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Mean-Independent Noise Control of Cell Fates via Intermediate States

A gene regulatory network is depicted in the middle with the intermediate state is highlighted in red. The diagram shows that when the amount of intermediate is increased, the amount of noise in the measured biochemical concentrations is reduced without changing the mean of the concentrations, a phenomena dubbed Mean-Independent Noise Control. Below, the effects of MINC on spatial concentration gradients is depicted. This shows how changes to the amount of intermediate reduce the amount of randomness in a concentration gradient without effecting the gradient’s average structure.