

# Biotic Games

A microscopic view of various organisms, likely algae or protozoa, with red numerical labels. The organisms are elongated and some have internal structures. The labels are: 425, 107; 445, 136; 566; 7, 350; 4, 394; 231, 376; 272, 312, 341, 354; and 272, 312, 341, 354.

A microscopic view of various organisms, likely algae or protozoa, with red numerical labels. The organisms are elongated and some have internal structures. The labels are: 425, 107; 445, 136; 566; 7, 350; 4, 394; 272, 312, 341; 231, 376. The text "What are Biotic Games?" is overlaid in white.

425, 107  
445, 136  
566  
7, 350  
4, 394  
272, 312, 341  
231, 376

# What are Biotic Games?

# LudusScope: Accessible Interactive Smartphone Microscopy for Life-Science Education

Honesty Kim, Lukas Cyrill Gerber, Daniel Chiu, Seung Ah Lee, Nate J. Cira, Sherwin Yuyang Xia, Ingmar H. Riedel-Kruse 

Published: October 5, 2016 • <https://doi.org/10.1371/journal.pone.0162602>

End



Time: 25



# **Animal Controlled Computer Games: Playing Pac-Man Against Real Crickets**

Wim van Eck and Maarten H. Lamers



Cite this: *Lab Chip*, 2011, **11**, 14

[www.rsc.org/loc](http://www.rsc.org/loc)

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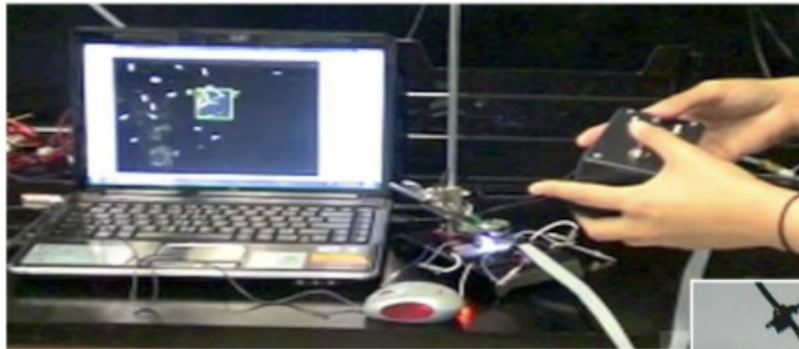
## **Design, engineering and utility of biotic games†‡§**

**Ingmar H. Riedel-Kruse,¶\* Alice M. Chung, Burak Dura, Andrea L. Hamilton and Byung C. Lee**

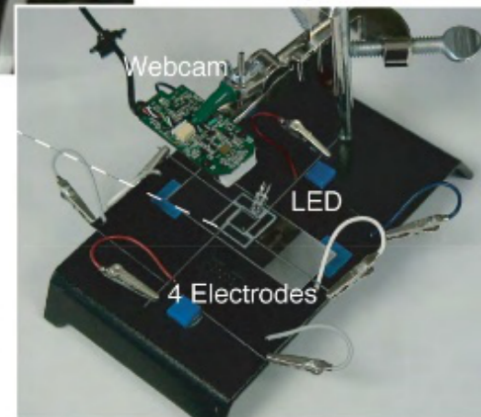
*Received 11th September 2010, Accepted 23rd September 2010*

