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*Repro Sampling Method for Statistical Inference of High  
Dimensional Linear Models*

**Wednesday, March 30, 2022**  
**11:45 AM**

**Zoom Meeting: Meeting ID: 963 9005 8784**  
**Password: 606979**

<https://rutgers.zoom.us/j/96390058784?pwd=c3VGOFIvYUxRanV5Tk5kS2R0dTVsQT09>

**Light refreshments will be served**

**Abstract:** This paper proposes a new and effective simulation-based approach, called the Repro Sampling method, to conduct statistical inference in high dimensional linear models. The Repro method creates and studies the performance of artificial samples (referred to as Repro samples) that are generated by mimicking the sampling mechanism that generated the true observed sample. By doing so, this method provides a new way to quantify model and parameter uncertainty and provide confidence sets with guaranteed coverage rates on a wide range of problems. A general theoretical framework and an effective Monte-Carlo algorithm, with supporting theories, are developed for high dimensional linear models. This method is used to create confidence sets for both the selected models and model coefficients, with both exact and asymptotic inferences, are included. It also provides theoretical development to support computational efficiency. The development provides a simple and effective solution for the difficult post-selection inference problems.

**Bio:** Dr. Peng Wang is an Associate Professor of Business Analytics in Lindner College of Business at the University of Cincinnati. Prior to joining the College, Dr. Wang obtained his Ph.D. degree in statistics from the University of Illinois at Urbana -Champaign and worked as an Assistant Professor at Bowling Green State University. Dr. Wang's research interests include longitudinal data analysis, high dimensional inference, basics of statistical inference, and applied statistical learning.

