


The 17th International Research Symposium on Computer-based Cartography
Shepherdstown, West Virginia, USA September 8-11, 2008
Organized by the Cartography and Geographic Information Society

FINAL PROGRAM

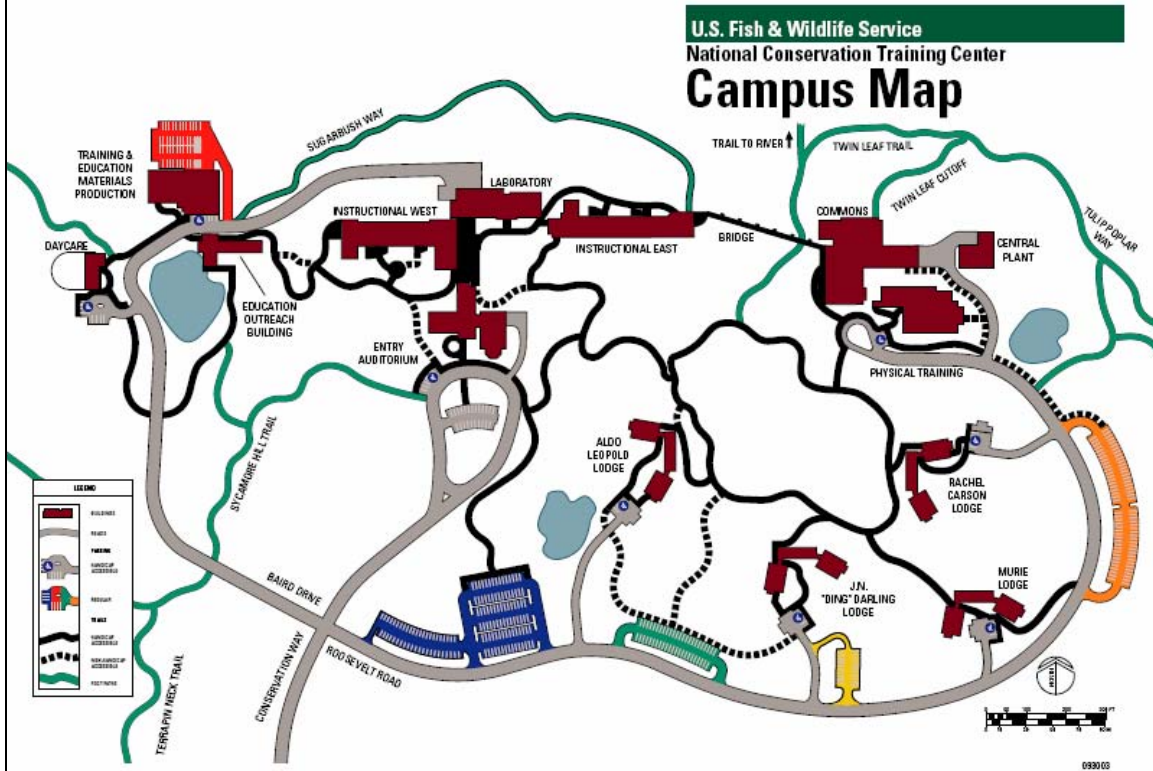
The 2008 International Symposium
on Automated Cartography

AutoCarto

2008



ESRI Thanks to ESRI for Sponsorship



MONDAY SEPTEMBER 8th, 2008 (Morning)

Note on Room Numbers: IE is "Instructional East" Building and IW "Instructional West"