**DOI: 10.1039/c0lc00399a**

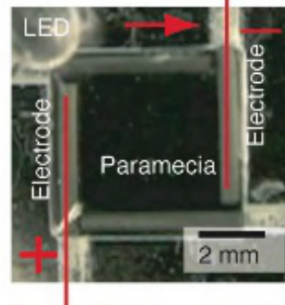
# Biotic game set-up



Biotic processor



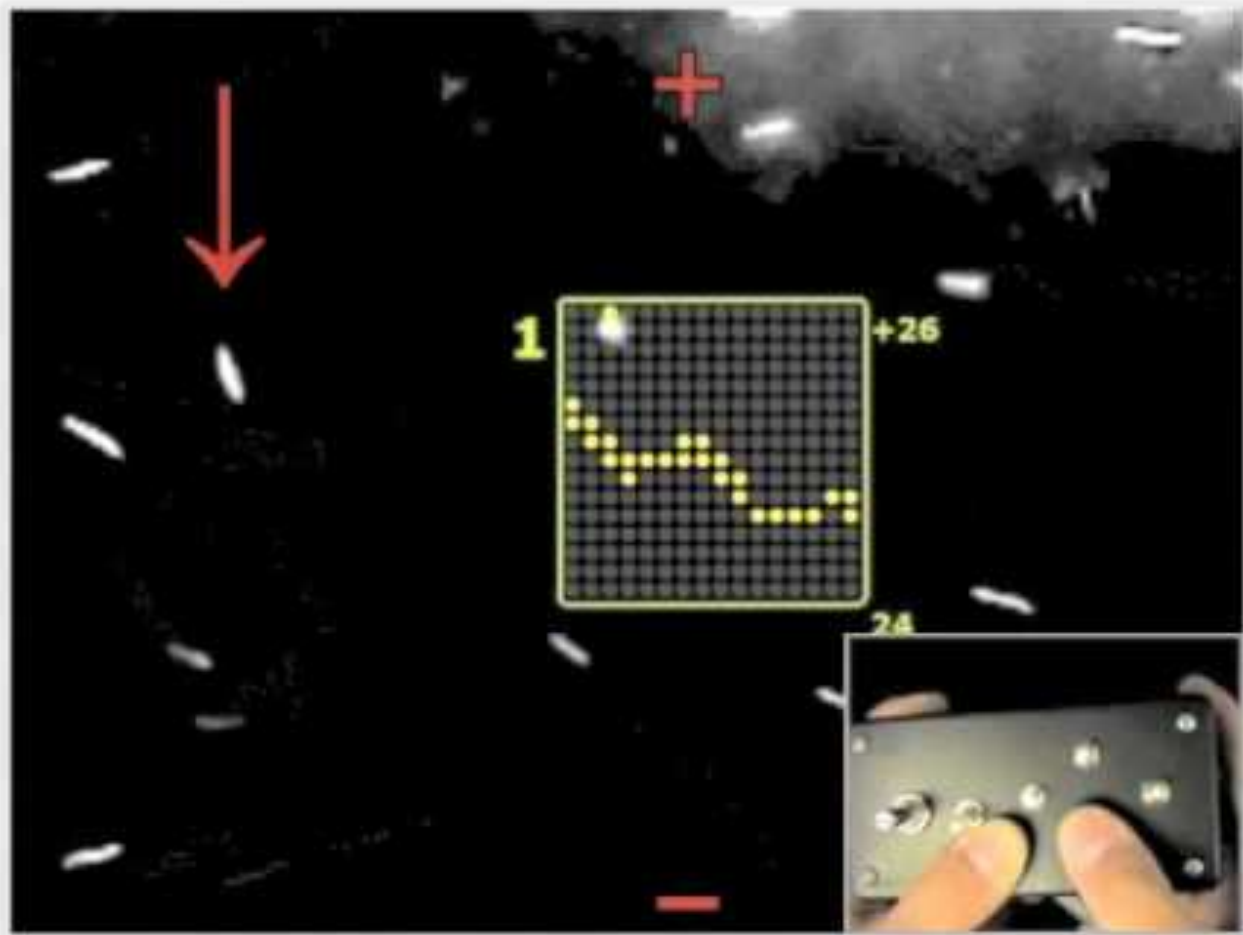
Fluid chamber



Game controller

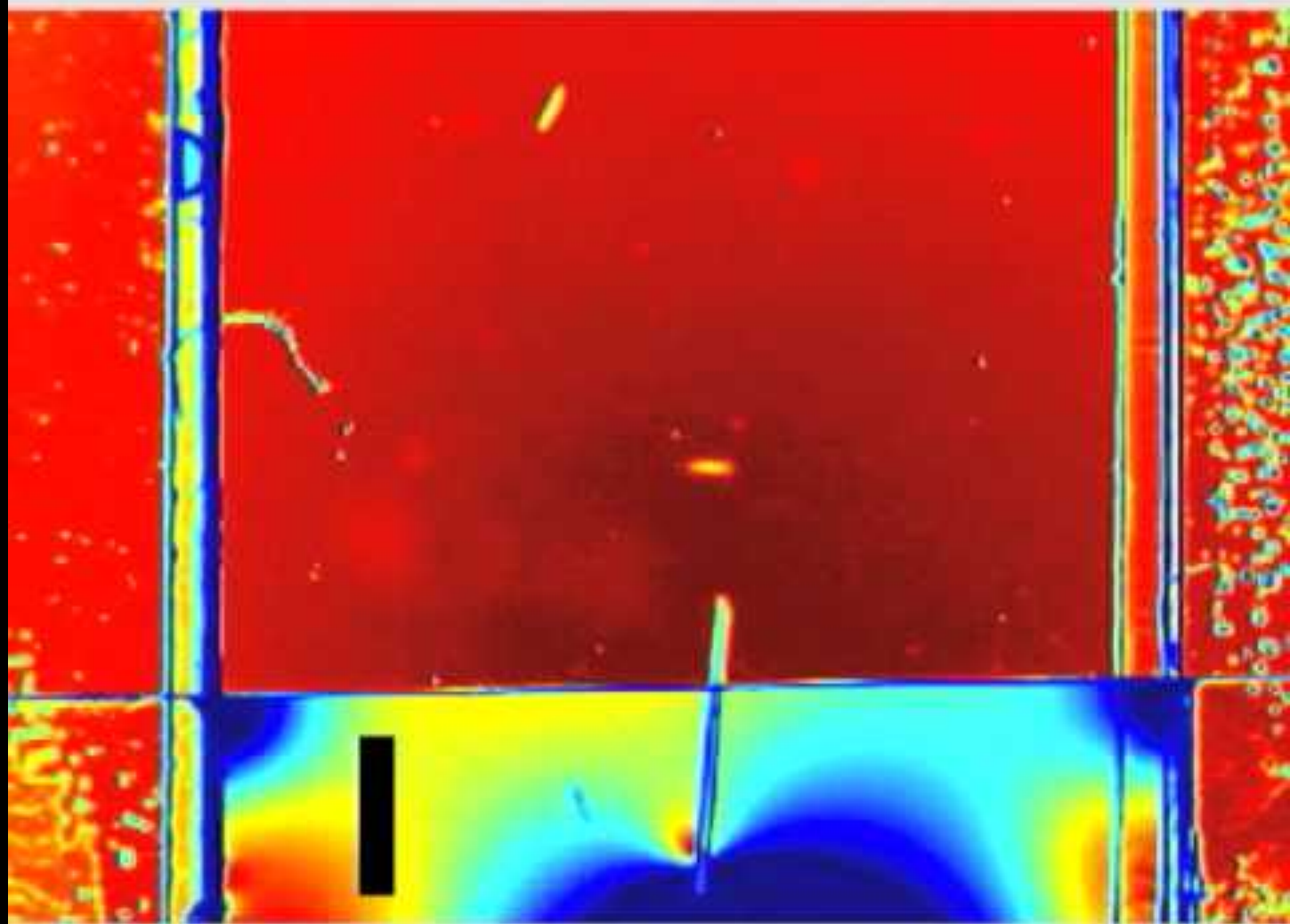


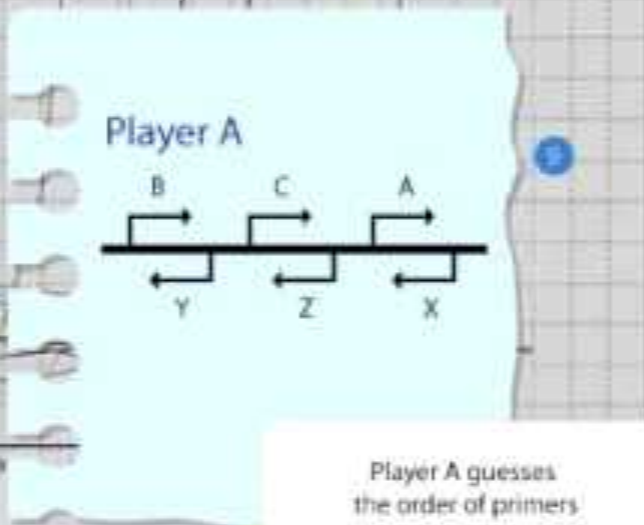




Player1

SCORE: 472

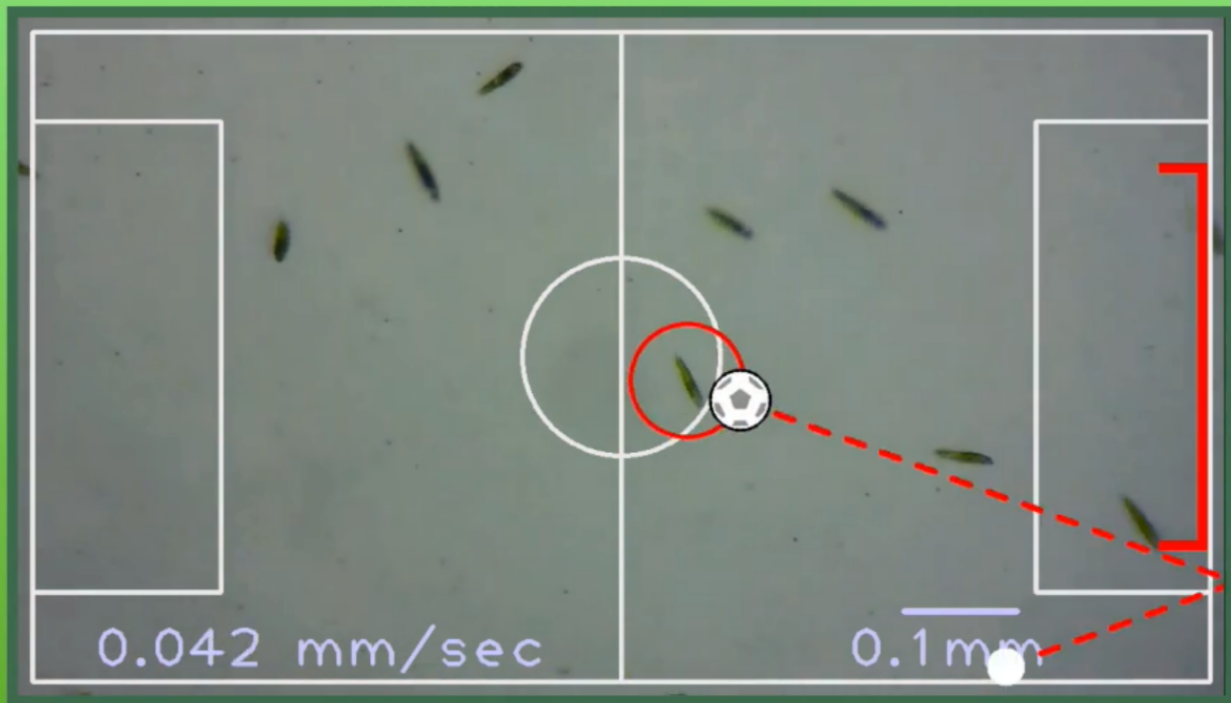




- 1 CX 1x
- 2 CZ 1x
- 3 AZ 2x
- 4 CX 2x
- 5 BY 4x
- 6 AY 4x
- 7 CZ 8x
- 8 BX 8x
- 9 CX 16x
- 10 BZ 16x
- 11 CZ 32x
- 12 CZ 32x

