

Wednesday Evening Special Session

Middle and High School Students and Parents STEM Workshop

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

Sponsors: AACC, IEEE CSS, and IEEE CSS Technical Committee on Control Education

Time: 1600 – 1830 Wednesday, June 27 2018 (light dinner provided) with invitation to The Public Lecture, 6:30 PM - 7:30 PM, see the Program

Location: Wisconsin Center Ballroom B - <http://www.wisconsincenter.org/map-directions-2/>

This 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). 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. Participants will receive certificates of participation.

This workshop is held in conjunction with the 2018 American Control Conference, June 27 – 29, 2018

<http://acc2018.a2c2.org>

PROGRAM

- 4:00 PM** **Introductions & Welcome**
Bozena Pasik-Duncan, University of Kansas,
Linda Bushnell, University of Washington
- 4:15 PM** *What is a Control System and Why Should I Care?*
Daniel Abramovitch, Agilent Technologies
- 4:30 PM** *Control for Smart Grid Stability*
Linda Bushnell, University of Washington
- 4:45 PM** *Adaptive Control of Drones*
Anuradha Annaswamy, MIT
- 5:00 PM** *Math and Brain*
Bozena Pasik-Duncan, University of Kansas

- 5:10 PM** *Analysis of Big Data in Neuroimaging*
<https://www.youtube.com/watch?v=FxAHyp4CQBI>
Dominique Duncan, University of Southern California
- 5:20 PM** *The Astounding Athletic Power of Quadcopters*
https://www.ted.com/talks/raffaello_d_andrea_the_astounding_athletic_power_of_quadcopters
by **Raffaello d'Andrea**, ETH Zurich
[Quadrocopter videos by Angela Schoellig](#), University of Toronto
- 5:30 PM** *Control of Complex Networks*

Andrew Clark, Worcester Polytechnic Institute
- 5:45 PM** **Discussion**
- 6:00 PM** **Dinner and Presentation by John Baillieul**, Boston University
Bio-Inspired Control Engineering – What Animals Teach
- 6:20 PM** **Closing Remarks**
Bozena Pasik-Duncan and Linda Bushnell

All Participants of this Workshop are invited to:

6:30 PM - 7:30 PM Wisconsin Center Ballroom C for:

The public plenary which is open to all and is very cool for these students.

<http://acc2018.a2c2.org/technical-program/plenary-speakers/>

The Guidance, Navigation, and Control Challenges of Landing on Mars and Europa, Miguel San Martin, NASA Jet Propulsion Lab, USA,