



COLLEGE OF BIOLOGICAL SCIENCE
Department of Molecular and Cellular Biology

ANNOUNCEMENT: Interested members of the University Community are invited to attend the Final Oral Examination for the Degree of **Master of Science** of

Julia C. Hooker

of the Department of Molecular and Cellular Biology
on Tuesday, March 14, 2017 at 1:30 p.m. in SSC 1511

Thesis Title: **Analysis of the genetic diversity of Grapevine rupestris stem pitting-associated virus in Ontarian vineyards and construction of a full-length infectious clone**

Examination Committee: Dr. F. Brauer, Dept. of Molecular and Cellular Biology (Chair)
Dr. B. Meng, Dept. of Molecular and Cellular Biology
Dr. A. Nassuth, Dept. of Molecular and Cellular Biology
Dr. T. Akhtar, Dept. of Molecular and Cellular Biology

ABSTRACT

Julia C. Hooker B.Sc. (Hons.)

Advisor: Dr. Baozhong Meng

Grapevine rupestris stem pitting-associated virus (GRSPaV; *Betaflexiviridae*, *Foveavirus*) has been associated with a number of diseases including Syrah decline. Previous findings show GRSPaV sequence variants cluster into three or more main phylogroups. Here, the genetic diversity of GRSPaV isolates from Ontarian vineyards was analyzed using broad-spectrum primers targeting the viral polymerase sequence. It was hypothesized that GRSPaV variants in Ontario are diverse and GRSPaV-SY variants are involved in Syrah decline. In total, 169 cDNA clones from 21 *Vitis* sources were used for phylogenetic analysis. Four major lineages were observed. GRSPaV-SY variants were confirmed in all 14 sources tested with SY-specific primers. Syrah cultivars expressing red canopy had more clones clustering with the GRSPaV-SY lineage than those without observable decline symptoms. Clones from 8 hybrid sources mostly clustered with GRSPaV-SY, followed distantly by GRSPaV-BS. An infectious cDNA clone of a GRSPaV-SY variant is being constructed to investigate this relationship.

CURRICULUM VITAE:

Julia completed her B.Sc. (Hons) degree at the University of Guelph in the spring of 2014. She then began her graduate program in the lab of Dr. Baozhong Meng in September of the same year.

Publication:

Xiao, H., Hooker, J., Li, C., Meng, B. 2015. Syrah decline in Ontario vineyards. Extended Abstracts of the 18th Congress of the International Council for the Study of Viruses and Virus-Like Diseases of the Grapevine. pp.80-82.