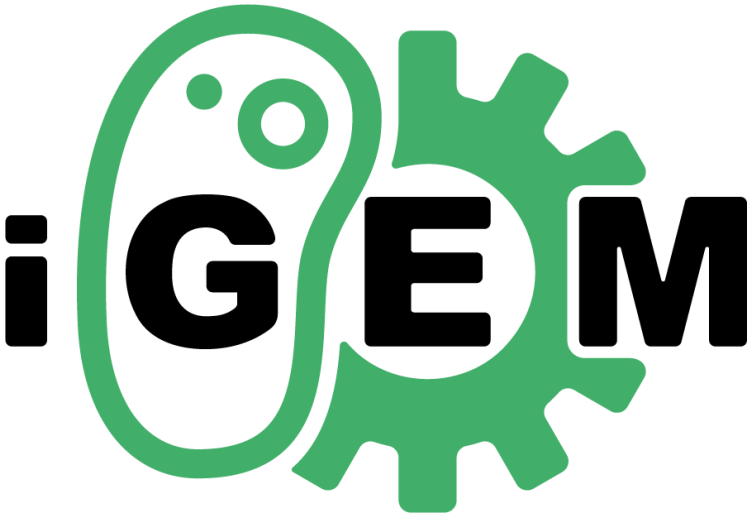

The International Genetically Engineered Machine Foundation

iGEM Foundation Statement at the 67th Session of the United Nations Committee on the Peaceful Uses of Outer Space

19-28 June 2024

Agenda Item 5 “General Exchange of Views”

Presented by: Lucas Boldrini, Team Experience Manager, iGEM Space Network Chair

Thank you Mr. Chairman.

Mr. Chairman, distinguished delegates, ladies and gentlemen:

The iGEM Foundation would like to thank the United Nations Office for Outer Space Affairs and the Secretariat for the efficient organization of the 67th Session of the United Nations Committee on the Peaceful Uses of Outer Space. We would also like to thank you for this opportunity to present our mission and activities related to advancements in space exploration to this Committee.

The iGEM Foundation is an independent, non-profit organization dedicated to the advancement of synthetic biology, through education, workforce development, and competition. Its inception took place in 2003 at MIT (the Massachusetts Institute of Technology) and it organizes an international team competition in which university and high school students design, build and test synthetic biology projects. Every year, the iGEM competition cycle culminates in our Jamboree, a celebration of synthetic biology, the teams, and their projects. Last year, we had nearly 400 teams from over 40 countries participating, totaling over 8000 students tackling world challenges related to topics such as climate crisis, infectious diseases, therapeutics, and space exploration.

Mr. Chairman, synthetic biology is a field that merges biology and engineering to design and reprogram biology and synthetic organisms, creating new biological systems to address global challenges. It has the potential to solve several obstacles faced by future space missions, including in-situ resource utilization, space biomining, space manufacturing, and space medicine. It can enhance closed-loop life support systems, improve radioprotection, advance space-specific disease prevention, and optimize space agriculture, among many others.

iGEM has a long history of teams applying synthetic biology to challenges posed by space exploration – from the need for oxygen and renewable food sources, to protection from extreme cold and radiation. Just like previous advancements in space travel have brought technological advancements to our lives on Earth, we also understand that advancing synthetic biology for space will also benefit our global problems, and vice-versa.

In recent years, the number of teams working on projects focused on synthetic biology applied to space exploration has been consistently increasing. To support these teams, we have implemented the iGEM Space Initiative. This proposal gathers several resources to assist teams in developing a robust space project and encompasses the following: a database of all previous iGEM teams that conducted space-related work, educational webinars with experts in the field, substantial guidelines and key considerations for a team to responsibly start a space-related project, challenges for space missions compiled by space agencies that could be solved by the use of synthetic biology, and the iGEM Space Network.

Distinguished delegates, the iGEM Space Network is a resource aiming to connect labs that work on synthetic biology applied to space exploration with iGEM teams interested in working on the topic. Network members are experts affiliated with space agencies such as NASA, the European Space Agency, CNES and DLR, past iGEM teams, and universities such as Cornell and The University of Edinburgh. Their goal is to offer mentorship and technical assistance to teams related to project inspiration, experimental planning, and troubleshooting.

At the 2024 Grand Jamboree in Paris, scheduled to be held at the end of October, iGEM will organize the first Space Village, which will serve as a hub for teams, researchers, and organizations working on space exploration.

As the iGEM Space Village and Initiative grows, we are also planning to conduct space-related activities beyond the competition and our Jamboree, with a focus on implementing policies for the safe, responsible and peaceful uses of synthetic biology in outer space, and connecting our global audience to current and future opportunities related to space. We understand the topic is not as widely discussed within major space events and organizations as we would have hoped for. We would like to help kickstart these discussions as we believe that without synthetic biology, mankind will not be capable of establishing long-term space travel and settlements.

We would like to thank the Committee and the distinguished delegates for their attention and highlight that we are always prepared to assist the Committee in any capacity required.

Thank you, Mr. Chairman.