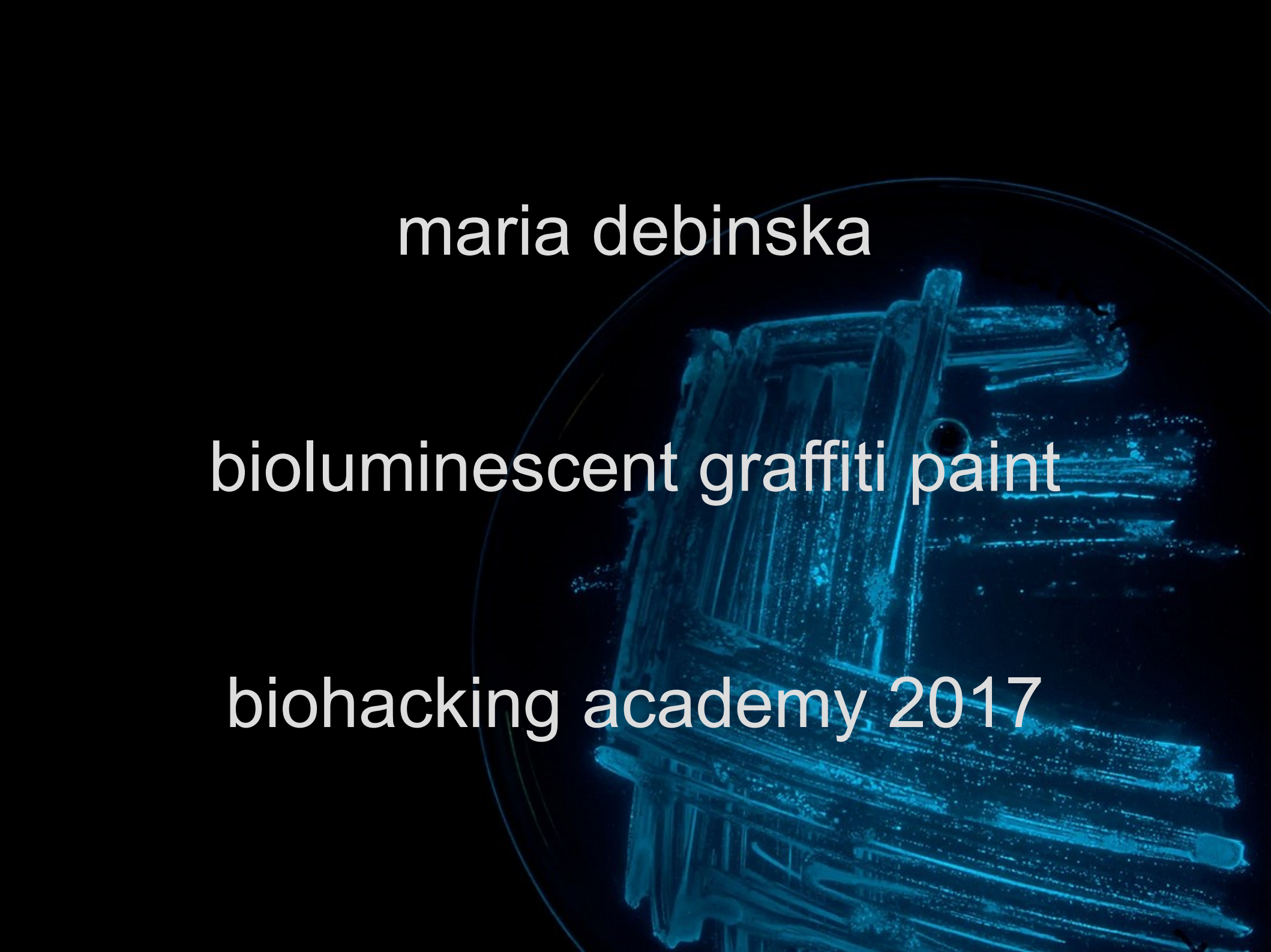
