



NOTICE OF INTENT TO AWARD

This Funding Announcement is not a request for applications. This announcement is to provide public notice of the U.S. Geological Survey's intention to fund the following project activities without full and open competition.

ABSTRACT	
Funding Announcement	G16AS00001
Project Title	Creating a Vision and Action Plan for Measurement of Socioeconomic Benefits of Geospatial Information
Recipient	East Carolina University
Principal Investigator / Program Manager	Professor Jamie Kruse
Anticipated Federal Amount	\$30,000 from USGS
Cost Share	0
Total Anticipated Award Amount	\$30,000 from USGS
New Award or Continuation?	New award
Anticipated Period of Performance	February 29, 2016 – February 28, 2021
Award Instrument	Grant
CFDA # and Title	15.808 - Research and Data Collection
USGS Point of Contact	Carl Shapiro

OVERVIEW

This project is an effort by the GEOValue Community in collaboration with OECD, NASA, and USGS to convene a workshop of researchers and practitioners to advance methods for measuring the socioeconomic benefits of geospatial information. The workshop will be focused on two societal impact focus areas: (1) Disasters – focusing on resilience to natural disasters and extreme events; and (2) Ecosystems – highlighting the land-water-energy nexus. The workshop will take place at OECD headquarters in Paris, France from March 10-11, 2016.

The expanding investment and use of earth observations by government entities and private industry is a hallmark of the 21st century. Today in the U.S. alone, civil earth observations estimated funding in 2014 included \$2.5 billion in satellite systems and more than \$1 billion for airborne, terrestrial, and marine networks and surveys [OSTP, 2014]. There is universal agreement that legacy systems such as Landsat, NEXRAD, GOES, and others) have contributed to the protection and quality of life. With these data and their relevant geospatial coordinates, hydrology/metrology resources, land cover utilization, coastal dynamics and other drivers can be used for scientific and applications analyses of the environment. However, standardized practices have yet to be established for measuring the contribution to society of these and other systems. Further, the future value of proposed new geospatial information systems, supported by the underlying science enabling their use, must become a component of the investment decision process in times of increasing demands on shrinking resources. The proposal to be funded outlines a vision and action plan to establish practice standards that are comparable across applications and to build upon and expand the community of practitioners that advances the science of measuring the socioeconomic benefits of geospatial information.

The impacts of science and applications on decisions need to be better understood, not only intuitively, but also through quantitative assessments. Scientists are increasingly being called upon to provide impartial scientific information to support decision-makers. The need to link scientific investment and advances in geospatial information and the related scientific analyses to impacts at a local, regional and global level has been articulated in the examples below.

- *“Over the next decade the global scientific community must take on the challenge of delivering to society the knowledge and information necessary to assess the risks humanity is facing from global change and to understand how society can effectively mitigate dangerous changes and cope with the change that we cannot manage.” [ICSU, 2010]*
- The US NRC Decadal Survey [2007] noted the importance of applied sciences and *“recommended a suite of satellite missions and complementary activities that serve both scientific and applications objectives for the nation.”*
- The Earth Observation Assessment (EOA) reported in the 2014 National Plan for Civil Earth Observations for prioritization of earth observing systems complements the Decadal Survey above by utilizing two new perspectives: *(a) the inclusion of non-satellite systems and (b) a robust analysis of the impact of each system with respect to its delivery of services to society in twelve societal benefit areas.*
- The 2015 white paper, “Earth observations in support of national strategies for disaster-risk management,” prepared for the UN World Conference on Disaster Risk Reduction outlines the contribution of earth observations to the “Priorities for Action.” *Priority 1: Understanding, communicating and using disaster risk information* is supported by end-to-end initiatives to deliver usable and reliable data to national and local end users to map risk and vulnerability and track their dynamics over time and space. “Objective and reliable information on hazard, vulnerability and exposure, presented through an analysis of expected impacts for given risk scenarios, is instrumental for triggering and, more importantly, sustaining the political will and economic strength needed to achieve Disaster Risk Reduction.”

Three factors contribute to the increasing importance of geospatial information products: (i) a recognition that there are significant decisions made at national levels having global impact, (ii) the complex and non-linear nature of environmental driving functions that make

optimization of outcomes less intuitive, and (iii) the need to observe trends on a global level to have an integrated perspective. This leads to the need for more observation-derived information and the capability to communicate the value of the information in its applications.

Previous workshops have fostered a nascent community of practice.

- “Socio-economic benefits of geospatial information/GEOSS 2012” Boulder, Colorado, June 2012.
- “Societal Impacts of Improved Environment & Geospatial Information” Rotterdam, The Netherlands, May 2013.
- “Information for Innovation and Socioeconomic Development” was an International Workshop at the crossroad of Earth Information, Technology and Social Sciences, conducted as a pre-event to the INSPIRE conference, Florence, Italy, June 2013,
- “Understanding socioeconomic benefits (SEB) and impacts” pre-event workshop hosted by the Group on Earth Observation (GEO) during the 10th Summit in Geneva Switzerland. January 2014.
- Assessing the socio-economic impact of “big geospatial data” and crowd sourcing, American Geophysical Union (AGU) session December 2014.
- “Assessing the socio-economic impact of open geospatial information,” Washington, DC October 2014.

