1124-92-327 **Marija Vucelja*** (mvucelja@virginia.edu), Department of Physics, University of Virginia, 382 McCormick Rd, Charlottesville, VA 22904. *Modelling CRISPR, the adaptive immune system of bacteria.*

The CRISPR mechanism serves as an adaptive defense mechanism of bacteria against phages and other invading genomic elements. It takes parts of genomic sequences from the "invaders" and in this way builds up a memory of past infections. The acquired sequences are stored among Clustered Regularly Interspaced Short Palindromic Repeats, aka CRISPR. With a new encounter of an invading sequence, this memory is accessed, and in a successful outcome, the invader is neutralized. I will introduce a population dynamics model where immunity can be both acquired and lost. Two key parameters of the model are the ease of acquisition and the effectiveness in conferring immunity. Next, I will describe the predictions of this model and suggest potential experiments. (Received September 12, 2016)