Statistical Sciences
UNIVERSITY OF TORONTO

SEMINAR SERIES 2018-2019

When:	**Thursday, October 25, 2018**
Time:	**3:30 – 4:30 pm**
	Refreshments at 3:15 pm
Where:	**Sidney Smith Hall Rm TBA**
Speaker:	**Kun Liang, University of Waterloo**
Host:	**Lei Sun**

Empirical Bayes Analysis of RNA Sequencing Experiments with Auxiliary Information

Finding differentially expressed genes is a common task in high-throughput transcriptome studies. While traditional statistical methods rank the genes by their test statistics alone, we analyze an RNA sequencing dataset using the auxiliary information of gene length and the test statistics from a related microarray study.

Given the auxiliary information, we propose a novel nonparametric empirical Bayes procedure to estimate the posterior probability of differential expression for each gene. We demonstrate the advantage of our procedure in extensive simulation studies and in a psoriasis RNA sequencing study.