

# Where are the Academic Jobs?

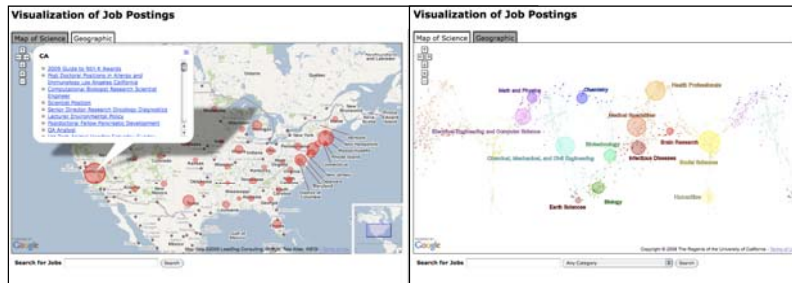
Interactive Exploration of Job Advertisements in Geospatial and Topical Space

Angela M. Zoss<sup>1</sup>, Michael Conover<sup>2</sup> and Katy Börner<sup>1</sup>

<sup>1</sup> Cyberinfrastructure for Network Science Center, School of Library and Information Science

<sup>2</sup> School of Informatics and Computing

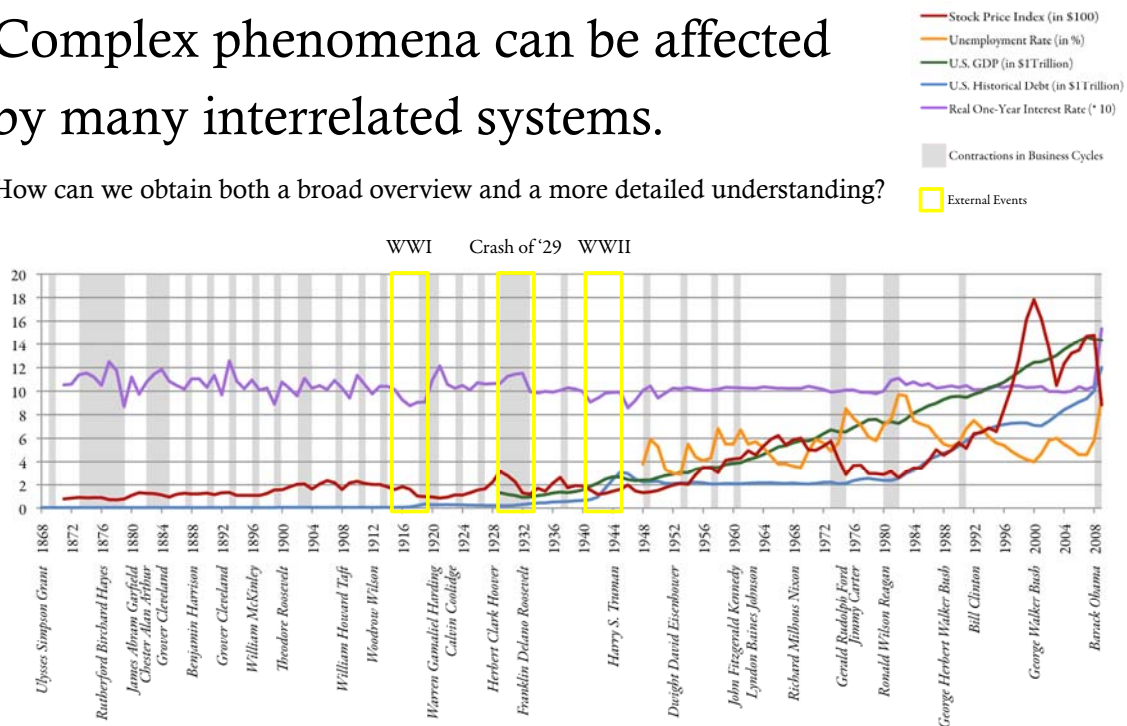
Indiana University, Bloomington, IN 47405  
{amzoss, midconov, katy}@indiana.edu



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## Complex phenomena can be affected by many interrelated systems.