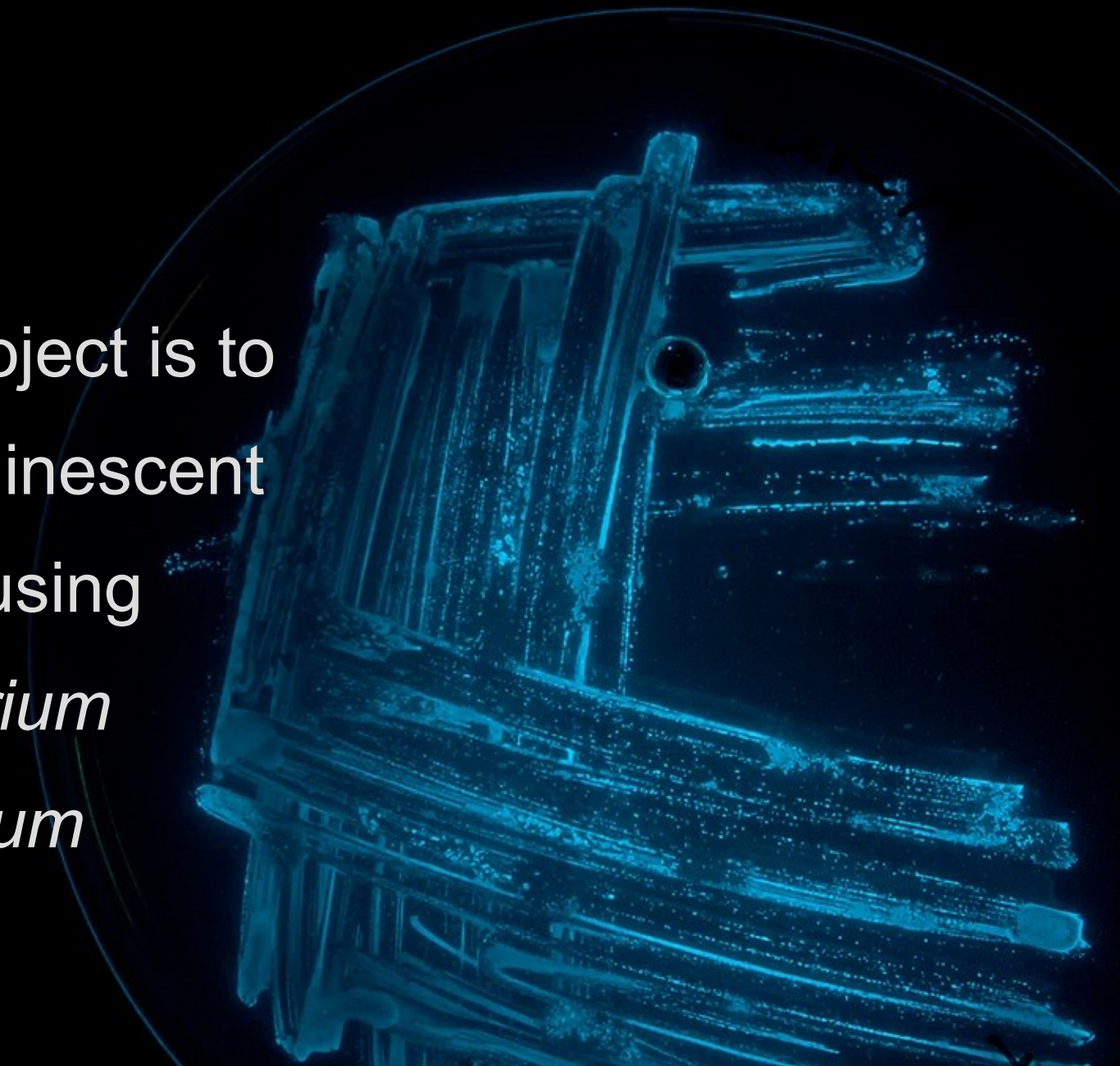

