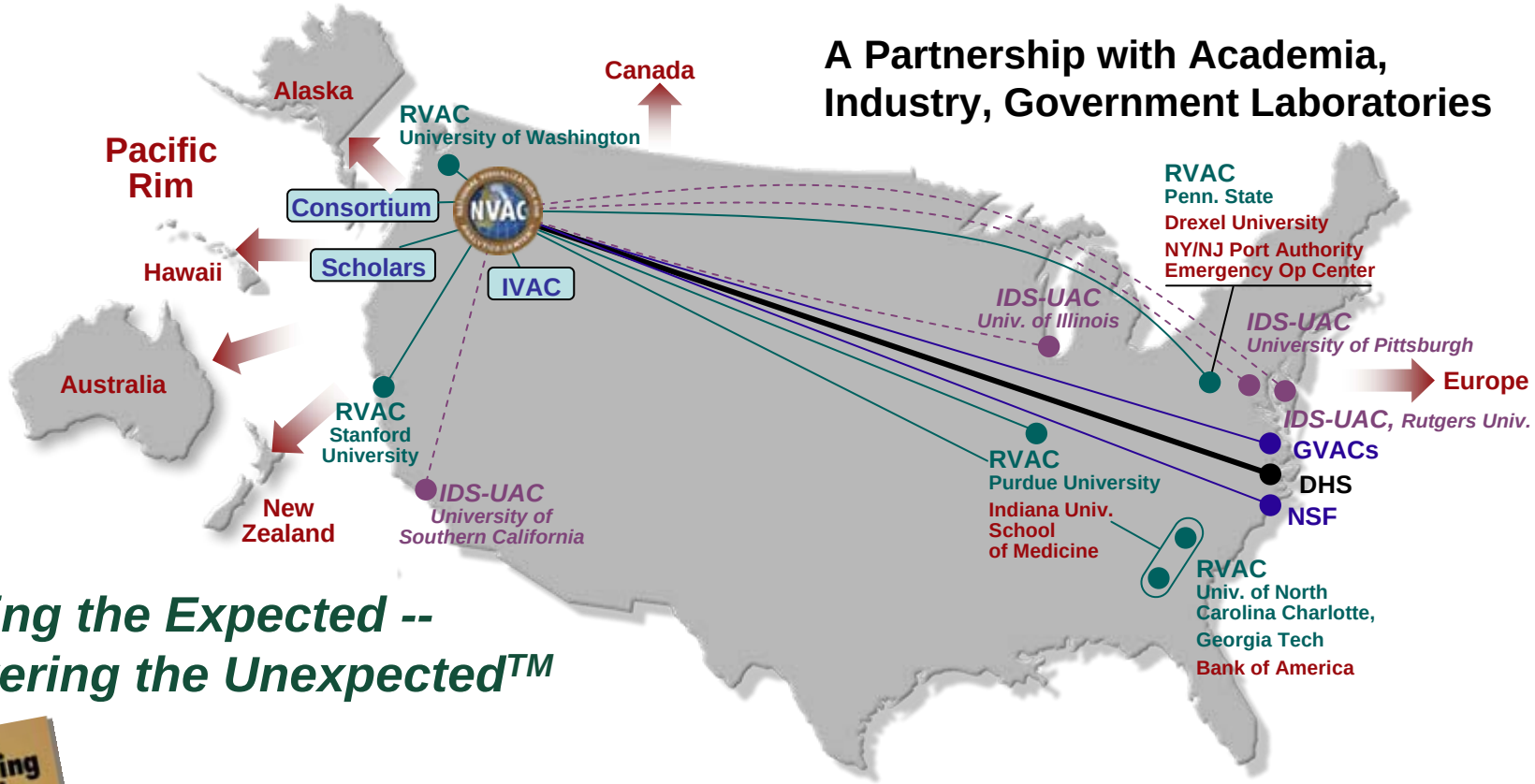
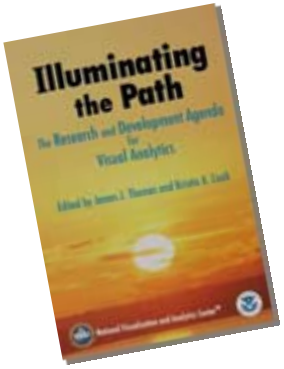
# Visualization and Analytics Centers

## A Partnership with Academia, Industry, Government Laboratories




***Detecting the Expected -- Discovering the Unexpected™***





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Pacific Northwest National Laboratory
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# Fall 2007 VAC Consortium

## Welcome! You're in good company.

Let's learn, respect, and form partnerships to deliver.

