

## **CURRICULUM VITAE**      **Hans Christian Dringenberg, Ph.D.**

**Address:** Department of Psychology  
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**Birth place:** Bochum, Germany

**Birth date:** April 18, 1964

**Citizenship:** Canadian

**Education:**

Abitur-Reifezeugnis	1985
Vestisches Gymnasium, Bottrop, Germany	
B.A. (Psychology)	1991
University of Lethbridge, Lethbridge, Alta., Canada	
M.Sc. (Neuroscience)	1993
University of Western Ontario, London, Ont., Canada	
Ph.D. (Neuroscience)	1996
University of Western Ontario, London, Ont., Canada	

**Positions:**

Professor	2011-present
Associate Professor	2004-2011
Assistant Professor	1998-2004
Department of Psychology, Queen's University and Centre for Neuroscience Studies	
Post-Doctoral Fellow	1996-97
Institute of Physiological Psychology Heinrich Heine University, Düsseldorf, Germany	

**Supervisory Experience:**

Ph.D. Theses: 7 (6 sole, 1 joint)
(Psychology, Neuroscience)
M.A./M.Sc. Theses: 19 (17 sole, 2 joint)
(Psychology, Pharmacology & Toxicology, Neuroscience)
B.Sc. Undergraduate (Honours) Theses: 49 (41 sole, 8 joint)
(Psychology, Biology, Life Sciences)

**Major University and Professional Administrative Responsibilities**

Chair, Animal Advisory Group, Department of Psychology	2001-2004, 2005-2006, 2010-2011 2017-2018
Chair, Graduate Program in Brain, Behavior and Cognitive Science, Department of Psychology	2007-2010
Coordinator of Graduate Studies, Department of Psychology	2014-2017
Chair, Personnel Committee, Department of Psychology	2017-2018

**Conference and Symposium Organization**

Organizer, Symposium “Recent advances in synaptic plasticity research: Implications for development, learning, and neuropathology”, Annual Meeting of the Canadian Society for Brain, Behaviour, and Cognitive Science, University of Manitoba, Winnipeg, Manitoba, June 24-26, 2011.

Chief Organizer, Annual Meeting of the Canadian Society for Brain, Behaviour, and Cognitive Science (CSBBCS), Queen’s University, Kingston, Ont., June 7-9, 2012.

Chief Organizer, 44th Annual Ontario Undergraduate Psychology Thesis Conference, Queen’s University, Kingston, Ont., May 9, 2014.

Organizer, Symposium “Why the role of sleep in memory consolidation is overrated”, World Sleep Congress, Vancouver, BC, Sep. 20-25, 2019.

**Membership in Scientific Societies (2018 - present):**

World Sleep Society

Canadian Society for Brain, Behaviour, and Cognitive Science (CSBBCS)

Canadian Sleep Society (Basic Scientist)

Federation of European Neuroscience Societies (FENS)

European Sleep Research Society

Southern Ontario Neuroscience Association (SONA)

**Journal Peer Review:**

Acta Neurobiologiae Experimentalis; Animal Cognition; Behavioural Brain Research; Behavioural Pharmacology; Biological Psychiatry; BioMed Research International; Brain; Brain Research; Brain Research Bulletin; British Journal of Pharmacology; Canadian Journal of Anesthesia; Canadian Journal of Physiology and Pharmacology; Cerebral Cortex; Cognitive Neurodynamics; Current Medicinal Chemistry; Current Neuropharmacology; eNeuro; European Journal of Neuroscience; Experimental Brain Research; Frontiers in Behavioral Neuroscience; Frontiers in Cellular Neuroscience; Future Neurology; Hippocampus; International Journal of Developmental Neuroscience; International Journal of Clinical and Experimental Ophthalmology; International Journal of Psychiatry and Mental Health; Journal of Chemical Neuroanatomy; Journal of Comparative Physiology-Section A; Journal of Neurochemistry; Journal of Neuroendocrinology; Journal of Neurophysiology; Journal of Neuroscience, Journal of Neuroscience Research; Journal of Neurotrauma; Journal of Physiology; Journal of Psychiatry & Neuroscience; Journal of Psychopharmacology; Journal of Translational Medicine; Journal of Visualized Experiments; Learning & Memory; Life Sciences; Molecular Brain Research; Nature Reviews Neuroscience; Neurobiology of Learning and Memory; NeuroImage; Neuronal Signaling; Neuropeptides; Neuropharmacology; Neuropsychopharmacology; Neuroscience; Neuroscience Letters; Neurotoxicity Research; Pharmacology, Biochemistry & Behavior; Pharmacology Research; Physiological Reports; Physiology & Behavior; PLoS One; Proceedings of the National Academy of Sciences USA; Psychopharmacology; Restorative Neurology and Neuroscience; Scientific Reports; Synapse; Trends in Neurosciences;

**Research Grant Review:**

Natural Sciences and Engineering Research Council of Canada (NSERC); Canadian Institutes of Health Research (formerly MRC); National Science Foundation (USA); Alberta Heritage Foundation for Medical Research; Advisory Research Council, Queen's University (Health Sciences; Natural Sciences); Biotechnology and Biological Sciences Research Council (UK, Animal Sciences Committee); Rehabilitation Research and Development (RR&D) Service, Department of Veterans Affairs, National Institutes of Health (USA); Hungarian Scientific Research Fund (OTKA); United States-Israel Binational Science Foundation;

**Current grants and other financial support:**

Natural Sciences and Engineering Research Council (NSERC) 2019-2025  
 “How special is sleep for human memory consolidation?”  
 Discovery Research Grant (CDN \$ 168,000)

**Past grants and other financial support:**

Natural Sciences and Engineering Research Council (NSERC) 2013-2019  
 “Plasticity of the juvenile and adult rodent primary auditory cortex”  
 Discovery Research Grant (CDN \$ 200,000)

Natural Sciences and Engineering Research Council (NSERC) 2017-2018  
 “Locomotor Activity Monitors for Rats”  
 Research Tools and Instruments Grant (CDN \$ 52,766)  
 with R. Beninger (PI), M. Olmstead, J. Lenard

Natural Sciences and Engineering Research Council (NSERC) 2016-2017  
 “Neurohistochemistry Processing and Imaging Suite”  
 Research Tools and Instruments Grant (CDN \$ 76,325)  
 with J. Menard (PI), R. Beninger, M. Olmstead

The Hearing Foundation of Canada (THFC) 2013-2014  
 “Reinstatement of juvenile-like synaptic plasticity in mature auditory cortex:  
 implications for the treatment of hearing loss in adulthood and advanced age”  
 with J.N. Reynolds  
 Research Grant (CDN \$ 22,500)

Natural Sciences and Engineering Research Council (NSERC) 2012-2013  
 “The plasticity-stability balance of auditory cortex synapses: role of sensory  
 experience and synaptic mechanisms”  
 Discovery Research Grant (CDN \$ 27,000)

Natural Sciences and Engineering Research Council (NSERC) 2006-2012  
 "Optimization of activity-dependent plasticity of cortical circuits: role of  
 neuromodulators, sensory experience, and "arousal"  
 Discovery Research Grant (CDN \$ 196,860)

