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Global Grand Challenges Summit: Engineering in an Unpredictable World

Luke Hansen

left to right: Mechanical Engineering senior Luke Hanson, Dr Katie Evans, Biomedical Engineering senior Savannah Esteve.

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By Luke Hansen, Mechanical Engineering Senior

The Global Grand Challenge Summit (GGCS) is a biennial gathering of students and individuals in engineering or related fields from the United States, the United Kingdom (UK), and the People's Republic of China. The goal of the summit is to collaborate and discuss selected topics related to the United States' 14 Grand Challenges of Engineering and the United Nation's (UN) 17 Sustainable Development Goals (SDG). The 2019 summit was hosted by the Royal Academy of Engineering in London, UK, from September 12-18. More than 900 entrepreneurs, innovators, engineers, and inspired students attended the summit.

Three organizations participated in and sent representatives to the summit: The Royal Academy of Engineering of the United Kingdom, the National Academy of Engineering (NAE) of the United States, and the Chinese Academy of Engineering. As a founding members of the (NAE GCSP), Louisiana Tech sent three representatives to the summit: Mechanical Engineering senior, Luke Hansen, Biomedical Engineering senior, Savanah Esteve and College of Engineering and Science Associate Dean for Strategic Initiatives and NAE GCSP Proposal Review Committee Chair, Dr. Katie Evans.

The first four days of the 2019 GGCS was a student collaboration lab that encouraged cross-cultural collaboration and innovation in solving global challenges. More than 300 students from the three collaborating countries participated in the event. The collaboration lab included several interactive activities between students, the first of which was a country team competition. Fifteen teams, five from each country, competed on the first day by presenting an innovative engineering solution to a global challenge. Three teams were selected as winners and were presented awards to continue their work after the competition. The next portion of the collaboration lab was designed to give students the tools they would need to respond to global challenges. This portion included breakout sessions on topics such as startups, entrepreneurship, and leadership. The final component of the collaboration lab was the formation of teams consisting of representatives from each country. Fifty teams of six students, two from each country, were assigned at random to promote cross-cultural collaboration. Each team was tasked to present a solution to a global grand challenge as defined by either the NAE or the UN. The pace was similar to a hackathon. Each team was given 18 hours to propose a solution and present their idea via PowerPoint and poster presentation to a panel of judges. The judges selected three teams to present their proposals at the summit the following day.

The final two days of the 2019 GGCS were dedicated to speakers and panels in the Queen Elizabeth II Hall. The themes of the summit were how to sustain a world of 10 billion people and how artificial intelligence (AI) will change humanity. The event began with speeches from the presidents of each academy of engineering, and Princess Royal Anne made a surprise appearance to welcome the participants. Subsequently, a thirteen-year-old student inventor named Gitanjali Rao presented her innovative concepts for detecting lead in drinking water. Dr. Keoki Jackson, the chief technology officer of Lockheed Martin, and Professor Luciano Floridi of Oxford University moderated several of the panels concerning the ethics and advancement of AI. Regarding the theme of sustaining a world of 10 billion people, a panel of entrepreneurs and engineers from Africa shared how they were using technology to improve the lives and welfare of their people. The final speaker of the event was the president of DEKA Research and founder of For the Inspiration and Recognition of Science and Technology (FIRST) Robotics, Dean Kamen. He challenged all of those present to remember the next generation by improving youth education in engineering.

The 2019 GGCS highlighted the importance of multinational and multigenerational collaboration. In the years to come, it will be fascinating to see how summits like the GGCS inspire and encourage engineers to innovatively solve global challenges in engineering.

Sources:
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