Clare Tao - May - July 2007. SUNY, Stony Brook.
Internalization of NMDA receptors.
Supported by the HHMI Summer Scholar Program.

Damien Arnaud - May - August, 2006, 2007. U Toronto.
Proteins in the NMDA receptor complex.

John Roszell - May - August, 2003. Summer Scholar, Univ. Waterloo.
Single-channel recordings from NMDA receptors.

Supported by Hospital for Sick Children Lunenfeld Summer Undergraduate Program.

Christiane Hendela - Sept 2002 - April 2003. Undergraduate student -PSL498Y (co-supervised with Dr. H.M. Dosch). *C-fibres in pancreatic islets*.

Roberto Diaz - May - August, 2002 and June - August, 2001. Summer Scholar, Univ. Toronto.
Src unique domain-interacting proteins in the regulation of NMDA receptors.
Supported by Canadian Stroke Network Summer Scholarship (2002)
Life Sciences Undergraduate Scholarship, University of Toronto (2001).

Jennifer Cheung - June - August, 2000. Summer Medical Scholar, University of Alberta.
Visualizing ATP release from astrocytes. Supported by Summer Research Award, Faculty of Medicine, University of Alberta.

Blythe Owen - June - August, 2000. Summer Scholar. University of Toronto.
Src unique domain-interacting proteins. Supported by Life Sciences Undergraduate Scholarship, University of Toronto.

Lorraine Hajdur - June- August 1998. Summer Medical Scholar, University of Toronto.
Tyrosine phosphorylation of NMDA receptor proteins. Supported by IMS MD/PhD Summer Research Bursary, University of Toronto.

Jonathon Davidow - June-August 1997. Summer Scholar, McGill University.
Tyrosine phosphorylation of NMDA receptors in epilepsy. Supported by Summer Research Award, Faculty of Medicine, McGill University.

Jennifer Forsdike - May-August 1997. Summer Scholar, Queen's University.
Src SH3 binding to NMDA receptors. Supported by the Hospital for Sick Children Summer Undergraduate Scholarship.

Michael Szeto - May-August 1996. Summer Scholar, McGill University.
Identification of src binding proteins associated with NMDA receptors. Supported by Hospital for Sick Children Summer Undergraduate Scholarship and Life Sciences Undergraduate Scholarship, University of Toronto.

Daniel Wiesbrod - May-August 1996. Summer Scholar, University of Western Ontario.
Modulation of NMDA and non-NMDA miniature synaptic currents in dorsal horn neurons. Supported by a John D. Schultz Science Student Scholarship from the Ontario Heart and Stroke Foundation.

- May-August 1995. Summer Scholar, University of Western Ontario.
Regulation of kainate receptors by tyrosine phosphorylation in spinal dorsal horn neurones. Supported by a John D. Schultz Science Student Scholarship from the Ontario Heart and Stroke Foundation.

Patrick Shing - May-August 1995. Summer Scholar, University of Toronto.
Novel nucleotide receptors expressed by astrocytes from the dorsal spinal cord. Supported by Hospital for Sick Children Summer Undergraduate Scholarship.

Cheryl Ho - May-August 1994. Summer Scholar, University of Toronto.

Molecular manipulation of P_{2y} and P_{2u} purinergic receptors in the spinal dorsal horn.

Supported by a John D. Schultz Science Student Scholarship from the Ontario Heart and Stroke Foundation.

- May-August 1993. Summer Scholar, University of Toronto.

Two subtypes of P₂ purinergic receptors cause release of intracellular Ca²⁺ in astrocytes from the dorsal spinal cord. Supported by a John D. Schultz Science Student Scholarship from the Ontario Heart and Stroke Foundation.

Francesco Palazzo - August-September 1992. Summer Student from University of Palermo, Italy.

Effects of ATP on immediate early gene expression in dorsal horn astrocytes.

Paul Perlon - May-August 1992. Summer Scholar, University of Toronto.

Diadenosine polyphosphates increase [Ca²⁺]_i in astrocytes from the dorsal spinal cord.

Supported by a John D. Schultz Science Student Scholarship from the Ontario Heart and Stroke Foundation.

Lise Aasheim M.Sc. M.Eng. - June-August 1991. Medical Summer Scholar, Univ. Toronto.

