

Targeted dietary treatments for the prevention of boar taint

The Squires' lab is currently looking to fill **3 graduate student positions (Msc or PhD)** for a new research project focused on identifying and addressing barriers preventing the use of entire males for meat production in the swine industry.

Project background and description:

Boar taint is a meat quality issue that develops in pork from entire male pigs. It is currently prevented by castrating males but this reduces production efficiency, increases the negative environmental impact of swine production, and is a growing welfare concern. Many treatments have been developed for boar taint but have not been effective in all animals as the biological systems that regulate boar taint development vary considerably between individual animals. We are addressing this using a novel precision agriculture approach where we will compare treatment response to the genotype of each individual animal to identify markers associated with favourable treatment outcomes. This will allow us to later provide animals with the most effective treatment for boar taint based on their individual genotypes. To accomplish this we will perform animal feeding trials using **1)** binding agents (activated charcoal and biochar), **2)** natural products (active compounds extracted from various plants), and **3)** dietary fiber (e.g., chicory root and sugar beet pulp) and evaluate the individual response to each treatment.

The available projects will aim to:

- Assess the efficacy of different dietary treatments strategies for preventing the development of boar taint and optimize the application of these treatments (e.g., ideal dose and duration for treatment)
- Identify biomarkers (genetic markers, hormone levels, gene expression levels in specific tissues, gut microbiome composition, etc.) associated with different responses to treatment
- Validate biomarkers associated with different treatment outcomes to effectively control boar taint

Qualifications:

- A relevant degree in animal science, biochemistry, molecular biology and genetics or equivalent
- Strong background in physiology (demonstrable through courses taken or projects completed)
- Independent worker with a high degree of initiative and a willingness to collaborate with others as needed (strong interpersonal skills)
- Strong work ethic, willingness to learn, and excellent organizational skills
- Proficient communication in English (oral and written)
- A valid Ontario driving license for use of department vehicles is preferred
- Experience working/volunteering in a lab and with pigs is an asset

These qualifications should be at an appropriate level for the desired position (MSc/PhD). Fostering a [culture of inclusion](#) is imperative within our lab and across our entire institution. Therefore, we encourage applications from all qualified individuals, including from groups that are traditionally underrepresented in employment, who may contribute to further diversification of our institution. For more information, please refer to the [Office of Diversity and Human Rights \(DHR\)](#). Additional information on the application process for international/out of province applicants can be found on the [Graduate & Postdoctoral Studies webpage](#).

Qualified applicants are encouraged to submit a cover letter (detailing the project they are most interested in, their motivation for pursuing an MSc/PhD and respective qualifications), their resume or *curriculum vitae*, and an unofficial transcript. Applications can be submitted by email to Dr. Jim Squires (jsquires@uoguelph.ca) and Dr. Christine Bone (cbone@uoguelph.ca).