How can we obtain both a broad overview and a more detailed understanding?



# Challenges and Opportunities

- Increases in size and complexity of data sets require **new techniques** of summary and representation.
- These techniques are critical when data have **high social impact**, like employment data during times of economic turmoil.
- Visualization of such data can:
  - provide **overviews and details** of complex phenomena,
  - facilitate **trend** analysis, and
  - encourage new reactions and interventions in **response** to system behavior.
- Users include both those who will interact directly with the low-level data (e.g., **job seekers**) and those who will analyze and respond to changes in high-level data (e.g., **policy makers**).

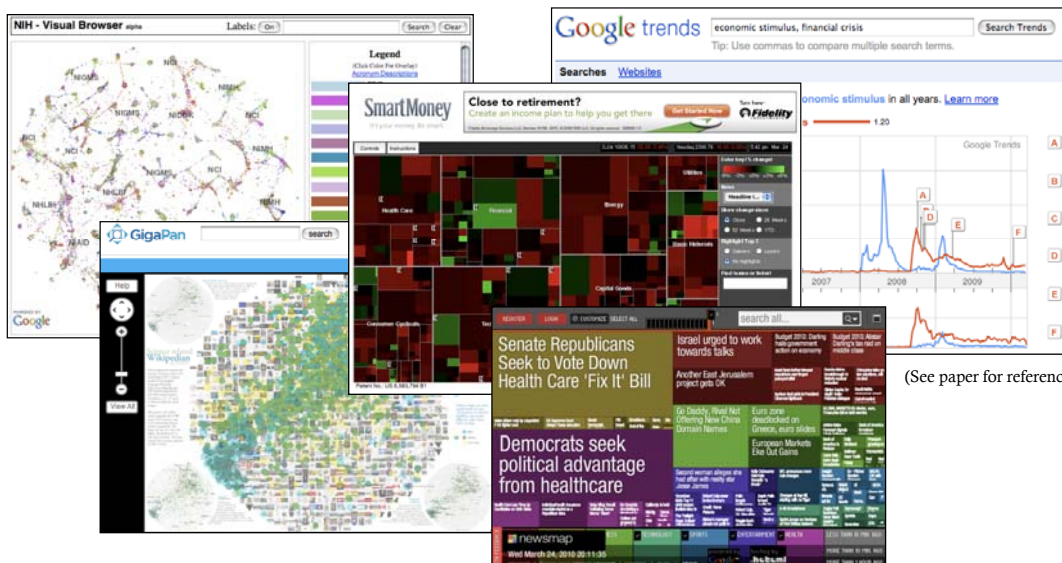
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## Related Work

### Real-Time Data Analysis and Interactive Visualizations



(See paper for references.)

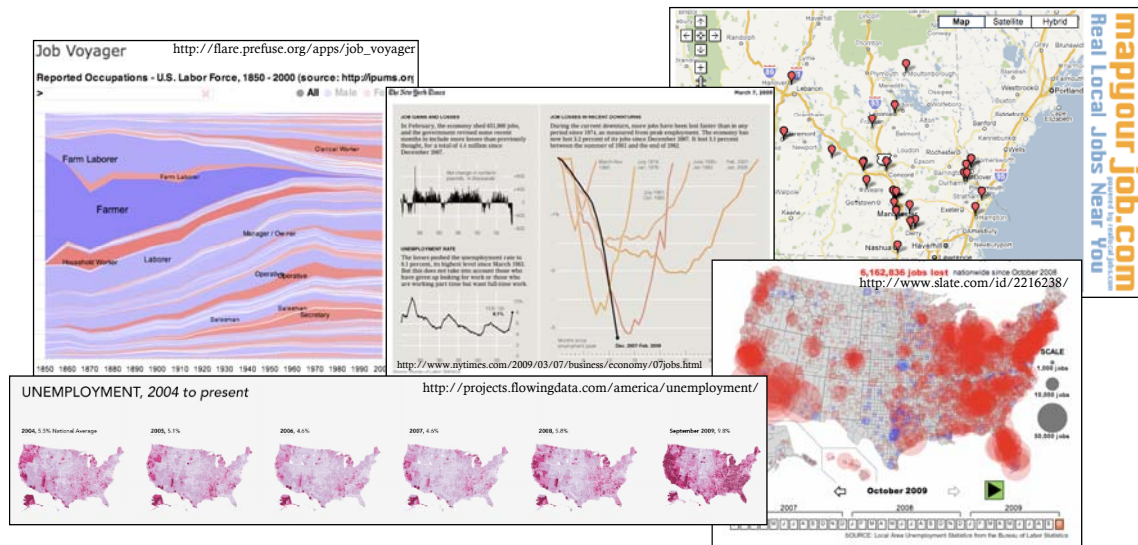
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4/13

