Workshop on Emerging Applications of Control and System Theory (EACST 2017)
UT Dallas, TI Auditorium (ECSS 2.102), September 28-30, 2017

Preliminary Program

**Thursday, September 28**

8:00  Registration

8:45  Steve Yurkovich and Mark Spong (UT Dallas)

*Welcome and Opening Remarks*

9:00-10:30  Session TM1

9:00  Brian Anderson (Australian National University)

*Collective Formation Control of Multiple Constant-Speed UAVs with Limited Interactions*

9:30  Elena Valcher (University of Padova)

*On the Consensus of High-Order Multi-Agent Systems with Cooperative/antagonistic Interactions and Switching Topologies*

10:00  Soura Dasgupta (University of Iowa)

*Feedback Control for Distributed Massive MIMO Communication*

10:30-11:00  Coffee Break

11:00-12:30  Session TM2

11:00  Rodolphe Sepulchre (University of Cambridge)

*Excitable Behaviors*

11:30  Allen Tannenbaum (State University of New York at Stoneybrook)

*Machine Learning for Joint Classification and Segmentation*

12:00  P.R. Kumar (Texas A&M University)

*Control Systems Under Attack: The Securable and Unsecurable Subspaces of a Linear Stochastic System*

12:30-14:00  Lunch Break

14:00-15:30  Session TA1

14:00  Richard Murray (California Institute of Technology)

*Feedback and Control in Biological Circuit Design*

14:30  Frank Allgower (University of Stuttgart)

*Passivity-based ensemble control for cell cycle synchronization*

15:00  Domitilla Del Vecchio (Massachusetts Institute of Technology)

*The "Power Network" of Genetic Circuits*

15:30-16:00  Coffee Break

16:00-17:30  Session TA2

16:00  Pramod Khargonekar (University of California, Irvine)

*Grid Integration of Renewable Electricity and Distributed Control*

16:30  Shinji Hara (University of Tokyo)

*Hierarchically Decentralized Control for Networked Dynamical Systems with Global and Local Objectives*

17:00  Kirsten Morris (University of Waterloo)

*The Role of Sensor and Actuator Models in Control of Distributed Parameter Systems*
Friday, September 29

9:00-10:30 Session FM1

9:00   Stephen Boyd (Stanford University)
       Parameter Selection and Pre-Conditioning for a Graph Form Solver
9:30   Munther Dahleh (Massachusetts Institute of Technology)
       Robustness Sensitivities in Large Networks
10:00  Malcolm Smith (University of Cambridge)
       Electrical Network Synthesis: A Survey of Recent Work

10:30-11:00 Coffee Break

11:00-12:30 Session FM2

11:00  Richard Braatz (Massachusetts Institute of Technology)
       Control and Systems Theory for Advanced Manufacturing
11:30  Francesco Bullo (University of California, Santa Barbara)
       A Review of Linear Network Systems
12:00  Murat Arcak (University of California, Berkeley)
       Control and Optimization Problems in Hyperpolarized Carbon-13 MRI

12:30-14:00 Lunch Break

14:00-15:30 Session FA1

14:00  Yutaka Yamamoto (Kyoto University)
       Hypertracking Beyond the Nyquist Frequency
14:30  Tryphon Georgiou (University of California, Irvine)
       Wasserstein Geometry of Quantum States and Optimal Transport of Matrix-Valued Measures
15:00  Toshiharu Sugie (Kyoto University)
       Design Theory of Distributed Controllers Via Gradient-Flow Approach

15:30-16:00 Coffee Break

16:00-17:30 Session FA2

16:00  Frank Doyle (Harvard University)
       Controlling Biological Time: Nonlinear Model Predictive Control for Populations of Circadian Oscillators
16:30  Eduardo Sontag (Rutgers University)
       Examples of Computation of Exact Moment Dynamics for Chemical Reaction Networks
17:00  Brian Ingalls (University of Waterloo)
       Bioaugmentation Approaches for Suppression of Antibiotic Resistance: Model-Based Design

18:00-20:00 Reception, followed by Banquet Dinner
           UT Dallas, Founders Building, 2nd Floor Atrium
Saturday, September 30

9:00-10:30 Session SM1
9:00 Vince Poor (Princeton University)  
Privacy in Networks of Interacting Agents
9:30 Andrew Heunis (University of Waterloo)  
Quadratic Hedging with Mixed State and Control Constraints
10:00 Michel Gevers (Université Catholique de Louvain)  
Identification of Dynamical Networks

10:30-11:00 Coffee Break

11:00-12:30 Session SM2
11:00 Keith Glover (University of Cambridge)  
Smooth Operators Enhance Robustness
11:30 Pradeep Misra (Wright State University)  
System Completion Problem: Theory and Applications
12:00 Mehmet Eren Ahsen (Icahn School of Medicine at Mount Sinai)  
Predicting the performance of classifiers and optimal ensemble learning in the absence of ground truth