Natural Sciences and Engineering Research Council (NSERC)	2010-2011
"2010 Cage Washer for Queen's Natural Sciences and Engineering Research Council-Funded Research in Psychology"	
with R. Beninger (PI), B. Frost, J. Menard, C. Olmstead, N. Troje	
Research Tools and Instruments Grant (CDN \$ 150,000, 2010-2011)	
Philip Morris External Research Program	2005-2008
"Nicotinic long-term-enhancement of glutamatergic transmission"	
with A. Fine (PI), D.D. Rasmusson	
Research Grant (US \$ 44,075/year to HCD)	
Natural Sciences and Engineering Research Council of Canada (NSERC)	2006-2007
"Rodent Operant Test Chambers"	
with M.C. Olmstead (PI), R.J.Beninger, J. Menard	
Research Tools and Instruments (CDN \$ 55,343)	
Natural Sciences and Engineering Research Council of Canada (NSERC)	2002-2006
"Subcortical-cortical interplay: regulation of activation state and plasticity"	
Discovery Research Grant (CDN \$ 128,000)	
Canadian Institutes of Health Research (CIHR)	2001-2006
"Effects of chronic prenatal ethanol exposure on cognitive skills and cortical EEG activity in offspring: Postnatal enrichment and drug intervention"	
Research Grant with J.N. Reynolds (PI), J.F. Brien	
(CDN \$ 446,523)	
Natural Sciences and Engineering Research Council of Canada (NSERC)	2004-2005
"Rodent housing infrastructure"	
with R.J. Beninger, J. Menard, M.C. Olmstead	
Equipment Grant (CDN \$ 10,250)	
Canadian Institutes of Health Research (CIHR)	2000-2005
with J.F. Brien (PI), J. Reynolds	
Research Grant (CDN \$ 452,750)	
Natural Sciences and Engineering Research Council of Canada (NSERC)	1998-2002
Research Grant (CDN \$ 92,000)	

GoBang Therapeutics, Ltd. “Evaluation of novel nitrate esters in animal models of dementia and neurodegeneration” Contract Research (CDN \$ 63,114)	1999-2001
Advisory Research Council, Queen’s University, Kingston Research Grant with M.C. Olmstead (PI) (CDN \$ 9,888)	1999-2000
Ontario Research and Development Challenge Fund Infrastructure Grant with M. C. Olmstead (CDN \$ 44,666)	1999-2001
Canadian Federation for Innovation Infrastructure Grant (CFI) Infrastructure Grant with M.C. Olmstead (CDN \$ 67,000)	1999-2001
Advisory Research Council, Queen’s University, Kingston Research Grant) CDN \$ 7,930)	1998-1999
Natural Sciences and Engineering Research Council of Canada (NSERC) Equipment Grant (CDN \$ 30,010)	1998-1999
Queen’s University Research Initiation Grant (CDN \$ 45,000)	1998

**Academic honours and awards:**

Undergraduate Teaching Award, Dept. of Psychology, Queen's University	2021
Graduate Teaching Award, Dept. of Psychology, Queen's University	2009
Nominee, Frank Knox Award for Excellence in Teaching, Queen's University	2004,2006
Inducted into the "Alumni Honour Society" of the University of Lethbridge	2002
Canadian Federation for Innovation Researcher	1998
Neuroscience Thesis Award (Ph.D.), University of Western Ontario	1997
Deutsche Forschungsgemeinschaft Travel Stipend (award declined)	1997
Deutsche Forschungsgemeinschaft Postdoctoral Training Stipend	1996-98
Neuroscience Thesis Award (M.Sc.), University of Western Ontario	1995
Ontario Graduate Scholarship	1995,1993,1992
University of Western Ontario Graduate Research Fellowship	1995
University of Western Ontario Admission Scholarship	1993,1991
University of Western Ontario Special University Scholarship	1994,1991
Bursary of the Province of Ontario	1991
Steven C. Patten Memorial Scholarship, University of Lethbridge	1990
University of Lethbridge Award	1990,1989
University of Lethbridge Undergraduate Research Enrichment Award	1990
Dean of Arts and Science Honour List, University of Lethbridge	1990,1989



**References:**

Dr. Mary C. Olmstead  
Professor  
Department of Psychology  
Queen's University  
Kingston, Ontario, Canada  
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Dr. R. J. Beninger  
Professor Emeritus  
Department of Psychology  
Queen's University  
Kingston, Ontario, Canada  
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Dr. Janet Menard  
Associate Professor  
Department of Psychology  
Queen's University  
Kingston, Ontario, Canada  
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## Publications

### Books:

Dringenberg, H.C. (Editor). (2019) *Handbook of Sleep Research*. Vol. 30, Handbook of Behavioural Neuroscience. Academic Press/Elsevier, San Diego, pp. 1-738.

### Journal Publications:

1. Wishaw, I.Q., and **Dringenberg, H.C.** (1991) How does the rat (*Rattus norvegicus*) adjust food-carrying responses to the influences of distance, effort, predatory odor, food size, and food availability. *Psychobiology*, 19:251-261.
2. Wishaw, I.Q., Gorny, B.P., and **Dringenberg, H.C.** (1991) The defensive strategies of foraging rats: a review and synthesis. *The Psychological Record*, 41:185-205.
3. **Dringenberg, H.C.**, Servos, P., Heale, R.V., and Vanderwolf, C.H. (1992) Pressure on the snout immobilizes the spontaneously active, scopolaminized, and amphetaminized hyperactive rat. *Behav. Brain Res.*, 50:197-199.
4. Wishaw, I.Q., **Dringenberg, H.C.**, and Comery, T.A. (1992) Rats (*Rattus norvegicus*) modulate eating speed and vigilance to optimize food consumption: effects of cover, circadian rhythm, food deprivation, and individual differences. *J. Comp. Psychol.*, 106:411-419.
5. Wishaw, I.Q., **Dringenberg, H.C.**, and Pellis, S.M. (1992) Spontaneous forelimb grasping in free feeding rats: motor cortex aids limb and digit positioning. *Behav. Brain Res.*, 48:113-125.
6. Sutherland, R.J., **Dringenberg, H.C.**, and Hoelsing, J.M. (1993) Induction of long-term potentiation at perforant path dentate synapses does not affect place learning or memory. *Hippocampus*, 3:141-148.
7. **Dringenberg, H.C.**, Kornelsen, R.A., and Vanderwolf, C.H. (1994) Food carrying in rats is blocked by the putative anxiolytic agent buspirone. *Pharmacology, Biochemistry and Behavior*, 49:741-746.

8. **Dringenberg, H.C.**, and Vanderwolf, C.H. (1994) Transcallosal evoked potentials: behavior-dependent modulation by muscarinic and serotonergic receptors. *Brain Res. Bull.*, 34:555-562.
9. **Dringenberg, H.C.**, Hargreaves, E.L., Baker, G.B., Cooley, R.K., and Vanderwolf, C.H. (1995) p-Chlorophenylalanine-induced serotonin depletion: reduction in exploratory locomotion but no obvious sensory-motor deficits. *Behav. Brain Res.*, 68:229-237.
10. **Dringenberg, H.C.**, and Vanderwolf, C.H. (1995) Some general anesthetics reduce serotonergic neocortical activation and enhance the action of serotonergic antagonists. *Brain Res. Bull.*, 36:285-292.
11. **Dringenberg, H.C.**, Vanderwolf, C.H., and Hamilton, J.T. (1995) Urethane reduces contraction to 5-hydroxytryptamine (5-HT) and enhances the action of the 5-HT antagonist ketanserin on the rat thoracic aortic ring. *Journal of Neural Transmission*, 101:183-193.
12. **Dringenberg, H.C.**, Baker, G.B., Urichuk, L.J., and Vanderwolf, C.H. (1996) Anti-serotonergic effects of urethane and chloral hydrate may not be mediated by a blockade of 5-HT<sub>2</sub> receptors. *Journal of Neural Transmission*, 103:693-698.
13. **Dringenberg, H.C.**, and Vanderwolf, C.H. (1996) Cholinergic activation of the electrocorticogram: an amygdaloid activating system. *Exp. Brain Res.*, 108:285-296.
14. **Dringenberg, H.C.**, and Vanderwolf, C.H. (1996) 5-Hydroxytryptamine (5-HT) agonists: effects on neocortical slow wave activity after combined muscarinic and serotonergic blockade. *Brain Res.*, 728:181-187.
15. **Dringenberg, H.C.**, and Vanderwolf, C.H. (1997) Neocortical activation: modulation by multiple pathways acting on central cholinergic and serotonergic systems. *Exp. Brain Res.*, 116:160-174.
16. Vanderwolf, C.H., McLauchlin, M., **Dringenberg, H.C.**, and Baker, G.B. (1997) Brain structures involved in the behavioral stimulant effect of central serotonin release. *Brain Res.*, 772:121-134.
17. **Dringenberg, H.C.**, de Souza-Silva, M.A., Roßmüller, J., Huston, J.P., and Schwarting, R.K.W. (1998) Histamine H<sub>1</sub> receptor antagonists produce increases in extracellular acetylcholine in rat frontal cortex and hippocampus. *J. Neurochem.*, 70:1750-1758.
18. **Dringenberg, H.C.**, de Souza-Silva, M.A., Schwarting, R.K.W., and Huston, J.P. (1998) Increased levels of extracellular dopamine in neostriatum and nucleus accumbens after

histamine H1 receptor blockade. *Naunyn-Schmiedeberg's Archives of Pharmacology*, 358:423-429.

