CPS Principal Investigator Meeting 2010

Arlington Westin Hotel
August 10-12, 2010

Agenda

Tuesday

8:00 – 8:30 Continental Breakfast

8:30 – 8:50 Opening Remarks
Thomas Peterson, NSF Assistant Director for Engineering
Ty Znati, NSF Division Director for CNS/CISE
Robert Trew, NSF Division Director for ECCS/ENG

8:50 – 9:00 NSF Charge
Helen Gill, CNS/CISE, Kishan Baheti, ECCS/ENG and Zygmunt Haas, ECCS/ENG

9:00 – 9:30 Government Keynote: CPS as Part of the Federal Information Technology R&D
Chris Greer, Assistant Director for Information Technology R&D
Office of Science and Technology Policy

9:30-10:05 Science Keynote: Foundations of Cyberphysical Systems
P. R. Kumar, UIUC

10:05 – 10:20 Break

10:20 – 12:00 Session 1: CPS Foundations

10:20-10:35 Jack Stankovic: Foundations of Cyberphysical Networks
10:50-11:05 Rahul Mangharam: Quantitative Analysis and Design of Control Networks
11:05-11:40 Panel Discussion
Panelists: Michael Branicky (moderator), P. R. Kumar, Jack Stankovic, Richard Murray, Rahul Mangharam

11:40 – 12:15 Break for Lunch Pickup

12:15 – 1:45 Conversation with Government and Industry: Transportation

1:45 – 3:00 Session 2: Transportation

1:45 - 2:00 Claire Tomlin: ActionWebs
2:00 - 2:15 Hari Balakrishna: Vehicular Cyber-Physical Systems
2:15 - 2:30 Francesco Borrelli: High Confidence Active Safety Control in Automotive Cyberphysical Systems
2:30 – 3:00 Panel Discussion
Panelists: Raj Rajkumar (moderator), Claire Tomlin, Hari Balakrishnan, Francesco Borrelli, Alex Bayen

3:00 – 3:30 Break
3:30 – 5:00 **Poster Session**  
Starts with 2 minutes project introductions

8:00 - **Birds of a Feather Group Meetings**  
Signup sheets for BoF sessions are at the registration desk.

1. Special Interest Group on CPS Foundations  
   Discussion Lead: Bruce Krogh
2. Special Interest Group on Transportation  
   Discussion Lead: Claire Tomlin
3. Special Interest Group on open source tools and experimental platforms for CPS  
   Discussion Lead: Gabor Karsai
4. An additional meeting room will be available for BoF Session initiated by PI-s.

**Wednesday**

8:00 – 8:30 Continental Breakfast

8:30 – 9:00 Opening: Introduction of the CPS-VO

9:00 – 9:45 Keynote: The Innovation Economy  
Curtis Carlson, President and CEO of SRI International

9:45 – 10:00 Break

10:00 – 12:00 **Session 3: Health and Medical**

10:00-10:15 Insup Lee: Infrastructure and Technology Innovations for Medical Device Coordination
10:15- 10:30 Gregory Hager: Hybrid Systems for Modeling and Teaching the Language of Surgery
10:30-10:45 Eric Perreault: Cybernetic Interfaces for the Restoration of Human Movement Through Functional Electrical Stimulation
10:45-11:00 Howard Chizeck: Control of Surgical Robots: Network Layer to Tissue Contact
11:00-11:40 Panel Discussion  
Panelists: Jack Stankovic (moderator), Insup Lee, Gregory Hager, Eric Perreault, Howard Chizeck, Julian Goldman

11:40 – 12:15 Break for Lunch Pickup

12:15 – 1:45 **Conversation with Government and Industry: Energy and Health/Medical**  

1:45 – 3:10 **Session 4: Energy**

1:45 - 2:00 Marija Ilic: Smart Grids as a Means of Implementing Sustainable Energy Systems: The Key Role of Dynamic Monitoring and Decision Systems (DYMonds)
2:30 - 2:45  Prabir Barooah: Methods for Network-Enabled Embedded Monitoring and Control for High-Performance Buildings
2:45 – 3:10  Panel Discussion
Panelists: Dagmar Niebur (moderator), Marija Ilic, Rohit Negi, Randy Katz, Prabir Barooah

3:10-3:30 Break

3:30 – 5:00  Poster Session
Starts with 2 minutes project introductions

8:00 -  Birds of a Feather Group Meetings
Signup sheets for BoF sessions are at the registration desk.

1. Special Interest Group on Health and Medical
   Discussion Lead: Insup Lee

2. Special Interest Group on Energy
   Discussion Lead: Marija Ilic

3. Special Interest Group on Certification: Research needs to support safety-critical software certification
   Discussion Lead: Sushil Birla

4. An additional meeting room will be available for BoF Session initiated by PI-s.
**Thursday**

8:00 – 8:30   Continental Breakfast

8:30 – 10:00  Communicating in New Media Landscape  
Joshua Chamot for NSF office of Public and Legislative Affairs (OLPA)

10:00-10:30  Break

10:30 – 12:00  Wrap-up Discussion

Note: The Thursday Session will run parallel with the CPS Education Workshop

All rooms will be set-up in class-room style with projector and screen for presentations by invited speakers.

**Birds of a Feather Meeting – Tuesday, August 10 th at 8 p.m.**

Ernest Hemingway salon 1  
CPS Foundations

Ernest Hemingway salon 2  
Transportation

Ernest Hemingway salon 3  
Open Source

F. Scott Fitzgerald D  
To be determined

**Birds of a Feather Meeting – Wednesday, August 11 th at 8 p.m.**

Ernest Hemingway salon 1  
Health and Medical

Ernest Hemingway salon 2  
Energy

Ernest Hemingway salon 3  
Certifications

F. Scott Fitzgerald D  
To be determined