



CONNECTING GRASSROOTS TO GOVERNMENT FOR DISASTER MANAGEMENT

**Commons Lab of the
Science and Technology Innovation Program**

**The Wilson Center
Ronald Reagan Building
1300 Pennsylvania Ave NW
Washington, DC**

September 13-14, 2012

Overview

By harnessing the collective power of citizens and engaging communities in their own response and recovery, new technologies and methods, like social media, crowdsourcing, and “crowd-mapping,” have the potential to transform disaster management. Yet many challenges – including characterization of reliability, guidelines for use, and demonstration of value – must be addressed before federal agencies can take full advantage of these approaches. Early uses of social media and crowdsourcing methods in disasters have raised a number of questions: Can citizens generate inputs to critical decisions faster and perhaps more accurately than traditional methods? What is the research telling us, and how are the best ideas being translated into practice? How have agencies successfully navigated potential roadblocks to the use of citizen-generated information, such as privacy and procurement or the Paperwork Reduction Act? When and how is it possible to innovate through open and participatory design with citizens and communities?

The Commons Lab of the Woodrow Wilson International Center for Scholars (The Wilson Center), the National Alliance for Public Safety GIS Foundation, the International Association for Information Systems for Crisis Response and Management, ESRI, NetHope, and University of Colorado Boulder’s Project EPIC are honored to host a policy roundtable titled, “Connecting Grassroots to Government for Disaster Management.” In recognition of National Preparedness month, this meeting will take place on September 13 and 14, 2012 in the 5th floor Conference Room at the Wilson Center in Washington, DC.

This meeting will allow members of the research, practitioner, policy, and “digital volunteer” communities to discuss the questions posed above and expand the list, as needed. The objectives are to build a community of interest, prioritize key issues, and identify possible solutions. On the first day of the workshop we will showcase some of the new and innovative projects currently in development by federal agencies, humanitarian and disaster management NGOs, and others.

Committee Chairs

- *Lea Shanley*, Director, Commons Lab, Woodrow Wilson Center International Center for Scholars
- *John Crowley*, Co-chair, Public Policy Scholar for the Science, Technology and Innovation Program, The Wilson Center; and Research Coordinator for the Crisis Dynamics Program, Harvard Humanitarian Initiative; Analyst for the Center for Technology and National Security Policy at the National Defense University

Steering Committee

- *John Bwarie*, Strategy & Communications Officer for SAFRR Project: Science Application for Risk Reduction, Natural Hazards Mission Area, U.S. Geological Survey
- *Michael Goodchild*, Emeritus Professor of Geography, University of California, Santa Barbara
- *Gisli Olafsson*, Emergency Response Director, NetHope
- *Leysia Palen*, Associate Professor of Computer Science, University of Colorado, Boulder
- *Eric Rasmussen*, Vice President, AccessAgility, and Managing Director, Infinitum Humanitarian Systems
- *Christopher Strager*, Director of the National Weather Service (NWS), Eastern Region, National Oceanic and Atmospheric Association
- *Bartel Van de Walle*, President, International Association for Information Systems for Crisis Response and Management (ISCRAM), and Associate Professor of Information Management, Tilburg School of Economics and Management, Tilburg University

Wilson Center Workshop Staff

- *Aly Lyons*, Lead Program Assistant
- *Ryan Burns*, Lead Research Assistant
- *Jason Kumar*, Research Assistant
- *Elise Barry*, Lead Intern
- *Joe Filvarof*, Program Assistant

CONNECTING GRASSROOTS TO GOVERNMENT FOR DISASTER MANAGEMENT

DAY 1: Thursday, September 13, 2012

8:00am-8:25am **Continental Breakfast**

8:30am-8:45am **Welcome and Introduction**

- *Lea Shanley*, Director, Commons Lab, Science and Technology Innovation Program, The Wilson Center
- *John Crowley*, Public Policy Scholar, Commons Lab, Science and Technology Innovation Program, The Wilson Center; and Research Coordinator for the Crisis Dynamics Program, Harvard Humanitarian Initiative

What are social media, crowdsourcing, “crisis mapping,” “serious games,” prizes, and challenges? How can these new technologies and methods facilitate public engagement in data collection, sharing, and problem-solving? What opportunities and challenges emerge when federal agencies try to harness these new tools and methods for disaster management and research?

8:45am-9:45am

Keynote Discussion: Agency Vision and Decision-Maker Needs

Moderated by *Alex Howard*, Government 2.0 Washington Correspondent, O'Reilly Media

Panelists:

- *Chief Charles Werner*, Fire Chief, Charlottesville Fire Department, City of Charlottesville, VA
- *Bruce Heinlein*, Director of Human Geography, Joint Program Office, National Geospatial Intelligence Agency
- *David Applegate*, Associate Director for Natural Hazards, U.S. Geological Survey

What information do local and federal government decision-makers need for disaster response and research? How do information needs differ for on-the-ground responders, back-office decision-makers, and those conducting research? Where might government agencies effectively leverage the power of social networking, crowdsourcing, and other innovations to augment existing information or intelligence and improve decision-making? What agency policies will need to be adapted or established? What is the strategic vision for the next 5-10 years?