<u>Time</u>	<u>Location</u>
6:30-8:30am	Breakfast Dining Room
8:00am-9:30am	Auditorium
	Symposium Intro Keith Clarke and Aileen Buckley <i>Presentation of First CaGIS Award of Distinction to Jerry Dobson, University of Kansas</i>
	Opening Keynote Michael W. Dobson, Ph.D. <i>Telemapics User Generated Content and Map Updating—A Panacea or a Problem?</i>
9:30-10:00am	Break (Coffee) Auditorium (Foyer)
10:00am-12:00noon	Auditorium
	<i>Plenary Paper Session 1: A Focus on Map Users.</i>
	Session Chair: Jean McKendry , University of Idaho.
10:00am	Roth, Robert E. GeoVISTA Center, Department of Geography, The Pennsylvania State University. <i>The impact of expertise on risk assessment predicated upon uncertain geographic information</i>
10:30am	Battersby, Sarah E. Department of Geography, University of South Carolina. <i>User-centered design for digital map navigation tools</i>
11:00am	Gelernter, J. and Lesk, M. Rutgers University. <i>Is your map here?</i>
11:30am	Çöltekin, Arzu; Garlandini, Simone; Heil, Benedikt; and Fabrikant, Sara. Geographic Information Visualization & Analysis Division, University of Zurich. <i>Evaluating the Effectiveness of Interactive Map Interface Designs: A Case Study with Eye Movement Analysis</i>
12:00noon – 1:15pm	Lunch (Dining Hall) Participants not staying at NCTC must have a lunch ticket for the dining hall

MONDAY SEPTEMBER 8th, 2008 (Afternoon)

1:30pm-2:30pm Room 114IE

Parallel Paper Session 1: New Approaches.

Session Chair: Douglas Vandegraft, USFWS

1:30 **Christophe, Sidonie.** IGN-COGIT, France. *Creative cartography based on dialogue*

1:50 **Leibovici, Didier G.** Centre for Geospatial Science, Univ. of Nottingham, UK. *Combining Attribute with Geometry for Automated Generalisation and Schematisation*

2:10 **Bitters, Barry.** Scientific Applications International Corporation. *The Relationship Network: Social Network Theory Applied to GIS Data*

1:30-2:30pm Room 151IW

Parallel Paper Session 2: Space and Time.

Session Chair: Michael Finn, USGS

1:30 **Kizito, Ongaya.** Gulu University, Uganda. *A Web-Based Spatio-Temporal Decision Support Tool For Humanitarian Support Distribution*

1:50 **Gribb, William J.** and Cole, Daniel G. Univ. of Wyoming, Dept. of Geography. *Incorporating 19th Century Geographic Data into 21st Century Geo-Spatial Research: Examples from Lewis and Clark, and Royce.*

2:10 **Millonig, Alexandra** and Gartner, Georg. Institute of Geoinformation and Cartography, Vienna Univ. of Technology. *Exploring Human Spatio-Temporal Behaviour Patterns*

2:30-3:00pm *Break (Coffee)*

3:00pm-5:00pm Room 114IE

Parallel Paper Session 3: Automated Cartographic Production.

Session Chair: Daniel Cole, Smithsonian Institution.

3:00 **Thompson, Bill.** Cartographic Products Branch, U.S. Census Bureau. *Automated Detection and Delineation of Inset Maps*

3:30 **Spahlinger, Stephanie** and Trainor, Tim. Cartographic Products Branch, U.S. Census Bureau *Challenges of An Automated Map Production Workflow to Support the 2010 Decennial Census*

4:00 **Wilson, James.** Dept. of Integrated Science and Technology, James Madison Univ. *Is it Time? On Demand Map Animations From Distributed Data Stores*

4:30 **Leyk, Stefan** and Boesch, Ruedi. Dept. of Geography, Univ. of Colorado, Boulder. *Improving Feature Extraction of Unbounded Composite Cartographic Symbols in Low-Quality Maps*

3:00-5:05pm

Room 151IW

Parallel Paper Session 4: Urban Mapping.

Session Chair: Keith Clarke, UC Santa Barbara

3:00 **Tavallai, Simin.** Tarbiat Moallem University, Iran. *Change Detection in City of Amol and its Hinterlands*

3:25 **da Silva, Alan Ricardo,** and Senra, Luciana Medeiros. Ministério das Cidades, Brasília, Brazil. *Brazilian System Of The Cities Information (SNIC): Easing The Access To The Information And To The Cities Management*

3:50 **Mas, Anabelle.** Département de Géographie, Université D'Orléans, France. *Temporal Follow-Up Of Morphological and Social Changes in Urban Zone*

4:15 **Jain, Manishika.** Research Scholar, Mohan Lal Sukhadia University. *GIS and Remote Sensing Applications to Study Urban Sprawl of Udaipur, India*

