

CURRICULUM VITAE

Hans Christian Dringenberg, Ph.D.

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Birth place: Bochum, Germany

Birth date: April 18, 1964

Citizenship: Canadian

Education: Abitur-Reifezeugnis 1985

Positions:

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)

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!"

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	

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 Behavioural Neuroscience*. 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. *Journal of Experimental Psychology: Animal Behavior Processes*, 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. *Journal of Experimental Psychology: Animal Behavior Processes*, 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. *Journal of Experimental Psychology: Animal Behavior Processes*, 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. *Journal of Experimental Psychology: Animal Behavior Processes*, 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. *Journal of Experimental Psychology: Animal Behavior Processes*, 48:113-125.
6. Sutherland, R.J., **Dringenberg, H.C.**, and Hoelsing, J.M. (1993) Induction of long-term

8. **Dringenberg, H.C.**, and Vanderwolf, C.H. (1994) Transcallosal evoked potentials: behavior-dependent modulation by muscarinic and serotonergic receptors. *Neuroscience Letters*, 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. *Behavioral Brain Research*, 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. *Neuroscience Letters*, 36:285-292.
11. **Dringenberg, H.C.**,

histamine H1 receptor blockade.

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. 96:161-172.
20. **Dringenberg, H.C.**, and Vanderwolf, C.H. (1998) Involvement of direct and indirect pathways in electrocorticographic activation.

learning in the guinea pig: cued vs. non-cued learning, sex differences, and comparison with rats. 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. 12:2395-2398.
31. **Dringenberg, H.C.**, and Diavolitsis, P. (2002) Electroencephalographic activation by fluoxetine in rats: role of 5-HT_{1A} receptors and enhancement of concurrent acetylcholinesterase inhibitor treatment. 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. 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. 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. 964:31-41.
35. **Dringenberg, H.C.**, and Olmstead, M.C. (2003) Integrated contributions of basal forebrain and thalamus to learning. *Q. J. Exp. Psychol. B* 56:1-12. doi:10.1080/027474702759812002

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. 154:461-469.
41. Iqbal, U., **Dringenberg, H.C.**, Brien, J.F., and Reynolds, J.N. (2004) Chronic prenatal ethanol exposure alters hippocampal GABA_A receptors and impairs spatial learning in the guinea pig.

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 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. 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, 24:3090-3096.
75. Chee, S.-S.A., Menard, J.L., and **Dringenberg, H.C.** (2015) The lateral septum as a regulator of hippocampal theta oscillations and defensive behaviour in rats. 113:1831-1841.
- 76.

80. Stewart, M.R., and

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.). . Editorial Sintesis: Madrid, pp. 315-331.
91. **Dringenberg, H.C.**, and Kuo, M.-C. (2006) Cholinergic, histaminergic, and noradrenergic

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-

"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,

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.

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:

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

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

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

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:

Byrnes, M.L., Reynolds, J.N., Dringenberg, H.C., Brien, J.F. Behavioural, morphological and neurochemical assessment of prenatal brain growth spurt ethanol exposure in the guinea pig.

Society for Neuroscience, 2000:

