ATLANTA (May 8, 2006)--David Bader, associate professor within the College's Computational Science and Engineering (CSE) division, along with Ph.D. students Kamesh Madduri and Vaddadi Chandu, have three papers accepted at this year's 35th International Conference on Parallel Processing (ICPP). ICPP is the longest-running conference dedicated to parallel processing with a significant impact within the field, and will be hosted by Ohio State University on August 14-18, 2006. The papers include:

"Designing Multithreaded Algorithms for Breadth-First Search and st-connectivity on the Cray MTA-2," D.A. Bader and K. Madduri


"ExactMP: An Efficient Parallel Exact Solver for Phylogenetic Tree Reconstruction Using Maximum Parsimony," D.A. Bader, V. Chandu, and M. Yan

The ExactMP paper by Bader, Chandu, and Yan, designs and implements an exact solver for the problem of maximum parsimony in computing evolutionary histories and important computational biology application. ExactMP can solve moderate sized instances exactly using combinatorial optimization techniques on symmetric multiprocessor and multicore systems with large main memories. This implementation is the first parallel solver for this problem and outperforms the widely-used commercial solver. The other two papers by Bader and Madduri design and implement parallel algorithms for large-scale graph theoretic problems. For instance, the two researchers identify key vertices using the betweenness centrality metric on real-world graphs, from small-world networks, patent databases, and citation networks. The results include the first parallel algorithms designed for several important metrics.

For more information about the International Conference on Parallel Processing (ICPP), click here.