Optical and electrophysiological studies on the effects of ATP in the spinal dorsal horn.

Supported by the Life Science Summer Scholarship program.

SCIENTIST-TRACK RESEARCH ADVISOR

Dr. E. Szabo - Dept of Anaesthesia - Hospital for Sick Children - 2009 - present

Dr. D. Joo - Dept of Anaesthesia - Hospital for Sick Children - 2001-2007

GRADUATE STUDENT ADVISORY COMMITTEES - UNIVERSITY OF TORONTO

Current

Ankur Bodalia	- Physiology	- supervisor - Dr. L.Y. Wang
Ceilidh Cunningham	- Physiology	- supervisor - Dr. W. Trimble
Sonam Dolma	- IMS	- supervisor - Dr. P. Dirks
Danielle Garand	- Cell/Systems Biol.	- supervisor - Dr. M. Woodin
Allison Guy	- Physiology	- supervisor - Dr. D. Broussard
Sean Haffey	- Physiology	- supervisor - Dr. B. Orser
Peter Hawrysh	- Cell/Systems Biol.	- supervisor - Dr. L. Buck
Derek Howard	- Physiology	- supervisor - Dr. L.Y. Wang
Michael Jones	- Physiology	- supervisor - Dr. M. Tymianski
Steve Lesperance	- Physiology	- supervisor - Dr. L.Y. Wang
Kasra Tajdaran	- IBBME	- supervisor - Dr. G. Borschel
Petri Takkala	- IMS	- supervisor - Dr. S. Prescott
Vitali Tregoubov	- Physiology	- supervisor - Dr. Z. Jia
Cecilia A. Veronesi	- IMS	- supervisor - Dr. G. Borschel
Jane Wu	- Physiology	- supervisor - Dr. M. Tymianski

Previous

Tanya Alves	- Physiology	- supervisor - Dr. L.Y. Wang – M.Sc. August 2012
Mustafa Abdulhusein	- Physiology	- supervisor - Dr. C. Bear - M.Sc. August 1993
Louis Barbier	- Medical Genetics	- supervisor - Dr. M. Zhen – M.Sc. 2012
Andrew Barszczyk	- Physiology	- supervisor - Dr. M. Tymianski – M.Sc. 2010
Yotam Blech-Hermoni	- Dentistry	- supervisor - Dr. Z. Seltzer - M.Sc. August 2005
Tamara Bond	- Physiology	- supervisor - Dr. C. Bear - M.Sc. Dec. 1993
David Cadotte MD	- IMS	- supervisor – Dr. M. Fehlings – Ph.D. 2014
Valerie Cariacos	- Physiology	- supervisor - Dr. B. Orser - M.Sc. Sept. 2000
Yin Chan	- Immunology	- supervisor - Dr. M. Dosch - Ph.D. April 2009
Victor Cheng	- Physiology	- supervisor - Dr. B. Orser - MSc 2006
Hee Cheol Cho	- Physiology	- supervisor - Dr. P. Backx - Ph.D. June 2003
Francisco Cayabyab	- Physiology	- supervisor - Dr. L. Schlichter - Ph.D. June 2002
Michael Corrin	- Biomedical Comm.	- supervisor - Dr. L. Wilson-Pauwels -M.Sc. 2006
Chris Feeney	- IMS	- supervisor - Dr. P.S. Pennefather - Ph.D. July 2003
John Georgiou	- Physiology	- supervisor - Dr. M.P. Charlton - M.Sc. Jan. 1994
Karen Gordon	- Physiology	- supervisor - Dr. R. Harrison -Ph.D. 2000
Hilda Gonzalez	- Physiology	- supervisor - Dr. M.P. Charlton - M.Sc. 2003
Gemma Higgs	- IMS	- supervisor - Dr. S. Josselyn - 2011
Mojgan Hodaie	- Medical Genetics	- supervisor - Dr. A. Roach - M.Sc. Sept. 1994
Andrzej Jankowski	- Biochemistry	- supervisor - Dr. S. Grinstein - Ph.D. Mar. 2003
Andreas Jeromin	- IMS	- supervisor - Dr. J. C. Roder - Ph.D. Dec. 2001
Indu Joshi	- Physiology	- supervisor - Dr. L.Y. Wang - Ph.D. Nov. 2003
Bob Kotecha	- Physiology	- supervisor - Dr. J.F. MacDonald - Ph.D. Oct. 2001
Wayne Li	- Physiology	- supervisor - Dr. M.P. Charlton - M.Sc. 1994
You-Ming Lu	- IMS	- supervisor - Dr. J. C. Roder - Ph. D. Jan. 1998
Dan MacDonald	- Pharmacology	- supervisor - Dr. J.F. MacDonald – Ph.D. 2001

