Jimmie Gmaz
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Current position

2021-ongoing **Research Associate, Department of Bioengineering**
Imperial College London, UK
Research topic: Cortical and subcortical contributions to motor control
Supervisor: Dr. Juan Gallego

Education

2015-2021 **PhD, Psychological and Brain Sciences**
Dartmouth College, Hanover, New Hampshire
Thesis: Dynamic coding of motivationally-relevant information in the rodent nucleus accumbens
Supervisor: Dr. Matthijs van der Meer

2013-2015* **PhD student, Biology**
University of Waterloo, Waterloo, Ontario
Research topic: Persistent coding of outcome-predictive cue features in the rat nucleus accumbens
Supervisor: Dr. Matthijs van der Meer
*Dr. van der Meer relocated the lab from University of Waterloo to Dartmouth

2011-2013 **MSc, Behavioural Neuroscience**
Wilfrid Laurier University, Waterloo, Ontario
Thesis: The effects of toluene on inhibitory synaptic transmission in the cerebellar cortex
Supervisor: Dr. Bruce McKay

2007-2011 **BSc, Psychology (Honours, minors in Biology and Chemistry)**
Wilfrid Laurier University, Waterloo, Ontario
Thesis: Modulation of synaptic transmission at the perforant path-dentate gyrus synapse
Supervisor: Dr. Bruce McKay

Additional Training

July 2024 Crick Innovation Challenge by Crick Science Entrepreneur Network
February 2024 NeuroTech Commercialization Workshop by University of Minnesota
September 2023 Cleveland NeuroDesign Entrepreneurs Workshop by Case Western
March 2023 Resilient Leadership in Action by Resilient Leaders Elements
July 2020 Course in Computational Neuroscience by Neuromatch Academy

Publications

Gmaz, J.M., Keller, J.A., Dudman, J.T., and Gallego, J.A. (2024) Integrating across behaviors and timescales to understand the neural control of movement. Current Opinion in Neurobiology, 85, 102843.

Gmaz, J.M., and van der Meer, M.A.A. (2022) Context coding in the mouse nucleus accumbens modulates motivationally relevant information. PLoS Biology, 20(4), e3001338.

Gmaz, J.M., Carmichael, J.E., and van der Meer, M.A.A. (2018) Persistent coding of outcome-predictive cue features in the rat nucleus accumbens. eLife, 7, e37275.

Carmichael, J.E., Gmaz, J.M., and van der Meer, M.A.A. (2017) Gamma oscillations in the rat ventral striatum originate in the piriform cortex. Journal of Neuroscience, 37(33), 7692-7974.

Gmaz, J.M., and McKay, B.E. (2014) Toluene decreases Purkinje cell output by enhancing inhibitory synaptic transmission in the cerebellar cortex. Neuroscience Letters, 560, 1-6.

Gmaz, J.M., Yang, L., Ahrari, A., and McKay, B.E. (2012) Binge inhalation of toluene vapor produces dissociable motor and cognitive dysfunction in water maze tasks. Behavioural Pharmacology, 23(7), 669-677.

Gmaz, J.M., Matthews, B.A., and McKay, B.E. (2012) Toluene inhalation modulates dentate gyrus granule cell output in vivo. Neurotoxicology and Teratology, 34(4), 403-412.

Perit, K.E., Gmaz, J.M., Browne, J.D.C., Matthews, B.A., Dunn, M.B.F., Yang, L., Raaphorst, T., Mallet, P.E., and McKay, B.E. (2012) Distribution of c-Fos immunoreactivity in the rat brain following abuse-like toluene vapor inhalation. Neurotoxicology and Teratology, 34(1), 37-46.

Pre-prints

van der Meer, M.A.A., Gmaz, J.M., and Carmichael, J.E. (2019) A comprehensive characterization of rhythmic spiking activity in the rat ventral striatum. bioRxiv, 617233.

Conference Posters

Fortunato, C., Safaie, M., Gallego-Cerrado, C., Kawakita, G., Gmaz, J.M., and Gallego, J. (2023) Nonlinear neural manifolds underlie naturalistic behaviors. Society for Neuroscience annual meeting 2023.

Kundu, A., Gmaz, J.M., Avrillon, S., Varghese, R., Grison, A., and Farina, D. (2023) A platform to elicit and record intramuscular EMG signals from anesthetized mice. International IEEE EMBS Conference on Neural Engineering 2023.

