



**Astrophysical Population Emulation and Uncertainty
Quantification Workshop
April 3-7, 2017**

Lecture: *Calibration - Combining models and data for predicting, parameter estimation and UQ*

Speaker: Earl Lawrence

Abstract:

Computational models are used throughout science as a way to explore physical systems. Using field observations, in conjunction with computer models, presents opportunities to estimate parameters that govern the model's behaviour or to build a predictive model that is better than using the observations or physics model alone. In this talk, a statistical framework for combining observations and simulations is presented. The approach - computer model calibration - treats the physics model parameters as a type of missing data. The inferential framework for parameter estimation, prediction and assessing uncertainty is described.