19. **Dringenberg, H.C.**, Kornelsen, R.A., Pacelli, R., Petersen, K., and Vanderwolf, C.H. (1998) Effects of amygdaloid lesions, hippocampal lesions, and buspirone on black-white exploration and food carrying in rats. *Behav. Brain Res.*, 96:161-172.
20. **Dringenberg, H.C.**, and Vanderwolf, C.H. (1998) Involvement of direct and indirect pathways in electrocorticographic activation. *Neurosci. Biobehav. Rev.*, 22:243-257.
21. **Dringenberg, H.C.**, and Zalan, R.M. (1999) Serotonin-dependent maintenance of spatial performance and EEG activation after cholinergic blockade: effects of serotonergic receptor antagonists. *Brain Res*, 837:242-253.
22. **Dringenberg, H.C.**, Diavolitsis, P., and Noseworthy, P.A. (2000) Effect of tacrine on EEG slowing in the rat: enhancement by concurrent monoamine therapy. *Neurobiology of Aging*, 21:135-143.
23. **Dringenberg, H.C.** (2000) Alzheimer's disease: more than a 'cholinergic disorder'-evidence that cholinergic-monoaminergic interactions contribute to EEG slowing and dementia. *Behav. Brain Res.*, 115:235-249.
24. **Dringenberg, H.C.**, Wightman, M, and Beninger, R.J. (2000) The effects of amphetamine and raclopride on food transport: possible relation to defensive behavior in rats. *Behavioural Pharmacology*, 11:447-454.
25. **Dringenberg, H.C.** (2000) Serotonergic receptor antagonists alter responses to general anesthetics in rats. *British Journal of Anaesthesia*, 85:904-906.
26. **Dringenberg, H.C.**, Laporte, P.P, and Diavolitsis, P. (2000) Increased effectiveness of tacrine by deprenyl co-treatment in rats: EEG and behavioral evidence. *NeuroReport*, 11:3513-3516.
27. Smith, S., **Dringenberg, H.C.**, Bennett, B.M., Thatcher, G.R.J., and Reynolds, J.N. (2000) A novel nitrate ester reverses the cognitive impairment caused by scopolamine in the Morris water maze. *NeuroReport*, 11:3883-3886.
28. Beninger, R.J., **Dringenberg, H.C.**, Boegman, R.J., and Jhamandas K. (2001) Cognitive effects of neurotoxic lesions of the nucleus basalis magnocellularis in rats: differential roles for corticopetal versus amygdalopetal projections. *Neurotoxicity Research*, 3:7-21.
29. **Dringenberg, H.C.**, Richardson, D.P., Brien, J.F., and Reynolds, J.N. (2001) Spatial

learning in the guinea pig: cued vs. non-cued learning, sex differences, and comparison with rats. *Behav. Brain Res.*, 124:97-101.

30. **Dringenberg, H.C.**, Saber, A.J., and Cahill, L. (2001) Enhanced frontal cortex activation in rats by convergent amygdaloid and noxious sensory signals. *NeuroReport*, 12:2395-2398.
31. **Dringenberg, H.C.**, and Diavolitsis, P. (2002) Electroencephalographic activation by fluoxetine in rats: role of 5-HT<sub>1A</sub> receptors and enhancement of concurrent acetylcholinesterase inhibitor treatment. *Neuropharmacology*, 42:154-161.
32. **Dringenberg, H.C.**, Rubenstein, M.L., Solty, H., Tomaszek, S., and Bruce, A. (2002) EEG activation by tacrine, deprenyl, and quipazine in rats: assessment of cholinergic and non-cholinergic contributions. *Eur. J. Pharmacol.*, 447:43-50.
33. Richardson, D.P., Byrnes, M.L., Brien, J.F., Reynolds, J.N., and **Dringenberg, H.C.** (2002) Impaired water maze acquisition and hippocampal long-term potentiation after chronic prenatal ethanol exposure in the guinea pig. *Eur. J. Neurosci.*, 16:1593-1598.
34. **Dringenberg, H.C.**, Vanderwolf, C.H., and Noseworthy, P.A. (2003) Superior colliculus stimulation enhances neocortical serotonin release and electrocorticographic activation in the urethane-anesthetized rat. *Brain Res.*, 964:31-41.
35. **Dringenberg, H.C.**, and Olmstead, M.C. (2003) Integrated contributions of basal forebrain and thalamus to neocortical activation elicited by pedunculo-pontine tegmental stimulation in urethane anesthetized rats. *Neuroscience*, 119:839-853.
36. **Dringenberg, H.C.**, Dennis, K.E.B., Tomaszek, S., and Martin, J. (2003) Orienting and defensive behaviors elicited by superior colliculus stimulation in rats: effects of 5-HT depletion, uptake inhibition, and direct midbrain or frontal cortex application. *Behav. Brain Res.*, 144:95-103.
37. **Dringenberg, H.C.**, and Kuo, M.-C. (2003) Histaminergic facilitation of electrocorticographic activation: role of basal forebrain, thalamus, and neocortex. *Eur. J. Neurosci.*, 18:2285-2291.
38. Paine, T.A., **Dringenberg, H.C.**, and Olmstead, M.C. (2003) Effects of chronic cocaine on impulsivity: relation to cortical serotonin mechanisms. *Behav. Brain Res.*, 147:135-147.
39. Hayward, M.L., Martin, A.E., Brien, J.F., **Dringenberg, H.C.**, Olmstead, M.C., and Reynolds, J.N. (2004) Chronic prenatal ethanol exposure impairs conditioned responding and enhances GABA release in the hippocampus of the adult guinea pig. *Journal of Pharmacology and Experimental Therapeutics*, 308:644-650.

