

## Genome plasticity in three dimensions: exploring the dynamics of chromatin folding across time-scales and cell types

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Studies examining the evolution of genomes have been mainly focused on sequence conservation. However, the inner working of a cell implies a tightly regulated crosstalk between complex gene networks, controlled by small dispersed regulatory elements of physically contacting DNA regions. How these different levels of chromatin organization crosstalk in different species underpins the potential for genome evolutionary plasticity. I will provide an overview on the evolution of chromatin organization, discussing general aspects of the mode and tempo of genome evolution to later explore the multiple layers of genome organization. We propose that both genome and chromosome size modulate patterns of chromatin folding and that chromatin interactions facilitate the formation of lineage-specific chromosomal reorganizations. Overall, analyzing the mechanistic forces involved in the maintenance of chromatin structure and function of germ line is critical for understanding genome evolution, maintenance, and inheritance.