**Novel Approaches to Feasibility Determination,** Daniel Solow, Roberto Szechtman, and Enver Yucesan, to *Transactions on Modeling and Computer Simulation*, 31(1),   
1 – 25, January 2021.

Various algorithms are proposed for determining whether a number of systems---each characterized by the same number of random variables---belongs to a set Γ defined by a finite collection of linear inequalities, where a system is ``in (not in) Γ'' if the mean of its random variables is in (not in) Γ. As the means of the systems are unknown, they must be estimated using Monte Carlo simulation. Various heuristics are developed for classifying the systems with a user-specified level of confidence while using as few simulation replications as possible so that the expected value of the probability of correct classification over all *r* systems satisfies the user-specified minimum value. Using a Bayesian approach, prior values are chosen for the means and standard deviations of the random variables in each system. Some initial simulation replications are then performed to obtain current estimates of the means and standard deviations. Using these estimates, for any system that cannot be classified at the desired level of confidence, Bayesian and Non-Bayesian heuristics are proposed to determine the number of additional simulation replications to perform. Computational tests show that the proposed approaches yield simple, but effective, heuristics.