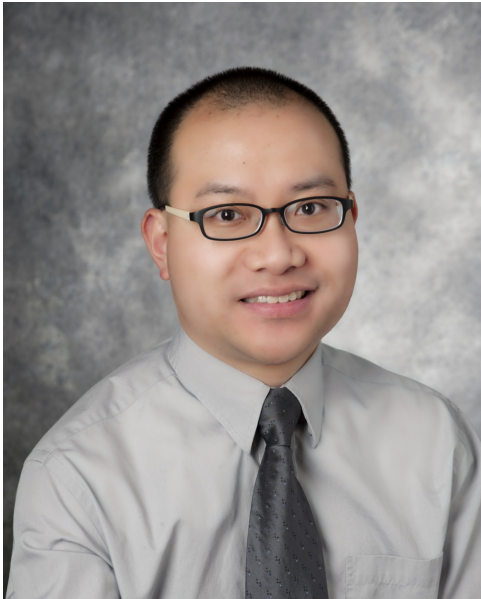


# MATH DEPARTMENT COLLOQUIUM



**Dr. Hon Keung Tony Ng**

**Dept. of Statistical Science  
Southern Methodist University**

**Friday, Nov 6, 2015**

**3:15 pm – 4:15 pm**

**DERR 113**

***Statistical Inference for Component Distribution from System Lifetime Data***

In this talk, statistical inference of the reliability characteristics of the components in the system based on the lifetimes of systems will be discussed. Various point and interval estimation methods for the parameters in different models are proposed. Next, we discuss the problem of testing the homogeneity of distributions of component lifetime based on system lifetime data with known system signatures. Both parametric and nonparametric procedures are developed for this problem. The performance and limitations of the proposed nonparametric method are discussed. Then, we assume the component lifetimes follow exponential distributions and develop exact and asymptotic parametric tests. Monte Carlo simulation study is used to compare the performance of different parametric procedures as well as the nonparametric procedure. Based on the simulation results, discussions and practical recommendations as well as some concluding remarks are finally provided.

Bio: Hon Keung Tony Ng received the M.Sc. and Ph.D. degrees in statistics from McMaster University, Hamilton, Ontario, Canada, in 2000, and 2002, respectively. He is currently a Professor with the Department of Statistical Science, Southern Methodist University, Dallas, TX, USA. He is an Associate Editor of Communications in Statistics, Computational Statistics, Journal of Statistical Computation and Simulation, and Statistics and Probability Letters. His research interests include reliability, censoring methodology, nonparametric methods, and statistical inference. Dr. Ng is Elected Member of the International Statistical Institute and elected Senior Member of the IEEE.