40. **Dringenberg, H.C.**, Yahia, N., Cirasuolo, J., McKee, D., and Kuo, M.-C. (2004) Neocortical activation by electrical and chemical stimulation of the rat inferior colliculus: intra-collicular mapping and neuropharmacological characterization. *Exp. Brain Res.*, 154:461-469.
41. Iqbal, U., **Dringenberg, H.C.**, Brien, J.F., and Reynolds, J.N. (2004) Chronic prenatal ethanol exposure alters hippocampal GABA<sub>A</sub> receptors and impairs spatial learning in the guinea pig. *Behav. Brain Res.*, 150:117-125.
42. Byrnes, M.L., Richardson, D.P., Brien, J.F., Reynolds, J.N., and **Dringenberg, H.C.** (2004) Spatial acquisition in the Morris water maze and hippocampal long-term potentiation in the adult guinea pig following brain growth spurt-prenatal ethanol exposure. *Neurotoxicology and Teratology*, 26:543-551.
43. **Dringenberg, H.C.**, Kuo, M.-C., and Tomaszek, S. (2004) Stabilization of thalamo-cortical long-term potentiation by the amygdala: cholinergic and transcription-dependent mechanisms. *Eur. J. Neurosci.*, 20:557-565.
44. Thatcher, G.R.J., Bennett, B.M., **Dringenberg, H.C.**, and Reynolds, J.N. (2004) Novel nitrates as NO mimetics directed at Alzheimer's disease. *Journal of Alzheimer's Disease*, 6(6 Suppl.):S75-84.
45. Iqbal, U., Rikhy S, **Dringenberg, H.C.**, Brien, J.F., and Reynolds, J.N. (2006) Spatial learning deficits induced by chronic prenatal ethanol exposure can be overcome by non-spatial pre-training, *Neurotoxicology and Teratology*, 28:333-341.
46. **Dringenberg, H.C.**, Sparling, J.S., Frazer, J., and Murdoch, J. (2006) Generalized cortex activation by the auditory midbrain: mediation by acetylcholine and subcortical relays. *Exp Brain Res.*, 174:114-123.
47. **Dringenberg, H.C.**, Hamze, B., Wilson, A., Speechley, W., and Kuo, M.-C. (2007) Heterosynaptic facilitation of *in vivo* thalamocortical long-term potentiation in the adult rat visual cortex by acetylcholine. *Cerebral Cortex*, 17:839-848.
48. Speechley, W.J., Hogsden, J.L., and **Dringenberg, H.C.** (2007) Continuous white noise exposure during and after auditory critical period differentially alters bi-directional thalamocortical plasticity in rat auditory cortex *in vivo*. *Eur. J. Neurosci.*, 26:2576-2584.
49. Nash, C.M., Ibram, F., **Dringenberg, H.C.**, Reynolds, J.N., and Brien, J.F. (2007) Effects of maternal administration of vitamins C and E on ethanol neurobehavioural teratogenicity in the guinea pig. *Alcohol*, 41:577-586.

50. **Dringenberg, H.C.**, Levine Y, and Menard, J.L. (2008) Electrical stimulation of dorsal, but not ventral hippocampus reduces behavioral defense in the elevated plus maze and shock-probe burying test in rats. *Behav. Brain Res.*, 186:143-147.
51. **Dringenberg, H.C.**, Oliveira D., and Habib, D. (2008) Predator (cat hair)-induced enhancement of hippocampal long-term potentiation in rats: involvement of acetylcholine. *Learning & Memory*, 15:112-116.
52. Kuo, M.-C., and **Dringenberg, H.C.** (2008) Histamine facilitates *in vivo* thalamocortical long-term potentiation in the mature visual cortex of anesthetized rats. *Eur. J. Neurosci.*, 27:1731-1738.
53. McAdam, T.D., Brien, J.F., Reynolds, J.N., and **Dringenberg, H.C.** (2008) Altered water-maze search behavior in adult guinea pigs following chronic prenatal ethanol exposure: lack of mitigation by postnatal fluoxetine treatment. *Behav. Brain Res.*, 191:202-209.
54. Habib, D., and **Dringenberg, H.C.** (2009) Alternating low-frequency stimulation of medial septal and commissural fibers induces NMDA-dependent, long-lasting potentiation of hippocampal synapses in urethane-anesthetized rats. *Hippocampus*, 19:299-307.
55. Kuo, M.-C., and **Dringenberg, H.C.** (2009) Short-term (2 to 5 hour) dark exposure lowers long-term potentiation (LTP) induction threshold in rat primary visual cortex. *Brain Res.*, 1276:58-66.
56. Hogsden, J.L., and **Dringenberg, H.C.** (2009) Decline of long-term potentiation (LTP) in the rat auditory cortex *in vivo* during postnatal life: Involvement of NR2B subunits. *Brain Res.*, 1283:25-33.
57. Hogsden, J.L., and **Dringenberg, H.C.** (2009) NR2B subunit-dependent long-term potentiation enhancement in the rat cortical auditory system *in vivo* following masking of patterned auditory input by white noise exposure during early postnatal life. *Eur. J. Neurosci.*, 30:376-384.
58. Kuo, M.-C., Rasmusson D.D., and **Dringenberg, H.C.** (2009) Input-selective potentiation and re-balancing of primary sensory cortex afferents by endogenous acetylcholine. *Neuroscience*, 163:430-441.
59. Gagolewicz P.J., **Dringenberg, H.C.** (2009) Selective potentiation of crossed vs. uncrossed inputs from lateral geniculate nucleus to visual cortex by the basal forebrain: potential facilitation of rodent binocularity. *Neurosci. Lett.*, 463:130-134.

60. Habib, D., and **Dringenberg, H.C.** (2010) Low frequency-induced synaptic potentiation: A paradigm shift in the field of memory-related plasticity mechanisms? *Hippocampus*, 20:29-35.
61. Hager, A.M., and **Dringenberg, H.C.** (2010) Assessment of different induction protocols to elicit long-term depression (LTD) in the rat visual cortex in vivo. *Brain Res.*, 1318:33-41.
62. Ashby, D.M., Habib, D., **Dringenberg, H.C.**, Reynolds, J.N., and Beninger, R.J. (2010) Subchronic MK-801 treatment and post-weaning social isolation in rats: Differential effects on locomotor activity and hippocampal long-term potentiation, *Behav. Brain Res.*, 212:64-70.
63. Hager, A.M., and **Dringenberg, H.C.** (2010) Training-induced plasticity in the visual cortex of adult rats following visual discrimination learning. *Learning & Memory*, 17:394-401.
64. MacKinnon, L.M., Troje, N., and **Dringenberg, H.C.** (2010) Do rats (*Rattus Norvegicus*) perceive biological motion? *Exp. Brain Res.*, 205:571-576.
65. Habib, D., and **Dringenberg, H.C.** (2010) Surprising similarity between mechanisms mediating low (1 Hz)- and high-frequency (100 Hz)-induced, long-lasting synaptic potentiation in CA1 of the intact hippocampus. *Neuroscience*, 170:489-496.
66. Hogsden, J.L., Rosen, L.G., and **Dringenberg, H.C.** (2011) Pharmacological and deprivation-induced reinstatement of juvenile-like long-term potentiation in the primary auditory cortex of adult rats. *Neuroscience*, 186:208-219.
67. Gagolewicz P.J., and **Dringenberg, H.C.** (2011) NR2B-subunit dependent facilitation of long-term potentiation in primary visual cortex following visual discrimination training of adult rats. *Eur. J. Neurosci.*, 34:1222-1229.
68. Kuo, M.-C., and **Dringenberg, H.C.** (2012) Comparison of long-term potentiation (LTP) in the medial (monocular) and lateral (binocular) rat primary visual cortex. *Brain Res.*, 1488:51-59.
69. Hager, A.M., and **Dringenberg, H.C.** (2012) Design of a simple, noninvasive facemask for ocular occlusion in rats and assessment in a visual discrimination paradigm. *Behav. Res. Methods*, 44:919-923.
70. Tsui, C.K.Y., and **Dringenberg, H.C.** (2013) Role of cholinergic-muscarinic receptors in visual discrimination performance of rats: importance of stimulus load. *Behav. Brain Res.*, 238:23-29.



