

## BioBuilding: Synthetic Biology for Teachers: Picture This

### Lab 3: Picture this



#### U-do-it Bacterial Photograph

Since the bacterial photography system requires expensive indicator media and a specialized light source in an incubator, we do not have an easy way for you to try this part of the work in your classroom. We're working on it! But in the meantime, if you'd like to send a transparency for us to develop for you in our lab, please contact us through the BioBuilder site and we'll work out a way to collaborate! Students might like to see their school logo or favorite actor in a bacterial photograph. As you think about an image to develop, remember that the goal is to have each cell growing distinctly in the light or dark, so simple black-and-white images are preferable (anything with gray-scale will not show up adequately). Light can bounce around edges and may blur the resulting image if the black and white are highly intermingled, so a large blocky design will work better than an intricate one. In general, it's better to have a dark background and a light image rather than the other way around. Once you've chosen an image to develop, generate a computer file with this image and print it to a transparency. To darken the dark parts of your photo, you might want to print it on two transparencies, and we'll use them both to mask the Petri dish. We can then send you a digital photo of your result.

#### Annotated Procedure

##### 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](#).



*TEACHERS: We recommend you give a lecture describing two-component signaling and the bacterial photography system in more detail.*

#### Part III. U-do-it Bacterial Photograph

Decide what image you would like to develop as a bacterial photograph. Remember that the goal is to have each cell growing distinctly in the light or dark. Light can bounce around edges and may blur the resulting image if the black and white are highly intermingled. In general, it's better to have a dark background and a light image rather than the other way around. Once you have decided on an image, generate a computer file with this image and print it to a transparency. To darken

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the dark parts of your photo, you might want to print it on two transparencies and use them both to mask the Petri dish. The diameter of the petri dish is less than 3 inches across so your image must be smaller than this.

Email info AT BioBuilder DOT org to say that a transparency is being sent, and in a few days, a jpg file with your bacterial photo, or the plate itself if that's possible, will be sent back to you.

### **Survey**

To help us improve the labs, you can

1. send the students [here](#), where they can upload their data.
2. "join a discussion" from the [BioBuilder homepage](#)
3. email us: "info AT biobuilder DOT org"

Thanks!

### **Feedback**

We're always looking to hear back from you if you've thought about this unit, tried it, or stumbled across it and want to know more. Please email us through [BioBuilder](#), info AT biobuilder DOT org.