Call for Participation

The Second DIMACS International Algorithm Implementation Challenge: Clique, Graph Coloring, and Satisfiability

In conjunction with its Special Year on Combinatorial Optimization, the Center for Discrete Mathematics and Theoretical Computer Science (DIMACS) invites participation in an international Implementation Challenge to find effective optimization and approximation algorithms for the following NP-hard problems: **Maximum Clique**, **Graph Coloring**, and **Satisfiability**. The Implementation Challenge will take place between September 1992 and August 1993. Participants are invited to carry out research projects related to these problem areas and to present research papers at a DIMACS workshop to be held in Fall of 1993. A refereed workshop proceedings will be published.

Research Projects. Recent results in complexity theory have shown that, in a worst-case sense, the problems that are the subject of this Challenge are not only hard to solve optimally, they are hard to approximate. Our goal in this Challenge is to provide an impetus for a coordinated attack on the question of how hard they are in practice. Participants may wish to implement algorithms for evaluation, to build and study input generators, or to develop implementations for newer architectures. Projects may involve either public domain or proprietary codes. We are particularly interested in collecting instances and instance generators for these problems, with the goal of constructing a library of test problems that will be available for study both during and after the challenge.

DIMACS Support. DIMACS will provide benchmark instances for each problem and support tools and guidelines for research projects. DIMACS facilities will provide a clearinghouse for exchange of programs and input generators and for communication among researchers. DIMACS can provide neither financial support for research projects nor machine cycles for the experiments.

How to Participate For more information about participating in the Implementation Challenge, send a request for the document *General Information* (available September 15, 1992) to **challenge@dimacs.rutgers.edu**. Request either LaTeX format (sent through email) or hard copy (sent through U. S. Mail), and include your return address as appropriate. Challenge materials will also be available via anonymous FTP from DIMACS, and we expect most communication with respect to the Challenge to take place over the Internet.

Advisory Board. A committee of DIMACS members will provide general direction for the Implementation Challenge. Committee members are Vašek Chvátal, Rutgers University, Bill Cook, Bell Communications Research, David Johnson, AT&T Bell Laboratories, Cathy McGeoch, Amherst College, Bob Tarjan, Princeton University, and Michael Trick, DIMACS Visiting Fellow/Carnegie Mellon University (Coordinator).