Gmaz, J.M., and van der Meer, M.A.A. (2022) Context coding in the mouse nucleus accumbens modulates motivationally relevant information, Neural Control of Movement annual meeting 2022.

Gmaz, J.M., and van der Meer, M.A.A. (2021) Contextual gating of motivationally-relevant stimuli in the mouse nucleus accumbens. Society for Neuroscience annual meeting 2021.

Gmaz, J.M., Carmichael, J.E., and van der Meer, M.A.A. (2019) Dynamic spike-field relationships in the rat nucleus accumbens. Society for Neuroscience annual meeting 2019.

van der Meer, M.A.A., Gmaz, J.M., and Carmichael, J.E. (2019) A comprehensive characterization of rhythmic spiking activity in the rat ventral striatum. Society for Neuroscience annual meeting 2019.

Gmaz, J.M., Carmichael, J.E., and van der Meer, M.A.A. (2016) Neural coding for distinct sets of reward-predictive cues in the rat ventral striatum. Society for Neuroscience annual meeting 2016.

Carmichael, J.E., Gmaz, J.M., and van der Meer, M.A.A. (2015) Unilateral naris occlusion effectively abolishes gamma oscillations in the rat ventral striatum. Society for Neuroscience annual meeting 2015.

Gmaz, J.M., and McKay, B.E. (2013) The effects of toluene on inhibitory synaptic transmission in the cerebellar cortex. Canadian Association for Neuroscience (CAN) annual meeting 2013.

Gmaz, J.M., Yang, L., Ahrari, A., and McKay, B.E. (2012) Binge inhalation of toluene vapor produces dissociable motor and cognitive dysfunction in water maze tasks. Southern Ontario Neuroscience Association (SONA) annual meeting 2012.

Gmaz, J.M., Gheidi, A., Browne, C., Matthews, B., Dunn, M.B.F., Marrone, D.F., and McKay, B.E. (2011) The abused psychoactive inhalant toluene modulates synaptic transmission but not place cell activation in the rat hippocampus. CAN 2011.

Perit, K.E., Browne, C., Gmaz, J.M., Matthews, B.A., Dunn, M.B.F., Raaphorst, T., Mallet, P.E., and McKay, B.E. (2011) Toluene inhalation evokes widespread c-Fos expression in the adult rat brain. CAN 2011.

Gmaz, J.M., Matthews, B., and McKay, B.E. (2011) The psychoactive inhalant toluene disrupts synaptic transmission at perforant path – dentate gyrus synapses in the anesthetized rat in vivo. SONA 2011.

Warwick, M.C., Gmaz, J.M., and McKay, B.E. (2010) The psychoactive solvent toluene attenuates perforant path – dentate gyrus synaptic transmission in the rat. SONA 2010.

Teaching Experience

Summer 2019	Neural Systems and Behavior course, Marine Biological Laboratories. Teaching assistant for mouse striatum module.
Fall 2017	Psych 24: Abnormal Psychology, Dartmouth College. Teaching assistant
Fall 2016	Psych 65: Systems Neuroscience, Dartmouth College. Lab instructor
Spring 2016	Psych 65: Systems Neuroscience, Dartmouth College. Lab instructor
Fall 2015	Psych 65: Systems Neuroscience, Dartmouth College. Lab instructor
Winter 2013	PS601: Behavioural Statistics II, Wilfrid Laurier University. Teaching assistant
Fall 2012	PS295: Introduction to Research Methods, Wilfrid Laurier University. Lab instructor
	PS600: Behavioural Statistics I, Wilfrid Laurier University. Teaching assistant
Winter 2012	PS296: Introduction to Statistics, Wilfrid Laurier University. Lab instructor
Fall 2011	PS263: Introduction to Biopsychology, Wilfrid Laurier University. Teaching assistant
	PS268: Drugs and Behaviour, Wilfrid Laurier University. Teaching assistant

Awards

2013-2016	Alexander Graham Bell Canada Graduate Scholarship
2013	Medal for Academic Excellence at Master's level for Faculty of Science at Fall 2013 convocation
2012-2013	Ontario Graduate Scholarship & Dean's Graduate Scholarship
2011-2012	Ontario Graduate Scholarship & Dean's Graduate Scholarship