4:40 **Hawley, Kevin.** U.S. Census Bureau, Geographic Standards and Criteria Branch. *2010 Urban Area Criteria Research at the Census Bureau*

7:00pm-7:30pm

Roosevelt Room

CaGIS Welcome Reception and Brief Business Meeting

7:30-9:00pm

Roosevelt Room

**(Continues) Reception and Poster Session
Sponsored by ESRI**



POSTERS

AC_P01	Kostelnick	Representing cartographic uncertainty with speculative or subjective phenomena
AC_P02	Wentz	The sensitivity of pattern analysis due to cartographic scale and map complexity
AC_P03	Li	A generalization framework for cartographic multi-representation on small display: Building feature generalization
AC_P04	Lalonde	Consequences of digital elevation model choice for a land use application
AC_P05	Morita	A visual model for a set of axes representing space-time-subject in ubiquitous mapping
AC_P06	Tsuruoka	User-generated audio tours integrated with egocentric maps
AC_P07	Griffin	Applying sequence alignment for analyzing user interactions with geovisualizations
AC_P08	Chesneau	Automatic improvement of contrasts between colors for a better readability of risks maps
AC_P09	Anderson	Sullivan's Island, South Carolina, coastal processes and human impacts
AC_P10	Cole	The Ocean GeoPortal
AC_P11	Baber	GIS database development and analysis of public access to water sources in the Mayange sector of Rwanda

TUESDAY SEPTEMBER 9th, 2008 (Morning)

<u>Time</u>	<u>Location</u>
6:30-8:30am	Breakfast Dining Room
8:00am-9:30am	Auditorium
8:00am	<i>CaGIS Award of Distinction Lecture: Jerome Dobson, University of Kansas. Spatial Logic in the Crucible of Science</i>
8:45am	<i>Invited Keynote Jason Dykes, Professor, City University London (UK). Flexible and Personal Data Exploration with Mashed-Up Cartography</i>
9:30-10:00am	Break (Coffee) Auditorium (Foyer)
10:00am-12:00noon	Auditorium
	<i>Plenary Paper Session 2: Generalizing Geoinformation.</i> Session Chair: Aileen Buckley, ESRI
10:00am	Mower, James. Department of Geography and Planning, University at Albany. <i>Non-Photorealistic Rendering of Stylized Block Diagrams</i>
10:30am	Wolf, Eric B. and Buttenfield, Barbara P. Department of Geography, University of Colorado, Boulder. <i>Dimensional Collapse and Airports in Multi-Scale Mapping</i>
11:00am	Brewer, Cynthia A; and Akella, Mamata. Department of Geography, Pennsylvania State University. <i>Multi-Resolution Multi-Scale Topographic Map Design: Toward a New Look for The National Map</i>
11:30am	Saalfeld, Alan. Geospatial Science, Ohio State University. <i>Topological Coordinates</i>
12:00noon – 1:15pm	Lunch (Dining Hall)

TUESDAY SEPTEMBER 9th, 2008 (Afternoon)

1:30pm-2:30pm	Room 114IE
	<i>Parallel Paper Session 5: Web Cartography.</i> Session Chair: Jean McKendry, University of Idaho
1:30	Tao, Kunwang; Su, Deguo; and Zhang, Fuhao. Chinese Academy of Surveying and Mapping, Beijing, PRC. <i>The WebGIS experiment based on IPv6</i>
2:30	Jolivet, Laurence. COGIT laboratory, IGN, France. <i>On-demand map design based on user-oriented specifications</i>

1:30-2:30pm

Room 151IW

Parallel Paper Session 6: Emergency Mapping.