Vivek Mahadevan	- Medical Genetics	- supervisor - Dr. R. McInnes - M.Sc. Jan 2010
Loren Martin	- Physiology	- supervisor - Dr. B. Orser - Ph.D. Sept 2009
Mahmood Mohtashami	- Zoology	- supervisor - Dr. W. Trimble - Ph.D. Feb. 2002
Michelle Olah	- Physiology	- supervisor - Dr. J.F. MacDonald – Ph.D. 2009
Peter Orth	- Physiology	- supervisor - Dr. H. Atwood - PhD 2000
Geoff Paltser	- Immunology	- supervisor - Dr. H.M. Dosch – PhD 2013
Matthew Pamenter	- Cell/Systems Biol.	- supervisor - Dr. L. Buck - PhD 2008
Jason Raine	- Biomedical Comm.	- supervisor - Dr. L.Wilson-Pauwels - MSc Nov 2004
Dorota Raciborska	- Physiology	- supervisor - Dr. M.P. Charlton - Ph.D. June 2002
Rozita Razavidrakhshi	- Immunology	- supervisor - Dr. H.M. Dosch - PhD 2007
Marcus Salvatori	- Physiology	- supervisor - Dr. L.Y. Wang - M.Sc. 2005
Rita Sattler	- Physiology	- supervisor - Dr. M.P. Charlton - Ph.D. Aug. 1999
Damian Shin	- Zoology	- supervisor - Dr. L. Buck - Ph.D. Jan 2005
Karun Singh	- IMS	- supervisor - Dr. F. Miller -Ph.D. Dec 2007
Gabriel Silva	- IMS	- supervisor - Dr. E. Theriault -M.Sc. Sept. 1997
Michael Szego	- Medical Genetics	- supervisor - Dr. R. McInnes - Ph.D. Jan 2009
Christina Tang	- Medical Genetics	- supervisor - Dr. R. McInnes – Ph.D. Aug 2012
Catherine Trepanier	- Pharmacology	- supervisor - Dr. J.F. MacDonald – Ph.D. Aug 2012
William To	- Physiology	- supervisor - Dr. B. Orser – M.Sc. 2013
Zarko Todorovski	- Physiology	- supervisor - Dr. Z. Jia – Ph.D. 2012
Chris Tsang	- Physiology	- supervisor - Dr. M.P. Charlton - M.Sc. Jan 2000
Simeon Wong	- Physiology	- supervisor - Dr. C. Bear - M.Sc. Sept. 2000
Andrew Wrong	- Physiology	- supervisor - Dr. J.F. MacDonald MSc 2006
Jindong Xu	- Dentistry	- supervisor - Dr. X.M. Yu - Ph.D. 2006
Joanne Xue	- Pharmacy	- supervisor - Dr. P. Pennefather - PhD 2008
Kai Yang	- Pharmacology	- supervisor - Dr. J.F. MacDonald – PhD 2013
Merav Yarkoni	- Physiology	- supervisor - Dr. Z. Seltzer – PhD 2014

INTERNAL EXAMINER - UNIVERSITY OF TORONTO

Master's Thesis

Tina Elahipanah	- Physiology	- supervisor - Dr. Ze'ev Selter - Sept. 2010
Vivek Mahadevan	- Molecular Genetics	- supervisor - Dr. Rod McInnes - Jan. 2010
Dominica Gidrewicz	- Physiology	- supervisor - Dr. P. Backx - June 2003
Timothy Corson	- IMS	- supervisor - Dr. J. Warsh - Jan. 2002
Raffy Moussa	- IMS	- supervisor - Dr. J. Gurd- Dec. 2001
Imran Fayaz	- IMS	- supervisor - Dr. C. Tator - Jan. 1997
Philip Owh	- Biochemistry	- supervisor - Dr. M. Moscarello - Oct. 1996
Billie-Rose Cameron	- Pharmacology	- supervisor - Dr. J.F. MacDonald - July 1994

