



Innovation Center Workshop, Fall 2016 New Tools for Changing Ecosystems

Friday December 09, 07:30-17:00 in the Rambo Auditorium, 345 Middlefield Road, Menlo Park

- 7:30-8:20 Poster discussion/Coffee
- 8:20-8:45 Welcome, Anne Kinsinger, Associate Director, Ecosystems, USGS
- 8:45-9:10 IC projects update: Eben Paxton, Dave Warner, Susan de La Cruz
- 9:10-9:30 Workshop goals, John Stock, USGS
- 9:30-10:30 **Jim Birch, MBARI:** *Next generation technology for tracking marine ecosystems*
Mike Chotkowski, USGS: *Key gaps in our ability to efficiently observe the biological dynamics of large estuaries*
Robert Simmon, Planet: *Next generation smallsat imaging of Earth and ecosystems*
- 10:30-11:00 Coffee break and poster discussion
- 11:00-12:00 **Peter Esselman, USGS:** *Frontiers in measuring and forecasting Great Lakes aquatic resources*
Scott Cornman, USGS: *Genes in the environment: Detection, interpretation, and the future biodiversity map*
Lynn Rothschild, NASA: *Synthetic biology tools for situational awareness*
- 12:00-12:20 Speaker TBA
- 12:20-13:10 Lunch and breakout session 1 (sandwiches, chips, cookies and drinks)
- 13:10-14:10 **Allan O'Connell, USGS:** *Challenges to tracking animal population changes*
Bob Iannucci, Carnegie Mellon: *Cyber-geophysical systems with an emphasis on out-of-building communication*
Matt Kaufmann, USGS: *Big game migrations in the American West: new discoveries, science gaps, and technological hurdles*
- 13:10-14:30 Coffee break
- 14:30-15:10 **Chad Frost, NASA:** *Environmental awareness of ecosystems using next -generation technology*
Clint Muhlfeld, USGS: *Key Needs to Implement the USGS National Integrated Drought Strategy*
- 15:10-16:30 Afternoon coffee break, breakout session 2 and poster discussion
- 16:30-17:00 Breakout leads report, and closing comments
- 17:30-21:00 Social at Mama Coco, 1081 El Camino

Workshop goals and description: The theme this year is new tools for changing ecosystems. The goal of Innovation Center workshops is to foster communication and problem-solving among scientists, engineers and technologists. Scientists address important components of ecosystems that they cannot assess because of technological limitations, and engineers and technologists describe exciting new to reduce these barriers, and describe novel applications. We hope that out of this tension come serendipitous conversations that lead to proposals to the USGS Innovation Fund or other funding. We expect engaging speakers, and great conversations about future opportunities with USGS leadership and our other partners. The audience will include ~ 150 scientists, including the USGS Director, a number of the Associate Directors of the Mission Areas, and numerous attendees from other agencies.

Posters: In addition to the plenary session, this is a chance to feature your science, technology, or novel applications, in our Poster Session. Posters will be up all day, with dedicated break-out and poster viewing sessions indicated on the Agenda. Please email the IC Director by December 01, 2016 with:

Authors:

Title:

Poster size:

Breakout Sessions and leaders

Breakout session 1: lunch

1. Innovation Fund PI lunch with Director (California Room).
2. Bruce Quirk & Matt Fladeland (Nevada Room): UAS applications for Ecosystems, how to get involved.
3. Jim Winton & Rama Nemani (PGST Conference Room, floor 1): Handling bioinformatic data: options including NASA's NEX.
4. Bruce Molnia: Remote sensing tools for USGS (Conference Room, floor 2).

Breakout session 2: afternoon

1. Susan De La Cruz, Isa Woo, Chad Frost (California Room): Wildlife Tracking: ecological needs for next generation tracking devices.
2. Bob Iannucci (PGST room): Next-generation wireless networks for environmental sensing
3. Jake Weltzin (Nevada Room): Towards National Ecosystems Assessments and Forecasting Potential topics include opportunities and challenges to delivering data and information real-time; moving towards ecological forecasting; tools for exploration, visualization and analysis; stakeholder engagement.
4. Andrea Ostroff, John Bradford (Conference Room, floor 2): Strengthening spatial and temporal data observation networks to support drought research.