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### **Stochasticity in biochemical networks**

Biochemical systems have two sources of stochasticity: intrinsic fluctuations, inherent in the biochemistry and enhanced by low numbers of molecules, and extrinsic fluctuations, generated by interactions of the system of interest with other stochastic systems in the cell or its environment. I will discuss the definitions of intrinsic and extrinsic stochasticity and their interdependencies. I will describe ways to model, simulate, and measure both types of fluctuations and illustrate how stochasticity can be important for understanding the "design" of some biochemical networks.