Ph.D. Thesis

Sherri Thiele	- Cell/System Biology	- supervisor - Dr. J. Nash – June 2014
Ishraq Alim	- Physiology	- supervisor - Dr. M. Tymianski – Sept. 2013
Phedias Diamandis	- Molecular Genetics	- supervisor - Dr. M Tyers - Jan. 2010
Loren Martin	- Physiology	- supervisor - Dr. B. Orser - Sept 2009
Nicole Carmichael	- Physiology	- supervisor - Dr. J. Dostrovsky - Sept. 2007
Rajan Sah	- IMS	- supervisor - Dr. P. Backx - Dec. 2001
Geoffrey Clarke	- Mol. Med. Genetics	- supervisor - Dr. Rod McInnes - Sept. 2000
John Georgiou	- Physiology	- supervisor - Dr. M. Charlton - Oct. 1999

Martin Chang	- Physiology	- supervisor - Dr. L. Schlichter - Sept. 1999
Ronald Li	- Physiology	- supervisor - Dr. P. Backx - Sept. 1998
Allan Volchuk	- Biochemistry	- supervisor - Dr. A. Klip - Jan. 1998
Franco Taverna	- Pharmacy	- supervisor - Dr. D. Hampson - April 1995
Bev Orser M.D.	- IMS	- supervisor - Dr. J.F. MacDonald - March 1995
James Swain	- Physiology	- supervisor - Dr. M.P. Charlton - Jan. 1994
Jeffery Weiner	- Pharmacology	- supervisor - Dr. P. Carlen - Sept. 1994

Ph.D. Transfer Oral

Irene Lecker	- Physiology	- supervisor - Dr. B. Orser – July 2011
Ishraq Alim	- Physiology	- supervisor - Dr. M. Tymianski - April 2010
Robert Bonin	- Physiology	- supervisor - Dr. B. Orser - Feb 2008
Anthony Lau	- Physiology	- supervisor - Dr. M. Tymianski - May 2006
Karun Singh	- Medical Genetics	- supervisor - Dr. F. Miller - June 2004
David Lam	- Dentistry	- supervisor - Dr. J. Hu - April 2003
David Ng	- Medical Genetics	- supervisor - Dr. R. McInnes - Nov 2002
Jonathan Steels	- Biochemistry	- supervisor - Dr. W. Trimble - June 2002
Daisy Ip M.D.	- IMS	- supervisor - Dr. B. Orser - June 1998
Herman Cheung	- Biochemistry	- supervisor - Dr. J. Gurd - April 1998
Hee Cheol Cho	- Physiology	- supervisor - Dr. P. Backx - April 1998
Dorota Raciborska	- Physiology	- supervisor - Dr. M. P. Charlton - July 1996
Wai Pui Ng	- IMS	- supervisor - Dr. A. Lozano - July 1996
Rajan Sah	- IMS	- supervisor - Dr. P. Backx - Nov. 1999
Il-Sang Yoon	- Biochemistry	- supervisor - Dr. M. Moscarello - Aug. 1995
Zelma Kiss M.D.	- IMS	- supervisor - Dr. R.R. Tasker - Mar. 1994

THESIS ORAL EXAMINATION CHAIR

Deepak Nallaswamy Veeraiyan - Dentistry	- supervisor - Dr. B.J. Sessle - Aug. 2010
James Bae - Physiology	- supervisor - Dr. W.Y. Lu - Nov. 2009
Dan Sirks - IMS	- supervisor - Dr. L. Milles - M.Sc. Sept. 2002
Susan Roberts - Nutritional Sciences	- supervisor - Dr. P. Pencharz - Ph.D. Nov. 1998
Kathryn Ross - Physiology	- supervisor - Dr. W. Trimble - M.Sc. Sept. 1998
Claire S. Barnes - Physiology	- supervisor - Dr. P. Hallett - Ph.D. Jan. 1995
Neela D. Rampersad - Physiology	- supervisor - Dr. K. Foskett - M.Sc. Sept 1994

