

## Applications of UAS to Land and Natural Resource Management

July 16 and 17, 2014  
Argonne National Laboratory  
Building 203 Conference Room D120

Wednesday, July 16, 2014

DAY 1	
8:15 am – 8:45 am	Registration and Gather – Light Breakfast
8:45 am – 9:30 am	Welcome, Introduction, Overview and Purpose
	<p>Welcome John Krummel, Director Environmental Science Division</p> <p>Introductions, Overview, and Purposes Karen Smith/Robert Johnson Senior Program Managers Environmental Science Division</p>
9:30 am – 12:00 pm	Regulatory Framework/Mission Support and Planning
	<p>Panel Discussion: Regulatory Framework FAA (Mark Foisy), Jeff Sloan (USGS), Brian Mullin (FWS) 9:30 – 10:30 am</p> <p>15 minute Break</p> <p><i>NASA / USFS Collaboration: Advances in Wildfire Observations with UAS</i> Vince Ambrosia (NASA Ames) 10:45 – 11:20 am</p> <p><i>Use of Unmanned Aircraft Systems in the United States Geological Survey (USGS), Bureau of Land Management (BLM) and other Department of Interior (DOI) Agencies</i> Jeff Sloan (USGS) 11:20 – 11:55 am</p>
12:00 pm – 1:00pm	Working Lunch: Small Group Discussions – Barriers to Federal Agency Use of UAS Technologies for Land/Natural Resource Monitoring

1:00 pm – 5:00 pm	<b>Mission Support and Planning</b>
	<p style="text-align: center;"><i>Overview of the NOAA Unmanned Aircraft Systems (UAS) Program</i> John Coffey (NOAA) 1:00 – 1:35 pm</p> <p style="text-align: center;"><i>Integration of UAS into USDA Forest Service Land Management Activities</i> Adrian Grell (USFS) 1:35 – 2:10 pm</p> <p style="text-align: center;"><i>UAS Environmental Applications at Dugway Proving Grounds</i> Robert Knight (DPG) 2:10 – 2:45 pm</p> <p style="text-align: center;">15 minute break</p> <p style="text-align: center;"><i>U.S. Fish and Wildlife Service Applications of UAS Technologies for Wildlife and Habitat Surveys</i> Orien Richmond (FWS) 3:00 – 3:35 pm</p> <p style="text-align: center;"><i>Nevada's UAS Research and Test Site</i> Lynn Fenstermaker (DRI) 3:35 – 4:10 pm</p> <p style="text-align: center;">Group Discussion 4:10 – 4:45 pm</p> <p style="text-align: center;">Adjourn</p>
6:30pm	<b>Dinner Offsite (Optional)</b>

Thursday, July 17, 2014

DAY 2	
8:30 am – 9:00 am	<b>Gather and Review Purpose – Light Breakfast</b>
9:00 am – 12:00 pm	<b>UAV Hardware Trends/Sensors-Applications</b>
	<p style="text-align: center;">Panel Discussion: UAV Hardware Trends Robert Knight (DPG), Mike Vogt (NAR), Chris Lippitt (UNM) 9:00 – 10:00 am</p> <p style="text-align: center;">15 min Break</p> <p style="text-align: center;"><i>Scale<sup>3</sup>: How Unmanned Aerial Vehicles Can Provide Data at Appropriate Spatial, Temporal, and Spectral Scales to Monitor Ecological Patterns and Processes</i> Benjamin Heumann (CMU) 10:15 – 10:50 am</p> <p style="text-align: center;"><i>The Use of UASs in Natural Resources: It's All About the Question</i> Matthew A. Burgess (UofI) 10:50 – 11:25 am</p> <p style="text-align: center;">Group Discussion 11:25 – 12:00 pm</p>
12:00 pm – 1:00pm	<b>Working Lunch: Small Group Discussions – UAS/Sensor Maturity for Select Land/Natural Resource Monitoring Applications</b>
1:00 pm – 4:30 pm	<b>Sensors/Applications</b>
	<p style="text-align: center;"><i>UAS@K-State</i> Mark Blanks (KSU) 1:00 – 1:35 pm</p> <p style="text-align: center;"><i>The Impact of UAS on Remote Sensing - A Conceptual Perspective</i> Chris Lippitt (UNM) 1:35 – 2:10 pm</p> <p style="text-align: center;"><i>Bringing Aerial Robots Closer to the Ground: Sensing, Sampling, and Safety</i> Carrick Detweiler (UNL) 2:10 – 2:45 pm</p> <p style="text-align: center;">15 min Break</p> <p style="text-align: center;"><i>UAS Applications in Agriculture and Hydrologic Research</i></p>

	<p>Keith Cherkauer (Purdue) 3:00 – 3:35 pm</p> <p><i>Application of Sensor Technology to Aerial Emission Sampling</i> Brian Gullet (EPA) 3:35 – 4:10 pm</p> <p>Group Discussion, Wrap-Up and Conclusions 4:10 – 4:30 pm</p>
4:30 pm	<b>Adjourn</b>

*Presenters*

Vince Ambrosia (NASA)  
 Mark Blanks (KSU)  
 Matthew Burgess (UofFI)  
 Keith Cherkauer (Purdue)  
 Carrick Detweiler (UNL)  
 Lynn Fenstermaker (Desert Research Institute)  
 Mark Foisy (FAA)  
 Brian Gullet (EPA)

Benjamin Heumann (CMU)  
 John Coffey (NOAA)  
 Robert Knight (Dugway Proving Grounds)  
 Chris Lippitt (UNM)  
 Brian Mullin (FWS)  
 Orien Richmond (FWS)  
 Jeff Sloan (USGS)  
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