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University of Lethbridge iGEM teams tackling relevant issues, awarded gold and silver at Giant Jamboree

The University of Lethbridge's iGEM students have proven once again they are among the best and brightest scientists in the synthetic biology field.

From over 300 teams, representing countries from all over the world, the U of L's collegiate team secured a gold medal and the high school entry a silver at the 2018 International Genetically Engineered Machine (iGEM) competition in Boston, MA.



The collegiate team's project *VINCenT* focused on developing tools for other synthetic biology researchers. Targeting specific tissues, cell types, or cellular organelles is important for the correct treatment of many diseases. The U of L team created software that would help others overcome these problems. The team members also demonstrated how they can successfully encapsulate cargo within P22 "nanocompartments" that can target Zebra and Quagga mussels with species-specific toxins. One of the largest problems facing Alberta waterways, Zebra and Quagga mussels are considered aquatic invasive species and a threat to the Alberta economy, specifically agriculture, tourism and recreation as they destroy natural lake ecosystems and fisheries. Work on this application will continue in the future.

The U of L team of Sydnee Calhoun, Kristi Turton, Catrione Lee and Luke Saville presented at the jamboree and were supported by team members Keith Aiken, Maya Degrood, Simmone D'Souza, Travis Haight, DJ Kim, Jessica Semmelrock, Reanna Takeyasu and David Tobin. Aubrey Demchuk, Graeme Glaister, Zak Stinson and secondary investigator Dr. Trushar Patel served as advisors.

The Lethbridge high school team is comprised of students from Winston Churchill High School, Lethbridge Collegiate Institute, Chinook High School and Catholic Central High School. Members Mark Lea, Michelle Wu and Andy Sun travelled to Boston to represent

the team. Their project, *Cu Later*, described a method for the capture and removal of metals from tailings ponds and effluent water using an engineered bacteriophage system and received a silver medal and nomination for best model.

Dewuni De Silva, Aidan Sander, Nicolas Parra, Aroma Pageni, Rebecca Avileli, Tyler Black, Logan Black, Alice Zhang, Karen He, Mina Akbary-Zheng, Emily Huynh and Nimaya De Silva supported their teammates' efforts from Lethbridge. Recruitment for the 2019 Lethbridge high school iGEM team will begin in January.

Representatives from the University of Lethbridge were also involved in core activities for the iGEM Giant Jamboree. Dr. Hans-Joachim Wieden, also a primary investigator for the U of L collegiate team, was one of the competition judges, and Chris Isaac, U of L biochemistry graduate student, participated in the iGEM Safety Committee.

The projects and accomplishments of the university and high school teams are available on their wiki websites. Also, follow the high school team's progress on social media: @LethHS_iGEM and @lethbridgehsiGEM. The U of L team can be followed here: @LethbridgeiGEM.

Lethbridge Team Sponsors

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ABOUT iGEM:

iGEM, the International Genetically Engineered Machine Competition, is the largest synthetic biology community and the premiere synthetic biology competition for both university and high school level students. iGEM inspires learning and innovation in synthetic biology through education, competition and by maintaining an open library of standard biological parts, the Registry of Standard Biological Parts.

Combining molecular biology techniques with engineering concepts, students work in interdisciplinary team to create novel biological systems. At the beginning of the competition season, each registered team is given a kit of 1000+ standard interchangeable parts called BioBricks from the Registry of Standard Biological Parts. Working at their own schools, teams use these parts and new parts of their own design to build, test and characterize genetically engineered systems and operate them in living cells in an effort to address real-world issues. Along with submitting their newly created BioBricks to the Registry of Standard Biological Parts, teams are required to actively consider the safety implications of their work and document their projects on team wiki pages. At the end of the competition season, teams converge at the Jamboree event to showcase their research. Teams present their work through posters and oral presentations, and compete for prizes and awards, such as the coveted BioBrick trophy.

For more information about iGEM, visit their website http://igem.org/Main_Page.

To view online:

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