Session Chair: Sarah Battersby, University of South Carolina

- 1:30 **Liu, Jiping**; Xu, Shenghua; Zhang, Fuhao; and Wang, Yong. Chinese Academy of Surveying and Mapping, Beijing, PRC. *Discussion on the Construction of the Geographic Information Platform in Public Emergency Services*
- 1:50 **Akella, Mamata** Dept. of Geography, The Pennsylvania State Univ. *First Responders, Crisis Maps and Command Stations: Making Communication Clearer*
- 2:10 **Rajamanickam, M.**; Rajendran, S.; Rajamanickam, G. V. Annamalai Univ., India *Reflectance Characteristics of Crop Canopies under Stress Due to rest and Disease Infestation*

2:30-3:00pm

Break (Coffee)

3:00pm-5:00pm

Room 114IE

Parallel Paper Session 7: Infrastructure and Mapping.

Session Chair: Michael Finn, USGS

- 3:00 **Vandegraft, Douglas L.** USFWS-NWRS-Realty. *A Cadastral Geodatabase for the U.S. Fish and Wildlife Service*
- 3:30 **Poore, Barbara S.**; Finn, Michael P. U.S. Geological Survey, Saint Petersburg FL. *User-centered design for spatial data infrastructures: implications of new Internet technologies*
- 4:00 **Moellering, Harold**; Brodeur, Jean; Danko, David; Shin, Sharon; Sussman, Raphael. Geography Dept., Ohio State University. *The Design and Intended Use of the North American Profile for Spatial Metadata*
- 4:30 **Fulmer, James.** Mineral Management Service, Herndon, VA. *Working Toward a Multipurpose Marine Cadastre*

3:00-5:00pm

Room 151IW

Parallel Paper Session 8: Visualization.

Session Chair: Keith Clarke, UC Santa Barbara

- 3:00 **Liu, Jiajia**; Chen, Yufen; Wang, Liuyi; Bian, Shuli. Zhengzhou Institute of Surveying and Mapping, PRC. *The analysis on function and vision of the icon in multimedia electronic map*
- 3:30 **Xu, Shenghua**; Liu, Jiping; Zhang, Fuhao; Wang, Yong; Fan, Rongshuang. Chinese Academy of Surveying and Mapping, PRC. *Visualization of 3D Moving Geographic Objects Based on Terrain Matching*
- 4:00 **Mount, Jerry** and Bennett, David. Dept. of Geography, The Univ. of Iowa. *Visualizing context*
- 4:30 **Brachman, Micah.** Department of Geography, UC Santa Barbara. *Dynamic Cartogram Visualization of Presidential Election Results*

WEDNESDAY SEPTEMBER 10th, 2008 (Morning)

<u>Time</u>	<u>Location</u>
6:30-8:30am	Breakfast Dining Room
8:30am-9:30pm	Room 114IE Parallel Paper Session 9: Mapping Flight. Session Chair: Douglas Vandegraft , USFWS
8:30	Michael P. Peterson , Univ. of Nebraska – Omaha. <i>Flight Traffic in North America</i>
9:00	Turton, Ian and Murdoch, Andrew. GeoVISTA Center, The Pennsylvania State Univ. <i>A Web Based Tool For the Detection and Analysis of Avian Influenza Outbreaks From Internet News Sources</i>
8:30am-9:30pm	Room 151IW Parallel Paper Session 10: Profiles and Contours. Session Chair: Daniel Cole , Smithsonian Institute
8:30	Leitner, Michael and Kent, Joshua Dept of Geography and Anthropology, Louisiana State Univ. <i>Improving Criminal Geographic Profiles by Accounting for Environmental and Social Characteristics</i>
9:00	Bildirici, I. Oztug , Aydin Ustun, H.Zahit Selvi, Alpay Abbak, and Ilkay Bugdayci. Selcuk Universitesi, Turkey. <i>Assesment of SRTM Based on Topographic Maps in The Territory of Turkey</i>
9:30-10:00am	Break (Coffee)
10:00am-11:00am	Auditorium Special Panel Session: Early Geospatial Computing at Harvard: Some Old Gisers Try to Remember Panel Members: Nicholas Chrisman (GEOIDE, Quebec QC, CN); Geoffrey Dutton (MathWorks, Natick MA, US); Scott Morehouse (ESRI, Redlands CA, US); Allan Schmidt (Concord MA, US). By phone: Denis White (EPA, Corvallis OR, US)
11:00am-12:00am	Auditorium Closing Keynote Michael P. Peterson , University of Nebraska at Omaha. <i>An International Perspective on Maps and the Internet</i> Closing Remarks Aileen Buckley , CaGIS President. Paul Young , USGS
12:00noon – 1:15pm	Lunch (Dining Hall)
12:30	Dulles Airport/Washington, D.C. Bus departs

