

1135-92-2780

**Raina S Robeva\***, robeva@sbc.edu. *Stochastic dynamical models for assessing the effects of radiation on living cells*. Preliminary report.

Using models to determine the effect of radiation on the ability of cells to reproduce and form colonies is essential in radiotherapy and for assessing the risks of radiation. The classical target theory and many of its modern modifications take the administered dose as input, but do not account for the time duration over which the dose is delivered, thus essentially ignoring the ongoing repairs in the cell. We present a mechanistic stochastic framework that describes a dynamic dose-effect response, taking into consideration the underlying mechanisms of cell recovery. (Received September 26, 2017)