2015 Biomedical Engineering E-Days Awards

On April 17, 2015, the School of Biomedical Engineering was proud to have their first cohort of biomedical engineering undergraduate students participate in Engineering Days (E-Days).

Four members of the School of Biomedical Engineering Advisory Board served as judges and provided four teams with cash awards for their outstanding achievements in biomedical engineering. Judging criteria included presentation, technical expertise, creativity, and overall impression.

From left: Dennis Schlaht, April Giles, Jeff Samson, and Steve Simske.

First place honors went to group members Alison Bailey, Blair Larson, Ilya Merkulovich, and Nicole Puissant (Chuck Henry, faculty advisor) for their "Amperometric Microfluidic Device with Incorporated Tissue Slice for Personalized Cancer" which explored the design of a microfluidic device capable of screening for individualized chemotherapy treatments, allowing direct, real-time feedback on drug efficacy via measured amperometric signals. The goal is to improve personalization of cancer treatment to offer patients a greater chance of life.

Second place was awarded to group members John Haverkamp, Matt Marrapode, Aaron Paulding, Craig Sandoval, Amy Schlagel, and Lane Taylor for their Covidien-sponsored "Prototypes for Delivering Depth-Controlled Release of Argon to Cut and Coagulate Colon Tissue" which included the development and construction of two argon plasma ablation (APC) devices: one with a forward, axially firing nozzle and the other with a side, perpendicularly firing nozzle. The testing data is to serve as proof of concept to determine whether burn depth can be controlled using this technology.

Second Place Team. **From left:** Amy Schlagel, Aaron Paulding, Matt Marrapode, Lane Taylor, and John Haverkamp.

Third place was awarded to group members Ashley Beckwith, Hillary Haws, Dalton Noren, and Josh Pickrell for their Terumo BCT-sponsored "In-Line Cellular Lysis Device" which focuses on developing a flow-through cellular lysis device that minimizes human involvement and handles large volumes of cellular medium with the sensitivity of smaller-scale operations. This device is part of a larger system which will culture and lyse E.coli prior to harvesting intracellular proteins. This automated, large-capacity, cell-lysing device will provide efficient and repeatable yields of viable cellular components.

First Place Team. **From left:** Ilya Merkulovich, Nicole Puissant, Blair Larson, and Alison Bailey.

In addition to awarding the best biomedical engineering project created by biomedical engineering majors, the SBME Advisory Board judges also acknowledged the best biomedical engineering project created by non-biomedical engineering majors. This honor was awarded to a mechanical engineering team of Jake Butinsky, Sally Runions, Joe Sernett, and Jamie Urban for their "Biomass Combustion Human Exposure Chamber" sponsored by the National Institutes of Health.

Third Place Team. **From left:** Josh Pickrell, Hillary Haws, Dalton Noren, and Ashley Beckwith.

E-Days provides undergraduate engineering students an opportunity to showcase the completion of their senior design projects to faculty, family, industry representatives, and peers. It helps students develop practical, hands-on skills and teaches them how to succeed in an integrated, interdisciplinary engineering design environment.