Robert W. Day

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Education:

May 2004 *Doctorate of Philosophy (expected)*, University of Maryland, College Park, Applied Mathematics and Scientific Computation Program, concentration in Operations Research, *R.H. Smith School of Business*. Dissertation: "Matrix Bidding in Combinatorial Auctions," S. Raghavan, Advisor.

May 1999 *Bachelor's Degree*, Vanderbilt University, Nashville, TN, Mathematics and Economics, Cum Laude.

Research:

Research Interests: Optimization and Auction Theory, Matching and Allocation Problems, Network Optimization, Game Theory and Operations Research, Theory of Computational Complexity.

Research Experience:

2004 *Researcher*, "Compact Methods for Combinatorial Auctions." National Science Foundation Dissertation Grant. Vertical Integration of Research and Education in the Mathematical Sciences (VIGRE) Award.

2002-2004 *Research Assistant*, "Rapid Response Electronic Markets for Time-Sensitive Goods," National Science Foundation Grant. Research projects with presentations given:

"Combinatorial Auctions using Matrix Bids with Order," development of a compact language for multi-good auction applications, with integer programming techniques for rapid auction winner determination.

"Time-Sensitive Goods and the Substitutes Property," exploration of the connections between Matching and Auction Theory, with convergence and incentive results regarding a new auction format for FAA Airport Landing Slot Auctions.

2003 *Editorial Assistant*, assistant to the Guest Editors for the Special Issue on Electronic Markets of the Journal *Management Science*.

2002 *Selected Participant*, "Mathematical Modeling in Industry – A Workshop for Graduate Students," the Institute for Mathematics and its Application, University of Minnesota.

Teaching:

Teaching Interests: Quantitative Methods for students at the Graduate and Undergraduate levels, Mathematical Optimization and its Applications, Game Theory and auctions, development of Computer Science and Applied Mathematics curriculum for interdisciplinary/business students.

Teaching Experience:

2003 *Graduate Assistant*, assistant to professor for a doctoral course on Integer Programming, guest lecturer, grader with office hours and review session.

2001 *Instructor*, summer course in Linear Algebra for undergraduates in science and engineering, responsible for all lectures, writing and grading of quizzes and tests.

2001 *Instructor*, Probability and Geometry for undergraduate Education majors, responsible for all lectures; collaborative writing and grading of quizzes and tests.

1999-2002 *Teaching Assistant*, Linear Algebra I, Calculus I and II, leader of discussion sections with regular office hours, writer and grader of quizzes, grader of exams.

1999 *Participant*, Graduate Teaching Seminar, classroom auditing and interactive evaluation, teaching workshop.

Publications:

"CAMBO: Combinatorial Auctions using Matrix Bids with Order," (with S. Raghavan) submitted to *Operations Research,* Aug 6, 2003.

"Vehicle Networks: Achieving Regular Formation," (with Glavaski et. al), *Proceedings of American Control Conference*, Denver, Colorado June 4-6, 2003.

"Auctions and Electronic Markets: An Overview," (with G. Anandalingam and S. Raghavan) in preparation for Special Issue of *Management Science*.

Honors:

Spotlight on Graduate Research Award Winner, February 20, 2003, Department of Mathematics, University of Maryland, College Park.

Excellence in Teaching Award for Graduate Assistants Nominee, December 19, 2001, Department of Mathematics, University of Maryland, College Park.

INFORMS Doctoral Colloquium Selected Participant, October 17-18, 2003.

Memberships: INFORMS, papers presented San Jose, 2002 and Atlanta, 2003.
American Mathematical Society.

Computing Languages: C, Matlab, CPLEX (C callable library), AMPL, xml, html.