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**William A Massey\*** ([wmassey@princeton.edu](mailto:wmassey@princeton.edu)), ORFE Department, Sherrerd Hall, Princeton University, Princeton, NJ 08544. *Stochastic Iteration for Probability Measures on Posets*. Preliminary report.

The space of probability measures on a partially ordered set (poset) inherits a family of partial ordering relations that are called stochastic orderings. We define a stochastic iteration to be the repeated application of some self mapping on this space of probability measures that is isotone (increasing or decreasing) with respect to a given stochastic ordering. The theory of fixed points for isotone mappings on posets then give us a variety of iteration methods for constructing random distributions. In turn, these results yield new types of simulation algorithms for queueing theory. (Received September 25, 2012)