

2017

IGEM IONIS, SCHOOL PRESENTATION



IGEM IONIS

Education Investment

For the iGEM competition, a part of the human practices project deals with public communication and ethic reflection around the project. For this approach, we decided to spoke in high schools to promote biology, synthetic biology, our iGEM project and to challenge them around some questions and a card game.

For our presentation, we introduced them to the following subjects:

- First, we presented what is synthetic biology and its application in some domains such as: agro-food sector, health and environment with concretes examples (1).
- Then, we warned them about the risks on the human health and on biodiversity, and we presented our project (2).
- Finally, we asked them questions in order to challenge their general knowledge on biology, synthetic biology and their limits (3).

1).



2).



3).



Card Game

After the presentation, we asked them to play a card game that we created to help them to have a better understanding of synthetic biology. In this purpose, students had to create their own biological tool to answer a problematic.

The rules of the game are as follow:

- First, we asked them to form teams of 4-6 people.
- Then, they had to draw 3 **green** cards representing organisms (mushroom, bacteria, human cell, plants or animals).
- After, they picked 3 **yellow** cards representing a DNA vector to induce a new property to the organism (produce a colored molecule, produce an antibody, produce an enzyme, ...).
- Then, 1 **red** card presenting a problematic to solve (produce energy, protect crops, detect a pollutant, ...).
- The purpose was simple: answer to the problematic by giving a new property to an organism.
- Finally, one student of the group made a quick presentation of their genetically modified organism with a short story to contextualize their ideas.

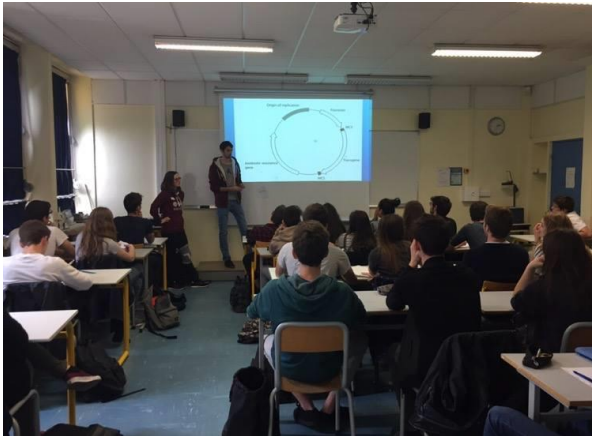
Below are all the different cards we created:



Events performed

We made our presentation for the following high school:

- ⑩ 05/11/2017 - Alain high school: 11th grade
- ⑩ 05/25 & 26/2017 - Valencia French high school: 11th grade
- ⑩ 05/24 & 29/2017 - Marcelin Berthelot high school: 11th grade
- ⑩ 06/08/2017 - Evariste Gallois high school: 11th grade



Thanks to these presentations we were able to communicate about biology, our project and the competition. We were able to teach a new domain of applications to interested students and to see their interest. Effectively, during our presentation we had the chance to meet creative students and to hear interesting stories such as the following ones:

“One day I was heading to my friend house. In my way I stopped by a salad field (culture protection as **problematic**) and found out that snails were eating the salads and letting holes in the vegetables. I thought about a mechanism to repulse the snails and just decided to create a salad (plant as **organism**) able to produce its own odorous molecule (**new property**) to prevent the snails from eating it”. – student from the Evariste Gallois high school.

“In my town, lights are turned off at 10pm (I know it is a weird town). The administration told me that it was a matter of budget and that if I found a better idea than I just had to submit it. Because I was working in a laboratory, I decided to modify a bacteria (**organism**) to make it express a luminous molecule (**new property**) to light up my town at night (**problematic**).”- student from the Marcellin Berthelot high school.

To conclude, we want to continue doing scientific vulgarization for the iGEM competition. Through our “SofterShock” project this year, our team has sensitized students on the integration and the acceptance of green biotechnologies. For us, it is important to share and communicate about synthetic biology and biotechnology and we want to continue in this way.