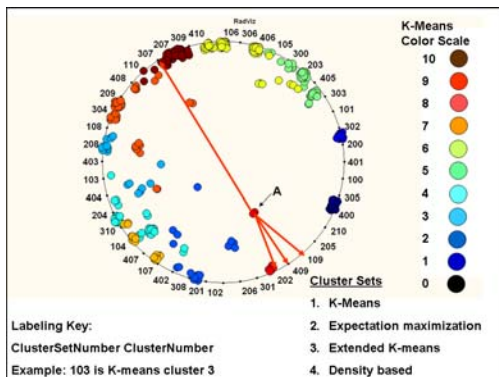# Topic: Visual Analytics with Applications

Visual Analytics is an emerging field that integrates visualization with data analysis to facilitate analytical reasoning. It envisions a discovery process in which humans, algorithms and visualizations interact to solve problems.

The Center for Discrete Mathematics & Theoretical Computer Science (DIMACS)

DIMACS was founded as one of 24 Science and Technology Centers funded by the NSF. It is located at Rutgers University, and is a joint project of Rutgers, Princeton, AT&T Laboratories, Bell Laboratories, the Cancer Institute of New Jersey, Telcordia Technologies, and the NEC Research Institute. DIMACS has over 300 permanent members in mathematics, computer science, statistics, and operations research, and hosts many distinguished visitors each year.

The Homeland Security Center of Excellence for Command, Control and Interoperability

The Center for Command, Control and Interoperability (CCI) is new DHS Center of Excellence co-led by Rutgers and Purdue. CCI conducts research in the data and visualization sciences to develop technologies, tools, and advanced methods for information analysis, knowledge management, threat assessment, decision support, information sharing, investigative operations, and cyber infrastructure protection.

Reconnect Conference

Reconnecting Teaching Faculty to the Mathematical Sciences

August 9 - 15, 2009

VACCINE

Department of Homeland Security in conjunction with the Center for Discrete Mathematics and Theoretical Computer Science

What is the Reconnect Program?

The Summer Reconnect Conferences exposes faculty teaching undergraduates to the role of the mathematical sciences in homeland security by introducing them to a current research topic that will be relevant for classroom presentation. They will also offer an opportunity to researchers in government or industry to learn about recent techniques.

Topics will be presented in a weeklong series of lectures and activities led by a leading expert in the field. Participants will be involved in both research activities and in writing materials useful in the classroom or to share with their colleagues, with the possibility of ultimately preparing these materials for publication in either our Technical Report or our Educational Modules Series.

These workshops offer the opportunity for junior faculty as well as mid-level and senior faculty, and government and industry professionals to advance to advance to research questions in a new area of the mathematical sciences. Participants will also acquire materials and gain ideas for seminar presentations and for undergraduate research projects and have the opportunity to network with people from a variety of backgrounds.

Fees, Lodging, Meals, & Travel:

✓ **Academic Participants:** Lodging & meals will be provided. Limited funds are expected to be available for travel awards.

✓ **Government Lab Participants:** $350*

✓ **For-Profit Corporation Participants:** $500 *

*Includes registration & meals. Limited funds are expected to be available to waive all or part of costs.

2009 Reconnect Conference
August 9 – 15, 2009

Description: This Reconnect conference will introduce participants to basic concepts in visual analytics. Program participants will gain an understanding of how the various components of visual analytics (human, algorithmic, and visualization) can work together to solve large and complex real-world problems in such areas as homeland security and bioinformatics. Each participant will use a variety of algorithms and visualizations; each will work with realistic data sets; and each will write briefs as to how they solved specific problems. There will be a number of video lectures and assigned readings as well as hands on use of several commercial and open source tools.

Prerequisites: Some knowledge of programming, analysis and graphics (at roughly the first year college level) will be assumed. Those with more extensive background will progress more quickly and be able to do more.

Speaker Biographies: *Georges Grinstein* is Director of the Institute for Visualization and Perception Research at the University of Massachusetts Lowell. His work is broad and interdisciplinary, ranging from perceptual foundations of visualization to techniques for high-dimensional visualization.

John Stasko is a Professor and the Associate Chair of the School of Interactive Computing at the Georgia Institute of Technology. He is Director of the Information Interfaces Research Group and Director of the Georgia Tech component of the Southeast Regional Visualization and Analytics Center, sponsored by DHS. His primary research area is human-computer interaction, with a specific focus on information visualization and visual analytics.

Who May Apply?

✓ Anyone may apply. Preference will be given to faculty whose primary job is undergraduate teaching and those working at government labs.
✓ Two-year college faculty are welcome to apply.
✓ Faculty from groups under-represented in mathematics are encouraged to apply.

Application Checklist:

✓ Three-Page Online Application Form
✓ Current copy of your Curriculum Vitae
✓ Two Letters of Recommendation

How To Apply:

Complete the online application form and send CV and letters of recommendation to:

reconnect@dimacs.rutgers.edu

or

Reconnect Program
CCCI, CoRE 406, Busch Campus
Rutgers University
96 Frelinghuysen Road
Piscataway, NJ 08854-8018
Phone: 732-445-5928
Fax: 732-445-5932

Deadline for submitting all materials:
Until all slots are filled.

For more information, please visit:
http://dimacs.rutgers.edu/reconnect/2009/

Women, minorities, and persons with disabilities are encouraged to apply.