

MSc Position: Genomic and Phenotypic Approaches to Improve Climate Resilience and Nitrogen Use Efficiency in Western Canadian Barley - **one position open.**

The Cropping Systems Research Group, led by Linda Gorim in the Department of Agricultural, Food and Nutritional Science at the University of Alberta, in collaboration with Western Crop Innovations (WCI), invites applications from highly motivated students for a Master of Science (MSc) graduate position. This project will focus on developing and evaluating improved phenotyping and genotyping approaches for barley breeding programs in Western Canada, with an emphasis on climate resilience, nitrogen use efficiency (NUE), and sustainable crop production. Research activities will involve field phenotyping, genomic analysis, and evaluation of breeding populations to identify improved selection strategies for future barley cultivar development. The barley breeding program at Western Crop Innovations focuses on developing cultivars with improved resistance to disease and environmental stress while maintaining strong agronomic performance under increasingly variable growing conditions. The successful candidate will contribute to research aimed at improving barley adaptation, resilience, nutrient use efficiency, and environmental sustainability across Western Canadian production systems.

Stipend: \$30,000–35,000 per year (MSc) Start Date: September 2026 or January 2027.

Location: Research activities will primarily be conducted at Western Crop Innovations in Lacombe, Alberta, while coursework will be completed through the University of Alberta in Edmonton, Alberta.

Education: Applicants must possess a B.Sc. degree in Agronomy, Soil Science, Plant Breeding, Plant Genetics, Biotechnology, or a related discipline, with a strong background in crop production and agricultural research. *Preference will be given to candidates currently residing in Canada.*

Experience: Experience or demonstrated interest in the following areas would be considered assets:

- Basic agronomy
- Laboratory and field-based research
- Genomic and phenotypic data collection and analysis
- Plant breeding or applied crop improvement research

Skills: Preferred candidates should demonstrate:

- Knowledge of agronomy and soil science principles
- Understanding of quantitative and qualitative genetic analysis
- Ability to understand and analyze genomic and phenotypic datasets
- Strong critical thinking, communication, and scientific writing skills
- Ability to work independently and collaboratively within a research team
- Experience using Microsoft Office Suite (Word, Excel, PowerPoint, Outlook, Teams, etc.)

- Experience using R or related statistical software for data analysis would be considered an asset
- Ability to follow written and verbal instructions accurately
- Ability to present research findings to both producer and scientific audiences
- Ability to build positive working relationships with individuals from diverse backgrounds and education levels

Application Requirements: Applicants must submit the following documents as a single PDF file:

- Cover letter
- Statement addressing qualifications and relevant experience
- Curriculum vitae (CV) or resume
- Academic transcripts

The statement of qualifications should specifically address all qualifications listed under the Education, Experience, and Skills sections above. The use of subtitles is strongly encouraged. Applicants are also encouraged to provide specific examples demonstrating their experience and skills. Providing false or misleading information in an application will result in disqualification. Contact Information: Questions regarding the position and application process should be directed to:

Dr. Linda Gorim

Department of Agricultural, Food and Nutritional Science, University of Alberta

Email: gorim@ualberta.ca, copying Dr. Jennifer Zantinge (τζantinge@westerncropinnovations.com)

Additional Information: All applicants must meet the graduate admission requirements of the Department of Agricultural, Food and Nutritional Science at the University of Alberta. Additional information regarding graduate admissions can be found at: University of Alberta AFNS Graduate Admissions (<https://www.ualberta.ca/agriculture-life-environment-sciences/programs/graduate-programs/prospective-students/agricultural-food-and-nutritional-science/afns-admission-process>)