1023-90-1283 **Shane Drew*** (s-drew@northwestern.edu), 2145 Sheridan Road, Dept. of IE/MS – Tech C210, Evanston, IL 60208, and **Tito Homem-de-Mello** (tito@northwestern.edu). *A Hybrid Sampling Algorithm for Stochastic Optimization.* Preliminary report.

In this paper we discuss the issue of solving stochastic optimization problems using sampling methods. Theoretical and numerical results have shown that using variance reduction techniques from statistics can result in significant improvements over Monte Carlo sampling in terms of the number of samples needed for convergence of the optimal objective value and optimal solution to a stochastic optimization problem. Among these techniques are stratified sampling and Quasi-Monte Carlo sampling. However, for problems in high dimension, it may be computationally inefficient to calculate Quasi-Monte Carlo point sets in the full dimension. Rather, we wish to identify which dimensions are most important to the convergence of the stochastic optimization problem and to implement a Quasi-Monte Carlo sampling scheme with padding, where the important dimensions are sampled via Quasi-Monte Carlo sampling and the remaining dimensions with Monte Carlo sampling or stratified sampling. We then incorporate this sampling scheme into an external sampling algorithm (ES-QMCP) to solve stochastic optimization problems. (Received September 25, 2006)