

# The Power, Beauty and Excitement of the Cross-Boundary Nature of Control



## Middle and High School Students & Teachers Workshop Open to all participants of CDC Conference



**9:00 am–2:30 pm, Wednesday, December 13, 2006**  
**Douglas Ballroom, Manchester Grand Hyatt Hotel, San Diego, CA**

### Organizers:

Technical Committee on Control Education of the Control Systems Society (CSS)

Technical Committee on Education of the International Federation of Automatic Control (IFAC)

Technical Committee on Control Education of the American Automatic Control Council (AACC)

**Chair:** Bozena Pasik-Duncan, University of Kansas

Assisted by Dominique Duncan, University of Chicago, and Yiannis Zachariou, University of Kansas

**San Diego Co-Chair:** Patricia Winter, General Atomics Sciences Education Foundation

**9:00 a.m.** Welcome

Bozena Pasik-Duncan

Pradeep Misra, General Chair, Organizing Committee, 45<sup>th</sup> IEEE Conference on Decision and Control

John Baillieul, President, Control Systems Society

**9:15** **Kishan Baheti**, Program Director, Engineering Systems Program, National Science Foundation

**9:30** **P.R. Kumar** (University of Illinois, Urbana-Champaign), “The Next Phase of the Information Technology Revolution”

**9:50** **Christos Cassandras** (Boston University), “When Computers Control: Joys and Perils of Automation”

**10:10** **Raffaello D’Andrea** (Cornell University), “From Hundreds of Warehouse Robots to Self-assembling Chair: How Automation is Helping to Rewrite What is Possible”

**10:30** **Short Break**

**10:40** **Theodore Djaferis** (University of Massachusetts) “Power of Feedback”

**11:00** **Mark Spong** (University of Illinois, Urbana-Champaign), “Control in Mechatronics and Robotics”

**11:20** **Richard Murray** (California Institute of Technology) “How to Design a Self-Driving Car: The DARPH Grand Challenge”

**11:40** **Lunch Break**

**12:40** **Katsuhisa Furuta** (Tokyo Denki University) “Understanding Phenomena through Real Physical Objects—Controlling Petroleum”

**1:00** **Claire Tomlin** (University of California, Berkeley) “Using Mathematics to Help Understand How Organisms Develop”

**1:20** **Ivan Osorio** (Kansas University Medical Center) and **Mark Frei** (Flint Hills Scientific, L.L.C.), “Application of Control Theory to the Problem of Epilepsy”

**1:50** Meet industry representatives and university graduate and undergraduate students.

**2:10** Evaluation of Workshop

**2:30** Farewell

Sponsored by: National Science Foundation, Control Systems Society,  
University of Kansas: College of Liberal Arts & Sciences, Department of Mathematics,  
Electrical Engineering and Computer Science, and Information & Telecommunications Technology Center