Towards a User-Centered Design (UCD) for *The National Map of* the U.S. Geological Survey

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ABSTRACT:
The USGS has a long record in the development of cartographic products and geospatial data. *The National Map* is the United States topographic map for the 21st century, leveraging current developments in Internet technology, web services, and partnerships to enable online, interactive public access to high-quality geospatial data from multiple sources.

A well-designed and user-friendly interface is essential for successful use of this web mapping service. This GIScience research project investigates user-centered methods for designing and evaluating the public interface to *The National Map*. Through an iterative interactive process of user evaluation in conjunction with computer systems development (ISO, 1999), we hope to permit easy access to quality maps, geospatial data, and geographic information services for the mapping and visualization needs of many different users.

The project is interdisciplinary, drawing on theories of map use (MacEachren 1995), visualization (MacEachren and Kraak 2001, Koua MacEachren and Kraak 2006), and distributed GIS services (Peng and Tsou 2003, Tsou 2004, Tu and Abdelguerfi 2006) from the world of geography; human-computer interaction (Schneiderman 1998, Nielsen 1999 and Garrett 2002) from computer science; and the context of computer use from the emerging field of Computer Supported Cooperative Work (CSCW)(Suchman 2007). This paper presents preliminary results addressing critical questions for the interface design for *The National Map* (National Research Council 2007):

- What kinds of communication methods are effective for disseminating geospatial information through web browsers?
- What types of user interfaces are appropriate for *The National Map* viewers?
- Does *The National Map* need different viewers for different users?
- Will new web mapping technologies improve the usability and system performance of *The National Map*?
- What is an appropriate standardized user testing and evaluation method for assessing and improving the effectiveness of *National Map products?*

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