RECIPIENT INVOLVEMENT

East Carolina University will work with the GEOValue organizing committee to plan the workshop to be held at OECD headquarters in Paris, March 10 -11, 2016. ECU and the organizing committee will handle development of the scientific agenda as well as logistics for the workshop.

USGS INVOLVEMENT

No substantial involvement on the part of USGS is anticipated for the successful completion of the objectives to be funded by this award. It is anticipated that USGS’ involvement will consist of standard federal stewardship responsibilities such as monitoring project performance, technical assistance at the request of the recipient, etc.

USGS will participate in workshop planning as a collaborator, but will not have primary responsibility for its completion. USGS will also participate in the workshop including involvement as speakers and panelists.

SINGLE-SOURCE JUSTIFICATION

**DEPARTMENT OF THE INTERIOR
SINGLE SOURCE POLICY REQUIREMENTS**

Department of the Interior Policy (505 DM 2) requires a written justification which explains why competition is not practicable for each single-source award. The justification must address one or more of the following criteria as well as discussion of the program legislative history, unique capabilities of the proposed recipient, and cost-sharing contribution offered by the proposed recipient, as applicable.

In order for an assistance award to be made without competition, the award must satisfy one or more of the following criteria:

- (1) Unsolicited Proposal – The proposed award is the result of an unsolicited assistance application which represents a unique or innovative idea, method, or approach which is not the subject of a current or planned contract or assistance award, but which is deemed advantageous to the program objectives;
- (2) Continuation – The activity to be funded is necessary to the satisfactory completion of, or is a continuation of an activity presently being funded, and for which competition would have a significant adverse effect on the continuity or completion of the activity;
- (3) Legislative intent – The language in the applicable authorizing legislation or legislative history clearly indicates Congress' intent to restrict the award to a particular recipient of purpose;
- (4) Unique Qualifications – The applicant is uniquely qualified to perform the activity based upon a variety of demonstrable factors such as location, property ownership, voluntary support capacity, cost-sharing ability if applicable, technical expertise, or other such unique qualifications;
- (5) Emergencies – Program/award where there is insufficient time available (due to a compelling and unusual urgency, or substantial danger to health or safety) for adequate competitive procedures to be followed.
- (6) Cooperative Agreements - USGS Unique Authority cited at 43 U.S.C. 36d (Federal, State, and academic partners) or DOI Authority cited at 43 U.S.C. 1457b (not-for-profit organizations).

USGS did not solicit full and open competition for this award based the following criteria:

(4) UNIQUE QUALIFICATIONS

Single Source Justification Description:

The principal investigator, Professor Jamie Kruse and the GEOValue community are uniquely qualified to move forward on this topic in an effective and meaningful way. Professor Kruse is recognized for her research in economics and decision making under uncertainty especially as it relates to natural hazards. She completed her doctoral work at University of Arizona under

dissertation advisor, Vernon Smith (2002 Nobel Laureate). Dr. Kruse has published over sixty refereed journal articles in addition to proceedings, abstracts and reports. Her work has appeared in *Econometrica*, *RAND Journal of Economics*, *Southern Economic Journal*, *Journal of Economic Behavior and Organization*, *Economic Inquiry*, *Natural Hazards Review*, *Journal of Wind Engineering and Industrial Aerodynamics*, *Environmetrics*, *Weather and Forecasting*, *Risk Analysis*, *Journal of Risk and Insurance* and others. She has held faculty positions at the University of Colorado, Texas Tech University, East Carolina University and a visiting position at Eidgenossische Technische Hochschule (ETH) in Zurich, Switzerland. Her funded research has been supported by National Science Foundation, Department of Energy, National Institute of Standards and Technology, Federal Emergency Management Agency, Federal Deposit Insurance Corporation, Niagara Mohawk, State of Texas and the State of North Carolina. She has been PI or Co-I of research projects totaling over \$20 million. She is serving as a mentor to 2014-2016 cohort of the NSF Enabling the Next Generation of Hazards Researchers, having mentored the 2008-2010 cohort as well.

During 2010 she held the position of Chief Economist at NOAA. Dr. Kruse's responsibilities within NOAA included member on the NOAA Research Council and chair of the Research Council Social Science Committee. She was co-chair of the *ad hoc* committee for Scientific Integrity. At the interagency level, she served as a member of the OSTP Subcommittee on Social, Behavioral and Economic Sciences, OSTP Subcommittee on Ocean Science and Technology and was co-chair of the Ocean Social Science Interagency Working Group. On April 20 an explosion of the drilling rig known as the Deepwater Horizon triggered a response from NOAA that involved all line offices. Dr. Kruse was lead in the social science thematic area for the NOAA Deepwater Horizon Science Team and served on the National Incident Command Economic Solutions Team.

At East Carolina University, Dr. Kruse was inducted as one of the 2011 Women of Distinction. Since then she has been recognized by ECU's Division of Research and Graduate Studies with the Lifetime Achievement Award for Research and Creative Work and honored with the HCAS Distinguished Professorship.

STATUTORY AUTHORITY

The authority which permits this action is 43 USC 31 et seq.; and the Administrative Provisions of P.L. 114-113 (FY 2016 Consolidated Appropriations Act).