**Overview**

合成生物学为生物医疗、生物技术、和基础分子研究持续注入源源不断的动力，而数学模型作为一种工具在其中扮演者越来越重要的角色，在定量的预测或对数据进行诠释，以及指导人工系统的设计方面都起到了重要作用。。

As synthetic biology continues to inject momentum into biomedical, biotechnology, and basic molecular research, mathematical model plays an increasingly important role as a tool. It makes significant sense in quantitative prediction and interpretation of data, as well as guiding the design of artificial systems.

**Cellular Automaton Model**

我们建立了元胞自动机模型，模型模拟了蚯蚓处理土壤铅污染的效果，为提供最佳释放策略提供了参考。模型考虑了多种吸引力对蚯蚓运动的影响，可以推广至其他区域土地。

We established a Cellular Automata Model to simulate the effect of earthworm on soil lead pollution, which provided a reference for the optimal release strategy. The model took into account the effects of various attractions on earthworm movement and can be extended to other regions.

**Kill Switch Model**

我们建立了自杀开关模型，以确定使自杀开关有效实行的最佳RBS强度和C1降解速率组合，在模拟多个组合之后，获取最佳组合，为实验设计提供指导。

We established a kill switch model to determine the optimal combination of RBS strength and C1 degradation rate for the effective implementation of the kill switch. After simulating multiple combinations, the optimal combination was obtained to provide guidance for the experiment design.