Industrial & Systems Engineering
Seminar Announcement

Michael Fu

National Science Foundation, Arlington, VA
Ralph J. Tyser Professor of Management Science, Department of Decision, Operations and Information Technologies, & Institute for Systems Research
University of Maryland, College Park, MD

Stochastic Gradient Estimation: Tutorial Review and Recent Research

Abstract: Stochastic gradient estimation techniques are methodologies for deriving computationally efficient estimators used in simulation optimization and sensi-tivity analysis of complex stochastic systems that require simulation to estimate their performance. Using a simple illustrative example, the three most well-known direct techniques that lead to unbiased estimators are presented: perturbation analysis, the likelihood ratio (score function) method, and weak derivatives. Applications are discussed and then some recent research is summarized. Opportunities for NSF funding in the Operations Research Program will be discussed in the second half of the talk.

Bio: Michael Fu has been Director of the Operations Research Program at NSF since September 2010. He is on leave from the University of Maryland at College Park where he is Ralph J. Tyser Professor of Management Science in the Robert H. Smith School of Business, with a joint appointment in the Institute for Systems Research and affiliate faculty appointment in the Department of Electrical and Computer Engineering, both in the A. James Clark School of Engineering. He received degrees in mathematics and EE/CS from MIT in 1985, and a Ph.D. in applied mathematics from Harvard University in 1989. His research interests include simulation optimization and applied probability, with applications in supply chain management and financial engineering. At Maryland, he received the Business School's Allen J. Krowe Award for Teaching Excellence in 1995, the Institute for Systems Research Outstanding Systems Engineering Faculty Award in 2002, and was named a University of Maryland Distinguished Scholar-Teacher for 2004-2005. He has published four books and served as Stochastic Models and Simulation Department Editor of ***Management Science*** from 2006-2008, as Simulation Area Editor of ***Operations Research*** 2000-2005, and also on the editorial boards of ***Mathematics of Operations Research, INFORMS Journal on Computing, IIE Transactions,*** and ***Production and Operations Management***. He is a Fellow of INFORMS and IEEE.

Thursday, March 1, 2012
12:30 – 1:20 p.m.
EEB 303

NOTE: different day and different location