



Ideas and Technology of Control Systems

Monday, December 12, 2011

9:30 am – 2:30 pm

Floridian A-C, Main Level - Hilton Orlando Bonnet Creek*

11th Anniversary

This workshop is held in conjunction with CDC/ECC 2011
IEEE Conference on Decision and Control and European Control Conference

The purpose of this workshop is to increase the general awareness among high school teachers and students of the importance of systems and control technology and its cross-disciplinary nature. The presentations demonstrate the Power, Beauty and Excitement of a Field that spans Science, Technology, Engineering, and Mathematics (STEM).

Bozenna Pasik-Duncan
Chair of Organizing and
Program Committees

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[www.math.ku.edu/ksacg/
Bozenna.html](http://www.math.ku.edu/ksacg/Bozenna.html)

CDC/ECC 2011
[http://control.disp.unirom
a2.it/cdcecc2011](http://control.disp.unirom2.it/cdcecc2011)

For information about past
workshops visit
[http://www.math.ku.edu/
ksacg/bpdworkshops.html](http://www.math.ku.edu/ksacg/bpdworkshops.html)

Program Committee:
Bozenna Pasik-Duncan,
University of Kansas

Richard Murray,
California Technology of
Institute

Angela Schoellig, ETH
Zurich, Switzerland

Jeannie Falcon, National
Instruments

Organizing Committee:
Bozenna Pasik-Duncan,
University of Kansas

Mark Frei, Flint Hills
Scientific, L.L.C

Tyrone Duncan,
University of Kansas

PROGRAM

- 9:30** **Welcome**
Bozenna Pasik-Duncan, USA, Chair AACC and IEEE CSS Control Education Committees
Rick Middleton, Ireland, President, IEEE Control Systems Society
Tamer Basar, USA, President, American Automatic Control Council
Edwin Chong, USA, General Chair, Conference on Decision and Control and European Control Conference, CDC/ECC 2011
Eduardo Camacho, Spain, EUCA General Vice-Chair
- 10:00** *Control Design of Unmanned Aerial Vehicles (UAVs)*
Roberto Tempo, Past President, IEEE Control Systems Society, Director of Research, IEIIT-CNR, Politecnico di Torino, Torino, Italy
- 10:20** *Joys and Perils of Automation: "Smart Parking" for all*
Christos Cassandras, Head, Division of Systems Engineering and Professor, Electrical and Computer Engineering, Boston University, President Elect, Control Systems Society
- 10:45** *LEGO Robotics joins University and High School, Research and Control Education*
Alexander Fradkov, Professor, Institute for Problems of Mechanical Engineering, Russian Academy of Sciences
- 11:10** *Molecular Control Systems and Synthetic Biology*
Elisa Franco, Assistant Professor, Mechanical Engineering, University of California at Riverside
- 11:30** *Autonomous Systems from Racing Cars to Robots to the Transformers*
Ufuk Topcu, Postdoctoral Scholar, Control and Dynamical Systems at the California Institute of Technology
- 12:00** **Lunch** (provided on site)
- 12:30** *Control Systems – from LEGO to Industrial Machines*
Margaret Barrett, Academic Marketing Engineer, Controls, Robotics, and Mechatronics, National Instruments
Andy Chang, Controls Engineer, National Instruments
- 1:00** *An Overview of Capstone Design Program*
Bahram Shafai, Professor, Electrical and Computer Engineering and Director, ECE Capstone Design Program, Northeastern University
- 1:20** *A Cube That Balances Itself on a Corner*
Sebastian Trimpe, Doctoral Student, Institute for Dynamic Systems and Control, ETH Zurich, Switzerland
- 1:40** *Applications of Math and Control Theory to the Problem of Epilepsy*
Mark Frei, Flint Hills Scientific, L.L.C., Lawrence, KS
- 2:00** *How to Control Unmanned Vehicles*
Leor Grebler, Academic Solutions Advisor, Quanser
- 2:20** **Discussion, Workshop Evaluation and Closing Remarks**
Bozenna Pasik-Duncan