WEDNESDAY SEPTEMBER 10th, 2008 (Afternoon)

1:30pm-4:30pm Room 161IW

Workshop A: Volunteered Geographic Information (Pre-registration required)

Workshop Leader: **Daniel Sui**, Professor, Texas A & M

Volunteered Geographic Information: Exploring Wiki Cartography and Mapping 2.0

Recent years have witnessed an explosion of amateur map-making by thousands of individual citizens, enabled by innovative geo-tagging via GPS and services provided by Web 2.0. This activity, popularly known as the phenomenon of volunteered geographic information (VGI), provides a potential complement to traditional map since it is cheaper and more timely than traditional methods. This workshop will address four sets of broader issues: 1). mechanisms to acquire, synthesize, and distribute VGI; 2). methods of quality assurance and the factors affecting the willingness of individuals to contribute VGI; 3). problems & prospects of using VGI as a data source for geographic research; 4). cartographic & GIScience research agenda in the age of VGI, wiki cartography, and map 2.0. Participants of this workshop will be exposed to the most up to date conceptual and technical information related to VGI from multiple perspectives.

1:30pm-5:30pm Room 151IW

ICA Commission Meeting: 3rd International Joint Workshop on Ubiquitous, Pervasive and Internet Mapping

1:30pm-5:30pm Room 114IE

ICA Commission Meeting: ICA Working Group on Cartography on Early Warning and Crisis Management Workshop

1:30pm-5:30pm Room 105IE

ICA Commission Meeting: ICA Commission on Map Projections Workshop

THURSDAY SEPTEMBER 11th, 2008 (Morning)

6:30-8:30am *Breakfast* Dining Room

Departing 7:30am

Field Trip: *Washington D.C. (National Geographic Society and Library of Congress)*
(Pre-registration required)

Departing 8:00am

Field Trip: *National Park Service Cartography, Harpers Ferry Tour*
(Pre-registration required)

The National Park Service, Harpers Ferry Center (HFC) produces maps of the 391 U.S. national parks, a system spanning 11 time zones from the Caribbean to Alaska to Guam. HFC products include maps for publications, visitor center exhibits, outdoor signboards, movies, and multimedia kiosks. Tom Patterson will lead a two-hour of HFC with emphasis given to relief presentation on park maps. After the tour finishes, participants will have time to explore adjacent Harpers Ferry National Historical Park, a Civil War-era village situated at the confluence of the Potomac and Shenandoah rivers.

8:00pm-12:00pm Room 151IW

ICA Commission Meeting: 3rd International Joint Workshop on Ubiquitous, Pervasive and Internet Mapping (Continues)

8:00pm-12:00pm Room 105IE

ICA Commission Meeting: ICA Commission on Map Projections Workshop (Continues)

8:00am-12:00noon Room 1041E

Workshop B: Tools for Online Mapping (Pre-registration required)

Workshop Leader: Michael Peterson, Professor, University of Nebraska at Omaha

This half day workshop will cover contemporary methods for bringing maps to the Internet, particularly interactive maps. The workshop will provide an overview of commercial and open source solutions. A major focus of the session will be on JavaScript and Google Maps, including methods for point, line and area symbolization. All workshop materials will be downloaded from a website that will remain available for use after the workshop is completed.

8:00am-12:00noon Room 156IW

Workshop C: The National Map. Organizer: E. Lynn Usery, USGS (No preregistration required. Seating will be based on availability.)



International Cartographic Association Commission Meetings
In conjunction with AutoCarto 2008

ICA Commission Meeting: ICA Working Group on Cartography on Early Warning and Crisis Management Workshop

1:30pm-5:30pm

Room 114IW

Keynotes:

1:30 – 2.15 PM

Situational awareness, information and analysis of complex humanitarian emergencies.

