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Fred J Hickernell* (hickernell@iit.edu), Department of Applied Mathematics, E1-208, Illinois Institute of Technology, 10 W. 32nd Street, Chicago, IL 60616. *Adaptive Algorithms for Computing Expectations and Integrals.*

Most adaptive algorithms have no guarantees of success. Most algorithms with theoretical underpinnings are not adaptive. Here we present recent work to develop algorithms that compute the means of random variables and the integrands of univariate and multivariate functions. These algorithms are adaptive, meaning that the amount of computational work required depends on the difficulty of the problem. They are also guaranteed to succeed for random variables or integrands satisfying certain cone conditions. (Received September 15, 2014)