71. **Dringenberg, H.C.**, Branfield Day, L.R., and Choi, D.H. (2014) Chronic fluoxetine treatment suppresses plasticity (long-term potentiation, LTP) in the mature rodent primary auditory cortex *in vivo*. *Neural Plasticity*, vol. 2014, Article ID 571285, 9 pages, 2014.  
doi:10.1155/2014/571285.
72. Chee, S.-S.A., Menard, J.L., and **Dringenberg, H.C.** (2014) Behavioral anxiolysis without reduction of hippocampal theta frequency after histamine application in the lateral septum of rats. *Hippocampus*, 24:615-627.
73. Damodaran, T., Hassan, Z., Navaratnam, V., Muzaimi, M., Ng, G., Müller, C.P., Liao, P., and **Dringenberg, H.C.** (2014) Time course of motor and cognitive functions after chronic cerebral ischemia in rats. *Behav. Brain Res.*, 275:252-258.
74. Habib, D., Tsui, C.K.Y., Rosen, L.G., and **Dringenberg, H.C.** (2014) Occlusion of low-frequency-induced long-term potentiation (LTP) in the rat hippocampus following spatial training, *Cerebral Cortex*, 24:3090-3096.
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77. Soutar, C.N., Rosen, L.G., Rodier, S.G., and **Dringenberg, H.C.** (2016) Effects of patterned sound deprivation on short- and long-term plasticity in the rat thalamocortical auditory system *in vivo*. *Neural Plasticity*, vol. 2016, Article ID 3407135, 10 pages.  
<http://dx.doi.org/10.1155/2016/3407135>
78. Yusoff, N.H.M., Suhaimi, F.W., Vadivelu, R.K., Hassan, Z., Rümmler, A., Rotter, A., Amato, D., **Dringenberg, H.C.**, Mansor, S.M., Navaratnam, V., and Müller, C.P. (2016) Abuse potential and adverse cognitive effects of mitragynine (Kratom). *Addiction Biology*, 21:98-110.
79. Gagolewicz, P.J., and **Dringenberg, H.C.** (2016) Age-dependent switch of the role of serotonergic 5-HT<sub>1A</sub> receptors in gating long-term potentiation (LTP) in rat visual cortex *in vivo*. *Neural Plasticity*, vol. 2016, Article ID 6404082, 11 pages.  
<http://dx.doi.org/10.1155/2016/6404082>

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81. Clark, E., Antoniak, K., Feniquito, A., and **Dringenberg, H.C.** (2017) Effects of the GluN2B-NMDA receptor antagonist Ro 25-6981 on two types of behavioral flexibility in rats. *Behav. Brain Res.*, 319:225-233.
82. Lee, K.K.Y., Soutar, C.N., and **Dringenberg, H.C.** (2018) Gating of long-term potentiation (LTP) in the thalamocortical auditory system of rats by serotonergic (5-HT) receptors. *Brain Res.*, 1683:1-11.
83. Ou, C., **Dringenberg, H.C.**, and Soutar, C.N. (2019) Is hippocampal theta frequency related to individual and sex differences in anxiety-like behaviour? An analysis in male and female Long-Evans rats. *Behav. Brain Res.*, 364:366-373.
84. Hassan, Z., Suhaimi, F.W., Ramanathan, S., Ling, K.H., Effendy, M.A., Müller, C.P., and **Dringenberg, H.C.** (2019) Mitragynine (Kratom) impairs spatial learning and hippocampal synaptic transmission in rats. *J. Psychopharmacol.*, 33:908-918.
85. **Dringenberg, H.C.** (2020) The history of long-term potentiation as a memory mechanism: controversies, confirmation, and some important lessons to remember. *Hippocampus*, 30, 987-1012.
86. Lo, E.B.L., Laferriere, L.J.C., Stewart, M.R., Milanovic, M., Kinney, M., Bowie, C.R., and **Dringenberg, H.C.** (2021) Does napping enhance the consolidation of clinically relevant information? A comparison of individuals with low and elevated depressive symptoms. *Nature and Science of Sleep*, 2021:13 141-152.
87. Soutar, C.N., Grenier, P., Patel, A., Kabitsis, P.P., Olmstead, M.C., Bailey, C.D.C., and **Dringenberg, H.C.** (2022) Brain-generated 17  $\beta$ -estradiol modulates long-term synaptic plasticity in the primary auditory cortex of adult male rats. *Cerebral Cortex*, 32, 2140-2155.
88. Dastgheib, M., Kulanayagam, A., and **Dringenberg, H.C.** (2022) Is the role of sleep in memory consolidation overrated? *Neurosci. Biobehav. Rev.* 140:104799. <https://doi.org/10.1016/j.neubiorev.2022.104799>
89. Fudge, J.E., Peterson, E.T., Koe, S.-L.M., **Dringenberg, H.C.** The impact of lunch timing on nap quality. *Nat. Sci. Sleep*, under review (submitted Dec. 27, 2023).

**Book Chapters:**

90. Beninger, R.J., **Dringenberg, H.C.**, Boegman, R.J., and Jhamandas, K. (2000) Cognitive effects of neurotoxic lesions of the nucleus basalis magnocellularis in rats: Differential roles for corticopetal versus amygdalopetal projections. In: Palomo, T., Beninger, R.J. and Archer, T. (eds.). *Neurodegenerative Brain Disorders*. Editorial Sintesis: Madrid, pp. 315-331.
91. **Dringenberg, H.C.**, and Kuo, M.-C. (2006) Cholinergic, histaminergic, and noradrenergic regulation of LTP stability and induction threshold: cognitive implications. In: Levin, E.D., Butcher, L, and Decker, M. (eds.). *Neurotransmitter Interactions and Cognitive Function*. Birkhäuser, Boston, pp. 165-183 (EXS 98:165-183).
92. **Dringenberg, H.C.** (2019) Preface: Sleep research in the 21 century — advances and challenges. In: Dringenberg, H.C. (ed.). *Handbook of Sleep Research*. Academic Press/Elsevier, p xvii.
93. **Dringenberg, H.C.** (2019) Sleep and memory consolidation: conceptual and methodological challenges. In: Dringenberg, H.C. (ed.). *Handbook of Sleep Research*. Academic Press/Elsevier, pp. 489-501.
94. **Dringenberg, H.C.** Foreword: Rick Beninger: Canadian neuroscientist, colleague, and friend. In: Beninger, R.J. *Finding Life's Rewards: Memoir of a Behavioral Neuroscientist*. In preparation.

## Invited Talks:

- “Sleep: Why Bother?”, Invited Lunch & Learn Presentation, Neugeneration, Queen’s University, Kingston, Ont., Feb. 28, 2023
- “Consolidation Mechanisms Are Active During Wake and Sleep”, Invited Presentation for the Symposium “Why the role of sleep in memory consolidation is overrated”, World Sleep Congress, Vancouver, BC, Sep. 25, 2019.
- “Gating of visual cortex plasticity by acetylcholine, monoamines, and visual experience”, Invited Seminar, Dept. of Biomedical Sciences, University of Guelph, Ont., Apr. 26, 2019.
- “Plasticity and Metaplasticity of the Rodent Primary Visual Cortex”, Invited Seminar, Groupe de Recherche En Science de la Vision, École d’optométrie, Université de Montréal, Montreal, Quebec, Apr. 8, 2019.
- “Boosting Neuroplasticity to Enhance Brain and Behavioural Recovery”, Invited Speaker at the Conference “Innovation in Brain Injury: Leading a World of Change”, Ontario Brain Injury Association (OBIA) & PIA Law, The Ritz-Carlton, Toronto, Ont., Sep. 20, 2018.
- “Neuroplasticity: History, Concepts, and Mechanisms”, Invited Lecture at the Conference “Working with Traumatic Brain Injury: Voices from the Field”, Science North, Vale Cavern, Sudbury, Ont., Oct. 25, 2017.
- “Brain plasticity and memory”, Invited Speaker, NeuGeneration Conference on Neuroscience, Queen’s University, Kingston, Ont., Feb. 11-12, 2017.
- “Activation, plasticity, and metaplasticity of the mammalian neocortex”, Invited Seminar, Neuroscience Program, Schulich School of Medicine & Dentistry, Western University, London, Ont., May 25, 2016.
- “Neuromodulation, Plasticity, and Metaplasticity of the Rodent Visual Cortex”, Invited Seminar, Dept. of Psychology, University of Alberta, Edmonton, Alberta, April 8, 2015.
- “The Plastic Brain”, Invited Lecture in the Lecture Series “Tomorrow’s World”, Bluewater Association for Lifelong Learning, Owen Sound, Ont., March 26, 2015.
- “Plasticity and metaplasticity of the mammalian sensory cortex”, Invited “Meeting of the Minds” Seminar, McMaster University, Hamilton, Ont., June 20, 2014.
- “Plasticity of the developing and mature brain: synapses, circuits, and neurochemical regulation”, Clinical Neuroscience Grand Rounds, Kingston General Hospital, Kingston, Ont., Jan. 19, 2012.
- “Plasticity in the developing and mature thalamocortical auditory system: electrophysiological and pharmacological investigations”, Department of Pharmacology & Toxicology, Queen’s University, Kingston, Ont., Dec. 5, 2011.
- “Reinstatement of juvenile-like plasticity in the mature rat auditory cortex”, Presentation for the Symposium “Recent advances in synaptic plasticity research: Implications for development, learning, and neuropathology” Annual Meeting of the Canadian Society for Brain, Behaviour, and Cognitive Science, University of Manitoba, Winnipeg, Manitoba, June 24-26, 2011.
- “Plasticity and metaplasticity of the rat primary visual cortex”, Invited Seminar, Centre for Vision Research, York University, Toronto, Ontario, March 25, 2011.