Paul BARTEL, State Department, USA (waiting for confirmation)

2:15 – 2:35

Cartography and GI research Agenda for Early Warning and Crises Management

Milan KONECNY, Czech Republic

Papers:

2:35 – 2:55 PM

How to Improve Disaster Management Strategies? Myanmar experiences.

Kevin McGRATH, United Nations, USA-Switzerland

2:55 – 3:15

Homeland Security Mapping Standard - Point Symbology for Emergency Management.

Daniel COTTER, DHS, USA

3:15 – 3:35

Creating and updating of navigation maps for children purposes

(in crises situations) **Temenujka BANDROVA**, Stanislav VASILEV, Bulgaria

3:35 – 4: 00

Real-Time Data in Operational Hydrology -

Visualization in an Online Cartographic Application

Christophe Lienert, Rolf Weingartner, Lorenz Hurni, Switzerland

4:00 – 4:20

Metadata and standards for Crises Management

David DANKO, ESRI, USA

4:20 – 4:40

Planning for an International Pop@Risk Geo-Demographic Database

Joshua COMMENETZ: US Census, USA

4:40 – 5:30 **Round Table: All speakers and Harold MOELLERING, USA**

ICA Commission on Map Projections Workshop

The International Cartographic Association includes a number of commissions, one of which is the ICA Commission on Map Projections chaired by Daniel Strebe of Mapmathematics LTD, USA. The priorities of this commission primarily focus on the establishment of a repository of knowledge on map projections and the promotion of map projections within all disciplines. In conjunction with AutoCarto 2008, the commission will hold an eight-hour workshop 10-11 September 2008 broadly covering the following topics:

- Current projection problems
- Projecting raster data
- Available public and commercial software packages
- Rapid, web-based projection
- Projections and parallel/ grid computing
- Commission business

ICA Commission on Map Projections (<http://www.csiss.org/map-projections/index.html>)

Special Panel Session

Early Geospatial Computing at Harvard: Some Old Gisers Try to Remember

Panel Members:

Nicholas Chrisman (GEOIDE, Quebec QC, CN); Geoffrey Dutton (MathWorks, Natick MA, US); Scott Morehouse (ESRI, Redlands CA, US); Allan Schmidt (Concord MA, US); With contributions from Denis White (EPA, Corvallis OR, US)

Geoff Dutton

On Integrating Spatial Analysis and (Geo)graphics: The Warntzian Legacy

William Warntz hired me to analyze data with him at the Lab in 1967. To my knowledge, he never programmed or even used a computer nor had any opinions about user interfaces or file formats. He understood CDBs to the extent of SYMAP packages, and while he had knowledge of topological data structures, he didn't talk or write about them.

The Warntzian paradigm "Geography, Geometry, Graphics" informed perhaps half of what the lab did. Except by implication, it does not encompass other major research themes, such as Topology, Data Structures, Cartographic Data Bases, and User Interfaces.

The computational slogan "Raster is faster but vector is correcter" summarizes ongoing frictions in and around the Lab.

- Geographic computational geometry (point pattern and network analysis; mathematically rigorous but empirically unprovable)
- Landscape analysis models (raster approaches such as "map algebra"; theoretically shaky, yet with empirically plausible results)

Bill Warntz believed that these sub-disciplines needed to talk and make themselves useful to one another. It took a long time, but slowly, raster and vector approaches to spatial modeling did sort of connect. Lab people who helped make this happen include

- Tom Poiker & Co. – Sampling terrain surfaces with triangulated irregular networks
- Scott Morehouse & Co. – ESRI software to convert between triangulated and raster representations
- Denis White – environmental sampling using planar hierarchical tessellations
- Geoff Dutton – Global hierarchical tessellations; GEM (terrain) and QTM (anything)
- Warntz himself – Without his concepts of topology of surfaces, TINs and hydrological modeling might have taken longer to evolve, and GEM/QTM wouldn't have happened.

Scott Morehouse

Lasting Lessons from Working at the Lab

- Building generic software tools for geographers & landscape scientists
 - simple data model
 - algebra of tools
 - design, build, ship, iterate
- Team-based, modular programming
 - modular FORTRAN
 - looking over shoulders, discussing, and doing
- Map definition language (DOT.MAP, Polyps)
 - the anatomy of a map
 - a language for defining "symbology", "map surround elements", etc.

