

Title: A Bayesian Hierarchical Model for Combining Several Crop Yield Indications

Date/Time: Thursday, February 11, 2016
12:30 – 2:00 p.m.

Speaker: Nathan Cruze, USDA National Agricultural Statistics Service

Chair: Pam McGovern, USDA National Agricultural Statistics Service

Sponsor: WSS Methodology Section

Abstract: The USDA National Agricultural Statistics Service conducts multiple surveys over the course of a growing season. Each of these surveys reflects current growing conditions and provides a prediction of end-of-season crop yield. In particular NASS conducts two interview-based surveys and one field measurement survey from which indications of crop yield may be obtained. It is also known that a number of weather conditions during the growing season may contribute to changes in crop yield. This talk describes a Bayesian hierarchical model which improves end-of-season crop yield predictions by combining these several disparate sources of information. The model incorporates benchmarking of state-level forecasts with regional forecasts of crop yield and gives rise to rigorous measures of uncertainty. It also permits a useful decomposition with respect to the emphasis placed on each information source. Several aspects of covariates selection and model performance are discussed.

Location: Bureau of Labor Statistics Conference Center, Room 3

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