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DEPARTMENT OF STATISTICS AND BIOSTATISTICS

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Non-parametric empirical Bayes improvement of common shrinkage estimators

October 19, 2016
3:20 – 4:20pm
Light refreshments will be served
110 Frelinghuysen Road

Abstract: We consider the problem of estimating a vector (μ1,...,μn) of normal means under a squared loss, based on independent Y_i ~ N(μ_i,1), i = 1,...,n. We use ideas and techniques from non-parametric empirical Bayes, to obtain asymptotical risk improvement of classical shrinkage estimators, such as, Stein's estimator, Fay-Herriot, Kalman filter, and more. We consider both the sequential and retrospective estimation problems. We elaborate on state-space models and the Kalman filter estimators. The performance of our improving method is demonstrated both through simulations and real data examples.

Joint work with Ariel Mansura, and Ya'acov Ritov.

Bio: Eitan Greenshtein received his PhD from Cornell University in 1990. He is currently at the Israel Bureau of Statistics, having been a faculty member at Ben-Gurion University, Technion and Haifa University. He has also been a visiting faculty at Purdue, Wharton, Duke and (presently) Rutgers.