Taking GIS Retrospective to the Federal Level: Seminar Introduction

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Mining U.S. Federal Agency Materials for GIS Nuggets
Taking GIS Retrospective to the Federal Level

A Snapshot of the Federal GIS Retrospective Seminar

The GIS retrospective project investigates mining government, business, learned, professional organization, and popular (media) literature for GIS ideas, concepts, proposals, designs, and applications that were not acted upon at the time of production, but which could be valuable today as means to advance GIS technology, GIScience methodology, and their uses.

This innovative approach inspires change in how we identify and extract benefits from previous investments in GIS science and technology, and how we ensure that present investments can be mined for high-value findings in future years.

Taking GIS Retrospective to the Federal Level builds on the AutoCarto Six Retrospective project in 2013, and the GIS Retrospective Colloquium at Esri in February 2015.

Presentations by leading-edge agencies – Census Bureau, Department of Defense, Geological Survey, and Smithsonian Institution – discuss why and how to mine federal agency materials for high-value GIS and GIScience findings, and provide guidelines for innovative retrospective activities by other government agencies, business, professional organizations, and academic researchers.
Initial Insights from Four Core Agencies


Dave LaBranche, Geospatial Information Officer, Office of the Assistant Secretary of Defense for Energy, Installations and Environment.  “In God We Trust, All Others Must Bring Data”


Origins of Using the GIS Retrospective Approach

Recent experiences with commemorative assignments, and discussions with deep contributors to GIS technology and GIScience methodology, advocate that the GIS and GIScience community undertake innovative applied research projects which use the retrospective approach to mine the literature for high-value findings about GIS (and GIScience) that could be termed “nuggets”.

Barry Wellar
Origins of the Idea of Mining “The Literature” for GIS Nuggets

“The Literature” broadly defined has at least 11 sub-literatures. Previous research, as well as discussions with a number of deep contributors to GIS technology and GIScience methodology, advocate that we use the retrospective approach to examine all the sub-literatures in the search for high-value findings about GIS science and technology that could be termed “nuggets”.
Mining Federal Agency Materials for GIS Nuggets

A major contributor to both the GIS technology literature and the GIScience methodology literature over the past 50 or so years are U.S. federal agencies. It therefore follows that if we are going to mine the GIS science and technology literature for “nuggets”, then a preeminent place to start is with U.S. federal agencies.
Defining GIS Nuggets

GIS nuggets are high-value findings from the literature or other sources which serve three core, related missions:

M1. Designing and developing geographic information systems technology;

M2. Defining and elaborating geographic information science;

M3. Using geographic information systems technology and/or geographic information science.
37 authors of papers given at the 1983 International Symposium on Automated Cartography (a.k.a. "AutoCarto Six") accepted an invitation to re-visit materials written 30 years previously about GIS and GIScience.

This innovative publication demonstrates why and how GIS science and technology nuggets can be found by mining previously published materials.
The 2015 Esri colloquium on using the retrospective approach to mine the literature for GIS nuggets generated three publications which provide background information for the seminar.

1. *Slide Presentations, Research Colloquium on Using the Retrospective Approach to Mine the Literature for GIS Nuggets*

2. *Proceedings, Research Colloquium on Using the Retrospective Approach to Mine the Literature for GIS Nuggets*

3. *Summary of the GIS Retrospective Research Colloquium*
Esri’s motivation and passion underlying its support for the GIS Retrospective initiative

“Reflecting and sharing experiences... history and memories matter
... our visions, efforts, successes ... and sometimes failures
... provide context and the foundation for creating the future.”

Jack Dangermond
The innovative GIS retrospective seminar breaks new ground in designing Esri FedGIS Conference sessions. The recommendations for designing presentations are intended to place presenters, attendees, and online readers on the same page in terms of key thoughts and materials to “put on the table” during and after the seminar.
Deep contributors to the literature on designing and developing geographic information systems technology, defining and elaborating geographic information science, and using geographic information systems technology and/or geographic information science, suggest that an introductory body of background readings would be a valuable contribution to the seminar.
Paradigm shifts among words, numbers, and maps as means of communication in policy research involving spatial phenomena have a history extending over hundreds of years.

However, there is very little general documentation much less publicly available documentation on the why’s and how’s behind paradigm shifts from words to maps, numbers to maps, maps to words, or maps to numbers.

In the domain of map-word-number paradigm shifts, it appears that there is a “mother lode” of GIS and GIScience nuggets yet to be identified, and applied.
The *International Journal of Applied Geospatial Research* published three articles on the GIS retrospective project which provide background information for the seminar.


The bio-notes introduce participants, and outline aspects of their expertise and experience which are pertinent to the seminar on Taking GIS Retrospective to the Federal Level. Readers interested in more detailed career information about the seminar chair and presenters, and especially the paths which they took leading to the seminar, are invited to follow the links provided in the respective presentations.
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