

**New Opportunities for Research in Systems and Control:  
Energy, Robotics and Cyber-Physical Systems  
A workshop to celebrate the 60<sup>th</sup> Birthday of Pramod Khargonekar**

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**Organizers:**

Kishan Baheti (National Science Foundation, USA)

Mario Rotea (The University of Texas at Dallas)

Kameshwar Poolla (University of California at Berkeley)

Eduardo Sontag (Rutgers University)

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**Date: Sunday, December 11**

**Time: 9:00 AM – 5:30 PM**

**Venue: Staryine 7, Aria Resort & Casino**

**Abstract:** The workshop is organized to celebrate 60th Birthday of Pramod Khargonekar to honor his contributions to the field of Systems and Control. The workshop will bring together several of his colleagues, and former students who will present a broad range of topics in different areas of systems and control. The speakers will describe progress in mathematical control theory, robust control and its impact on engineering practice. In addition recent advances and opportunities in Energy, Robotics, Smart Cities, System Biology, and Cyber-Physical Systems will be presented. The main goal of this workshop is to inspire a future generation of research leaders to pursue work that promotes excellence in the field.

**Target audience:** The workshop will be of interest to CDC participants interested in recent advances in systems and control with innovative applications to grand challenges in engineering systems that will benefit the society. All CDC participants are welcome to join this celebration.

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## Schedule

09:00	Kishan Baheti	Welcome and Introduction
University of Florida and Minnesota Period Collaborators Session Chair: Kameshwar Poolla		
09:10 to 10:30	Allen Tannenbaum	On the robustness of cancer networks
	Yutaka Yamamoto	New Horizon for Signal Processing and Control – Beyond the Nyquist Rate
	M. Vidyasagar	Maximum Hands-Off Control (Joint work with Masaaki and Niharika Challapalli)
	Ian Petersen	The Kalman Decomposition for Linear Quantum Systems

10:30 to 10:50 Coffee Break

Students of Pramod Session Chair: Kishan Baheti		
10:50 to 12:10	Kameshwar Poolla	The Sharing Economy for the Smart Grid
	Mario Rotea	Mixed H <sub>2</sub> /Infinity Control: One Schur complement away from the first LMI in an output feedback problem
	Tyrone Vincent	How Systems Theory Can Impact New Applications
	Isaac Kaminer	On Implementation of Gain Scheduled Controller and Beyond

12:10 to 13:30 Lunch

University of Michigan and NC State Collaborators Session Chair: Mario Rotea		
13:30 to 14:30	Jessy Grizzle	Adventures With Feedback: Theorems, Cars, Chips, Robots, ...
	Dan Koditschek	Learning Piecewise Linear Homomorphism, will it ever work?
	Aranya Chakraborty	New Research Directions in Power Systems Dynamics and Control

Leading the Charge at NSF-ENG		
14:30	Kishan Baheti	People and Programs
New Directions in Systems and Control – I Session Chair: Kameshwar Poolla		
14:50 to 15:50	Muther Dahleh	Scheduling for Smart Platforms
	P.R. Kumar	The Independent System Operator Problem of Power Systems: General Equilibrium Theory Revisited
	Magnus Egerstedt	The Robotarium: A Remotely Accessible Testbed for Swarm-Robotics and Networked Control

15:50 to 16:10 Coffee Break

New Directions in Systems and Control – II Session Chair: Mario Rotea		
16:10 to 17:10	Eduardo Sontag	Molecular Biology, Cancer and Immunotherapies
	Mark Spong	From Robotics to the Internet of Things
	John Doyle	Architectures for CPS: Part 2
Closing Session		
17:10 to 17:30	Open Discussion and Nostalgia	
	Pramod Khargonekar: Closing Remarks	