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U of L iGEM teams succeed at provincial competition and prepare for Giant Jamboree

The University of Lethbridge international Genetically Engineered Machine (iGEM) collegiate and high school teams are readying for November's Giant Jamboree after they came away with awards and cash prizes at the recent annual aGEM (Alberta Genetically Engineered Machine) competition in Edmonton.

“aGEM showcases the high calibre projects that come from Alberta and prepares students for the international Giant Jamboree in Boston,” says Taylor Sheahan, a team advisor and doctoral student in biomolecular sciences at the U of L's Alberta RNA Research and Training Institute. “It is incredibly beneficial to receive feedback from experts in the field, which helps improve our project prior to the iGEM competition.”

The U of L Collegiate iGEM team project involves developing a synthetic biology tool that can be widely used by a variety of people, from educators teaching the basic concepts of protein production, to hobbyists tinkering in the field, to scientists performing state-of-the-art research. The tool, which includes all the necessary biomachinery for safely producing proteins outside of a living cell, is a simplified version of the protein production machinery found in all living cells. Researchers will be able to use the tool to test their hypotheses, while students will learn the basic principles of protein production and hobbyist synthetic biologists can explore their ideas.

They presented their work to a panel of judges at the provincial competition and won \$4,000 to help subsidize travel costs for the team to attend the Giant Jamboree in Boston, Massachusetts. They were also presented with the Stewardship Award for addressing the biosecurity risks associated with the project. In addition, the team has secured \$8,000 in funding from the U of L Students' Union Quality Initiative Program. The funding will be used for travel costs for sending undergraduate students to Boston.

The Lethbridge High School iGEM team was presented with an Aspiring Entrepreneurship Award and \$4,000 to assist with costs of travelling to Boston for the Giant Jamboree. The team is using synthetic biology methods to produce biological pigments in bacteria, with the overall goal of incorporating these pigments into environmentally friendly inks for printers.

Students from universities around the world compete in Boston at the end of November to share their work in hopes of further advancing the field of synthetic biology.

“iGEM encourages students to apply their knowledge and creativity to a real-world problem, and we support them as they work towards a solution,” says Dr. Hans-Joachim Wieden, a Chemistry and Biochemistry professor, iGEM faculty supervisor and Alberta Innovates Strategic Chair in RNA Bioengineering. “Competitions like aGEM give them a chance to communicate their ideas to experts in the field and rewards them for their efforts, while providing transferrable skills that integrate into the bigger picture.”

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