cycle  
22

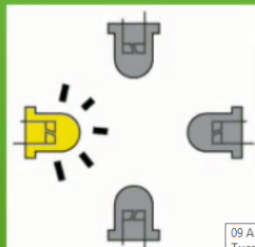




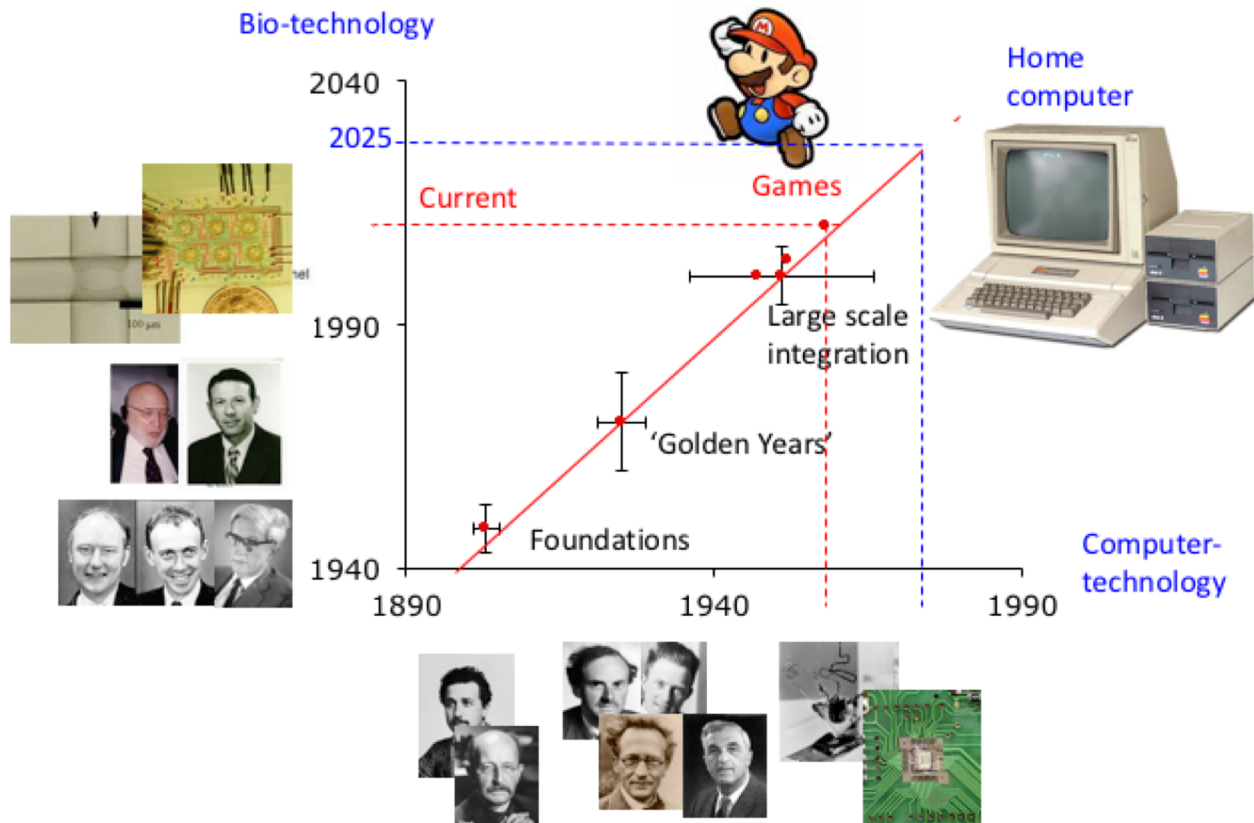
Score: 0

**Shoot Ball**

Time: 5



# Computer- vs. Bio-tech: 50 year lag





# Euglena Spaceships

2016

Roland van Dierendonck, Christian Schulz, Pieter van Boheemen (then Waag Society) and Ingmar Riedel-Kruse (Stanford University)



