

Announcement: The Department of Molecular and Cellular Biology, in the College of Biological Science, invites all interested members of the university community to attend the Final Oral Examination for the degree of **Doctor of Philosophy** of

Jenna Penney, on Thursday, July 13, 2017 at 1:00 p.m. in SSC 2315

(Advisor: Dr. Ray Lu)

Thesis Title: Characterization of the potential role of Luman as a novel regulator of animal stress responses

Examination Committee:

Dr. A. Bendall, Dept. of Molecular and Cellular Biology (Chair)

Dr. R. Lu, Dept. of Molecular and Cellular Biology

Dr. N. MacLusky, Dept. of Biomedical Science

Dr. N. Jones, Dept. of Molecular and Cellular Biology

Dr. M. Olmstead, Dept. of Psychology, Queen's University (External Examiner)

Abstract: Altered glucocorticoid sensitivity is believed to contribute to a number of human diseases, including inflammatory and autoimmune conditions as well as disorders characterized by abnormal hypothalamic-pituitary-adrenal axis function. LUMAN, originally identified through its interaction with a cell cycle regulator HCFC1, is an endoplasmic reticulum membrane-bound transcription factor that is involved in the unfolded protein response. In characterizing Luman-deficient mice, I found that these mice are smaller in size, with less visceral fat, had lower fertility and a maternal defect indicated by low pup survival rate. In addition, LUMAN altered the glucocorticoid response by modulating the expression of the glucocorticoid receptor and/or glucocorticoid levels. Correspondingly, Luman-deficient mice exhibited a blunted stress response exemplified by reduced anxiety and depressive-like behaviours. I thus postulate that LUMAN is a key regulator of GR-mediated signaling and modulates HPA axis reactivity.

Curriculum Vitae: Jenna received her Hons. B.Sc. (Major Biology, Minor Psychology) from the University of Ottawa in 2011, then obtained her M.Sc. (Animal Sciences) from the University of Guelph in 2012. In 2014, she began her Ph.D. program (Neuroscience specialization) with Dr. Ray Lu.

Publications:

Jenna Penney, Ari Mendell, Minghua Zeng, Khoa Tran, Jennifer Lymer, Patricia V Turner, Elena Choleris, Neil MacLusky and Ray Lu. 2016. LUMAN/CREB3 Is a Key Regulator of Glucocorticoid-Mediated Stress Responses. *Molecular and Cell Endocrinology*. 439, 95-104.

Timothy E. Audas, Philip W. Hardy-Smith, Jenna Penney, Tiegh Taylor and Ray Lu. 2016. Characterization of nuclear foci-targeting of Luman/CREB3 recruitment factor (LRF/CREBRF) and its potential role in inhibition of herpes simplex virus-1 replication. *European Journal of Cell Biology*. 95, (12), 611-622.