

Faculty Name:

Tal Danino

Faculty Email:

td2506@columbia.edu

Lab:

Tal Danino Lab

Project Title:

Engineering microbes to treat cancer and infectious diseases

Description:

Our lab engineers genetic circuits of microbes such as bacteria and viruses, and utilize them to treat diseases like cancer where traditional therapies have been ineffective. We also utilize bacteria's ability to colonize diseased tissues to design new treatments for infectious diseases. The SEAS summer fellows will be involved in the process of engineering plasmids to construct genetic circuits for use in bacteria such as Salmonella sp. and E.coli. They will make use of a variety of methods including, but not limited to: plasmid cloning, mammalian tissue culture, time lapse microscopy, subcutaneous mouse tumor injections, tumor tissue implantation, as well as volume measurements over time, and, tests for immune activation in mice. The fellows will undergo safety training, as well as proper technique training for all of the utilized methods. By the end of the summer, the fellows should emerge from the project with a deeper understanding of synthetic biology, gene circuits, and the process of engineering living organisms.

Location of Research:

On-Site

of hrs/week:

25

Department/Program:

Biomedical Engineering

Eligibility:

BS, First Year, BS, Second Year, BS, Third Year

To apply, please contact:

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