Allan Schmidt

Harvard University's contribution to the evolution of GIS, 1833-2008

- 1833 Despite "barely getting in" to Harvard College, Henry Thoreau maintained above-average grades and studied classical literature, and French, Italian, and German, as well as math, geology, zoology, botany, and natural and intellectual philosophy.
- 1837 Thoreau receives his degree from Harvard College, graduating 19th in a class of 44.
- 1847 Louis Agassiz appointment as Professor of zoology and geology at Harvard proposes theory of glaciation.
- 1847 Henry Thoreau studies surveying, works as a surveyor in Concord MA (1850s) using chain and compass.
- 1850-1860 Henry Thoreau's GIS contribution and Walden Pond-Brister's Spring mistake.
- 1894 USGS mistake.
- 1966 Howard Fisher establishes the Harvard Lab for Computer Graphics
- 1967 Harvard GSD Newsletter announces formation of the Lab.
- 1981 Dutton/Cohen LCG report on the history of the Lab
- 1968-1979 LCG *Context* newsletters
- 1966-1970 LCG *Redbook* editions
- 1970's-1980 *LabLog* products and services catalog
- 1979-1981 *Harvard Library of Computer Graphics*
- 1978 *Harvard Papers on Geographic Information Systems*
- 1980 Harvard Business Review article
- 1995-1999 Niemann Interviews of Chrisman, Morehouse and Schmidt
- 2003 Jon Corson-Rikert LCG web page at Cornell Library
- 2006 Nick Chrisman's book "Charting the Unknown"
- 2007 Harvard CGI legacy
- 2010? Monmonier book re History of Cartography (forthcoming)

Denis White

Lasting Influences on My Work

Two disparate influences from the lab have prospered in my life at EPA since then. Mike Woldenberg's work on branching structures and tessellations somehow got embedded and has fostered applications in environmental monitoring and fish modeling, among others. Carl Steinitz's alternative futures style of landscape planning has invigorated a broadly applied approach to scenario-based environmental assessments.

Nick Chrisman

Charting the mostly remembered

- Writing a book about the Lab: issues in first-person history
 - Privileged access to the documentary records (confessions of a packrat, and friend of other packrats)
 - Memory? Selective accounts to coordinate
 - It was easier to write the 1966-1971 part.
- Local vs. global: why we thought we didn't need no stinking database
- The history of an artifact: the curious evolution of metadata
 - As soon as elements of ODYSSEY started working, we needed some way to save just enough to make them work together. The question of what was enough rages to this day...
 - various GISers will take their habitual positions on the spectrum from simplicity to full disclosure.
- What endures: a round-table

National Map Workshop: Thursday Sept 11 (Thursday) 8:00 am to 12:00 pm.

Introduction and Overview (30 min) (Use TNM images slides)	Mark Naftzger
NGTOC	
Organization/locations/functions (15 min)	Eric Constance
Open discussion with participants (15 min)	NGTOC Staff
Themes	
List and status (10 min)	Kari Craun
Issues/problems (10 min)	Kari Craun
Open discussion with participants	GIIA staff
Partnerships	
List and status (10 min)	Tracy Fuller
Functions (10 min)	Tracy Fuller
Open discussion	Liaisons
Research	
Introduction (5 min)	E. Lynn Usery
Projects (concurrently discussed with workshop participants, 25 min)	
Ontology	Dalia Varanka/Mingzhen Wei
User-Centered Design	Barbara Poore/Michael P. Finn
E-Topo Maps	Cindy Brewer/E. Lynn Usery
Generalization	Larry Stanislawski/Barbara Buttenfield
Data Integration	E. Lynn Usery/Michael P. Finn
Multi-Resolution Raster	Michael P. Finn
<i>The National Map</i> Demonstration	NGTOC staff
Access to <i>The National Map</i>	
Image map product development issues/successes/challenges	
MOD demo/discussion	
NHD edit tools demo/discussion	