# SPACEWAR

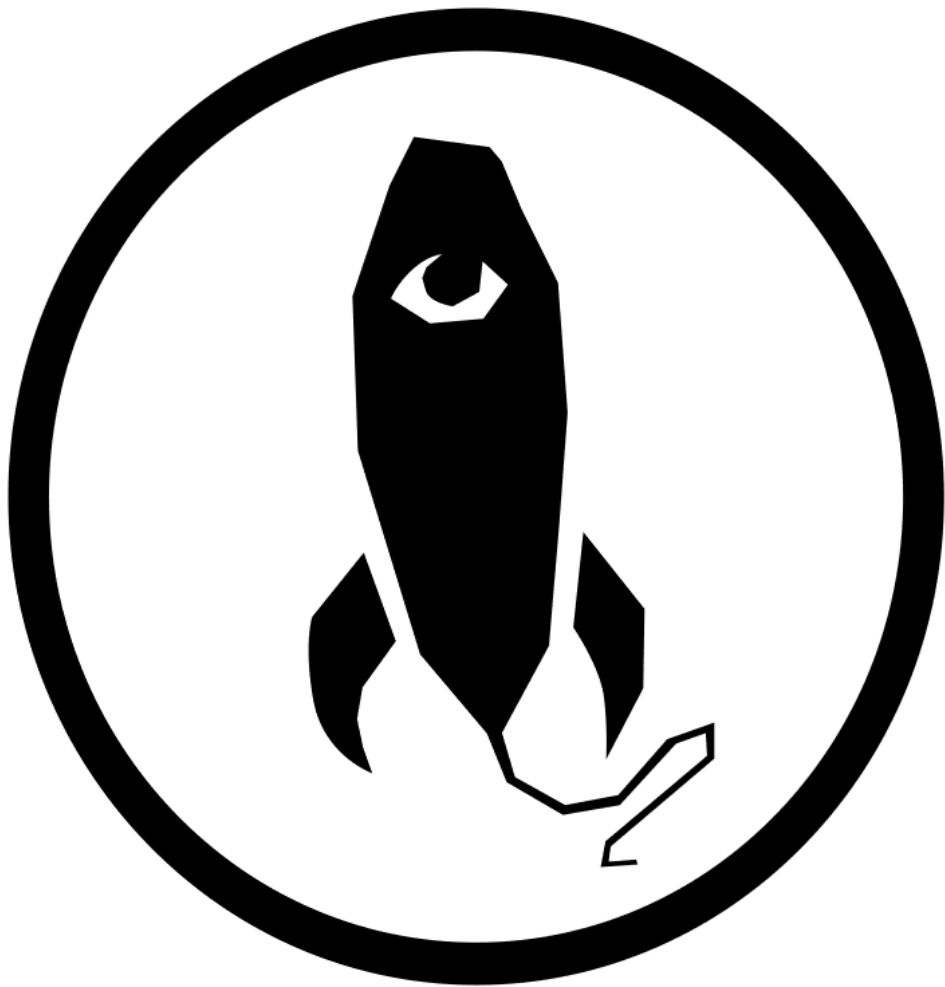
V1.71

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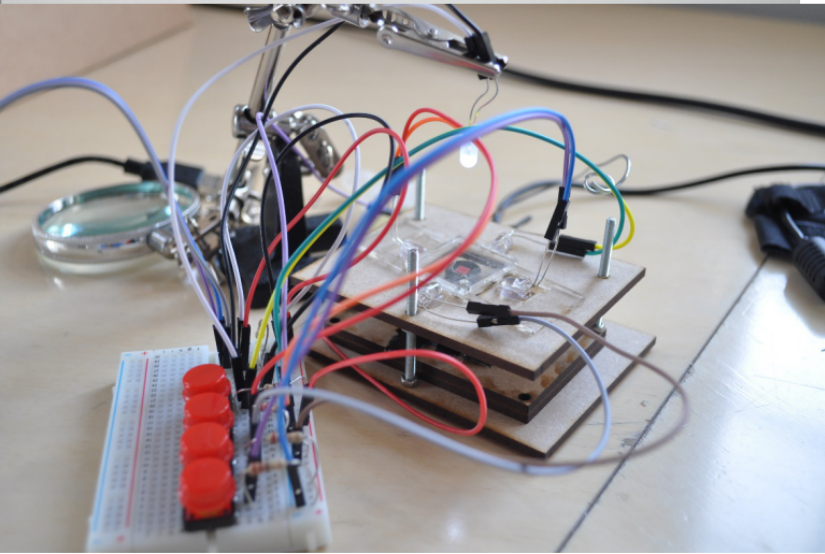
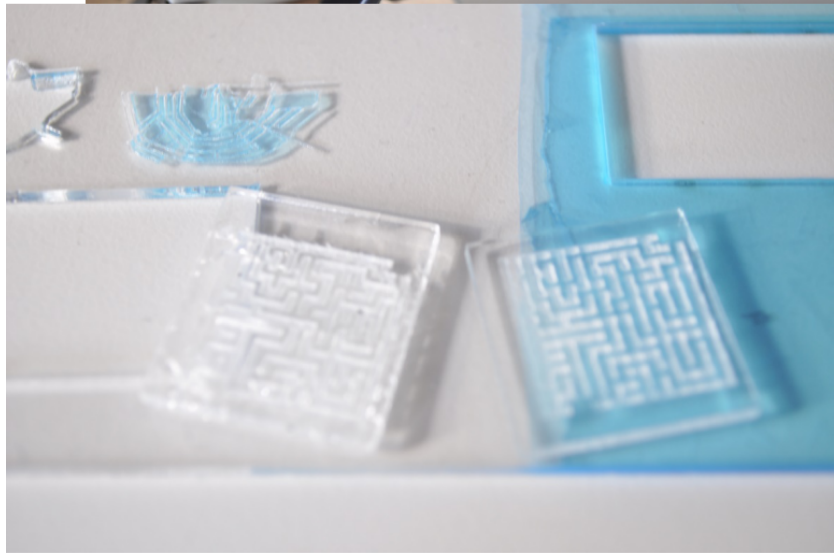
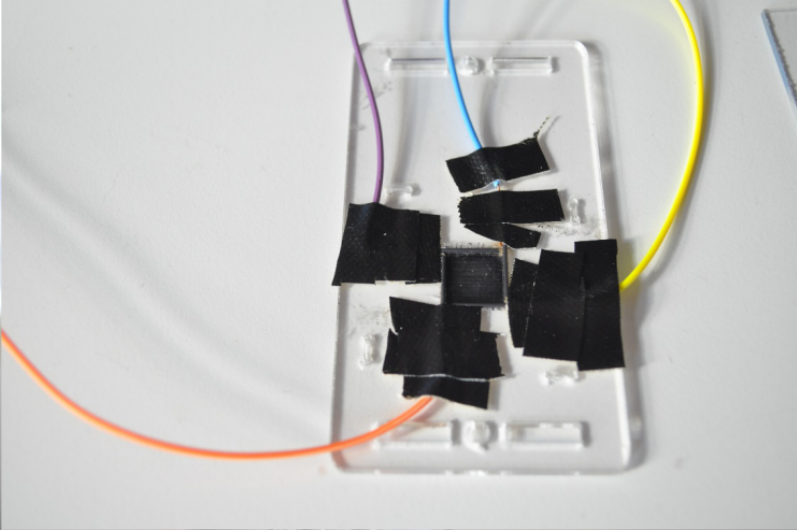
☪ = 0

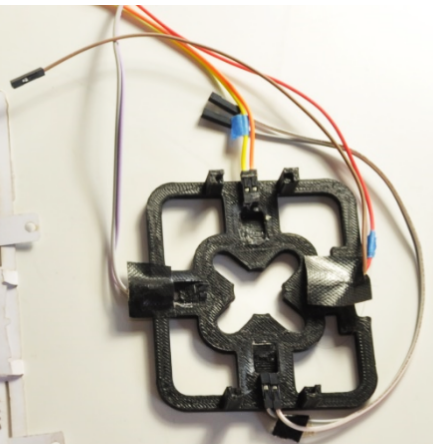
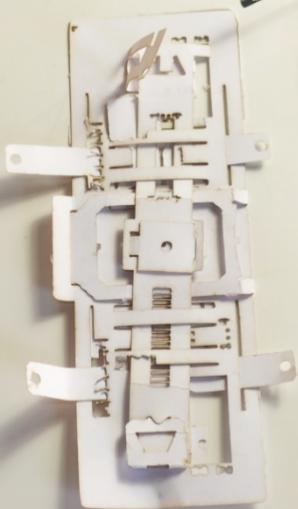
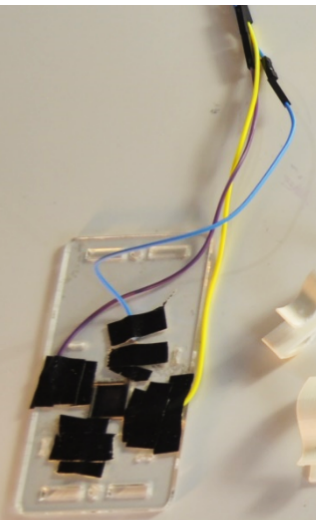
☺ = 0

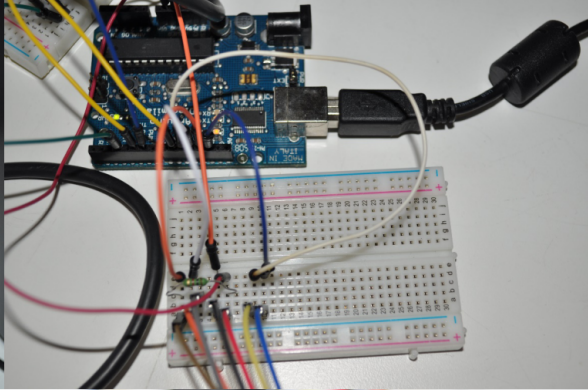
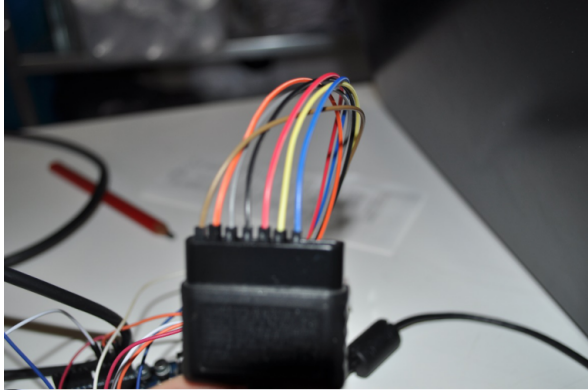
1 EXIT 2 PLAY 3 ROBOT L 4 ROBOT R 5 PLANET 6 GRAVITY 7 PAUSE











