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**Understanding cellular architecture in cancer cells** SIMONE BIANCO, CHAO TANG, Department of Bioengineering and Therapeutic Science, University of California San Francisco — Understanding the development of cancer is an important goal for today's science. The morphology of cellular organelles, such as the nucleus, the nucleoli and the mitochondria, which is referred to as cellular architecture or cytoarchitecture, is an important indicator of the state of the cell. In particular, there are striking difference between the cellular architecture of a healthy cell versus a cancer cell. In this work we present a dynamical model for the evolution of organelles morphology in cancer cells. Using a dynamical systems approach, we describe the evolution of a cell on its way to cancer as a trajectory in a multidimensional morphology state. The results provided by this work may increase our insight on the mechanism of tumorigenesis and help build new therapeutic strategies.

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