

# BIOSTATISTICS SEMINAR



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## **Uncertainty, Loss Valleys, and Generalization in Deep Learning**

In this talk, we approach model construction from a probabilistic perspective. First, we introduce a scalable Gaussian process framework capable of learning expressive kernel functions on large datasets, implemented in our new library GPyTorch. We then develop this framework into an approach for deep kernel learning, with full predictive distributions and automatic complexity calibration. We will consider applications in crime prediction, epidemiology, counterfactuals, and autonomous vehicles. We will also present our work in understanding loss geometry in deep learning, leading to practical training methods with scalable uncertainty representation and improved generalization.

**Thursday January 24, 2019**

**3:30 pm - 4:30 pm**

**Blue Cross and Blue Shield of North Carolina Foundation Auditorium**



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