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Chris J Myers* (myers@ece.utah.edu), 50 S. Central Campus Dr., Rm. 3280, Salt Lake City, UT 84112. *Efficient methods of abstraction of Stochastic genetic circuit models.*

Researchers are beginning to be able to engineer synthetic genetic circuits for a range of applications in the environmental, medical, and energy domains. Crucial to the success of these efforts is the development of efficient methods and tools for the analysis of these genetic circuit designs. Genetic circuits are composed of very noisy components making their behavior stochastic in nature. Exact analysis methods are limited to very small circuits with no major time scale separations. Our research applies automatic abstraction techniques to simplify models of these genetic circuits making analysis more efficient while retaining important phenotypic behavior. This talk will present these methods, as well as their application to several interesting synthetic genetic circuits designs. (Received February 03, 2016)