

Department of Applied Mathematics and Statistics  
The Johns Hopkins University

SEMINAR

Stephan R. Sain  
Department of Mathematical Sciences  
University of Colorado Denver

February 7, 2008  
304 Whitehead Hall  
Refreshments: 3:30 p.m.  
Seminar: 4:00 p.m.

**MODELS AND MODELS: STATISTICAL APPROACHES TO COMBINING  
REGIONAL CLIMATE MODEL OUTPUT**

ABSTRACT

The North American Regional Climate Change Assessment Program (NARCCAP) is an ambitious experiment that seeks to use a number of regional climate models (RCMs) to produce a wide range of model output over North America. Our goal within this program is to develop statistical methodology to analyze this model output and assess the sources of uncertainty. To that end, we are developing a Bayesian hierarchical framework that is based upon multivariate spatial models. This framework allows us to capture the complex distribution of the spatial fields produced by these regional climate models and make inferences about the model differences as well as projections of climate change. In this talk, methodology will be discussed and examples presented that focus on (i) projections of the change in temperature and precipitation over the western United States, and (ii) a first look at some early NARCCAP runs.