1116-60-1073   **Dan Hrozencik*** (`dhro@att.net`), Chicago State University, Department of Mathematics HWH 332, 9501 S. King Dr., Chicago, IL 60423. *When Genes Fail: Modeling Stochasticity in Gene Regulatory Networks.*

In gene regulatory networks (GRNs), the expression of genes is subject to not only the input from other genes but also possible internal and/or external noise. Thus it is possible for genes in seemingly identical environmental conditions to behave differently. For this reason we are interested in studying variability in GRNs. In this talk the authors demonstrate a method for determining the variability in the probabilistic state space by estimating the activation and degradation propensities for the genes in the network as well as their distributions, and using this information to create an accurate simulation of the network, which is then used to calculate the previously unknown variations in the probabilistic state space. (Received September 16, 2015)