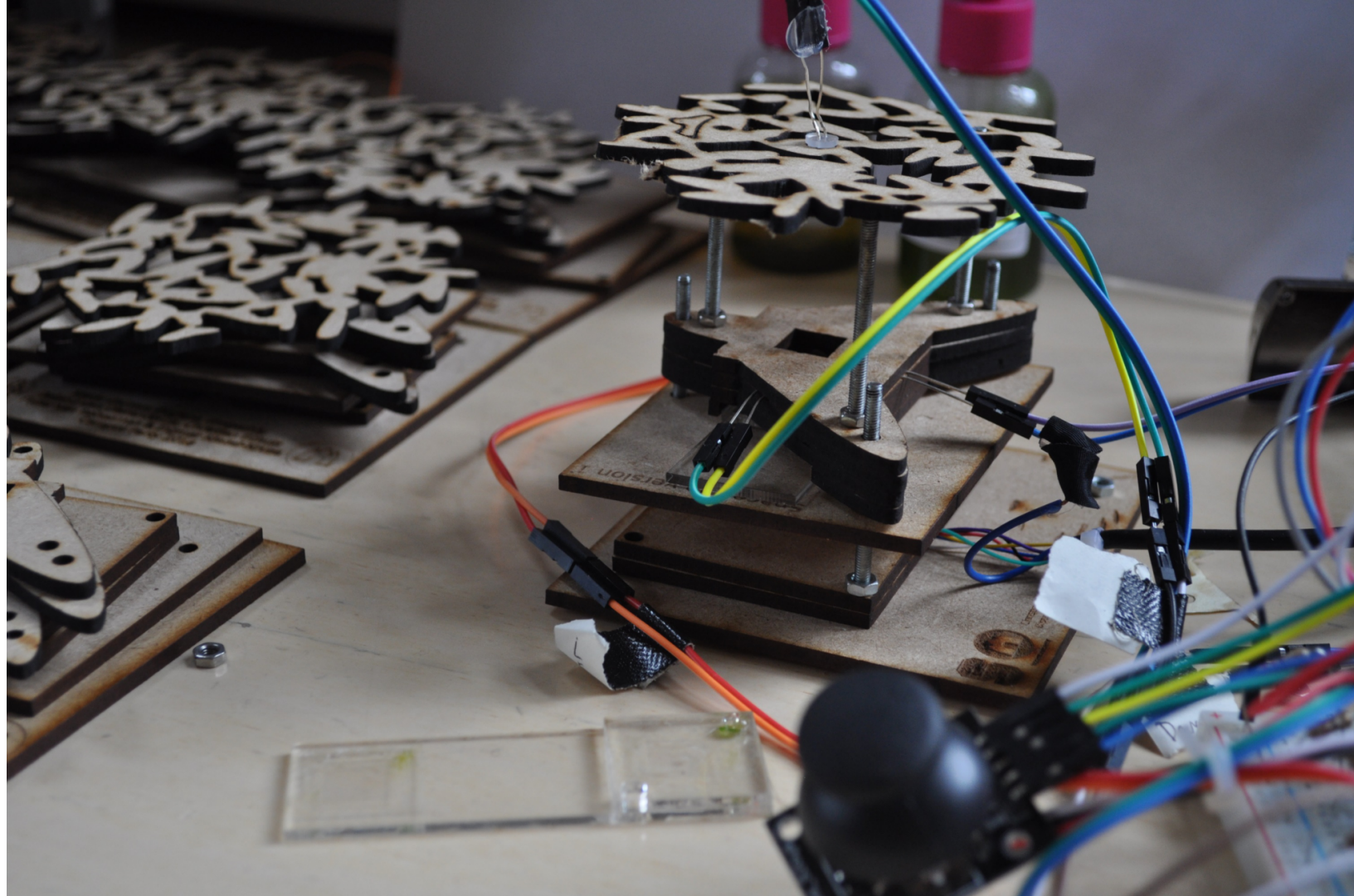




Algae culture - *Euglenophyta*  
JP530  
**Euglena gracilis**  
*Phytoflagellate*  
Sciento - Manchester

CAROLINA  
15-2800  
*Euglena gracilis*  
Soil-Water+Pe  
Biological Supply  
North Carolina  
www.carolina.com

