**THE SUBTERRANEAN MACROSCOPE: SENSOR NETWORKS FOR UNDERSTANDING,
MODELING AND MANAGING SOIL PROCESSES**
November 1 – 2, 2017
Gleacher Center | 450 Cityfront Plaza Drive | Chicago, IL

Day 1: Wednesday, November 1

Time	Location	Event
7:30a – 7:55a	Lounge	**Breakfast**
7:55a – 8:05a	200	**Welcome and Goals** Supratik Guha, *University of Chicago*
8:05a – 9:20a	200	**Opening Plenaries** **Sensor Networks for Agriculture's Unchartered Frontier** *Nick Dokoozlian* *Vice President, Viticulture, Chemistry and Enology* *E&J Gallo Winery* **Understanding the Role of Soil in the Genetics x Environment x Management Concept** *Jerry Hatfield* *Laboratory Director and* Supervisory Plant Physiologist *National Laboratory for Agriculture and the Environment* **Research needs for sensing and monitoring biological analytes in buried soil environment** *Rajakkannu Mutharasan* *Frank A. Fletcher Professor of Chemical and Biological Engineering* *Drexel University*
9:20a – 9:40a	200	**Plenary Q&A**
9:40a – 9:55a	200	**Break**
9:55a –11:10a	200	**Opening Plenaries** ***A World Without Soil*** *Jo Handelsman* Director of the Wisconsin Institute for Discovery at the University of Wisconsin-Madison Vilas Research Professor Howard Hughes Medical Institute Professor *Ian Foster* *Arthur Holly Compton Distinguished Service Professor* *Department of Computer Science, University of Chicago* *Distinguished Fellow, MCS Division* *Senior Scientist, MCS Division, Argonne National Laboratory*

Agricultural Internet of Things: View From the Field
Mehmet Can Vuran
Susan J. Rosowski Associate Professor
Cyber-Physical Networking Laboratory
Computer Science and Engineering
University of Nebraska-Lincoln

11:10a –11:30a	200	**Plenary Q&A**

11:30a –12:15p	Lounge	**Lunch**

12:15p – 1:30p	200	**Panel 1: Soil physics, chemistry and microbiology** *Moderated plenary panel discussions with 5-minute talks, followed by Q&A* *Presenters:* *1. Henry Lin, Pennsylvania State University* *2. Tyson Ochsner, Oklahoma State University* *3. Katalin Szlavecz, Johns Hopkins University* *4. Jennifer Pett-Ridge, Lawrence Berkeley National Laboratory* *5. Zoe Cardon, Marine Biological Laboratory* *6 David Brown, Washington State University* *7. April Ulery, New Mexico State University* *8. David Myrold, Oregon State University*

1:30p – 2:15p	200	**Panel 2: Plant genomics, predicting phenotype from G x E** *Moderated plenary panel discussions with 5-minute talks, followed by Q&A* *Presenters:* *1. Steve Welch, Kansas State University* *2. Chris Topp, Danforth Plant Science Center* *3. Alison Thompson, USDA ARS* *4. Edgar Spalding, University of Wisconsin-Madison* *5. David Baltensperger, Texas A&M University* *6. Steve Evett, USDA ARS*

2:15p – 2:30p		**Break**

2:30p – 3:30p	200	**Panel 3: Sensors and Subsystems** *Moderated plenary panel discussions with 5-minute talks, followed by Q&A* *Presenters:* *1. Viacheslav Adamchuk, McGill University* *2. Xufeng Zhang, University of Chicago* *3. David Blaauw, University of Michigan* *4. Hongda Chen, USDA NIFA* *5. Michael Haley, University of Oregon* *6. Agnelo Silva, University of Southern California* *7. Raphael Viscarra Rossel, CSIRO* *8. James Krogmeier, Purdue University*

Time	Location	Event
3:30p – 4:30p	200	**Panel 4: Big Data** *Moderated plenary panel discussions with 5-minute talks, followed by Q&A* *Presenters:* *1. Bruno Basso, Michigan State University* *2. Alex Szalay, Johns Hopkins University* *3. Ken Birman, Cornell University* *4.Greg Gandenberger, Uptake* *5. Deb Agarwal, Lawrence Berkeley National Laboratory* *6. Ranveer Chandra, Microsoft* *7. Alok Choudhary, Northwestern University*
4:30p – 4:45p	200	**End of Day Wrap Up** *Participants sign up for day 2 breakout sessions*
5:00p – 6:30p		**Break** *Attendees can return to hotel*
7:00p – 9:00p	River Roast	**Conference Dinner** *315 N LaSalle Dr, Chicago, IL 60654*

Day 2: Thursday, November 2		
Time	**Location**	**Event**
7:30a – 8:00a	200	**Breakfast**
8:00a – 8:10a	200	**Overview of Breakout Sessions** Supratik Guha
8:10a – 8:40a	200	**Keynote: Big Data gets Physical** *Hendrik Hamann* *Distinguished Researcher and Research Manager for Physical Analytics, IBM Thomas J. Watson Research Center*
8:40a – 8:45a		**Head to breakout room sessions**
8:45a –9:45a	222, 226	**Concurrent Breakout: Soil Science** **Concurrent Breakout: Plant Genomics**
9:45a – 10:00a		**Break**
10:00a – 11:00a	222, 226	**Concurrent Breakout: Subsystems and Infrastructure** **Concurrent Breakout: How can data analytics help soil science**
11:00a –11:30a	200	**Wrap Up and Develop Summary Presentations**

		Moderators develop 1-2 slide summary
11:30a –1:00p	200	**Presentation Readout** *10 minutes per group*
1:00p	200	**Workshop Concludes**