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Talk 1:

**Control and coordination of stochastic gene regulatory pulses**

Increasing evidence shows that many gene regulatory processes rely on stochastic pulsing by diverse factors that direct gene expression. Controlling the activity of these processes involves adjusting the intrinsic dynamics of the genetic circuits that generate the pulsing behavior. Here I will discuss our recent efforts in systematically characterizing how different biochemical perturbations control the dynamics of competence pulses in *Bacillus subtilis* bacteria under nutritional stress. Additionally, in many situations multiple pulsing factors coexist within a cell, raising the question of how they are coordinated. In the second part of the talk I will address this question in the case of sigma factor pulses in *B. subtilis* under energy stress.