Attenex
10thdimensionmedia LLC
Microsoft Research
Australian Government Department of Defence
PURDUE UNIVERSITY
GREENLINE SYSTEMS
TABLEAU SOFTWARE
Georgia Institute of Technology
FUTURE POINT Systems, Inc.
Attenex
PENNSTATE
UNC CHARLOTTE
Raytheon
Objectivity
FMS Advanced Systems Group
The Podmilsak Group
UBC
SFU
BOEING
CHI SYSTEMS INC
START
mako Strategies
WASHINGTON STATE UNIVERSITY
JOHNS HOPKINS UNIVERSITY
perceptivesoftware
EARL INDUSTRIES Technology Group
MITRE
NUWC
Morgan Stanley

*Collaborating on Land & Sea*

Battelle
The Business of Innovation
applied minds

Pacific Northwest National Laboratory
Operated by Battelle for the U.S. Department of Energy

VAC Consortium Meeting
November 14-15, 2007
Richland, WA

# Visual Analytics Definition

***Congress: Visual analytics provides the last 12 inches between the masses of information and the human mind to make decisions***

***Science: Visual analytics is the science of analytical reasoning facilitated by interactive visual interfaces***

Government of Canada Gouvernement du Canada

Canada

# *" Visual Analytics: key ENABLER to Canadian Public Security S&T"*


Dr. Andrew L VALLERAND

*Director*
*Public Security Technical Program*
*DRDC Centre for Security Science*
*Ottawa ON CANADA*


*NVAC Consortium Nov 07*

The Federal Science and Technology Community

# NSF Partnership

National Science Foundation
WHERE DISCOVERIES BEGIN

- MOU signed between DHS and NSF July 23, 2007
- A new NSF program called Foundations of Data and Visual Analytics is being established (Larry Rosenblum, program manager)
- VAC will leverage this program to support DHS missions.

# CompStat NG

Deploying advanced visual and data analytics tools for crime analysis and counter-terrorism for use in force deployment.

