Mr. Chairman, Vice-Chairmen, Excellencies, Distinguished Representatives, Ladies and Gentlemen. My name is Laura Fader and I am a representative of the University of Calgary’s iGEM team. Attending this convention are 4 representatives from our team on behalf of the University of Calgary that are presenting a poster later today. Additionally, the iGEM competition and our team will be profiled by the Canadian delegation this Wednesday.

The international genetically engineered machine foundation or iGEM is a non-profit organization committed to the advancement of synthetic biology since 2003. iGEM promotes an open community and collaborative atmosphere for undergraduate research. Additionally, iGEM organizes a forum of international competition for participating universities and their undergraduate students. A key resource provided by iGEM is an open-source registry of genetic parts called Bio-Bricks. Biobricks are standardized genetic components that allow for straightforward assembly of genetic circuits. The iGEM BioBrick registry grows every year with the submission of new parts by the participating teams, and is maintained by iGEM headquarters. This allows a collective effort to advance the field of synthetic biology and provide a foundation for various industries and future research. Synthetic biology allows for the engineering of complex biological systems, and provides us access to the extant technologies found in nature. Ultimately this rapidly developing field provides us with a novel perspective to improve upon current technology.

For the approaching iGEM competition this November, 247 teams will compete on behalf of their educational institutions and present their synthetic biology research projects. After the competition these projects have the potential to become entrepreneurial ventures and develop into biotech start-up companies. These novel technologies have been applied to current industrial needs, and will provide new perspectives on global issues, as well as advancing our scientific knowledge.

In addition to innovative research, iGEM promotes the responsibility of safe and ethical use of synthetic biology, and consideration of relevant policy-making. This aspect of iGEM helps to shape the notion of accountability and the obligation to exercise the utmost safety practices when working in any industry. Ethical concerns of containment and use of this technology are
directly addressed through the iGEM foundation to ensure that this innovative technology is developed appropriately.

Mr. Chairman, Our team consists of 14 undergraduate students ranging in age from 17-25, as well as 4 graduate advisors and 2 professors. Our team has a diverse academic background, from biochemistry and molecular biology to engineering and physics - we all share a common goal of creating an innovative project through collaboration. The current Calgary iGEM team is developing a multiplexed diagnostic biosensor for the detection of pathogenic organisms that are often misdiagnosed as malaria due to the similarities in their clinical symptoms. This genome-based and rapid point-of-care biological device will simultaneously diagnose multiple infectious diseases. By providing accurate results using fewer diagnostic resources than that of traditional methods, our device has the potential to alleviate the economic burden caused by misdiagnosis. This simple, robust and economically feasible system has the goal of reducing misdiagnosis and providing a resource for clinicians to rapidly attain test results of multiple diseases and allocate appropriate treatment to patients. The molecular mechanism underlying this technology also serves as a modular platform that can be easily adjusted in a timely manner to detect the genetic code of any living organism. Thus, this platform has the potential to be applied to the detection of biological weapons agents, among multi-industry application. Our project is just one aspect of harnessing the power of synthetic biology in order to improve upon our existing technologies.

Our team has received support from various companies within the synthetic biology industry and governmental organizations such as Alberta Innovates Technology Futures. The engagement and interest of these organizations allows our research to develop effective applications that are relevant to industrial needs.

The representatives from our team are attending the conference for the next three days and would be more than happy to discuss iGEM, our research, the impact of synthetic biology and any further questions you have.

Thank you for your time, Mr. Chairman.