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Oscillations and condensation in cellular regulation

Friday, August 11, 2023 1:30 PM (15 minutes)

The fundamental mechanisms that control and regulate biological organisms exhibit a surprising level of complexity. The protein, p53, is a master regulator of DNA damage response and when the cell is exposed to multiple DNA double-strand breaks, it exhibits sustained oscillations.
A characteristic hallmark of the response is the formation of sub-compartments around the site of damage, known as foci. Following multiple DNA breaks, the transcription factor p53 exhibits oscillations in its nuclear concentration, but how this dynamics can affect the repair remains unknown.
In this talk, I will present different ways in which the the oscillations can be stimulated and how complex dynamics might stimulate groups of genes.
Finally I will discuss the future prospects and how we aim to investigate the possibilities of oscillatory transcription factors.

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