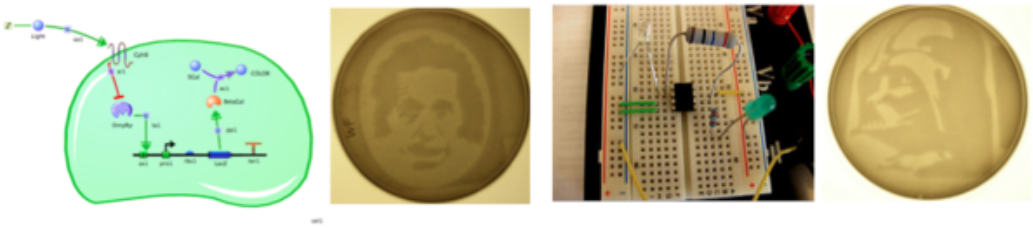
Lab 3: Picture this

Explore an engineered biological system through a computer simulation, an electronics building kit, and a real-life example.



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Objectives

By the conclusion of this laboratory investigation, the student will be able to:

- Explain how synthetic biology as an engineering discipline differs from genetic engineering.
- Define and properly use synthetic biology terms: system, gain, tuning
- Define and properly use molecular genetics terms: two component system, transcriptional activation, phosphorylation
- Relate the bacterial photography system to the two component signaling system.
- Model a biological system using electronic parts and a computer program.
- Explain the role that modeling can play in design, and name some ways that models differ from reality.

Introduction

If you have not had a lesson on how the bacterial photography system works, go read the first half of the design assignment page.

Part I: TinkerCell

Part II. Electronic vs Biological Circuits

Part III. U-do-it Bacterial Photograph