- "Amplification of cortical synaptic plasticity by the amygdala, acetylcholine, and "arousal", Invited Presentation at the Conference "Memory and the Brain: Basic Mechanisms and Clinical Implications", Center for the Neurobiology of Learning and Memory, University of California Irvine, Irvine, CA, March 11-14, 2006.
- "Amplification of cortical synaptic plasticity by subcortical neurotransmitter inputs and "arousal", Invited Seminar, Centre for Neuroscience Studies, Queen's University, Kingston, Ont., Jan. 11, 2006.
- "Combined monoaminergic-cholinergic enhancement for the effective restoration of cortical activation: evidence from EEG studies in rats", Invited Presentation for the Symposium "Novel pharmacological approaches to dementia treatment: how rats inform the clinic", 28<sup>th</sup> Annual Meeting of the Canadian College of Neuropsychopharmacology, The Fairmont Newfoundland Hotel, St. John's, Newfoundland, July 2-5, 2005.
- "Activation and plasticity of the rat neocortex", Invited Seminar in the Departments of Physiology & Biophysics and Anatomy & Neurobiology, Dalhousie University, Halifax, Nova Scotia, May 27, 2004.
- "Activation and plasticity of the adult neocortex *in vivo*", Invited Seminar in the Department of Pharmacology & Toxicology, Queen's University, Kingston, Ont., Nov. 3, 2003
- "Electrophysiology and behavior: from Western to the present", Invited Neuroscience Seminar, University of Western Ontario, London, Ont., Oct. 1, 2001.
- University of California, Irvine Workshop on "Amygdala Interactions with other Brain Regions in Learning". Invited participant and presentation on "Amygdala/Thalamic, Basalis Interactions", UC Irvine, Feb. 17-18, 2001.
- "Cholinergic-serotonergic control of neocortical electrical activity and behavior: implication for age-related dementia in humans", Invited Neuroscience Symposium, University of Alberta, Edmonton, Alberta, Dec. 7, 2000.
- "Joint cholinergic-serotonergic control of cortical activation and cognition in rats: implications for human dementia?". Invited Seminar in the Department of Anatomy and Neurobiology, Dalhousie University, Halifax, Nov. 20, 2000.
- "Neocortical activation in rats: neurotransmitters, relation to behavior, and models of human dementia", Invited talk at the Department of Psychology and Neuroscience, University of Lethbridge, Feb. 23, 2000.
- "The basal forebrain cholinergic system: direct cortical activator and mediator of activation induced by excitation of secondary brain systems", Invited presentation, Internet World Congress on Biomedical Sciences '98 (INABIS 1998). McMaster University. <http://www.mcmaster.ca/inabis98/SAdringerberg0136>.
- "New concepts in neocortical activation: contributions of direct and indirect pathways", Invited presentation, 18th Low Countries Meeting in Behavioral Neuroscience, Düsseldorf, Germany, 18:7, 1997.
- "Neocortical activation: the central role of the cholinergic and serotonergic systems", Invited presentation, The Vanderwolf Festschrift Symposium, Kananaskis Guest Ranch, Alberta, Canada, 1996.

## Conference poster presentations:

### **Canadian Society for Brain, Behaviour, and Cognitive Science (CSBBCS), University of Guelph, Ont., July 17-19, 2023:**

Goldring, L., Fudge, J., Alexandra, A., Wammes, J.D., Dringenberg, H.C. Napping and statistical learning consolidation: A pilot study.

### **Canadian Society for Brain, Behaviour, and Cognitive Science (CSBBCS), Halifax, NS, July 18-20, 2022:**

Tigchelaar, S, Dringenberg, H.C. Sleep and dreaming during a pandemic.

Fudge, J., Peterson, E., Koe, S.-L., Dringenberg, H. Impact of lunch timing on nap quality.

### **Southern Ontario Neuroscience Association (SONA), University of Toronto, Ontario, May 27, 2022:**

Fudge, J., Peterson, E., Koe, S.-L., Dringenberg, H. Impact of lunch timing on nap quality: preliminary results.

### **Society for Neuroscience, Annual Meeting, Chicago, IL, Oct. 19-23, 2019:**

Soutar, C.N., Grenier, P.G., Olmstead, M.C., Bailey, C.D.C., Dringenberg, H.C. Modulation of long-term synaptic plasticity by 17 $\beta$ -estradiol in the rat primary auditory cortex.

### **Canadian Society for Brain, Behaviour, and Cognitive Science (CSBBCS), University of Waterloo, Waterloo, Ont., June 7-9, 2019:**

Dastgheib, M., Kulanayagam, A., Legro, L., Stewart, M., Dringenberg, H.C. The effects of self-guided meditation and napping on non-declarative and declarative memory consolidation

Lo, E., Laferriere, L.J.C., Stewart, M.R., Milanovic, M., Kinney, M., Bowie, C.R., Dringenberg, H.C. The role of napping in consolidating clinically-relevant information in healthy and depressed participants

### **Neuroscience Research Day, University of Guelph, May 1, 2019:**

Soutar, C.N., Grenier, P.G., Olmstead, M.C., Bailey, C.D.C., Dringenberg, H.C. Modulation of long-term synaptic plasticity by 17 $\beta$ -estradiol in the rat A1.

### **Canadian Association for Neuroscience (CAN), Vancouver, B.C., May 13-16, 2018:**

Soutar, C.N., Grenier, P., Olmstead, M.C., Dringenberg, H.C. Aromatase expression in the neocortex of adult male rats.

### **Southern Ontario Neuroscience Association (SONA), University of Guelph, Guelph, Ontario, May 4, 2018:**

Stewart, M.R., Dringenberg, H.C. Potential role of synaptic activity in inhibit LTP induction in rat visual cortex.

Laferriere, L.J.C., Lo, E., Milanovic, M., Kinney, M., Bowie, C.R., Dringenberg, H.C. The impact of napping on the consolidation of clinically-relevant information: a comparison of depressed and healthy individuals.

Legro, L., Dringenberg, H.C., Stewart, M., Dastgheib, M. The effects of self-guided meditation and napping on memory consolidation.

Soutar, C.N., Grenier, P., Olmstead, M.C., Dringenberg, H.C. Aromatase expression in the neocortex of adult male rats.