**Intuidex**

PURDUE UNIVERSITY

PENNSTATE

IDS-UACs

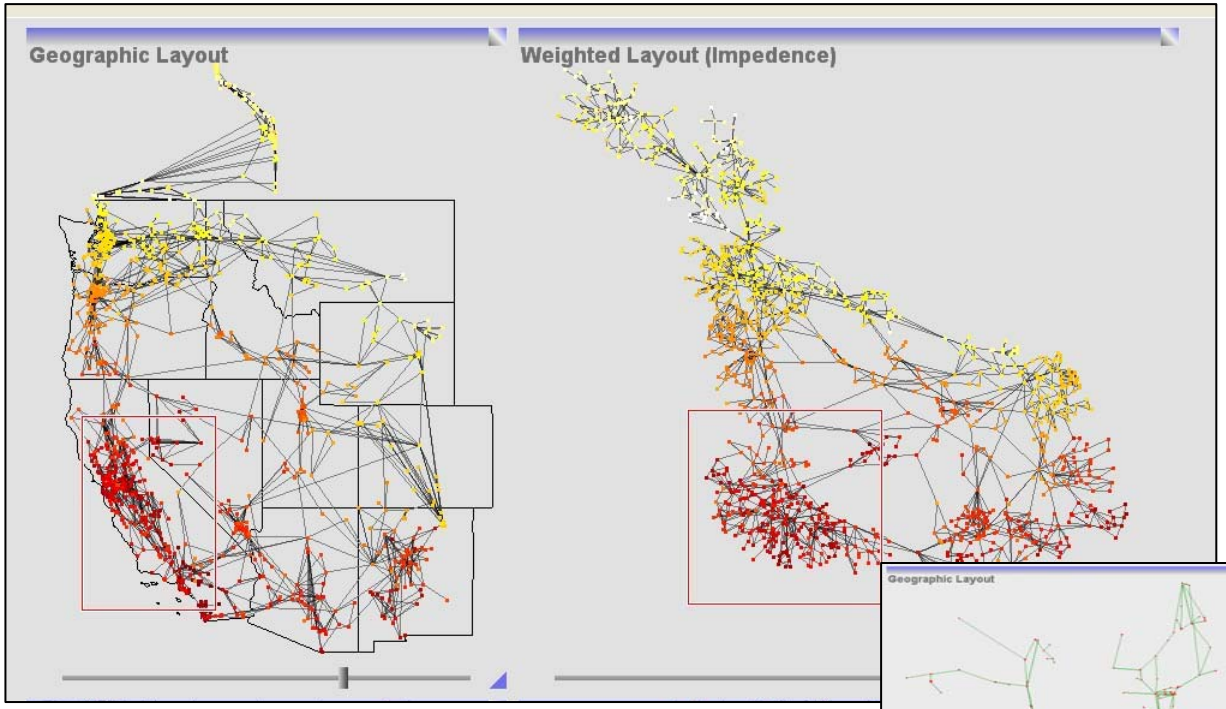
START

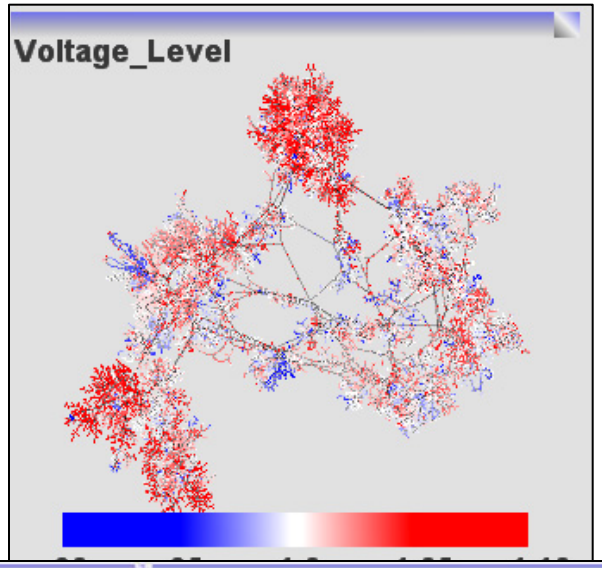
Seattle Police Department

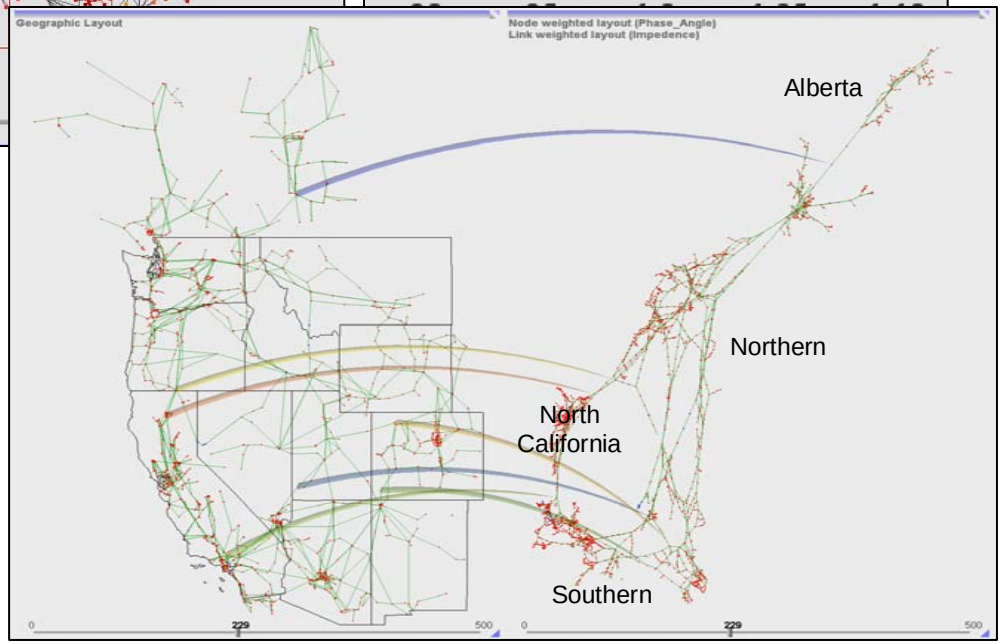
ARJIS

THE PORT AUTHORITY OF NY & NJ

# Interactive Graph Analytics



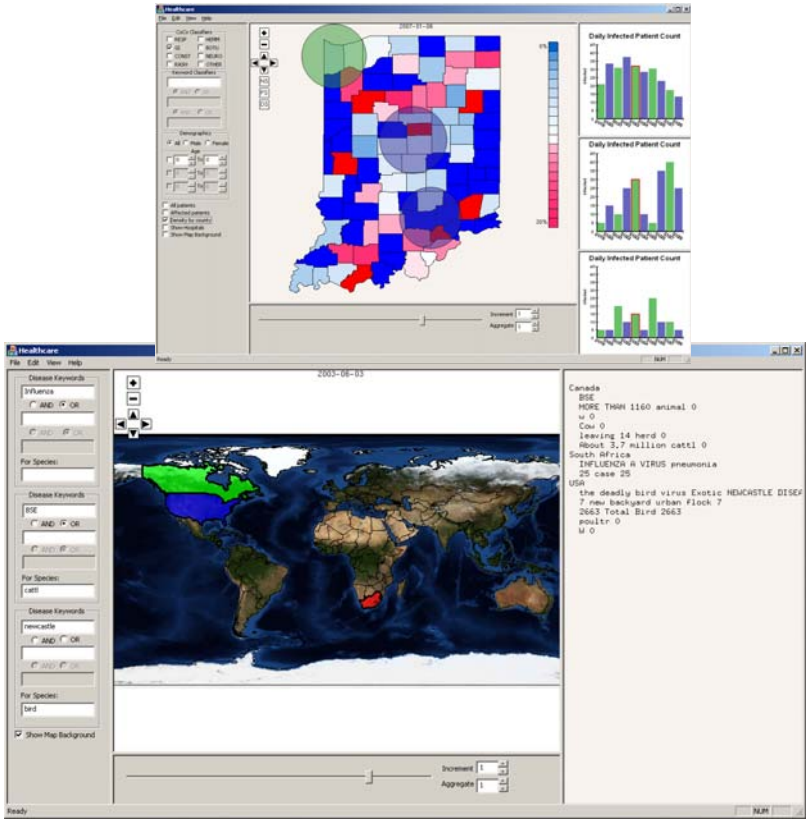




**The Department of Energy Office of Electricity Delivery and Energy Reliability has expanded VAC research by starting up a series of power grid analytics project.**

# Linked Animal-Human Health Visual Analytics

*LAHVA provides public health officials with a suite of visual analytic tools for exploration of health care data sets in linked statistical and geospatial- temporal views. These tools provide advanced detection capabilities for adverse chemical and biological occurrences in the general populace.*



