

BIOSTATISTICS SEMINAR



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Development of Bayesian Software in SAS

For much of its over 40 years as a set of tools for data analysis and statistical modeling, SAS statistical software has been primarily based on the frequentist paradigm. Starting in the early 2000's, we began adding Bayesian components to complex models in many areas of applications. This talk describes the evolution of SAS Bayesian software, from implementing the BAYES statement in a few procedures (GENMOD and such) for easy access to Bayesian computations in specific models, to the development of a general sampling-based procedure (MCMC), to the introduction of a fully Bayesian procedure (BGLIMM) for generalized linear mixed-effects models. We will provide a behind-the-scenes look at the development of this software, giving developers' perspectives on design philosophy, customer requirements, and feature enhancements, and demonstrating how we balance handling modern modeling scenarios with constraints arising from the maturity of the SAS language. The talk will also look at new challenges on the horizon for Bayesian computation, discussing new tools that must be developed to tackle key elements of these challenges.

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3:30 pm - 4:30 pm

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