## DEPARTMENT OF STATISTICS

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*Valid Statistical Inference with Privacy Constraints*
**Wednesday, November 4th 2020**
**11:45 AM EST**

**Zoom Meeting: Meeting ID: 989 6125 5223**
**Password: 586927**

*Virtual Coffee session before the seminar at 11:30AM EST*

Abstract: Limiting the disclosure risk of sensitive data and statistical analyses is a long-standing problem in statistics. Differential privacy (DP), provides a framework for a strong provable privacy protection against arbitrary adversaries while allowing the release of summary statistics and potentially synthetic data. DP methods/mechanisms require the introduction of randomness which reduces the utility of the results especially in finite samples. In this talk we give an overview of statstical data privacy and its links to DP. We also describe a general framework, built on sound statistical principles from measurement error, robustness and the likelihood-based inference, and give specific examples of how to achieve optimal statistical inference under formal privacy, focused on survey and census data.

Bio: Aleksandra (Seša) Slavković is a Professor of Statistics and Associate Dean for Graduate Education in Eberly College of Science at Penn State. Her research focuses on methodological developments in the area of data privacy and confidentiality in the context of small and large scale surveys, health, genomic, and network data, including differential privacy and broad data access offers guarantees of accurate statistical inference needed to support reliable science and policy. Other research interests include evaluation methods for human performance in virtual environments, application of statistics to information sciences and social sciences, algebraic statistics, and causal inference. She earned her PhD in Statistics from Carnegie Mellon University. She served as a chair of the ASA Privacy and Confidentiality committee, and is Chair-Elect 2021 for the ASA Social Statistics Section.