UNIVERSITY of GUELPH

COLLEGE of BIOLOGICAL SCIENCE

DEPARTMENT OF MOLECULAR AND CELLULAR BIOLOGY

Announcement:

All interested members of the university community are invited to attend the Final Oral Examination for the degree of ***Master of Science*** *of*

TIEGH TAYLOR

On Thursday, December 6, 2018 at 1 p.m. in SSC 1304

Thesis Title: **Luman potentially regulates whole-body metabolism through modulation of the hypothalamic-pituitary-adrenal axis**

Examination Committee:

Dr. J. Vessey, Dept. of Molecular and Cellular Biology (Exam Chair)
Dr. R. Lu, Dept. of Molecular and Cellular Biology
Dr. N. MacLusky, Dept. of Biomedical Science
Dr. M. Perreault, Dept. of Molecular and Cellular Biology

Advisory Committee:

Dr. R. Lu (Adv)
Dr. N. Jones
Dr. N. MacLusky
Dr. E. Choleris

Abstract: Luman is an endoplasmic reticulum associated transmembrane protein which when activated, alleviates endoplasmic reticulum stress. Recently, Luman has been found to play a key role in glucocorticoid signaling which modulates the whole-body stress response; this interaction is hypothesized to be due to an interaction with the glucocorticoid receptor. Luman contains a motif which is a hallmark of general nuclear receptor cofactors, suggesting that Luman may be able to interact not just with the glucocorticoid receptor but with all nuclear steroid hormone receptors. Luman may also affect neuronal regulation of steroid hormone signaling by protecting against endoplasmic reticulum stress.

Here we demonstrate that Luman directly interacts with the glucocorticoid receptor through this canonical nuclear receptor binding domain and that Luman may act as a general cofactor of other nuclear receptors. These data provide more evidence that Luman may impact whole body steroid hormone signaling through modulation of nuclear receptors.

Curriculum Vitae: Tiegh completed his Bachelor of Science (Hons.) at the University of Guelph in April 2016, and then began his M.Sc. in the lab of Dr. Ray Lu in the fall of 2016.

Publications: Penney, J., Taylor T., MacLusky N., and Lu R. (2018). "LUMAN/CREB3 Plays a Dual Role in Stress Responses as a Cofactor of the Glucocorticoid Receptor and a Regulator of Secretion." Frontiers in Molecular Neuroscience **11**(352). DOI:10.3389/fnmol.2018.00352

Audas, T. E., Hardy-Smith, P. W., Moyer, V., Taylor, T., Penney, J., and Lu, R. (2016). "Characterization of nuclear foci targeting of Luman/CREB3 recruitment factor (LRF) and its potential role in inhibition of Herpes Simplex Virus-1 replication," European Journal of Cell Biology **95**(12):611-622**.** DOI:10.1016/j.ejcb.2016.10.006