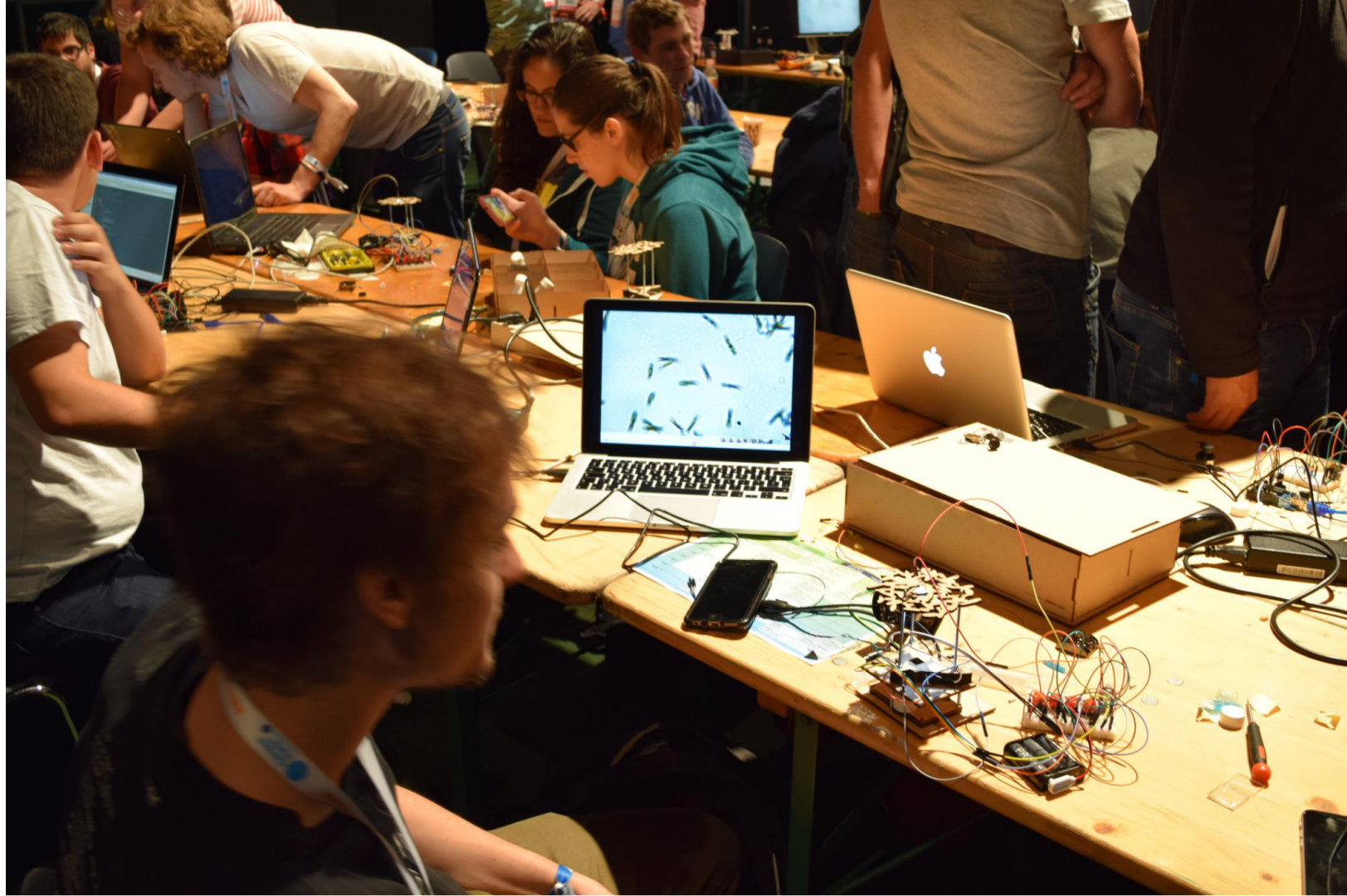






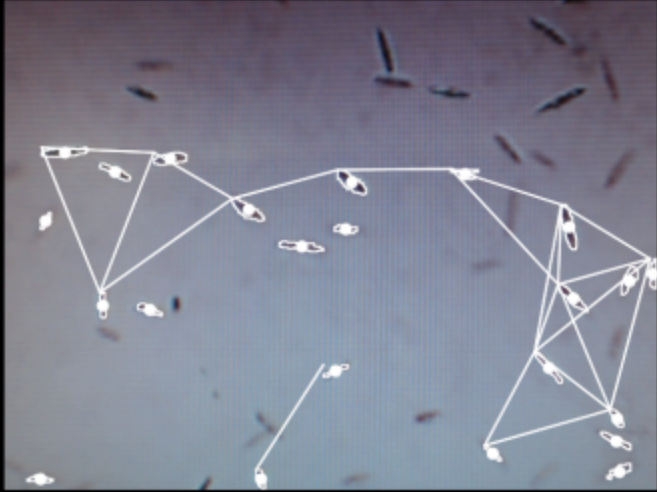
Replay



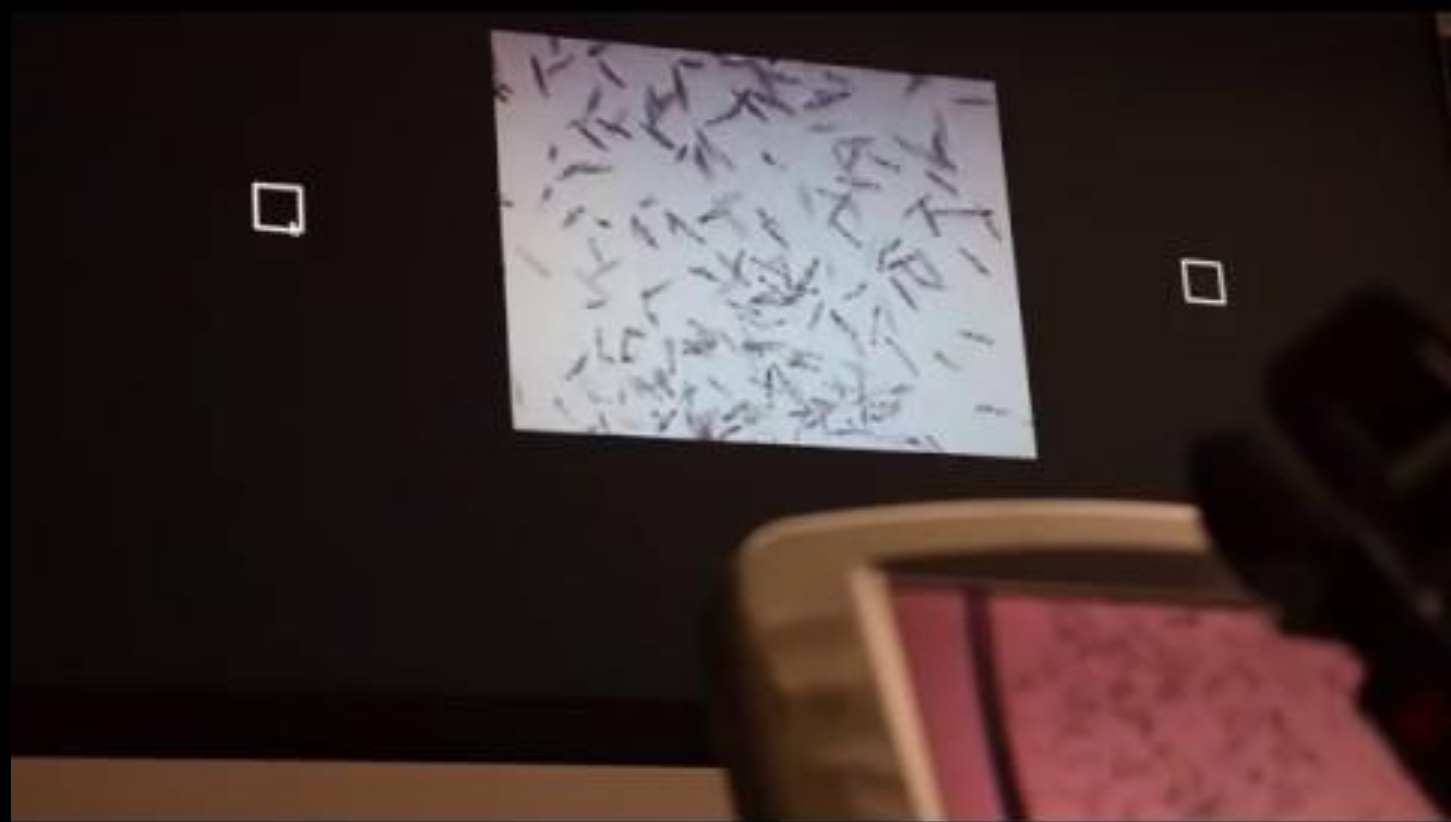












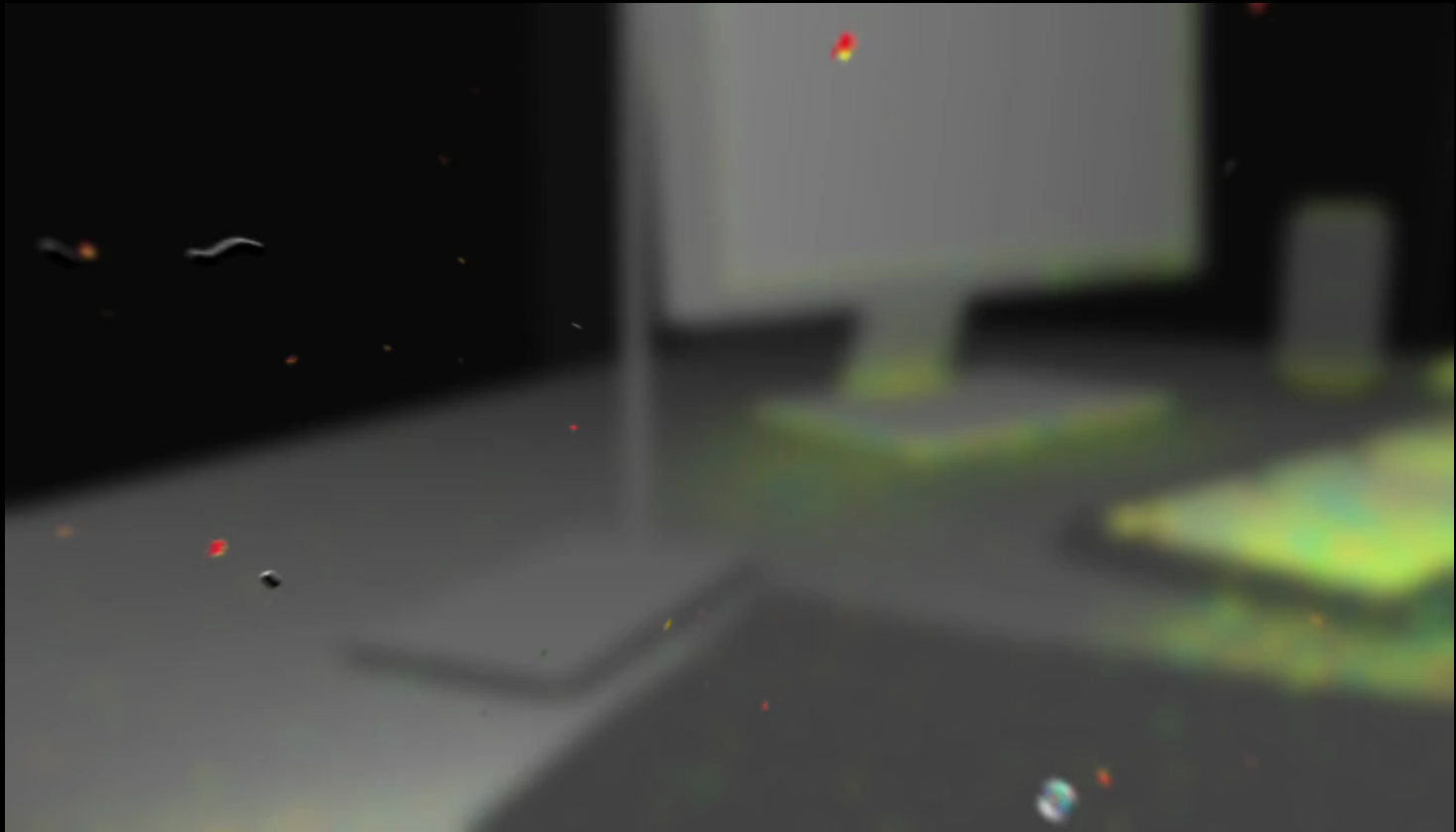
A microscopic view of various mould colonies growing on a dark, textured surface. The colonies are in various stages of growth, showing different colors and textures. Some are light brown and fuzzy, while others are darker and more structured. The