***Collaborators:***

*Purdue University*

*Indiana State Department of Health (ISDH)*

*Indiana Board of Animal Health*

*The Regenstrief Institute*

*Indiana University School of Medicine*

*Banfield the Pet Hospital*

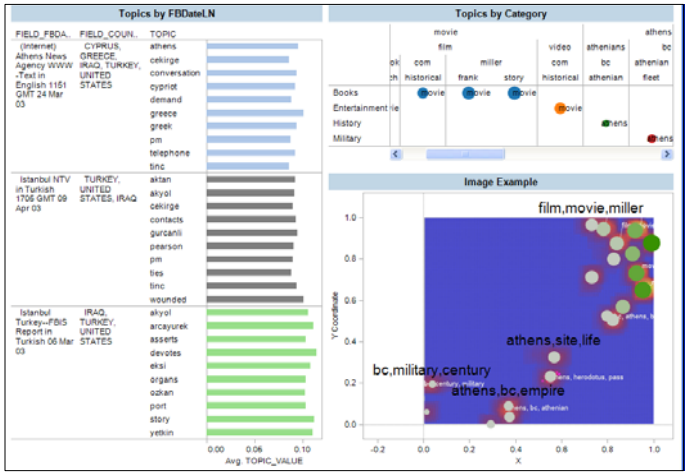
*Georgia Department of Health*

*Ceratops UAC (Utah, Pittsburgh)*

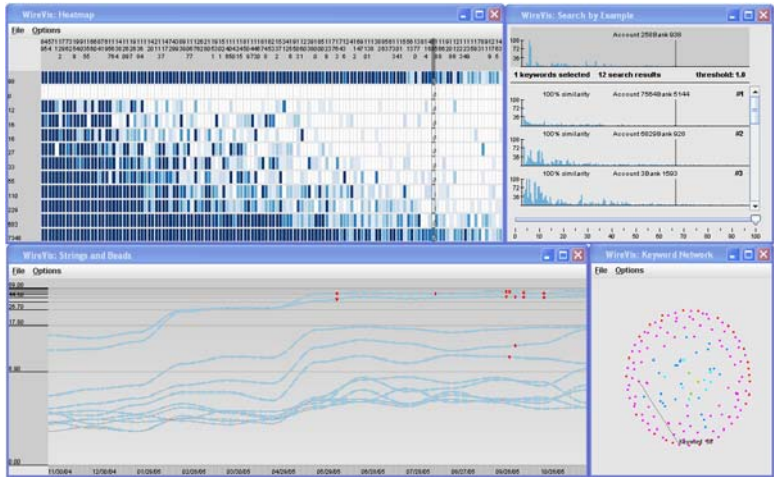
*Lawrence Livermore National Laboratory*

# Leveraging VAC Partnerships

- ICE/Tableau: NVAC
- US-CERT: Stanford
- Bank of America: UNCC
- NGA: Penn State
- NIJ: UNCC
- NASIC: NVAC
- Many other joint activities with partners




WireVis



# VAC Supported Workshops

- **Mathematical Foundations of VA:** VAC in partnership with NSF held a workshop on the math behind visual analytics. The attendees looked at the current foundations and developed plans for addressing current gaps.

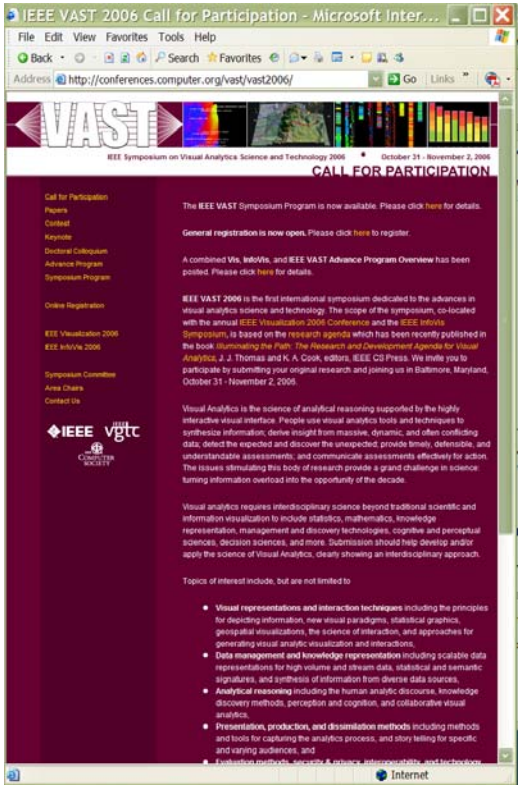
- **Active Dynamic Products of VA:** VAC in partnership with CIA held a workshop on the identifying core science issues. The attendees looked at the current commercial solutions and available State-of-art technologies to develop S&T gaps.

