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General

An innovative and highly motivated candidate is sought to conduct a research project funded by Alberta Livestock Meat Agency (ALMA). This multi-disciplinary and multi component project aims to study "Water Related Risks and Opportunities to the Beef Industry in Alberta" by examining climate change induced changes in water supply and demand scenarios.

Specific Duties

The candidate is generally responsible for:

1) Developing physical and process-based crop growth models for Alberta (preferably GEPIC, or SWAT).
2) Assessing dynamic water demand (WD) of beef (feed to meat) in Alberta under irrigated and rainfed conditions and under various production systems (i.e., grazed, industry, mixed) taking hydro-climatic and agro-management factors into account.
3) Modeling of feed crops (yield, ET, CWP, etc.), and assessing beef production under various climate change scenarios and production systems in Alberta.
4) Linking WD into the water availability and water scarcity data to explore opportunities and risks to the sustainability of beef production.
5) Examining scenarios that favor improvements in water use by the Alberta beef industry and promote food and economic security at local and regional levels.

Qualifications

The successful candidate for the position will have to meet the following criteria:

1) Candidate must have a doctoral degree in hydrology, ecosystem ecology, biogeochemistry, environmental engineering, environmental sciences, or a closely related field.
2) Candidates should have a thorough understanding of watershed agro-hydrology, and with a specific focus on soil-plant-water relationship and interactions with climate and land management practices.
3) Experience with development (coding) of process-based hydrologic and crop models, large dataset compilation and processing, or alternatively, with development of subroutines to complement process-based watershed models. Skills in GIS and statistical analysis are desirable.
4) Applicants must have track record of success in publishing peer reviewed papers.
5) Applicants must have strong oral communication skills and be able to work both independently and collaboratively.

Work Location and Conditions

- The job is full time, located in University of Alberta, Edmonton, Canada, available for two years (starting from March 2016), with a possibility of extension
- Salary: $50 K per year

How to apply

- Statement of research interest: what questions in job advertisement you find interesting and important, and why, as well how you think progress could be made.
- Curriculum Vita
- Letters of recommendation from three references
- Applications must be sent to faramarz@ualberta.ca with a CC to ggoss@ualberta.ca

For more information about the project scale, data, and collaborators please refer to:

Framarzi et al., 2015. Setting up a hydrological model of Alberta: Data discrimination analyses prior to calibration, *Environmental Modelling & Software 74*, 48-65.