# Postdoctoral Fellow in Plant Quantitative & Statistical Genetics

# Global Institute for Food Security, University of Saskatchewan

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**Department:** Global Institute for Food Security

**Status:** Term up to 3 years, with the possibility of extension

**Requisition:**

**Open Date:** 4/3/19

**Closing Date:** when filled


**Salary Information:** The salary range is $50,000-60,000 CAD per annum. The starting salary will be commensurate with education and experience.

**Description:** There is 1 opening for this posting. Located in Saskatoon.

**Primary Purpose**: The Global Institute for Food Security (GIFS) and the Canada Excellence Research Chair (CERC) in Global Food Security at the University of Saskatchewan, Saskatoon, Canada, is seeking a creative, highly motivated postdoctoral research associate in the area of plant quantitative and statistical genetics for a three-year appointment with the possibility of renewal based on performance. Salary will be commensurate with qualifications and experience. Incumbent will be part of a long-term collaborative project between Professors Leon Kochian (CERC) and Dave Schneider at GIFS and Professor Jurandir Magalhaes at Embrapa Maize and Sorghum, Sete Lagoas, MG Brazil. The research project is focused on the interface between plant biology, molecular genetics and plant breeding. Incumbent will use traits acquired with advanced phenotyping techniques, such as quantitative analysis of plant root system architectures in two (2D) and three dimensions (3D), in conjunction with crop performance traits under abiotic stress, to identify the underlying molecular genetic determinants of crop abiotic stress tolerance. These traits will focus on metal toxicity in acid soils (aluminum toxicity), low phosphorus availability and drought stress. Importantly, the incumbent is expected to develop molecular/statistical genetic strategies for deploying those determinants into plant breeding.

GIFS and the CERC program at the University of Saskatchewan is establishing a world-class program to develop and transfer agricultural innovations to both developing and developed areas of the world for the purpose of ensuring food security. The CERC

program is building a multidisciplinary research team consisting of 4-5 faculty positions and an additional 25-35 postdoctoral, graduate student, and research technician positions.  The team's research disciplines span the biological and physical sciences, including plant molecular biology, physiology and genetics, engineering, physics, computer science, soil science, and microbiology.  The discoveries from this multidisciplinary research are expected to both enhance agriculture in food production frontiers such as sub-Saharan Africa and South Asia, as well as in Canada.

## Qualifications

A proven and strong background in quantitative genetics and statistics is required, including the use of mixed models in plant molecular genetics and plant breeding. Proficiency in programming and statistical software is expected.  Working knowledge of R and Python is required.  Experience with SAS and Perl is desirable. Prior experience with genome-wide association mapping, genomic selection and other quantitative methods applied to plant breeding will be valued. This position requires a Ph.D. in plant molecular genetics, statistical genetics, plant molecular biology, plant breeding or in a related area. Some experience with plant phenotyping and imaging techniques, and the mathematical and computational foundations of digital image processing, are desirable but not essential. While the incumbent will be based at GIFS on the University of Saskatchewan campus in Saskatoon, Canada, he/she is expected to extensively interact with scientists at Embrapa Maize and Sorghum, and as such should be available for short-term visits to the Embrapa station in Brazil, as needed to accomplish the project goals.

This position is in scope of the Public Service Alliance of Canada (PSAC) - Post Doctoral Fellows (PDF).

*Inquiries regarding this position can be directed to Megan Paul at 306-966-3722.*

Interested candidates must submit a CV and cover letter to Megan Paul: megan.paul@gifs.ca.

**Applications will be accepted until the positions are filled.**