



THE HOMELAND SECURITY CENTER FOR DYNAMIC DATA ANALYSIS AT RUTGERS UNIVERSITY

The Center for Dynamic Data Analysis (DyDAn) is one of four recently-announced University Affiliate Centers of the Institute for Discrete Sciences, which is a joint project between the Department of Homeland Security (DHS) and several national laboratories, led by Lawrence Livermore National Laboratory. DyDAn brings together the talents of a unique academic-industrial team to work in partnership with DHS and the national laboratories. DyDAn is led by Rutgers University and based at the Center for Discrete Mathematics and Theoretical Science (DIMACS).

DyDAn researchers will develop new techniques for drawing inferences from massive flows of data arriving continuously over time. Buried in such data are patterns and behaviors that are changing, often quite quickly. The DyDAn team will develop novel technologies to find these patterns and relationships in dynamic and sometimes massive datasets. The DyDAn research program spans topics in Information Management and Knowledge Discovery as well as foundational topics in Discrete Mathematics.

DyDAn will develop educational programs for students and educators at all academic levels that are fully integrated with ongoing research. DyDAn will involve graduate students in all of its research projects and will host a research experience for undergraduates program during the summer. Programs for educators will feature new courses, certificate programs, guidance for faculty who want to bring homeland security topics into their classrooms, and a summer homeland security workshop for college teachers. Since awareness of career paths begins early, we will also develop a course for high school teachers to introduce topics at the interface between discrete science and homeland security.

DyDAn is a collaboration of five university partners and two industry partners:

- Rutgers University
- Princeton University
- Rensselaer Polytechnic Institute
- Texas Southern University
- Texas State University, San Marcos
- AT&T Labs
- Bell Labs/Lucent Technologies.

DyDAn will coordinate the other three new University Affiliate Centers located at:

- University of Illinois
- University of Pittsburgh
- University of Southern California.

Opportunities to participate in DyDAn activities include:

- Research Experiences for Undergraduates (REU) program
- Workshops introducing high school teachers to emerging topics in homeland security
- Reconnect programs connecting undergraduate faculty with homeland security research
- Workshops for researchers on focused research topics relevant to homeland security.