

**UCGIS Workshop
Geospatial Visualization and Knowledge Discovery Workshop
National Conference Center, Lansdowne, Virginia**

November 18-20, 2003

Monday 17 November

Afternoon—Evening Workshop Participants Arrive
3:00PM— 6:00PM Registration, Lobby
5:00PM— 8:00PM Dinner, Cafeteria

Tuesday 18 November

8:00AM— 10:30AM Registration, Lobby

8:30AM— 9:45AM Room N3-585
Introduction—Barbara Buttenfield, Harvey Miller, Lynn Usery
Overview and Charge to the Smaller Group of 25 – setting forth the mechanics of the coming two days – who will lead the small groups, who will summarize and report discussions to the rest of the group of 25, goals and topics for the small groups, and overall objective of prioritizing research for the KD and VIS communities.

9:45AM— 10:15AM Break

10:15AM— 10:30AM Open Plenary Session
N3-365
Welcome
Barbara Buttenfield

10:30AM— 11:05AM Plenary Talk 1—Harvey Miller, University of Utah
Geospatial and Spatio-temporal Knowledge Discovery:
Overview and Agenda

11:05AM— 11:40AM Plenary Talk 2—May Yuan, University of Oklahoma
GIS Representation for Visualizing and Mining Geographic Dynamics

11:40 AM—12NOON Discussion Question and Answer
Moderator Barbara Buttenfield

12NOON— 1:00PM Lunch

1:00PM— 1:35PM Plenary Talk 3—Nick Faust, Georgia Institute of Technology
The Integration of Dynamic Data Within The Georgia Tech Virtual
Geographic Information System (GTVGIS) Global Framework

1:30PM— 2:10PM Plenary Talk 4—Keith Clarke, University of California, Santa Barbara
Wearable GIS for Homeland Security Applications:
Accomplishments, Prospects and Research Issues

2:10PM— 2:30PM Discussion Question and Answer
Moderator Lynn Usery

2:30PM Open Plenary Session Closes

2:30PM— 3:00PM Break

- 3:00PM Convene the invited workshop
Room N3-585
- 3:05PM— 4:30PM Breakout #1
Rooms N3-781, N3-783, N3-784, N3785, N3-786, N3-787
Spatiotemporal data modeling and algorithms in large GIS databases. The topic is related to "Management of large volume datasets" and "Information search and retrieval" but with greater emphasis on (1) representing geographic knowledge, (2) incorporating semantic, spatial, and temporal information, and (3) linkages between data models and analytical methods.
Small Group Leaders – Hornsby, Shekhar, Wilson, Findley
- 4:30PM— 5:15PM Small Group Reports—Session Moderator: Harvey Miller
- 5:15PM— 6:00PM Open Discussion—Moderator Harvey Miller
- 5:30PM— 6:30PM Welcome Reception
Room N3-367
- 6:30PM— 8:00PM Dinner
Room N3-367

Wednesday 19 November

- 8:45AM— 9:00AM Room N3-585
Announcements Barbara Buttenfield
- 9:00AM—10:30AM Breakout #2
Rooms N3-781, N3-783, N3-784, N3785, N3-786, N3-787
Graphic user interfaces for geographic knowledge discovery software environments, specifically developing dynamic and linked modes of user interaction. Representing confidence, relevance and uncertainty. Usability and customized access to meet the needs of very different user groups.
Small Group Leaders – Fabrikant, Smith, Usery, Gahegan
Small Group Leaders – Hornsby, Shekhar, Wilson, Findley
- 10:30AM—11:00AM Break
- 11:00AM—11:45AM Small Group Reports—Session Moderator Barbara Buttenfield
Room N3-585
- 11:45AM—12:30PM Open discussion—Moderator Barbara Buttenfield
- 12:30PM— 1:30PM Lunch, Cafeteria
- 1:30PM— 3:00PM Breakout #3
Rooms N3-781, N3-783, N3-784, N3785, N3-786, N3-787
Potential biases (computational and assumptional) related to outcomes of DM/KD software. Scale dependence, for example -- we know that geospatial data are sensitive to resolution, but we don't know at this point if resolution of features or attributes affects modeling results, or if so, how. The issue with statistical assumptions is also a consideration. Many researchers adopt statistical tools (neural net regression, e.g.) in DM/KD environments without establishing whether the method assumptions can be met with unknown data cases. In what research situations does this create problems? Third, what is the effect of

transforming data architecture on the DM/KD outcomes, e.g.,
spatialization or other strategies for improving access.
Small Group Leaders –Mennis, Miller, Merry, Landvoigt
Small Group Leaders – Fabrikant, Smith, Usery, Gahegan
Small Group Leaders – Hornsby, Shekhar, Wilson, Findley

- 3:00PM— 3:30PM Coffee Break
- 3:30PM— 4:15PM Small Group Reports—Moderator Lynn Usery
Room N3-585
- 4:15PM— 5:00PM Open Discussion—Moderator Lynn Usery
- 5:00PM— 7:00PM Break for dinner
Cafeteria
- 7:30PM— 9:30PM Dessert
Suzy Jampoler's
Transportation Provided

Thursday 20 November

- 8:15AM— 8:30AM Room N3-585
Announcements Barbara Buttenfield
- 8:30AM—10:00AM Breakout #4
Rooms N3-781, N3-783, N3-784, N3785, N3-786, N3-787
Visualization techniques to support 'meta-mining' (mining the results of
conventional data mining techniques). For example, association rule
mining may extract tens of thousands of rules from even a moderately
sized database, but only a few may be considered non-trivial or
interesting. How can visualization be used to explore such a 'rule
space'? Many visualization techniques are available to explore data;
how can these techniques be adapted to explore derived knowledge?
Small Group Leaders –Yuan, Stuekerjuergen, Clarke
Small Group Leaders – Mennis, Miller, Merry, Landvoigt
Small Group Leaders – Fabrikant, Smith, Usery, Gahegan
Small Group Leaders – Hornsby, Shekhar, Wilson, Findley
- 10:00AM—10:30AM Break
- 10:30AM—11:15AM Small Group Reports—Moderator John Wilson
Room N3-585
- 11:15PM—12NOON Open Discussion—Moderator John Wilson
- 12NOON— 1:00PM Lunch
Cafeteria
- 1:00PM— 2:00PM Plenary Wrap-up
Room N3-585
Barbara Buttenfield, Lynn Usery, Harvey Miller
Summarizing and prioritizing research needs
Re-capping the workshop venue -- feedback
- 2:00PM— 2:30PM Plans for moving forward, proposals, publications, etc.
- 2:30PM Adjourn the workshop
Pick up travel snack

3:00PM Bus leaves for Dulles International Airport
 Arrive Dulles International Airport