

Emma Louth

PhD Candidate, Biomedical Sciences with Neuroscience at University of Guelph

Guelph, ON, CA

Emma Louth's research interests are focused on the neural mechanisms of attention deficits associated with Fetal Alcohol Spectrum Disorders

Biography

Emma Louth is a PhD Candidate at the University of Guelph studying the effects of developmental ethanol exposure on attention behaviour and attentional networks in the brain. She completed her BScH in May 2013 in Biomedical Sciences at the University of Guelph and began graduate school in September of 2013. She is expecting to complete her PhD by the end of 2017. Following her PhD, Emma hopes to continue on to postdoctoral research in the field of neuroscience.

Her current work uses an animal model to assess the effects of developmental ethanol exposure on neurons within the prefrontal cortex. She uses a technique called electrophysiology to analyze nicotinic acetylcholine receptor function, AMPA receptor function and basic electrophysiological properties of neurons within the prefrontal cortex. An example of this work can be found in the Society for Neuroscience journal eNeuro (see Articles for link) where she found that mice exposed to ethanol during development exhibited altered basic electrophysiological properties and altered nicotinic and AMPA receptor function in adulthood. This work demonstrates the persistence effects of developmental ethanol exposure on the prefrontal cortex. She also uses microscopy to analyze the morphology of neurons in the same area. A video of this technique is currently being put together and will be published in JoVE (see Articles for link). The end goal of this project is to gain a better understanding of the neural mechanisms underlying attention deficits associated with Fetal Alcohol Spectrum Disorders (FASD) and in the long-term to identify novel therapeutic targets.

Outside of the laboratory, Emma is an active member in the University of Guelph community as a student senate representative, member of the graduate teaching community and mentor to undergraduate students. She is also active in the local area as a board member for her local housing co-operative and president of the local Canadian Federation of University Women (CFUW) chapter. Through CFUW, Emma has written policy for the group advocating for better diagnosis and treatment/support for individuals diagnosed with FASD. Also through CFUW she advocates for increasing women in leadership positions and has aided in research assessing the barriers to women entering leadership positions, specifically in politics.

Industry Expertise

Research, Education/Learning

Areas of Expertise

Neuroscience, Attention, Fetal Alcohol Spectrum Disorder , Animal Research, Research Design, Electrophysiology, Neuron Morphology, Mouse Models, Developmental Bases of Behaviour

Education

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