The Power, Beauty and Excitement of Cross-Boundaries Nature of Control, a Field that Spans Science, Technology, Engineering & Mathematics (STEM) –

Workshop for Middle & High School Students and Teachers

Wednesday, May 24, 9:00 a.m. - 12:30 p.m.
Location: Metropolitan A
Co-Organizers: Bozenna Pasik-Duncan, University of Kansas and **Linda Bushnel**l, University of Washington
Program Committee: Members of AACC Technical Committee on Education and IEEE CSS Technical Committee on Control Education

Purpose: This outreach event is designed to increase the general awareness of the importance of systems and control technology and its cross-disciplinary nature among high school students and teachers. Control is used in many common devices and systems: cell phones, computer hard drives, automobiles, and aircraft, but is usually hidden from view. The control field spans science, technology, engineering and mathematics (STEM). The success of all STEM disciplines depends on attracting the most gifted young people to science and engineering professions. Early exposure to middle and high school students and their teachers is a key factor. The goal of these outreach efforts is to promote an increased awareness of the importance and cross-disciplinary nature of control and systems technology. The workshop activities include presentations by control systems experts from our technical community, informal discussions, and the opportunity for teachers and students to meet passionate researchers and educators from academia and industry. The talks are designed to be educational, inspirational and entertaining showing the excitement of controls.
Lunch will be provided. Participants will receive certificates of participation.

Program:

9:00 – 9: 05 Arrival & Welcome, Bozenna Pasik-Duncan, University of Kansas and Linda Bushnell, University of Washington
9:05 - 9:25 Bio-inspired Control Engineering - What Animals Teach, John Baillieul, Boston University
9:25– 9:45 Control of Complex Systems, Andrew Clark, Worcester Polytechnic Institute
9:45– 10:05 Predicting epilepsy after traumatic brain injuries and exploring MRI data in virtual reality, Dominique Duncan, University of Southern California
10:05– 10:25 Synthetic biology: how to program a bacterium, Richard Murray, California Institute of Technology
10:25- 10:45 Swimming and Flying in Engineering and Biology, Kristi Morgansen, University of Washington
10:45 - 11:05 Universal Laws and Architectures in Brains and Nets, John Doyle, California Institute of Technology
11:05– 11:25 How to build a self-driving car, Richard Murray, California Institute of Technology
11:25– 11:45 **Imagining the Robots of Science Fiction, Aaron D. Ames,**
11:45 – 12:15 Lunch
12:15 – 12:30 Discussion, Evaluation and Closing Remarks
Additional Information: **http://www.math.ku.edu/ksacg/workshops/ACC_2017/acc2017workshop.html**