maria debinska
bioluminescent graffiti paint
biohacking academy 2017

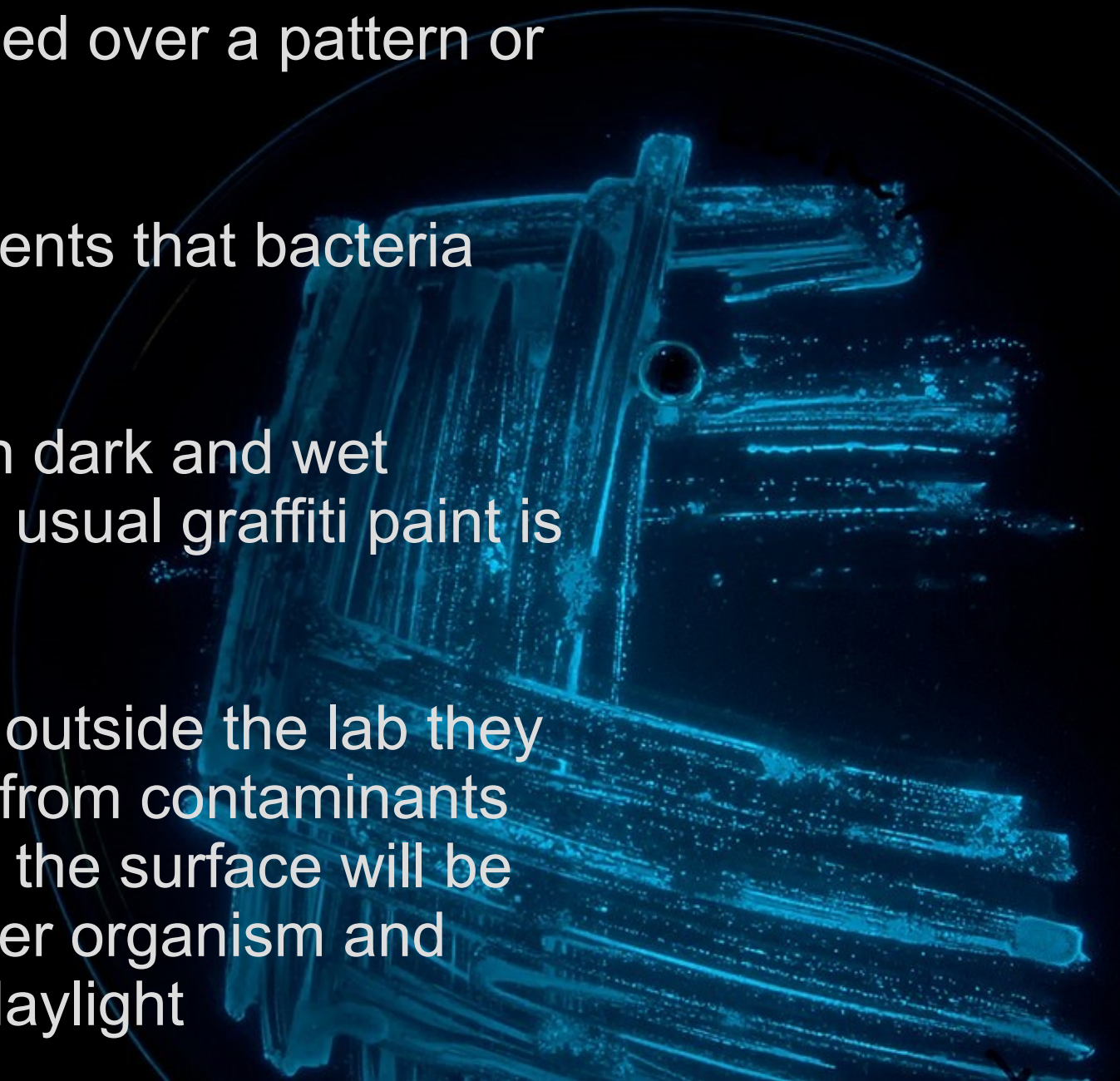
aim

the aim of this project is to develop a bioluminescent graffiti paint using *photobacterium phosphoreum*



how it works

- the paint can be used over a pattern or independently
- it contains the nutrients that bacteria need to glow
- It should be used in dark and wet places – where the usual graffiti paint is less useful
- in the environment outside the lab they cannot be isolated from contaminants so after a few days the surface will be overgrown with other organism and become visible in daylight