EXTERNAL EXAMINER

Ph.D. Thesis

Rachel Bosma – Biomedical Sciences, Queen’s University – April 15, 2015
Jingfei Zhang - Dept. of Neuroscience, Univ. British Columbia – August 17, 2012
Kimberly Gerrow - Dept. of Neuroscience, Univ. British Columbia - July 29, 2008.
Van Lu - Dept. of Pharmacology, Univ. Alberta - Sept 13, 2007.
Robert Griffin - Dept. of Neurobiology, Harvard University - Sept 20, 2005.
Yushan Wang - Dept. of Pharmacology, Dalhousie University - Sept. 7, 2000.
Jennifer Ryan - Dept. of Pharmacology, Dalhousie University - Jan. 11, 1999.
Shafiqur Rahman - Faculty of Basic Medical Science, Memorial University - Jan. 13, 1995.
Jianguo Gu - Department of Pharmacology, University of Manitoba - June 10, 1994.
Barbara Ann Ballyk - Dept. Pharmacology and Toxicology, Queen's University - Sept. 30, 1993.
Constance Craig - Dept. of Pharmacology, Dalhousie University - Oct. 1, 1992.

Master's Thesis

Rhonda J. Whitten - Faculty of Basic Medical Science, Memorial University - Sept. 1995.

PROMOTION/TENURE REVIEWER

Harvard University
University of Cambridge
University of California Los Angeles
University of Arizona
University of Pittsburgh
Centre Hospitalier Universitaire Vaudois, Lausanne, Switzerland
University of British Columbia
Johns Hopkins University School of Medicine
University of Colorado
University of California San Francisco
University of Illinois, Chicago
University of Pennsylvania
McGill University
National Institutes of Health USA
Queen's University
University of Alabama
University of Western Ontario
University of Toronto
University of Texas Dallas

COMMITTEE MEMBERSHIP AND ADMINISTRATION

International

IASP Presidential Task Force on Pain Research (2015-present)

Canadian Institutes of Health Research

Inaugural Member of the Institute Advisory Board

for the Institute of Neuroscience, Mental Health and Addiction (2001-2005)

Executive of CIHR Consortium on Pain Research, Diagnosis and Management (1999-2003)

National

Science Advisory Council, *Brain Canada* (2011-2013)

Executive of *Brain Canada* (2009-2010)

Province of Ontario

Member of Ontario Brain Initiative Committee of the Ministry of Research and Innovation (2009)

Hospital for Sick Children Research Institute

Advisory Board Centre for Computational Medicine (2012-2015)

Executive of the Centre for Pain Management and Research (2008-2015)

Executive of the Centre for Brain and Mental Health (2007-2015)

Executive of the Programme in Brain and Behaviour (1998-2001)

Committee Head

Research Committee, Centre for Brain and Mental Health (2013- 2015)

Search Committee Head

Program Head, Developmental and Stem Cell Biology – 2015

Molecular Neuroscience/Optogenetics, Research Institute, Hospital for Sick Children – 2012-13

Computational Biology (2 positions), Research Institute, Hospital for Sick Children – 2010-11

Standing Committees

Staff Review Committee (2000-2006)

Andrew Sass-Kortsak Award Committee (2006)

External Review Committee (2000-2005)

Equipment Committee (1992-1999)

S.I.D.S. Research Committee (1990-1999)

Clinician-Scientist Committee (1997-2000)

Chair - Working Group on Annual Assessment (1998)

Staff Review Committee (1997)

Research Institute Newsletter Committee (1993-1996)

Summer Undergraduate Training Committee (1991-1993)

Ad hoc Committees

Task Force on Research Institute Renewal (2006)

Research Institute Hospital for Sick Children Review Committee (2004)

Computational Biology Lectureship Committee (2002)

Chair - Promotion Review Committees (1999, 2001)

Advisory Committee on Infrastructure (1997)

