

**South Carolina Chapter  
American Statistical Association  
47th Annual Meeting**

**SC-ASA Palmetto Symposium**



**Friday, March 9th, 2018**

**Capstone House  
University of South Carolina  
Columbia, SC 29208**



<b>9:00 AM</b>	<b>Introductions</b>
<b>9:10 AM</b>	<b>Invited speaker</b>
<b>10:10 AM</b>	<b>Short recess</b>
<b>10:30 AM</b>	<b>Student presentations</b>
<b>11:45 AM</b>	<b>Student awards</b>
<b>12:00 PM</b>	<b>Adjourn</b>

---

### **Invited Presentation**

**Joseph Ibrahim, UNC Chapel Hill**  
Professor of Biostatistics,

**Title: Bayesian Design of Superiority Clinical Trials for Recurrent Events Data with Applications to Bleeding and Transfusion Events in Myelodysplastic Syndrome**

**Abstract: In many biomedical studies, patients may experience the same type of recurrent event repeatedly over time, such as bleeding, multiple infections and disease. In this article, we propose a Bayesian design to a pivotal clinical trial in which lower risk myelodysplastic syndromes (MDS) patients are treated with MDS disease modifying therapies. One of the key study objectives is to demonstrate the investigational product (treatment) effect on reduction of platelet transfusion and bleeding events while receiving MDS therapies. In this context, we propose a new Bayesian approach for the design of superiority clinical trials using recurrent events frailty regression models. Historical recurrent events data from an already completed phase 2 trial are incorporated into the Bayesian design via the partial borrowing power prior of Ibrahim et al. (2012, Biometrics 68, 578-586). An efficient Gibbs sampling algorithm, a predictive data generation algorithm, and a simulation-based algorithm are developed for sampling from the fitting posterior distribution, generating the predictive recurrent events data, and computing various design quantities such as the type I error rate and power, respectively. An extensive simulation study is conducted to compare the proposed method to the existing frequentist methods and to investigate various operating characteristics of the proposed design.**

---

### **Students' Presentations**

- 1) Lu Wang (University of South Carolina)
- 2) John Del Gaizo (Medical University of South Carolina)
- 3) Haigang Liu (University of South Carolina)
- 4) Stella Watson Self (Clemson University)

---

### **Did you know?**

The American Statistical Association, a scientific and educational society founded in Boston in 1839, is the second-oldest, continuously operating professional society in the United States. For 169 years, the ASA has provided its members and the public with up-to-date, useful information about statistics. The ASA has a proud tradition of service to statisticians, quantitative scientists, and users of statistics across a wealth of academic areas and applications.

---

### **ASA Mission**

The ASA mission is to promote excellence in the application of statistical science across the wealth of human endeavor, specifically to:

- Support excellence in statistical practice, research, journals, and meetings
- Work for the improvement of statistical education at all levels
- Promote the proper application of statistics
- Anticipate and meet member needs
- Use the discipline of statistics to enhance human welfare
- Seek opportunities to advance the statistics profession

---

### **Organizing Committee**

The SC ASA Executive Committee organized the meeting.

Alexander Mclain, PhD, USC  
Dewei Wang, PHD, USC  
Bethany Wolf, PhD, MUSC  
Andrew Brown, PhD, Clemson University