background is a dark, almost black, surface with some small, white, circular spots.

**Mould Rush**  
**GAME OVER**



Raphael Kim



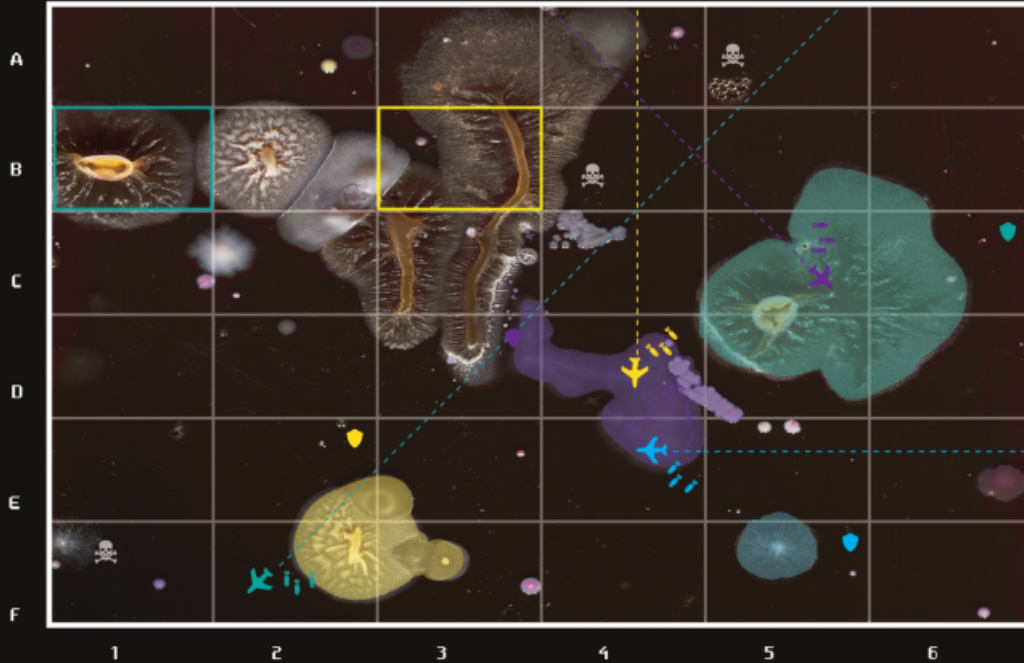


CC 3.0 SA - Biology and the Built Environment (BioBE) Center with Cameron Slayden (Cosmocyste)



# MOULD RUSHING : London E16 (Day 3/3) 33°C

● LIVE



## LEADERBOARD :

- 1 = pes\_nes (350)
- 2 = rphKim82 (138)
- 3 = candida\_crush (83)
- 4 = Iichte404 (21)