task 1

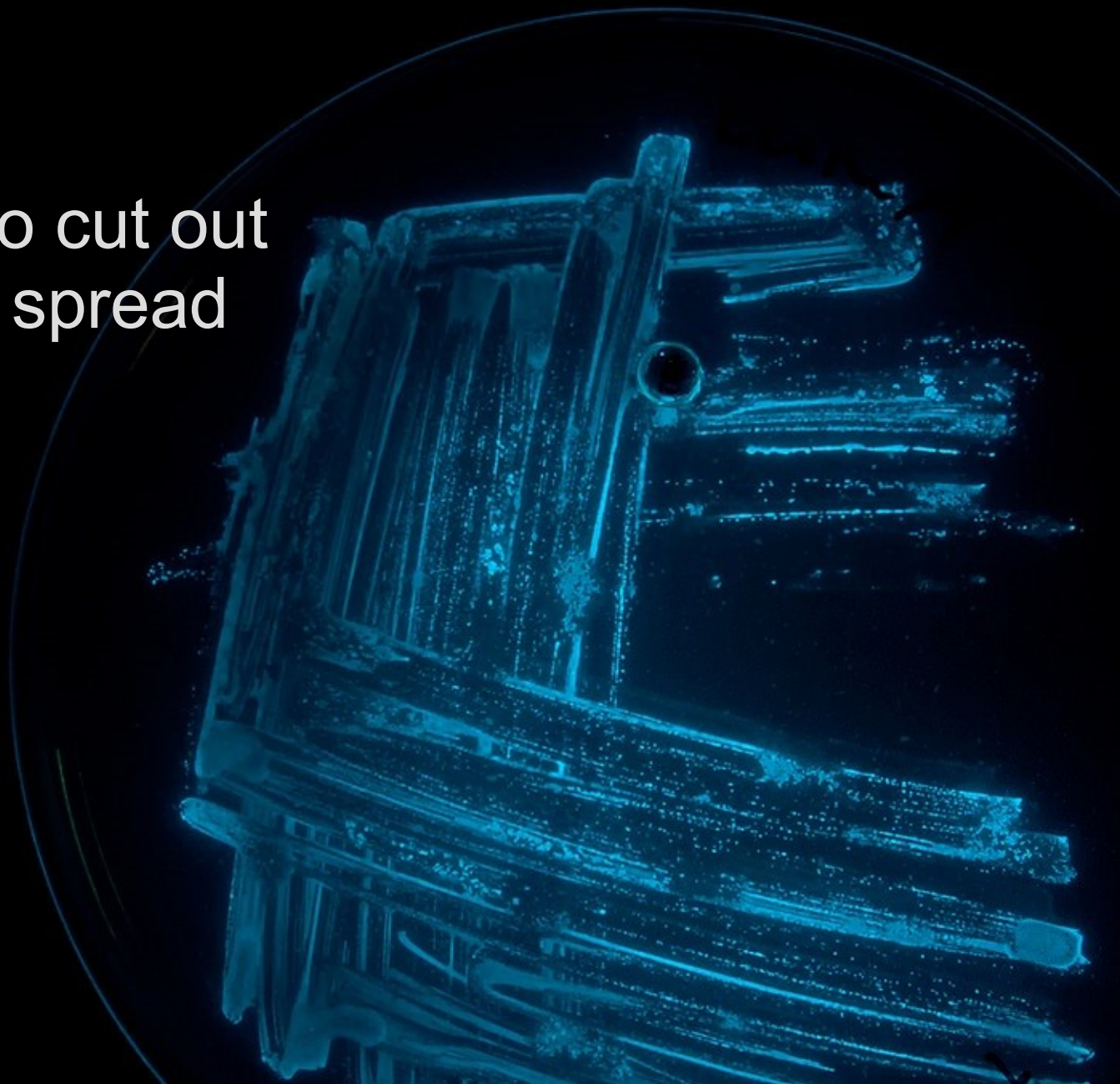
develop a gel medium able to sustain the bacteria in an environment outside the lab using easily available ingredients

steps:

- prepare medium: the solution should not allow for agar to completely solidify
- sterilize medium and add bacteria
- sterilize paintbrush and put paint on it in sterile conditions
- test for longevity in non-sterile conditions: provide oxygen supply, choose a cool and shady place