9:45am-10:00am

Coffee Break

10:00am-10:55am

Crowdsourced Data Quality

Moderated by *Sean Gorman*, President and Founder, GeoIQ; and ESRI

Panelists:

- *Muki Haklay*, Professor of GIScience, Extreme Citizen Science (ExCiteS) Research Group, Department of Civil, Environmental & Geomatic Engineering, University College London
- *Robert Munro*, Chief Executive Officer, IdiBon
- *Kate Starbird*, Assistant Professor, University of Washington, Seattle
- *E. Lynn Usery*, Research Physical Scientist and Director, Center of Excellence for Geospatial Information Science (CEGIS), U.S. Geological Survey

One of the primary obstacles to government agency use of citizen-generated data is trust in the source of the information and in the accuracy of the data provided. What tools and methods have been developed for validation and verification of crowdsourced data? How does the quality of crowdsourced data compare to other data sets? And what are the caveats? Under what circumstances might crowdsourced data be more useful than other resources? How do these lessons apply to tools built through open innovation processes?

11:00am-12:00pm

Data Collection and Management

Moderated by *Nigel Snoad*, Product Manager, Crisis Response, Google

Panelists:

- *Tim Brice*, Senior Meteorologist, National Weather Service, National Oceanic and Atmospheric Administration (NOAA)
- *Kris Eriksen*, Public Information Officer, Portland National Interagency Fire Center, NIMO Team, US Forest Service (USFS)
- *Shadrock Roberts*, Senior GIS Analyst, GeoCenter, US Agency for International Development (USAID)
- *Chris Vaughn*, GIO, Federal Emergency Management Agency (FEMA)

Once data quality can be assessed, how can an agency integrate citizen-generated data with authoritative data sets? What issues emerge when using fused data sets to make operational decisions? Most integration of data sets into federal decision-making has happened because of personal relationships between agency personnel and crowdsourcing communities. Until these workflows are transformed into durable, official processes, they are ad hoc and fragile. What methods and processes have federal agencies put in place to support crowdsourcing and other open-innovation tools and methods?

12:00pm-12:55pm

Buffet Lunch and Showcase

1:00pm-1:55pm

Evaluation Frameworks, Performance Metrics, and Impact

Moderated by *E.J. Ashbourne*, Senior Operations Officer, and Director, Global Health Information's Forum, World Bank

Panelists:

- *Bartel Van de Walle*, Associate Professor, Department of Information Management, Tilburg University, and President, International Association for Information Systems for Crisis Response and Management
- *Taha Kass-Hout*, Director, Division of Informatics Solutions and Operations, Public Health Surveillance and Informatics Program Office
- *John Vocino*, Senior Analyst, U.S. Government Accountability Office
- *Leysia Palen*, Associate Professor of Computer Science, University of Colorado, Boulder

New workflows for social media, crowdsourcing, and crowd-mapping are often more process than product, and therefore often fall outside current methods of measuring impact of federal procurement. What forms of monitoring and evaluation are effective? What do we want the impact to be? How can we develop an iterative design process with a positive measurable impact? How do we define success?

2:00pm-3:15pm

Public and Volunteer Engagement

Introductory Keynote Presentation and Moderation by *Ali S. Khan, MD, MPH*, Assistant Surgeon General (Retired) and Director, Office of Public Health Preparedness and Response, Centers for Disease Control and Prevention

Panelists:

- *Rob Baker*, Program Developer, External Projects Team, Ushahidi; and Member, Humanitarian OpenStreetMap Team
- *Jeff Phillips*, Emergency Manager Coordinator, Los Ranchos de Albuquerque, NM, Founder, Virtual Operations Support Teams (VOST), and member Social Media 4 Emergency Management
- *Laurie Van Leuven*, Social Media and Emergency Management, Scientific Research Corp and Former City of Seattle Strategic Adviser and Naval Postgraduate School Fellow, FEMA
- *Jen Ziemke*, Assistant Professor, International Relations, John Carroll University, Co-Founder & Co-Director, International Network of Crisis Mappers, and Fellow at the Harvard Humanitarian Initiative – Crisis Mapping & Early Warning

Citizens can contribute as passive sensors, interpreters, data collectors, and problem solvers. In many ways, the federal government is prevented from interacting directly with the public involved in open innovation and crowdsourcing. For some, replying to a post for clarification on a social media website would violate policy. And yet, engagement with the public and digital volunteer communities is the key attribute of successful strategies to build the

best ideas and living repositories of up-to-date data. What are potential models for successful participatory engagement? What are effective techniques for engaging and motivating volunteers? What types of organizational structures, protocols, and processes have proven effective?

3:15pm-3:25pm

Coffee Break

3:30pm-4:25pm

Research Challenges

Moderated by *Michael Goodchild*, Emeritus Professor, Department of Geography, University of California, Santa Barbara

Panelists:

- *Dave Ferguson*, Deputy Director, Science & Technology Office, U.S. Agency for International Development
- *Robin Murphy*, Raytheon Professor, Department of Computer Science and Engineering, Texas A&M University
- *Leysia Palen*, Associate Professor of Computer Science, University of Colorado, Boulder
- *Bartel Van de Walle*, Associate Professor, Department of Information Management, Tilburg University, and President, International Association for Information Systems for Crisis Response and Management

Social media, crowdsourcing, and other open innovations create new and unsolved research challenges around issues as wide ranging as pattern recognition, validation, visualization, and cybersecurity. What is the state of the art? What problems have various groups identified as the research agenda for the next 5-10 years?

