



ONTARIO VETERINARY COLLEGE
Department of Pathobiology

MSc Position in Genetic Resistance to *Streptococcus suis* in Pigs

A 2-year MSc position is available in the lab of Dr. Brandon Lillie in the Department of Pathobiology commencing September 1, 2017 or January 1, 2018 on the genetics of host immunity to *Streptococcus suis* in swine.

The research project is part of a large “Food from Thought” multidisciplinary project involving the Departments of Pathobiology and Population Medicine at the Ontario Veterinary College, as well as the Animal Health Laboratory, at the University of Guelph. The “Food from Thought” project will explore the epidemiology of *S. suis* infection and molecular characteristics of *S. suis* isolates on Ontario pig farms, as well as the role of the tonsil and nasal microbiome in pathogenesis of *Streptococcus suis* and host resistance to *S. suis* infection in pigs. This MSc project will investigate the role of genetic variation (e.g. single-nucleotide polymorphisms (SNPs)) in host resistance to *S. suis*. Over two years, swine farms with historical and/or current *S. suis* infections will be identified and samples will be collected from pigs with clinical signs of *S. suis* infection as well as from healthy pigs. Samples will be cultured for *S. suis* and the isolates will be serotyped by means of a multiplex PCR method, and host DNA will be used to genotype pigs. Using a novel low-cost SNP-array, pigs will be genotyped for ~54 000 (single nucleotide polymorphisms) and their association with *S. suis* infection and/or disease as well as the microbiome and other parameters will be studied. The projects will include a review of existing literature, laboratory work (e.g. bacterial culturing, DNA extraction, PCR), analysis of genotyping data and other data collected on farms and data produced from sample analysis in other aspects of the project, and use of statistical and epidemiological methods to analyze the data. The project may involve farm visits to obtain samples.

Selection of the successful candidate is based on a combination of academic criteria, relevant interest and experience, referees’ evaluations, and an assessment of the candidate’s career goals and motivation. **Review of applications will begin immediately, and continue until the position is filled.**

Stipend: \$20 000 per year plus benefits for 6 semesters

A formal application should be submitted to Dr. Lillie or Dr. Vahab Farzan and should include a CV, a copy of undergraduate transcripts, names of three references, and a cover letter stating interest in the above-mentioned areas.

Dr. Brandon Lillie
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Dr. Vahab Farzan
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Inquiries about the research and/or the specific project should be directed to Dr. Lillie or Dr. Farzan.

Further inquiries related to general application procedures can be directed to Mrs. Donna Kangas, Graduate Program Assistant, Department of Pathobiology, University of Guelph, Guelph, Ontario, N1G 2W1, Canada; phone 519- 824-4120 ext. 54725; e-mail: pathgrad@uoguelph.ca

The University of Guelph is committed to an Employment Equity Program that includes special measures to achieve diversity among its faculty and staff. We therefore particularly encourage applications from qualified aboriginal Canadians, members of the LGBTQA community, women, veterans, persons with disabilities, and members of visible minorities.