**Canadian Association for Neuroscience (CAN), Montreal, Quebec, May 28-31, 2017:**

Ou, C., Dringenberg, H.C. Examining sex differences in anxiety-related behavior and hippocampal theta activity in rats.

Soutar, C.N., McLagan, S.L., Dringenberg, H.C. Differential effects of local aromatase inhibition on hippocampal theta oscillations in male and female rats.

Lee, K, Dringenberg, H.C. Serotonergic (5-HT) receptors modulate the induction of long-term potentiation in the rat thalamocortical auditory system.

**NeuroRetreat, Centre for Neuroscience Studies, Queen's University, Kingston, Ont., Sep. 9, 2016:**

Ou, C., Dringenberg, H.C. Examining differences in hippocampal theta in relation to anxiety.

**14<sup>th</sup> Meeting of the Asian-Pacific Society for Neurochemistry, Kuala Lumpur, Malaysia, Aug. 27-30, 2016:**

Hassan, Z., Suhaimi, F., Dringenberg, H.C., Muller, C.P. Impaired water maze learning and hippocampal long-term potentiation after mitragynine (Kratom) treatment in rats.

Front. Cell. Neurosci. Conference Abstract: 14<sup>th</sup> Meeting of the Asian-Pacific Society for Neurochemistry. doi: 10.3389/conf.fncel.2016.36.00058

**Society for Neuroscience, Annual Meeting, Chicago, IL, Oct. 17-21, 2015:**

Soutar, C.N., Rodier, S.G., Chee, S.-S.A, Pun, N., Dringenberg, H.C. Gating of synaptic plasticity in the rodent primary auditory cortex by 17 $\beta$ -estradiol.

**Southern Ontario Neuroscience Association (SONA), McMaster University, Hamilton, Ontario, May 1, 2015:**

Clark, E.L., Kabitsis, P., Dringenberg, H.C. Role of the NMDA-2B Receptor Subunit in Spatial Reversal Learning.

Soutar, C.N., Rodier, S.G., Chee, S.-S.A, Pun, N., Dringenberg, H.C. 17 $\beta$ -estradiol is a modulator of synaptic plasticity in the auditory cortex of male rats.

Gagolewicz, P., Dringenberg, H.C. 5-HT<sub>1A</sub> receptor-dependent modulation of LTP in visual cortex of adult rats *in vivo*.

**Canadian Association for Neuroscience (CAN), Montreal, Quebec., May 25-28, 2014:**

Hassan Z., Damodaran, T., Navaratnam, V., Dringenberg, H.C, Muller, C. The development of a rat model of chronic cerebral ischemia: effects on motor and cognitive functions.

Chee, S.-S.A., Menard, J.L., Dringenberg, H.C. Behavioral anxiolysis without reduction of hippocampal theta frequency after histamine application in the lateral septum of rats.

Soutar, C.N., Rodier, S., Wilkin, M., Menad, J., Dringenberg, H.C. Role of Early Acoustic Experience in Development of the Rat Primary Auditory Cortex.

**Canadian Association for Neuroscience (CAN), Toronto, Ont., May 21-24, 2013:**

Gagolewicz, P., Dringenberg, H.C. Acute Exogenous Serotonin Application Does Not Affect Adult Rat V1 LTP In Vivo.

Rosen, L.G., Soutar, C.N., Dringenberg, H.C. Sensory deprivation alters properties of short- and long-term plasticity in the rat central auditory system.

Dringenberg, H.C., Branfield Day, L., Choi, D. Failure of Chronic Fluoxetine Treatment to Enhance Plasticity in the Auditory Cortex (A1) of Mature Rats.

**Society for Neuroscience, Annual Meeting, New Orleans, LA, Oct. 13-17, 2012:**

Hager, A.M., Dringenberg, H.C. Role of thalamic vs. cortical NMDA receptors in LTP in the primary visual cortex: shift to a cortical mechanism by visual discrimination training of adult rats.

**Canadian Society for Brain, Behaviour, and Cognitive Science (CSBBCS), Queen's University, Kingston, Ont., June 7-9, 2012:**

Hager, A.M., Dringenberg, H.C. NR2B-subunit dependent plasticity enhancement in the trained hemisphere of adult rats following monocular visual discrimination learning.

Gagolewicz, P., Dumont, E., Dringenberg, H.C. NR2B-subunit changes in V1 layer II/III neurons following visual discrimination training of adult rats.

Rosen, L.G., Dringenberg, H.C. Cortical zinc application restores developmentally-dependent declines in plasticity of the rat primary auditory cortex.

Kuo, M.-C., Dringenberg, H.C. Comparison of Synaptic Plasticity in the Monocular and Binocular Segments of the Rat Primary Visual Cortex.

**Canadian Association for Neuroscience (CAN), Quebec City, Quebec, May 29-June 1, 2011:**

Hogsden, J., Rosen, L., Dringenberg, H.C. Pharmacological and deprivation-induced reinstatement of juvenile-like long-term potentiation in the primary auditory cortex of adult rats.

Gagolewicz, P., Dringenberg, H.C. NR2B-subunit dependent facilitation of LTP in V1 following visual discrimination training of adult rats.

Tsui, C., Dringenberg, H.C. The effect of muscarinic receptor blockade (scopolamine) on visual discrimination performance in rats.

Hager, A., Dringenberg, H.C. Selective plasticity enhancement in the trained hemisphere following monocular visual discrimination learning in rats.



**Canadian Spring Conference for Behaviour and Brain, Fernie, B.C., Feb. 18-20, 2010:**

Hager, A., Dringenberg, H.C. The elasticity of plasticity in V1 following visual discrimination training. Part I.

Gagolewicz, P., Dringenberg, H.C. The elasticity of plasticity in V1 following visual discrimination training.  
Part II.

Dringenberg, H.C. I can't hear you! Patterned sound regulates developmental plasticity in rat primary auditory cortex.

Habib, D., Dringenberg, H.C. Low-frequency-induced synaptic potentiation: A paradigm shift in the field of memory-related plasticity mechanisms?

Tsui, C., Dringenberg, H.C. The scare from predator hair helps rats remember where!

**Society for Neuroscience, Annual Meeting, Washington, DC, Nov. 15-19, 2008:**

Hager, A.M., Dringenberg, H.C. Facilitation of evoked potentials and LTP in V1 of adult rats following visual discrimination training.

Kuo, M.-C., Dringenberg, H.C. Rapid Decrease of Induction Threshold for Long-Term Potentiation in Adult Rat Visual Cortex following Brief (2-5 Hours) Periods of Dark Exposure.

Gagolewicz, P.J., Dringenberg, H.C. Preferential potentiation of weaker inputs to primary visual cortex by activation of the basal forebrain in urethane anesthetized rats.

Hogsden, J.L., Dringenberg, H.C. NR2B subunit-dependent maintenance of juvenile-like long-term potentiation in the thalamocortical auditory system of rats following auditory deprivation.

**Canadian Society for Brain, Behavior, and Cognitive Science (CSBBCS), University of Western Ontario, London, Ont., June 19-21, 2008:**

Hager, A., Dringenberg, H.C. Training-induced plasticity in the visual cortex of adult rats following visual discrimination learning.

Habib, D., Dringenberg, H.C. NMDA-dependent synaptic enhancement by low-frequency stimulation of converging septal and hippocampal fibers: A novel form of hippocampal synaptic plasticity.

Kuo, M.-C., Dringenberg, H.C. Dark Exposure Lowers the Induction Threshold for Long-term Potentiation in the Adult Primary Visual Cortex of Anesthetized Rats.

Hogsden, J.L., Dringenberg, H.C. Plastic properties of the thalamocortical auditory system of rats at different ages and following sensory deprivation during early postnatal life.

