



**Sixth Bayesian, Fiducial, and Frequentist (BFF6)
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SPEAKER TITLES/ABSTRACT

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“Fusion Learning and BFF Approaches”

Inferences from different data sources can often be fused together, referred to as ‘fusion learning’, to yield more powerful findings than those derived from individual data sources alone. Effective fusion learning approaches are in growing demand as increasing number of data sources have become easily available in this big data era. Fusion learning broadens the scope of traditional meta-analysis, whose goal is also combining findings from different studies (often in the analysis of clinical trials), to a wider range of problem settings and with greater emphases on both the efficiency and computational feasibility of the methods used. This short course is designed to: 1) review existing fusion learning approaches derived from BFF concepts, especially the approach derived from the so-called confidence distribution (CD); and 2) show that BFF can help develop versatile tools for fusion learning in many challenging problem settings, including but not limited to: i) fusion learning from independent studies, ii) fusion learning for zero (or near zero) counts in discrete data, iii) robust and nonparametric fusion learning methods, iv) fusion learning in split-conquer-combine approach to efficient and feasible analyses of big data, v) individualized fusion (iFusion) learning to enhancing inference for individual studies by borrowing useful information from similar studies. The goal is to show that BFF developments can help provide efficient and broadly applicable approaches for fusion learning.