# Related Work

## Job Market Data Analysis and Visualizations



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## Data Sets

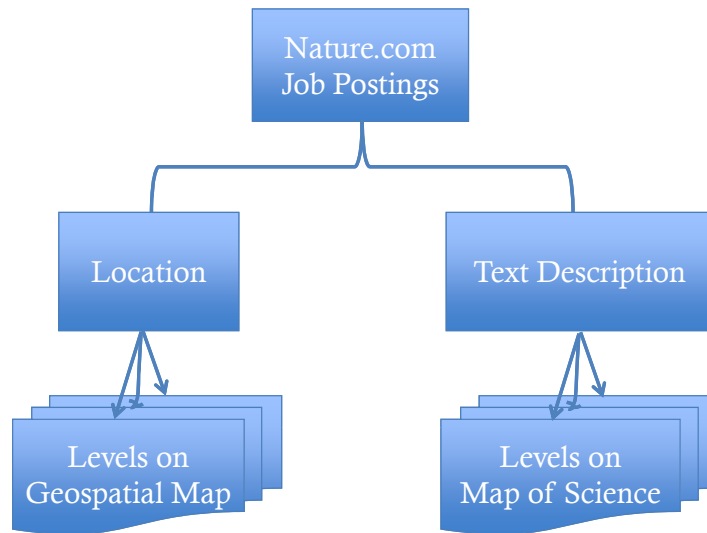
- Effective visualizations depend on high quality, well-structured data.
- High value data sets will preserve as much of the complexity of phenomena as possible.
- Trend analysis and interactivity are best supported by data that are continually updated.

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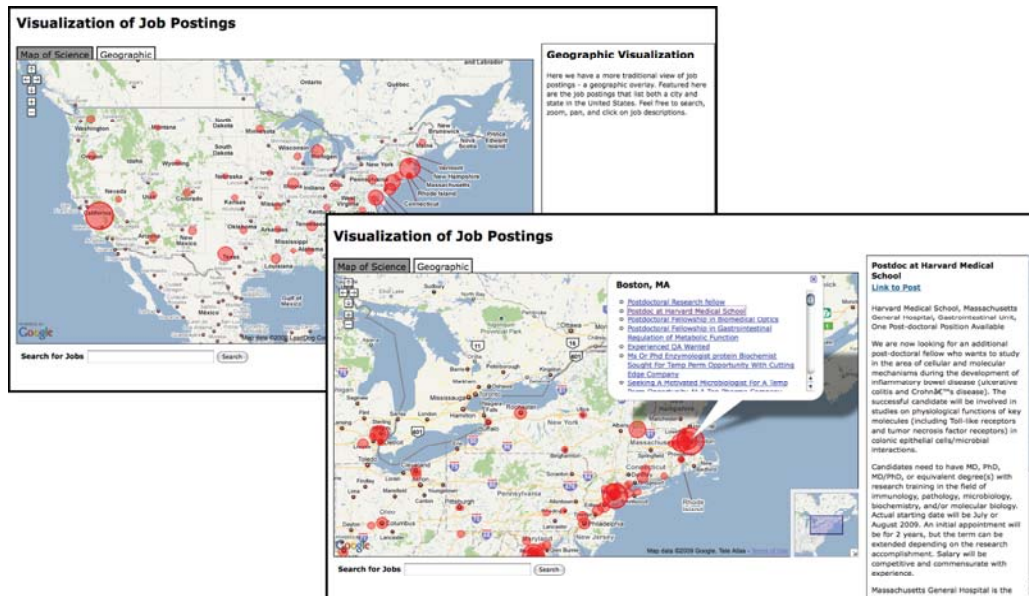
# Data Preparation and Analysis