**Annual Neuroscience Research Day, Queen's University, Kingston, Ont., Sep. 26, 2007:**

Hager, A., and Dringenberg, H.C. Training-induced plasticity in the visual cortex of adult rats following visual discrimination learning.

Habib, D., and Dringenberg, H.C. Synaptic enhancement by converging septal and hippocampal fibers: a novel form of hippocampal synaptic plasticity.

Hogsden, J.L., and Dringenberg, H.C. The plastic properties of the thalamocortical auditory system of rats at different ages and following sensory deprivation during early postnatal life.

Gagolewicz, P.J., and Dringenberg, H.C. Preferential potentiation of weaker inputs to primary visual cortex by activation of the basal forebrain in urethane anesthetized rats.

**Society for Neuroscience, Annual Meeting, San Diego, CA, Nov. 3-7, 2007:**

Habib, D., and Dringenberg, H.C. Synaptic enhancement by converging septal and hippocampal fibers: a novel form of hippocampal synaptic plasticity.

Kuo, M.-C., Rasmusson, D.D., and Dringenberg, H.C. Endogenous acetylcholine release preferentially enhances weak inputs to primary sensory cortex of anesthetized rats.

**Annual Meeting, Research Society on Alcoholism, Hyatt Regency, Chicago, ILL., July 7-12, 2007:**

McAdam, T.D., Dringenberg, H.C., Brien, J.F., and Reynolds, J.N. Chronic prenatal ethanol exposure enhances thigmotaxis behaviour in adult offspring: Lack of effect of postnatal treatment with fluoxetine.

**Society for Neuroscience, Annual Meeting, Atlanta, GA, Oct. 14-18, 2006:**

Speechley, W.J., and Dringenberg, H.C. Continuous white noise exposure during and after auditory critical period alters *in vivo* bi-directional auditory cortex plasticity in rats.

**Annual Neuroscience Research Day, Queen's University, Kingston, Ont., Sep. 26, 2006:**

Habib, D., and Dringenberg, H.C. Synaptic enhancement by converging septal and hippocampal fibers: an innovative model of hippocampal synaptic plasticity.

**Conference "Memory and the Brain: Basic Mechanisms and Clinical Implications", Center for the Neurobiology of Learning and Memory, University of California Irvine, Irvine, CA, March 11-14, 2006.**

Habib, D., and Dringenberg, H.C. Synaptic potentiation by converging septal and hippocampal fibers.

Oliveira, D., and Dringenberg, H.C. Hippocampal long-term potentiation in the presence of an aversive predatory stimulus (cat hair).

**Society for Neuroscience, Annual Meeting, Washington, DC, Nov. 12-16, 2005:**

Kuo, M.-C., and Dringenberg, H.C. Histamine facilitates thalamocortical long-term potentiation in the mature visual cortex of rats.

**Canadian Society for Brain, Behavior, and Cognitive Science (CSBBCS), Universite de Montreal, Montreal, Quebec, July 14-17, 2005:**

Pohl, J., Paine, T.A., Olmstead, M.C., and Dringenberg, H.C. Effects of chronic cocaine exposure on synaptic plasticity in adult and adolescent rats.

Speechley, W., and Dringenberg, H.C. Bi-directional plasticity of the auditory thalamo-cortical system of adult rats in vivo.

McAdam, T., Dringenberg, H.C., Brien, J.F., and Reynolds, J.N. Postnatal fluoxetine treatment does not restore deficits in cognitive function and hippocampal plasticity in the guinea pig induced by chronic prenatal ethanol exposure.

Kuo, M.-C., and Dringenberg, H.C. Enhancement of thalamocortical long-term potentiation by histamine.

**Society for Neuroscience, Annual Meeting, San Diego, CA, 2004:**

Paine, T.A., McKelvie, B., Dringenberg, H.C., and Olmstead, M.C. Chronic Cocaine Impairs Reversal Learning in the Attentional Set-Shifting Paradigm.

Iqbal, U., Rikhy, S., Dringenberg, H.C., Brien, J.F., and Reynolds, J.N. Spatial learning deficits induced by chronic prenatal ethanol exposure can be overcome by behavioral enrichment.

**Canadian College of Neuropsychopharmacology, Queen's University, Kingston, Ont., May 29-June 1, 2004:**

Brien, J.F., Reynolds, J.N., and Dringenberg, H.C. Fetal alcohol syndrome: brain injury mechanisms and innovative therapeutic approaches.

**Canadian Society for Brain, Behavior, and Cognitive Science (CSBBCS), Memorial University, St. John's, Newfoundland, June 12-14, 2005**

Kuo, M.-C., Hamze, B., Wilson, A., Dringenberg, H.C. Enhancement of thalamocortical long-term potentiation by the cortical activators acetylcholine and histamine.

**Society for Neuroscience, 2003:**

Reynolds, J.N., Hayward, M.L., Martin, A.E., Brien, J.F., Dringenberg, H.C., Olmstead, M.C. Chronic prenatal ethanol exposure impairs conditioned responding and enhances GABA release in the hippocampus of the adult guinea pig.

**Canadian Society for Brain, Behavior, and Cognitive Science (CSBBCS), McMaster University, Hamilton, Ont., June 12-14, 2003:**

Paquette, J.J., Park, R.S., Dringenberg, H.C., and Olmstead, M.C. Caffeine decreases scopolamine-induced spatial memory impairments.

Dringenberg, H., Yahia, N., Cirasuolo, J., McKee, D., Kuo, M.-C. Neocortical activation by electrical and chemical stimulation of the rat inferior colliculus: intra-collicular mapping and neuropharmacological characterization.

Dringenberg, H.C., Kuo, M.-C., and Tomaszek, S. Stabilization of increased synaptic strength in the rat neocortex by the basal amygdala.

**Developmental Neuroscience Research Day, Center for Neuroscience Studies, Queen's University, Kingston, Ont., Feb. 19, 2003:**

Dringenberg, H.C. Fetal alcohol syndrome-brain injury: roles of the glutamate and GABA signaling systems in the cerebral cortex and hippocampus.

**Society for Neuroscience, 2002:**

Dringenberg, H.C., and Kuo, M.-C. Histamine promotes neocortical ECoG activation by an action in the basal forebrain and cortex.

**Research Society on Alcoholism Meeting, San Francisco, June 2002:**

Byrnes, M.L., Richardson, D.P., Brien, J.F., Dringenberg, H.C., and Reynolds, J.N. Chronic prenatal exposure to ethanol increases the sensitivity of the adult guinea pig brain to acute ethanol exposure.

Richardson, D.P., Dringenberg, H.C., Brien, J.F., and Reynolds, J.N. Differential effects of ethanol on electrically-stimulated release of glutamate and GABA in the adult guinea pig hippocampus.

Butters, N.S., Reynolds, J.N., Dringenberg, H.C., and Brien, J.F. Effects of chronic prenatal ethanol exposure on glutamate release and cGMP accumulation in the hippocampus of the neonatal guinea pig.

Ipbal, U., Dringenberg H.C., Brien, J.F., and Reynolds, J.N. Chronic prenatal ethanol exposure alters spatial learning and hippocampal GABA-A receptor subunit expression in the guinea pig.

**Society for Neuroscience, Annual Meeting, San Diego, CA, 2001:**

Byrnes, M.L., Richardson, D.P., Reynolds, J.N., Brien, J.F., and Dringenberg, H.C. Impaired water maze acquisition and hippocampal long-term potentiation after chronic prenatal ethanol exposure in the guinea pig.

Dringenberg, H.C., Smith, S., Poklewska-Koziell, M., Boegman R.J., Thatcher, G.R.J., and Reynolds, J.N. A novel nitrate ester protects dopaminergic neurons in the rat substantia nigra against 6-hydroxydopamine toxicity.

**Research Society on Alcoholism Meeting, Montreal, Quebec, July 2001:**

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