4:30pm-5:25pm

Research-to-Operations

Moderated by *Eric Rasmussen*, Vice President, AccessAgility, and Managing Director, Infinitum Humanitarian Systems

Panelists:

- *Ray Buettner*, Director, Field Experimentation and Associate Professor, Department of Information Sciences, Naval Postgraduate School
- *Captain Xenophon (Yo) Gikas*, Fire Captain, Operations Control Division, Los Angeles Fire Department
- *Frank Lindsay*, NASA Applied Sciences Program—Disasters Program
- *Will McClintock*, Director, SeaSketch, Marine Science Institute, University of California Santa Barbara; member of the Center for Marine Assessment and Planning; and Senior Fellow at the United Nations Environmental Program - World Conservation Monitoring Center

Transforming current research and open innovation into pilot projects and eventually into enterprise-level tools and methods can be a difficult task. How does an agency turn new capabilities into official processes? How does an agency look out 10-20 years and build processes with uncertainty and adaptation as part of the design?

5:25pm-5:30pm

Wrap Up of Day 1

- *Lea Shanley, Director, Commons Lab, Wilson Center*

5:30pm-7:30 PM

Showcase and Networking Reception

CONNECTING GRASSROOTS TO GOVERNMENT FOR DISASTER MANAGEMENT

DAY 2: Friday, September 14, 2012

9:00am-9:30am **Continental Breakfast and Registration**

9:30am-9:35am **Welcome and Introduction**
Lea Shanley, Director, Commons Lab of the Science and Technology Innovation Program, Woodrow Wilson Center

9:35am-10:55am **Legal and Policy Issues II**
Moderated by *John Crowley*, Public Policy Scholar for the Science, Technology and Innovation Program, Woodrow Wilson Center; and Research Coordinator for the Crisis Dynamics Program, Harvard Humanitarian

Panelists:

- *David Kaufman*, Director, Office of Policy and Program Analysis, DHS Federal Emergency Management Agency
- *Stephanie Grosser*, Communications Specialist, Presidential Management Fellows Program, United States Agency for International Development
- *Ed Robson, Esq.*, Robson & Robson, LLC, Tort Liability for Digital Volunteers
- *Robert Gellman, Esq.*, Privacy Consultant, Missing Persons Privacy Project

Social media, crowdsourcing, and other open innovations challenge current policies around procurement, privacy, liability, data access and retention, intellectual property, data quality, and even the Paperwork Reduction Act. What are the major administrative hurdles that must be addressed? How have agencies dealt with the policies and issues related to the management of personally identifiable information (PII)? What federal policy issues need further analysis? What are potential pathways forward?

10:55am-11:05am **Coffee Break**

11:05am-12:00pm **Security of Crowdsourcing**
Moderated by *Eric Rasmussen*, Vice President, AccessAgility, and Managing Director, Infinitum Humanitarian Systems

Panelists:

- *George Chamales*, Principal, Rogue Genius LLC
- *B.K. DeLong*, Principal and Lead Analyst, Extropic Technology Consulting
- *Aiden Riley Eller*, Vice President of Technology and Security, CoCo Communications

Federal information assurance often tries to *eliminate* risk. However, because crowdsourcing requires a greater degree of openness, it entails developing practices and technologies to *manage* risk. What are the emerging standards for crowdsourcing? How should federal agencies approach the use of crowdsourcing data to make decisions under conditions of uncertainty? How different is this situation from the usual ‘fog of war’ that surrounds disasters?

12:00pm-12:55pm

Lunch

1:00pm-1:55pm

Keynote Discussion:

Connecting Grassroots to Government through Open Innovation

Moderated by *Gisli Olafsson*, Emergency Response Director, NetHope

Keynote Speakers:

- *Christopher Fabian*, Co-Lead, Innovation Unit, UNICEF
- *Nigel Snoad*, Product Manager, Crisis Response, Google

Federal procurement rules are often oriented to controlling fair competition between entities that are unlikely to collaborate. Open innovation often takes the opposite approach: aggregating multiple tools into ecosystems that can solve complex problems through collaboration of organizations across specializations. When should agencies use competition or collaboration? What are the best methods and models for organizing collective work? From the perspective of leaders in government, what are the main challenges that need to be overcome if open innovation is to take a wider role in federal problem solving? This panel will assemble key players in the federal technology space and ask how to work towards open innovation for disaster response.

2:00pm-2:45pm

Plenary Discussion: Prioritizing Grand Challenges

Moderated by *David Applegate*, Associate Director for Natural Hazards, U.S. Geological Survey

2:45pm-3:00pm

Vision for the Future

Gisli Olafsson, Emergency Response Director, NetHope

Next Steps and Close

Lea Shanley, Director, Commons Lab, The Wilson Center