

Cyber-Enabled Discovery & Innovation: *Knowledge Extraction*

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Scientific Overview

The NSF is rolling out a major new initiative in late September on “Cyber-enabled Discovery and Innovation.” This will begin as a \$50 million dollar program the first year, and will grow over the next 5 years into a \$250 million program.

The goal of this workshop is to inform the scientific community about the CDI program, with the aim of eliciting strong proposals involving mathematical scientists. This workshop will be focused on the “knowledge extraction” aspect of the CDI program. For more information about CDI, see: http://www.nsf.gov/news/news_summ.jsp?cntn_id=108366 .

Format

We plan on having three types of presentations:

- An information session with Q&A with a representative from NSF
- Several panels where each panelist would present a few slides about what they consider to be the interesting and important questions of long-term significance, followed by a discussion with Q&A. Topics we envision at this point are:
 - i. Numerical Methods for Fast Knowledge Extraction
 - ii. Nonlinear Methods for Dimensional Reduction
 - iii. Knowledge Extraction from Images and Problems of Visualization
 - iv. Discrete and Graph-based Techniques for Knowledge Extraction and Analysis of Large Networks
- Selected examples of success stories of applying knowledge extraction techniques from the mathematical sciences to large scale problems

Participation

Additional information about this workshop including links to register and to apply for funding, can be found on the webpage listed below. Encouraging the careers of women and minority mathematicians and scientists is an important component of IPAM's mission, and we welcome their applications.

www.ipam.ucla.edu/programs/cdi2007



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