Integrating Data and Interfaces to Enhance Understanding of Government Statistics:
Toward the National Statistical Knowledge Network
Project Briefing
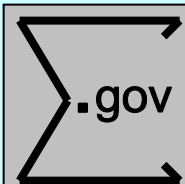## DG 06

University of North Carolina at Chapel Hill

University of Maryland at College Park
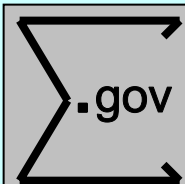
Types of Collaboration

- Mutual trust and benefits are crucial to collaborative success
- Listservs
- Paper co-authorships, evaluation
- ASIST panel with academic, government, and corporate participants
- *Computer* special issue on DG
- No cost extension year: Main focus on writing papers and reports

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Scientific Research Objective

- Support non-specialist access and understanding of government statistics
  - Define a statistical knowledge network
  - Develop and evaluate user interfaces
  - Develop and evaluate metadata strategies
  - Develop and evaluate online help
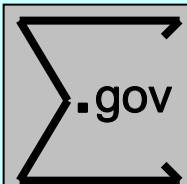 - Develop alternative information architectures and strategies

**"Find what you need,
 understand what you find"**

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Accomplishments

- Define a statistical knowledge network
  - A registry model proposed
  - SKN as a collaborative community
- Develop and evaluate user interfaces:
  - Relation Browser instantiated with all partner websites, usability studies conducted
  - Spatial audio for maps prototype developed and evaluated
  - treemaps evaluated
  - Meaningful and stable categories to support exploratory search developed and evaluated
- Develop and evaluate metadata strategies:
  - Layered metadata model with four perspectives
  - Prototype XML schema developed
  - Automatic metadata generation via machine learning
- Develop and evaluate online help
  - Interactive Glossary implementation and user studies
  - Mulitlayered help prototypes and studies
- Develop alternative information architectures and strategies
  - Faceted websites and highly interactive websites

Note that each of these points have published papers/reports/dissertations associated with them

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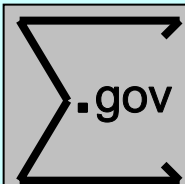Network Project

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Management Structure

- **UNC-CH and UMD teams**
    - **Bi-Weekly meetings within groups**
- **Listservs**
- **Joint papers and presentations**
- **Note that the biannual all-partner meetings in DC were discontinued in the no-cost extension year**
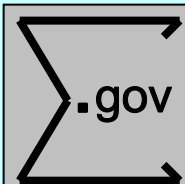
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Collaboration Success Stories

- Specific collaborative projects
  - FedStats installation of Relation Browser instances
  - BLS website evolution (several papers, joint presentations)
  - FedStats A-Z improvement (paper)
  - Help symposium brought several communities together
  - Cooperation of agency personnel in automatic classification study
- Develop an appreciation and understanding of the uneven rates of change in technology, human needs, and institutional processes; lead to mutual respect for the exigencies of government practice and academic theory building
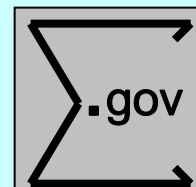
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Broad Impact

- Integration of data across websites in partnership with agency partners--harnessing emerging data standards to facilitate cross-agency data integration

- Integration of meaning across websites: beyond simple access to data sets toward understanding and help

- Metadata discovery (adding value to information resources in cost effective ways)

- Enabling universal usability through effective user interfaces

- Demonstrating effective models for government agency-university partnerships

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Challenges/Barriers

- Large number of stakeholders
  - Agencies and personnel
  - Diverse citizen population

- Interagency cultures and perspectives
  - Federal and state/local agencies
  - Academic departments

- Statistical agency missions are enduring and well-defined, but resources are responsive to government-wide priorities and concerns

- Sustaining collaborative knowledge base and relationships as individual career paths evolve

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Research Value of DG Domain

- Opportunity to
  - see research applied in important domains
  - work with large-scale problems
    - number of people affected
    - Size of data sets and number of systems
    - Open data sets
  - help agencies shape vision and service
  - work in interdisciplinary teams

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Recommendations for Improving DG Program

- Develop formal technology transfer models
- Develop sustainability models linked to technology transfer
- Increase levels of funding
- Develop mechanisms to involve state and local government agencies
- Reconsider the opportunities and barriers of required partnerships given changing priorities in agencies and changes in personnel

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