## Geospatial Visualization

- We leverage Google maps as a well-known navigation tool.
- The map has customized levels of detail depending on zoom level.
- We add interactivity by giving markers an “information window” that shows what job postings are connected to that location.

# Geospatial Visualization



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## Map of Science Visualization

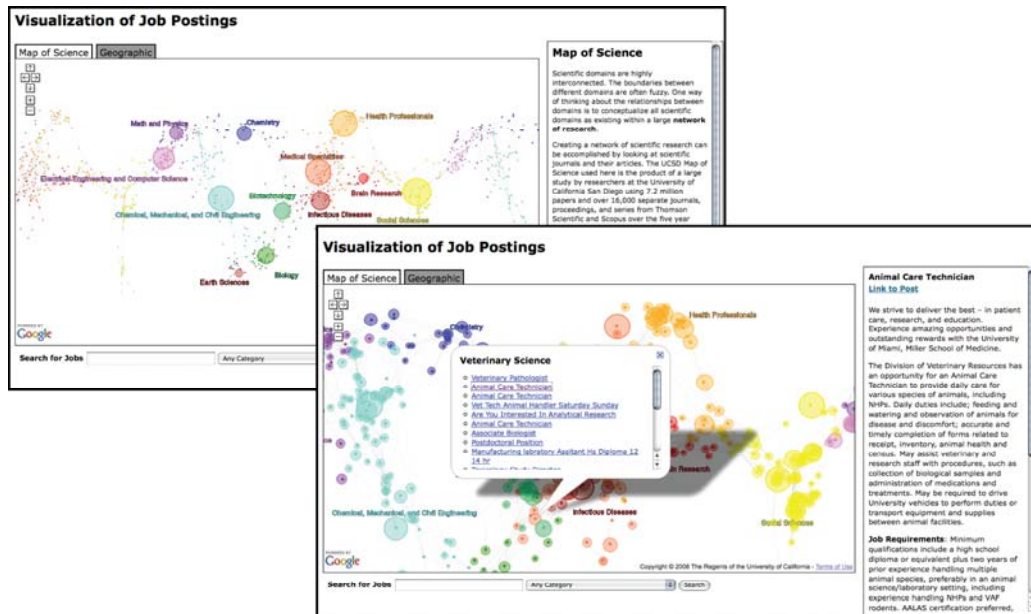
- The UCSD Map of Science represents scientific fields as large network.
- The map was created using text and bibliographic data from journal publications.
- The network has 554 nodes (e.g., “plant physiology”), each of which is a subdomain of 13 top-level scientific disciplines (e.g., “Earth Science”).
- Each node is also described by keywords, which can be matched to other texts.

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10/13

# Map of Science Visualization



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## Discussion and Outlook

- Using **common navigation metaphor** for multiple access points reduces barriers to exploration, analysis, and synthesis.
- **Interactivity** reduces data overload by enabling users to selectively expand elements.
- Using **geospatial and topical** representations of job data creates a unique opportunity to examine the activity of fields of science.
- Planned improvements include adding continuously updated, robust **data** sets; optimizing text **matching** algorithms; and incorporating **timeline** control.

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# Questions?

Angela Zoss  
amzoss@indiana.edu

Site: <http://cns-nd3.slis.indiana.edu/mapjobs/>

Paper: <http://ivl.slis.indiana.edu/km/pub/zoss-et-al-jobmaps.pdf>

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