**Agenda**
for the 2002
Annual Review of

**AFRL/VA and AFOSR**
supported

**The Ohio State University**

# Collaborative Center of Control Science (CCCS)

Thursday-Friday, November 7-8, 2002

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# Collaborative Center of Control Science (CCCS)

Thursday-Friday, Nov. 7-8, 2002

## Thursday, Nov. 7: Longaberger Alumni House
## Project Reports and Poster Sessions

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| 7:15am | Registration and Continental Breakfast |
| 8:00am | Opening Remarks<br>Siva Banda |
| 8:15am | Welcome and CCCS Overview<br>Kevin Passino |

**Cooperative Control for UAVs and Formation Control for Microsatellites:**

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|---|---|
| 8:30am | Cooperative Control: Mathematical Models and Strategies<br>Kevin Passino |
| 9:00am | Distributed Task Assignment and Planning for Cooperative Search<br>Ali Minai and Marios Polycarpou |
| 9:30am | Markov Chain Models for Persistent Area Denial Problems<br>Joe Cruz |
| 10:00am | Break |
| 10:30am | Adaptive Cooperative Control and Map Building via<br>Surrogate Optimization<br>Raúl Ordóñez |
| 11:00am | Distributed Sensor Fusion<br>Ümit Özgüner |
| 11:30am | Robust Formation Control for Microsatellites<br>Andrea Serrani |
| **12:00pm** | **Lunch (catered, on-site)** |

**1:00pm Poster Session: Additional CCCS Projects**

Collision Prediction and Avoidance for Satellite Clusters
Trevor Williams

Pursuit Path Discovery for the Pursuer-Evader Problem
Chris Bohn and Bruce Weide

Cooperative Search Strategies for Multi-Vehicle Teams
Umit Ogras and Ümit Özgüner

Software Structure and Communication Delay Issues in Coordinated Control
Q. Chen and Ümit Özgüner

Mathematical Modeling and Simulation of Cooperative Control Problems
Jorge Finke, Sriram Ganapathy, and Kevin Passino

CATA Simulation of Surrogate Search for Stationary and Mobile Targets
Shreecharan Kanchanavally and Raúl Ordóñez

MiDAS: A Minimal Disturbance Approach to Decentralizable
Target Assignment and Path Planning in UAV Groups
Ali Minai and Marios Polycarpou

Collaborative Strategies for Multi-Static Synthetic Aperture Radar Sensing
Brian Rigling and Randy Moses

Robustness Study of the Dynamic Inversion Based Indirect Adaptive Control of
Flight Vehicles with Uncertain Model Data
Rama Yedavalli

**Aerodynamic Flow Control and Control of Reusable Launch Vehicles:**

2:00pm Closed-Loop Aerodynamic Flow Control
Mo Samimy

3:00pm Break

3:30pm Design of Controllers for Closed-loop Aerodynamic Flow Control
Onder Efe and Hitay Ozbay

4:00pm Control of Reusable Launch Vehicles
Steve Yurkovich and Andrea Serrani

**4:30pm** **Poster Session: Overview of Related Funded Projects (not CCCS-funded)**

DARPA MICA Program: "OSU DARPA MICA SHARED Program," Joe Cruz

DARPA Autonomous Negotiating Teams (ANTS) Program: "Stable Distributed Dynamic Scan Scheduling," Kevin Passino, Alvaro Gil

NASA: "Solar Radiation Pressure and Formation Flight in Highly Elliptical Orbits," Trevor Williams

DAGSI/AFRL-VA: "Development and Application of High Bandwidth and Amplitude Fluidic Actuators for High Speed Flow Control," Mo Samimy

5:00pm Cocktails and Hors d'oevres
6:00pm Catered Dinner (on site)

## Friday, Nov. 8: Dreese Laboratories Demonstrations and Evaluation

8:00am Continental Breakfast, Rm. 260 Dreese Laboratories (DL)

8:30am Demonstrations
(run simultaneously, spend 1 hour each in Rooms 731 and 260):

**Rm. 731 Dreese Laboratories:**

8:30am CCCS Cooperative Control Testbed demonstrations (Rm. 731 DL)
Keith Redmill, Ümit Ogras, Oguz Dagci, Scott Waun, Ümit Özgüner

9:30am CCCS Cooperative Control Testbed demonstrations (Rm. 731 DL)
(repeat of 8:30am demonstration)

**Rm. 260 Dreese Laboratories:**

8:30am Bioautonomous vehicle progress/demonstration (Rm. 260 DL)
Doug Torzewski, Kevin Passino, Kevin Daly, Brian Smith

9:00am Cooperative scheduling for fire control demonstration (Rm. 260 DL)
Alvaro Gil, Jorge, Finke, Kevin Passino

9:30am Bioautonomous vehicle progress/demonstration (Rm. 260 DL)
(repeat of 8:30am demonstration)

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|---|---|
| 10:00am | Cooperative scheduling for fire control demonstration (Rm. 260 DL) (repeat of 9:00am demonstration) |
| 10:30am | CCCS Executive Board Meeting (closed meeting), Rm. 259 Dreese Laboratories |
| 11:30am | CCCS Executive Board Feedback to CCCS Investigators (open meeting), Rm. 260 Dreese Laboratories |
| 12:00pm | Meeting ends |