

JAMES RENNIE BEQUEST

REPORT ON EXPEDITION / PROJECT / CONFERENCE

**Expedition/Project/
Conference Title:** International Genetically Engineered Competition 2023

Travel Dates: 01/11/23 – 05/11/23

Location: Porte de Versailles, Paris, France

Group member(s): Karen Leung, Will Green

Aims: To present a synthetic biology summer project to judges and competing teams at the iGEM competition.

Photography consent form attached: Yes
(please refer to your award letter) No

OUTCOME (a minimum of 500 words):-

Throughout the summer, the University of Edinburgh iGEM team has been working on a project developing a biophotovoltaic cell powered by cyanobacteria. iGEM is an annual international synthetic biology competition/conference and there were over 400 teams in attendance this year. This report gives an overview of the 5 days at the competition, our reflection of the experience and how it has helped us develop our careers in biology.

Competition Overview

The first day of the competition was November 2nd, we arrived at Porte de Versailles in Paris where we spent the morning lining up for registration then watching the opening show. We then set up our booth with a powerpoint presentation explaining our project. We took turns manning the booth so that we could also walk around meeting other teams and learning about their projects.

On Nov 3rd, we had our judging session early in the morning. We had practiced for this multiple times before flying to Paris, presenting to our sponsors and researchers at the university. This meant we were well prepared for questions and articulated the project well in a short time frame.

On Nov 4th, we had a plaza presentation early in the morning where we presented again on a stage for other teams in the competition. We were scheduled for 9am which was quite early, but other teams we had met over the course of the conference came to support us despite this. Judges from the previous day also came to ask follow-up questions on the project and overall it was successful.

On the last day, we attended the awards ceremony where we won gold medals, Biosafety Award in the over graduate division and were nominated for the Best New Part award. Throughout these five days, there were a variety of events to attend such as keynote speeches, panel discussions, and opportunities to talk to employers, startup founders and representatives from big companies such as Gingko Bioworks and IDT.

Favourite Projects

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One of our favourite projects was by Team Tsukuba from Japan. Their 'Amino Ship' concept involved designing *E.coli* to express an adhesion inhibitor compound that would prevent barnacles from sticking to the hulls of ships, which would reduce water resistance and save the shipping industry a lot of oil. Another project by HUST – China had a very similar concept to ours, generating a coculture of *Shewanella* and cyanobacteria to capture solar energy with a microbial fuel cell. Finally, a team from DTU-Denmark developed an aptamer-based method for detecting a forever chemical called PFAS.

Favourite Talks

Will's favourite talk was from Niko McCarthy who is the founding editor of Asimov Press. This talk discussed the importance of science communication, and he heard about his firsthand experience conveying synthetic biology to an audience through his newsletter 'Codon'. Karen's favourite talk was a panel discussion about starting a biotech business. Her most memorable speaker on this panel was Nadine Bonaegerts-Duportet, who is the chief innovation officer at Gourmey. This talk discussed experiences working at a cultivated-meat startup in Europe, which is where she would like to specialize in the future.

Conclusion

During this competition, we had many opportunities to network with other teams. The friends we have made at this competition will undoubtedly be colleagues, collaborators or even employers in the future, and this has been the first step in our synthetic biology careers. It was also incredibly helpful to witness new advances and talk to people working in this field. Through our conversations and attendance at panel discussions, we have gained a much better understanding of the synthetic biology community. In preparation for this competition, we also developed our science communication skills, which will undoubtedly be of use in the future. We would like to thank the James Rennie Bequest Committee for granting us this award, which contributed to the cost of travel between Edinburgh and Paris, and also our travels while in Paris. Without this funding, we would not have been able to attend this competition and present our work in person. Overall, iGEM has been a wonderful exchange of ideas and has given us much inspiration for future research.