task 2

prepare patterns to cut out and find places to spread them

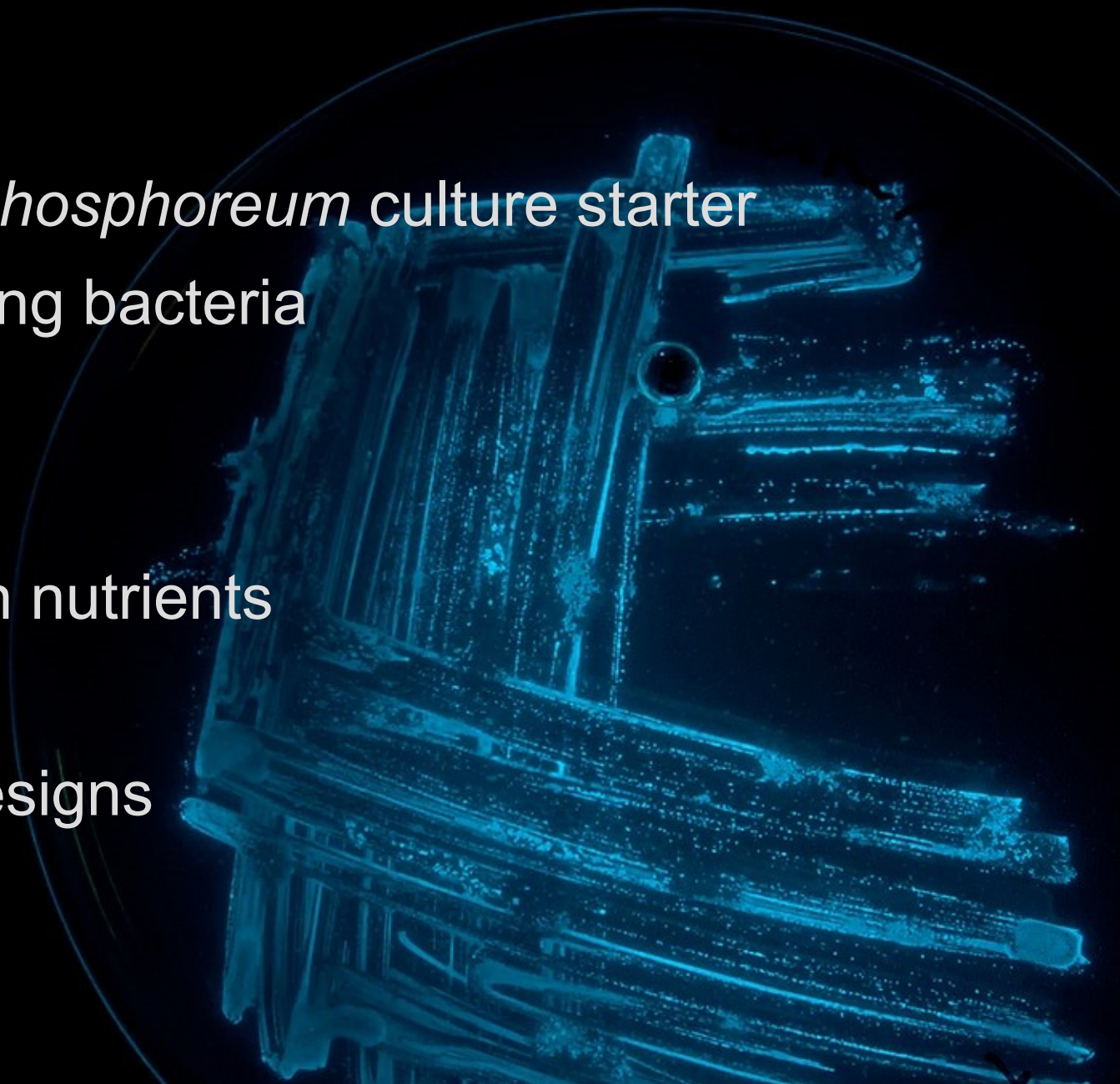


protocol

steps:

- prepare sterile containers
- grow bacteria in a sterile liquid customized medium
- when the bacteria are glowing bright enough prepare paint solution by adding more agar (but not enough to let the liquid solidify)
- design signs and patterns for painting
- paint with sterilized brush over chosen surface

materials



- *photobacterium phosphoreum* culture starter
- medium for growing bacteria
- petri dishes
- flask
- paint solution with nutrients
- sterilized brush
- cut-out pattern designs

sources

http://www.instructables.com/id/Bioluminescent-Bacterial-Lightbulb-Water-Polluti/

https://www.newscientist.com/article/2078921-glow-in-the-dark-bacterial-lights-could-illuminate-shop-windows/

https://www.wired.com/2015/01/lamp-whose-light-comes-bioluminescent-bacteria/

Microbiology at Home: A short non-laboratory manual for enthusiasts and bioartists