## Next Score Update :

12:30 BST

## Last Score Update :

00:30 BST

**pes\_nes** collect B1, block B6,  
kill F2

**candida\_crush** collect B3, kill D4

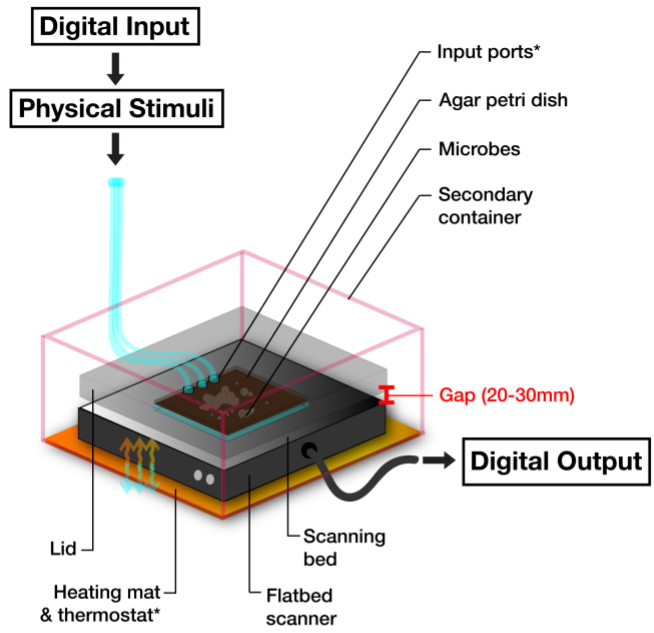
**mould\_rush** thank you

**pes\_nes** sorry block C6 🙄🙄🙄

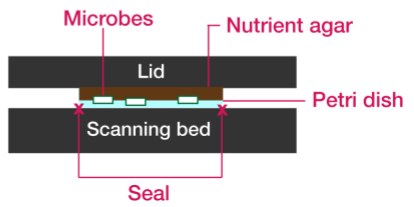
**rphkim82** kill C5

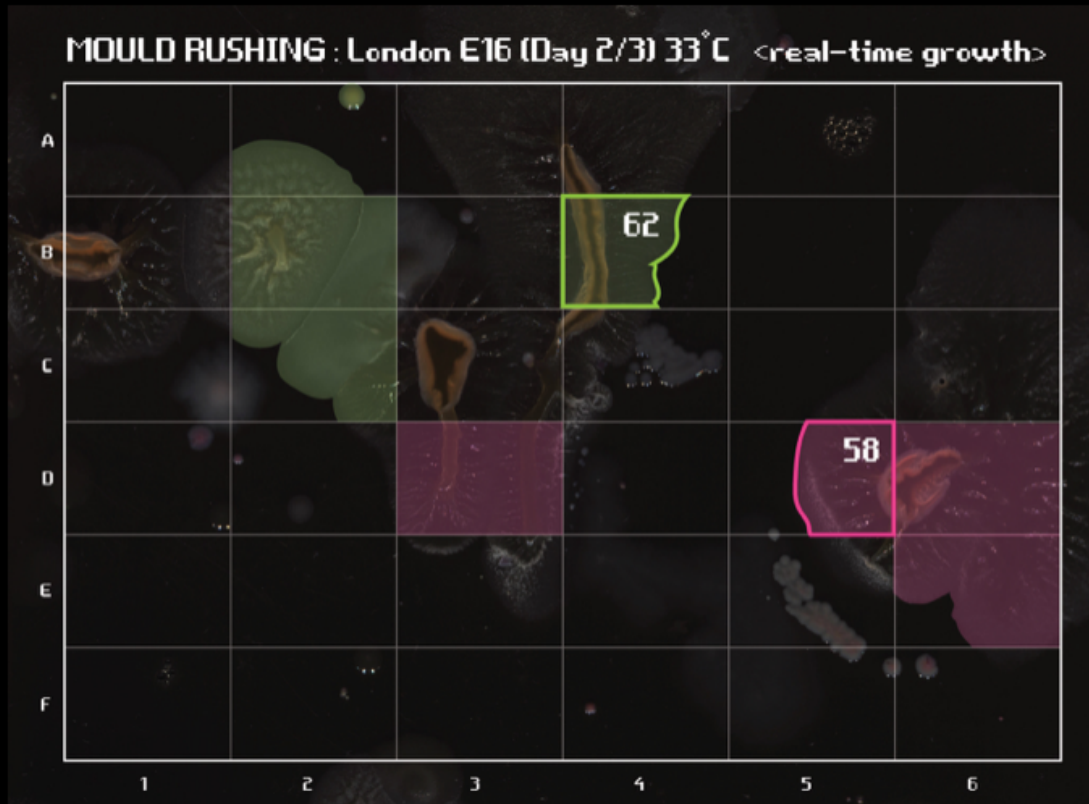
**rphkim82** block D3 🙄

**candida\_crush** Block e2



**Side View (Close-Up)**





**'Collect B4'**

**'Collect D5'**



**'Kill B2'**

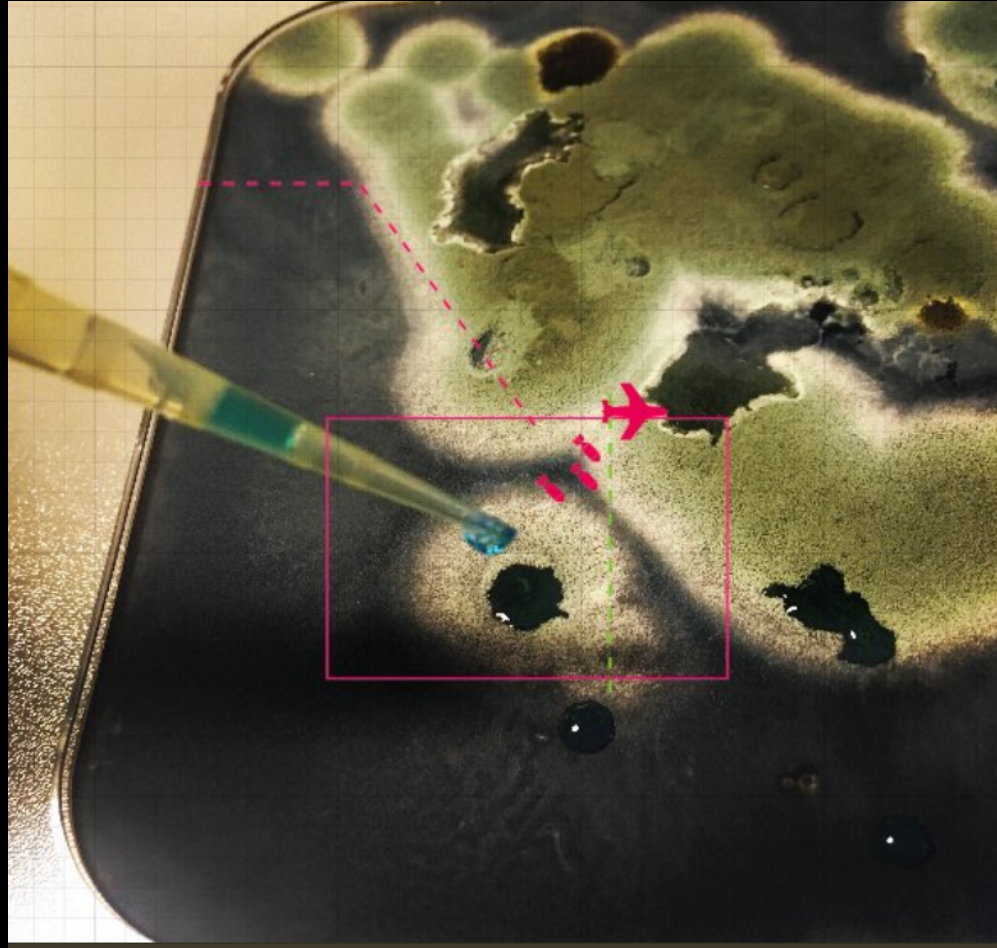


image: Raphael Kim



image: Raphael Kim





mould\_rush

Videos 39

Events

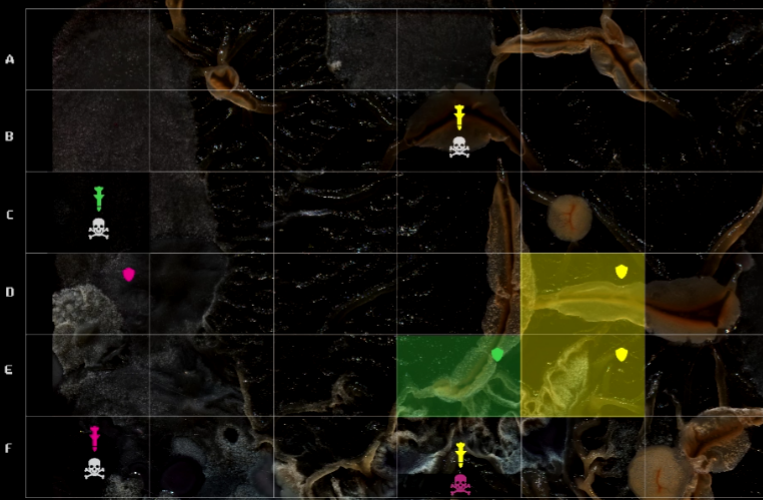
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### GAME DAY 2 (London, 30°C) PRE-RECORDED GROWTH



### LEADERBOARD :

- 1 = bac\_subtilis (200)
- 2 = sacc\_myces (100)
- 3 = Candida\_crush (0)
- 3 = myc\_celium (0)

Submit Commands by  
18:30 BST  
GAME OVER at  
18:30 BST

mould\_hello

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- ✓ Capture your favorite moments
- ✓ Watch in Dark Mode!

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MegTurney  
Board Games

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Disney's Toy Story



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Post at 7:09:41