Search Committee Membership

Chair, Head of Program in Developmental and Stem Cell Biology, SickKids RI – 2015
Chief of Pediatrics, Hospital for Sick Children – 2015
Head of Neurology, Hospital for Sick Children – 2011
Head of CHES, Research Institute, Hospital for Sick Children – 2010-11
Imaging Neuroscientist, Hospital for Sick Children - 2010
Molecular Structure Scientist, Hospital for Sick Children - 2010
NeuroImaging Scientist, Hospital for Sick Children - 2008
Director, Research Institute Hospital for Sick Children - (2004/5)
Neurobiologist/Integrative Biologist - 2 positions (2002)
Neurophysiologist (1997)
Electrophysiologist/Neurologist (1996)
Academic Neonatologist/Clinical Physiologist (1992)
Developmental Biology - S.I.D.S. Focus (1992)

The University of Toronto

Executive Committee, Medicine by Design (2015-present)
Presidents' Steering Committee, Ted Rogers Centre for Heart Research (2015-present)
Neuroscience Program Advisory Committee – (2009-present)
Member of Committee to review portfolio of Vice-President RIR, U of T (2002)
Member of Working Group on Canada Research Chair Pain Research Cluster (2000)
Head of Cell and Membrane Physiology Research Group - Dept. Physiology (1998-1999)
Executive of the University of Toronto Pain Research Group (1997-1999)
- a lead author of submission to Provostial Academic Priorities Funds to establish
The University of Toronto Centre for the Study of Pain

Standing Committees

Research and Innovations Committee - Department of Physiology (2001-present)
Ontario PDF Selection Committee - Fac. Medicine (2009)
Scientific Advisory Committee-Fundamental Neuroscience Network-Fac. Medicine (2001-2007)

Finance and Planning Committee - Department of Physiology (2001-2008)
Chair, Centennial Committee - Department of Physiology (1998-2000)
Graduate Studies Committee - Department of Physiology (1995-2000)
Strategic Planning Subcommittee on Research - Dept. of Physiology (1994)

Search Committees

Ted Rogers Centre for Heart Research, Executive Director (2015)
Department of Physiology Chair (2014)
Campbell Family Chair – CAMH/Psychiatry (2013-4)
Neurobiologist - Department of Psychology (2007)
Principal Investigators - Structural Genomics Consortium (2003)
Vice-President of Research - University of Toronto (2002)
Neuroscientist - Department of Physiology (2002)
Molecular Neurobiologist - Psychiatry/AMHR (2000)
UTCSP - Basic and Clinical models of pain (2000, committee chair)
Rose Chair in Palliative Care (2000)
Chair - Department of Physiology (1994, 2000, 2001)

Other Institutions

Samuel Lunenfeld Research Institute - Credential Committee – June 2013

Member of Search Committee for Primate Electrophysiologist, Univ. Western Ontario (2002)

MEMBERSHIPS IN PROFESSIONAL SOCIETIES

Alpha Omega Alpha Medical Honour Society

Canadian Association for Neuroscience

Canadian Federation of Biological Sciences

Canadian Pain Society

Canadian Physiological Society

International Association for the Study of Pain

International Brain Research Organization

International Pain Foundation

New York Academy of Sciences

Society for Neuroscience

EXECUTIVE OFFICER IN PROFESSIONAL SOCIETIES

President - Canadian Chapter of the *Purines Club* - 1998-2005

President - Southern Ontario Neuroscience Association - 1995-96

Secretary - Canadian Association for Neuroscience - 1990

COMMITTEES IN PROFESSIONAL SOCIETIES

Financial Aid Working Group – International Association for the Study of Pain – 2011-present

Young Investigator Award – Canadian Association for Neuroscience - 2011-15

EXECUTIVE OF VOLUNTARY ORGANIZATIONS

Board of Directors - Canadian Pain Coalition - 2004-2010

Scientific Advisory Committee – Canadian Pain Coalition – 2010-present

COMPANIES

NoNO Inc. - Vice-President and a Founding Scientist. NoNO Inc. is developing novel therapeutic agents for the treatment of stroke, neurodegeneration, neurotrauma and pain by targeting intracellular protein-protein interactions. NoNO Inc has taken a drug based on our findings reported in *Science* 2002 through pre-clinical development, a Phase 1 and a Phase 2 trial in humans have been completed. Two Phase 3 trials will begin in early 2015. NoNO Inc. obtained its first round of financing in 2006 and completed its fifth round in summer 2013.

