

Graduate Research Assistantship

Irrigation Scheduling

The Biological Systems Engineering Department at the University of Nebraska-Lincoln invites applications for a graduate assistantship position starting in August 2013. The selected candidate will pursue a Master of Science degree in Agricultural and Biological Systems Engineering or a Doctor of Philosophy degree in Biological Engineering with an emphasis in agricultural engineering.

Research Description

Competition for water is increasing while a growing world population requires more food production. Since irrigation is the largest use of water in many places, accounting for 65% of the fresh water use in the 22 western states (USGS, 2000), proper irrigation water management is critical to make the best use of the water available. In some cases, irrigation water use can make it difficult to achieve the instream flows required for endangered species. Also, water levels in the some portions of the High Plains (Ogallala) Aquifer are declining, resulting in increased pumping costs and/or reduced pumping rates. Similar constraints exist for producers in arid and semi-arid regions around the world. Scientific irrigation scheduling provides an opportunity for producers to maximize crop production with limited water supplies. Research objectives may include an economic analysis of the feasibility of variable rate irrigation (VRI); developing irrigation prescriptions including variable irrigation rates in space and time for a decision support system; quantifying nutrient leaching reductions to groundwater due to VRI; or improving irrigation scheduling in developing countries. This research will be part of a larger research program associated with the Robert B. Daugherty Water for Food Institute. The selected applicant will be part of a multi-disciplinary team and will have the opportunity work with faculty outside the Biological Systems Engineering Department as well as BSE faculty.

Qualifications

Applicants must have B.S. or M.S. degree from agricultural or a related engineering program, and grade point averages higher than 3.0 on a 4.0 scale. The assistantship will consist of an annual stipend and funds to support tuition and health insurance costs. Funding after the first year is subject to availability of funds and satisfactory progress.

Apply on-line at

<http://www.unl.edu/gradstudies/>.

Questions

Contact Derek Heeren (derek.heeren@unl.edu)

Biological Systems Engineering
University of Nebraska-Lincoln
241 L. W. Chase Hall
Lincoln, NE, 68583-0726

Department Website: <http://bse.unl.edu/>.



Irrigation accounts for 65% of the fresh water use in the 22 western states.