Robots and Sensors for the Human Well-being (ROSE-HUB)

Meeting May 16-17, 2019

Meeting Locations:

May 16: At the Graduate Minneapolis (hotel), 615 Washington Ave SE, Minneapolis, MN 55414
May 17: At Shepherd Labs, 100 Union St SE, Minneapolis, MN 55455

Agenda

Thursday, May 16 2019 (Graduate Minneapolis Hotel)

8:00 AM Registration and Continental Breakfast

9:00   Welcome, Dr. Joseph Konstan, Associate Dean College of Science &
          Engineering
9:10   Institute for Engineering in Medicine (IEM), Dr. John Bischof, Director IEM
9:20   Introductions round-robin
9:30   Evaluation/Survey, Dr. Vida Scarpello, Assessor Coordinator
9:45   State of the ROSE-HUB, Dr. Vassilios Morellas, Center Director

10:00 Cluster 1: UAVs/Robots - Project Status Presentations and LIFE Forms

"Robust Axial Localization in Penstocks and Tunnels for Infrastructure Inspection" – PI: Jim Keller (UPENN01)

"Events2Audio: Towards Audio Reconstruction from an Event Camera" – PI: Kostas Daniilidis (UPENN02)

10:30   Break

10:45 **Cluster 1: UAVs/Robots (*concluded*) - Project Status Presentations and LIFE Forms**

"An End-to-End Hybrid Pipeline for Unsupervised Learning of Egomotion" – PI: Kostas Daniilidis (UPENN03)

"Structure Modeling for Inspection with MAVs" - PI: Jing Xiao (UNCC01)

11:15 Cluster 2: Agriculture - Project Status Presentations and LIFE Forms

"Weed Detection and Classification in High Altitude Aerial Images" – PI: Nick Heller (UMN01)

"CPS with multi-robots for persistent water and sediment monitoring" - PI: Byung-Cheol Min (PURDUE01)

11:45 Lunch

12:45 PM Cluster 2: Agriculture (*concluded*) - Project Status Presentations and LIFE Forms

"Precision Dairy Agriculture Sensors and the 'Lifecycle of a Bolus' " - PIs: Robert Nawrocki, Richard Voyles, (PURDUE02)

1:00 Cluster 3: Medical/Health - Project Status Presentations and LIFE Forms

"Integrating Smart Home Technologies and Other Sensors to Detect Stress and Determine Appropriate Interventions" - PIs: Maria Gini, Wilma Koutstaal (UMN02)

"Image Processing for Surgical Instrument Tracking and auto Segmentation Applications" – PI: Paul Rullkoetter (DU01)

"Toward Real Time Musculoskeletal Assessment in a Clinical Environment" – PI: Paul Rulkoetter (DU02)

1:40 Cluster 4: Industrial - Project Status Presentations and LIFE Forms

"Large Scale Deployment and Maintenance for On-Line Detection of Diverse Truck Parking Scenarios through 3D Computer Vision Methodology" – PI: Ted Morris (UMN03)

"Robotic Handling of High-Consequence Materials"- PIs Richard Voyles (PURDUE03)

"Flexible Displays for Kitchen IOT" - PIs: BC Min, Richard Voyles (PURDUE04)

"Towards Real-time Automated Detection of Flaws in Nuclear Power Plant" - PI: Min Shin (UNCC02)

2:40 "Reenvisioning Human-Autonomy Systems-of-Systems", Professor Venkat Krovi, Clemson University

3:15 Break

3:30 "The Importance of Failure", Professor Nikos Papanikolopoulos
4:00   Poster Session/Neworking with Students
4:30   IAB Review of Evaluations (open meeting), Dr. Gregg Swanson, IAB chair stand-in
5:00   IAB and NSF Closed Meeting
6:00   Adjourn

7:00 PM Networking Reception and Dinner at Loring Bar and Restaurant at 327 14th Av SE, Minneapolis MN 55414, phone: 612-378-4849. It is about 7 blocks NW of the Graduate Minneapolis hotel.
7:30 PM Appetizers and Social hour
8:00 PM Dinner

Friday, May 17 2019 (Shepherd Labs)

9:00 NSF Update, Dr. Ann Von Lehmen, National Science Foundation PD
9:20 IAB/NSF Observations and Summary Feedback, Dr. Ann Von Lehmen/Dr. Vida Scarpello
9:45 **"ROSE-HUB Priorities Going Forward", Dr. Vassilios Morellas, Center Director**
10:00 **"The Vision for ROSE-HUB 2.0", Professor Nikos Papanikolopoulos, University of Minnesota**

10:30 Break

10:45 **"Enterprise Robotics: Using robotics at your business"**
       Jack Killian, Rover Robotics Inc.
11:15 Shepherd Labs Tour
11:45 General Discussion and Closing Remarks

12:15 PM Adjourn and Box Lunches