Afference Therapeutics - Chair of the Scientific Advisory Board (2007-10) and a Founding Member. Afference Therapeutics is developing novel methods of treating diabetes based on the discovery of Salter and Dosch that primary sensory nociceptors regulate the function of insulin-producing cells in the islets of the pancreas and the invasion of pancreatic islets by T cells.

Chlorion Pharma - Member of the founding Scientific Advisory Board (2005-2006). Chlorion Pharma is developing novel therapeutic agents that lower intracellular chloride ion concentration for the treatment of neuropathic pain and epilepsy.

CONSULTING

Geneyouin (Scientific Advisory Board) – 2012-present

Avanir – 2012

Abbott - 2000, 2010
Pfizer – 2010
Endo Pharmaceuticals - 2008, 09
MedPanel - 2006
PureTech Ventures - 2005
Solace Pharmaceuticals - 2005
Structural Genomics Consortium - 2003
AGY Therapeutics - 2002 - 2004
CDP du Quebec - Sofinov - 2001
University Medical Discoveries Inc. - 2000

INTERNATIONAL PRIZE COMMITTEES

Gairdner Foundation – Medical Review Panel – 2013-present
– Chair, assessment committee - 2012
J. Allyn Taylor Prize - 2008

INTERNATIONAL ADVISORY BOARDS

Chair, Scientific Advisory Board – *Rotman Research Institute* – Toronto, ON – 2012 - present
Governing Council - *Life Sciences Research Institute* – Dalhousie University – 2010 - present
Scientific Advisory Board - *London Pain Consortium* - London, UK - 2008 - present
Scientific Advisory Board – *Team Grant in Children’s Pain (TROPIC)* – Toronto – 2007 - present

EDITORIAL BOARD MEMBERSHIP

Associate Editor - *Pain Research and Management*
Associate Editor - *Pain* (2011-16)
Editorial Board Member - *Channels*
Editorial Board Member - *Molecular Pain*
Editorial Board Member - *Purinergic Signalling*
Editorial Board Member - *Neuron Glia Biology*
Associate Editor - *Journal of Neuroscience* (2006-2009)
Scientific Advisor for the special issue of *The Scientist* devoted to *Pain* (2005).

GRANT REVIEW COMMITTEES

CIHR Pharmacology and Toxicology – June 2014
Member of the College of Reviewers - Canada Research Chairs Program - 2000-present
Canadian Pain Society/Janssen-Ortho/CIHR Pre-doctoral Awards - 2000-present
Parke-Davis/Canadian Pain Society Research Awards for Chronic Pain - 2000-present
Medical Research Council of Canada - Neurosciences 'A' - 1995-1998
Hospital for Sick Children Foundation - 1994-1995
Faculty of Medicine, University of Toronto, Research Grants Committee - 1995, 1999

EXTERNAL REVIEWER – GRANTS / AWARDS

ANR France
British Columbia Health Research Foundation
Fonds de la Recherche en Santé du Québec
Heart and Stroke Foundation of Canada
Hospital for Sick Children Foundation
Human Frontiers in Science Foundation
Israel Science Foundation

Italian Telethon Foundation
MacArthur Foundation (U.S.A.)
Medical Research Council of Canada
National Institutes of Health (U.S.A.)
National Science Foundation (U.S.A.)
Natural Sciences and Engineering Research Council of Canada
Wellcome Trust

EXTERNAL REVIEWER FOR SCIENTIFIC JOURNALS

American Journal of Physiology
American Society of Neurochemistry
Canadian Journal of Physiology and Pharmacology
Cell
Cerebral Cortex
British Journal Pharmacology
EMBO Journal
European Journal of Neuroscience
FEBS Letters
Journal of Biological Chemistry
Journal of Cerebral Blood Flow and Metabolism
Journal of Neurochemistry
Journal of Neurophysiology
Journal of Neuropharmacology
Journal of Neuroscience
Journal of Pain
Molecular Brain Research
Molecular Pain
Nature
Nature Biotechnology
Nature Medicine
Nature Methods
Nature Neuroscience
Nature Protocols
Nature Reviews Neuroscience
Neuron
Neuroscience
Neuroscience Letters
Neuropharmacology
Pain
Pediatric Research
Pflügers Archiv European Journal of Physiology
Proceedings of the National Academy of Science U.S.A.
PLoS Biology
PLoS One
Science
Science Signaling