- **VA in Geography:** A series of special sessions on "Visual Analytics in Geography" was held at the 2007 Annual Meeting of the Association of American Geographers (AAG)

- Financial Analytics: The VAC hosted a workshop sponsored by DHS to define a research agenda outlining the challenges and visual analytic solutions for financial intelligence in support of law enforcement and counter-terrorism.

# Spring Consortium and IEEE VAST 2008

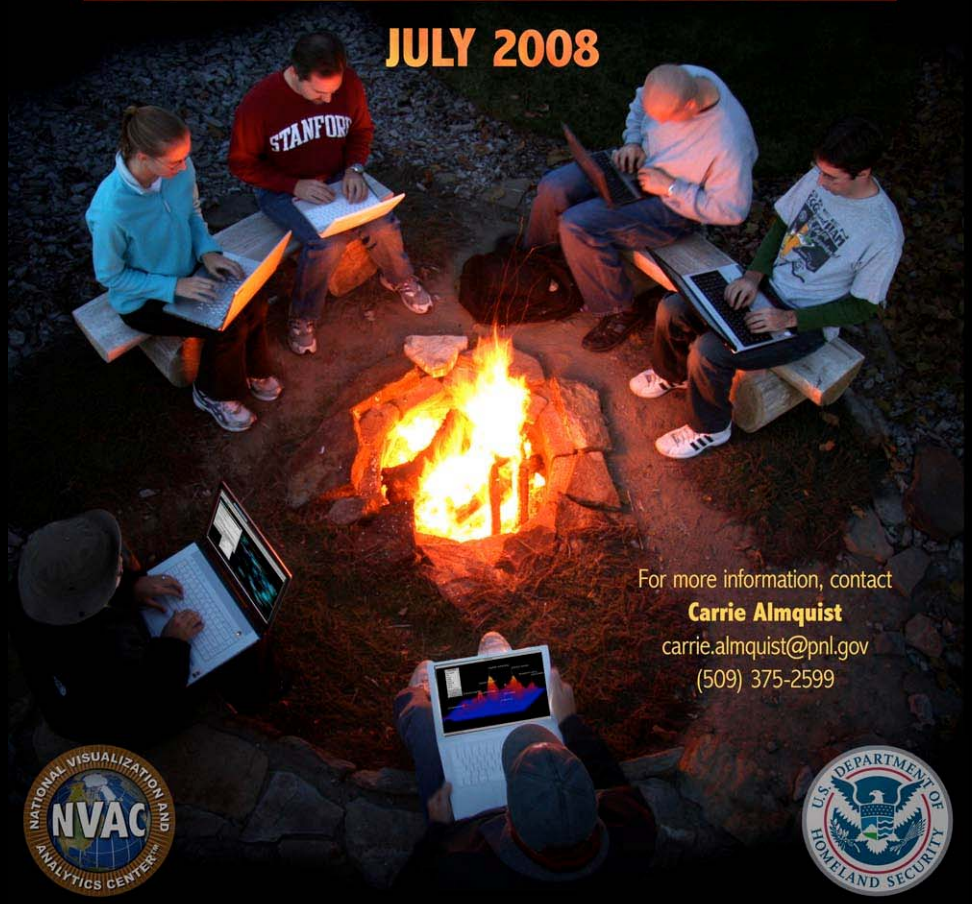
- Spring VAC Consortium: May 21-22, 2008 at APL, JHU
- IEEE Symposium on Visual Analytics Science and Technology (VAST) 2008
  - http://conferences.computer.org/vast/vast2008/
  - Columbus Ohio
  - Oct 14-19, 2008



# VISUAL ANALYTICS EDUCATIONAL WORKSHOP

at

Pacific Northwest National Laboratory

sponsored by the U.S. Department of Homeland Security

## Fire up your imagination: Join our Visual Analytics Summer Camp.