Robert W. Day

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Education:

August 2004	*Doctorate of Philosophy*, University of Maryland, College Park, Applied Mathematics and Scientific Computation, concentration in Operations Research, *R.H. Smith School of Business*, Dissertation: "Expressing Preferences with Price-Vector Agents in Combinatorial Auctions."
May 1999	*Bachelor of Arts*, Vanderbilt University, Nashville, TN Mathematics and Economics, Cum Laude

Awards:

Finalist: EURO Excellence in Practice Award, 2009, awarded by EURO: the Association of European Operational Research Societies, recognizing outstanding accomplishments in the practice of Operational Research.

INFORMS Computing Society Prize, 2008, awarded annually for the best English language paper or group of related papers in the Operations Research/Computer Science interface, in recognition of the scholarly and applied contributions of Day and Raghavan 2007.

Ackerman Scholarship, 2008-2010, recognizes significant and continuing all around academic productivity among the faculty of the School of Business, University of Connecticut.

Best Paper Award, 2007, awarded to the most outstanding research paper in the School of Business, University of Connecticut, for Day and Raghavan 2007.

Dantzig Dissertation Award, 2005, awarded by INFORMS for the best dissertation in Operations Research and the Management Sciences that is innovative and relevant to practice.

Research:

Research Interests: Optimization and Auction Theory, Airport Landing-Slot Auctions, Spectrum License Auctions, Hospital Management OR, Grid computing, Matching and Allocation Problems, Network Optimization, Game Theory and Operations Research.

Research Papers:

"Matrix Bidding in Combinatorial Auctions," (w/ S. Raghavan), *Operations Research*. To appear.

"Core-Selecting Package Auctions," (w/ P. Milgrom), *International Journal of Game Theory* **36**(3), March 2008, pp. 393-407.

"A Combinatorial Procurement Auction Featuring Bundle Price Revelation without Free Riding," (w/ S. Raghavan) *Decision Support Systems* **44**(3), February 2008, pp. 621-640.

"Fair Payments for Efficient Allocations in Public Sector Combinatorial Auctions," (w/ S. Raghavan) *Management Science* **53**(9), September 2007, pp. 1389-1406.

"The Landscape of Electronic Market Design," (w/ G. Anandalingam and S. Raghavan) *Management Science* **51**(3), March 2005, pp. 316-327.

Conference Papers:

"A Robust Combinatorial Auction Mechanism against Shill Bidding," Matsuo, T., T. Ito, R. Day, and T. Shintani, *Automated Agents and Multi-Agent Systems*, refereed conference paper, 2006.

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

Working Papers:

"Assignment Preferences and Combinatorial Auctions," (w/ S. Raghavan), Working Paper.

"A Clock Auction Model for Stochastic Grid Resource Pricing and Allocation," (w/ R. Bapna, S. Das, R. Garfinkel, and J. Stallaert), Working Paper.

"The Quadratic Core-Selecting Payment Rule for Combinatorial Auctions," (w/ P. Cramton), Working Paper.

"Schedule-Block Sharing and Operating Room Utilization," (w/ R. Garfinkel and S. Thompson), Working Paper.

"Improving Patient Flow in a Hospital Through Dynamic Allocation of Cardiac Diagnostic," (w/ M. Dean, R. Garfinkel and S. Thompson), Working Paper.

Current Research Projects:

"Walrasian Equilibria and Bidding Agents for Simultaneous Auctions," (w/ R. Aggarwal)

"Flexible Operating Room Suite Scheduling," (w/ R. Garfinkel and S. Thompson)

"Computational Techniques for the Matrix Bid Winner Determination Problem," (w/ S. deVries and S. Raghavan)

"A Revealed-Preference Activity Rule for Quasi-Linear Utilities with Budget Constraints."

Conferences and Presentations:

EURO XXIV 2009, Conference Bonn Germany, July 5-8, 2009. Invited Speaker.

Michael Rothkopf Memorial Conference, June 2, 2009. Invited Speaker.

Los Alamos National Laboratories, Center for Nonlinear Studies. July 1, 2008. Center visit and research presentation.

Ninth INFORMS Telecommunications Conference, University of Maryland, March 27-29, 2008. Invited Speaker, Session Chair.

The 18th International Conference on Game Theory, Stony Brook University, July 9-13, 2007. Research presented by co-author, Paul Milgrom.

Euro XXI 2006, Congress in Iceland, July 2-5, 2006. Invited Speaker.

North American Summer Meeting of the Econometric Society, June 22-25, 2006. Invited Speaker.

INFORMS Practice Conference, April 30-May 2, 2006. Invited Participant.

Harvard University, Econ/CS Group, March 11, 2005. Campus visit and research presentation.

NEXTOR/FAA, Mock Auction, Congestion Management Project/Strategic Simulation, February 24-25, 2005. Team Facilitator.

Computing and Markets, Schloss Dagstuhl International Conference and Research Center for Computer Science, January 3-7, 2005. Invited Speaker.

DIMACS Workshop for Computational Issues in Auction Design, October 7-8, 2004. Invited Speaker.

NEXTOR Workshop: *Government, the Airline Industry and the Flying Public: a New Way of Doing Business,* June 21-23, 2004. Research presented by co-author, S. Raghavan.

CORS/INFORMS Joint International Meeting, May 16-19, 2004. Invited Speaker.

INFORMS Annual Meeting, Invited Speaker: 2002, 2003, 2004, 2005, 2006, 2007, Session Chair 2005, 2008, 2009.

Teaching:

Teaching Interests: Quantitative Methods for Graduate and Undergraduate students, Mathematical Programming and its Applications, Operations Management, Statistical Quality Control, Game Theory and auctions, development of Computer Science and Applied Mathematics curriculum for interdisciplinary/business students.

Teaching Experience:

Assistant Professor, Operations and Information Management, University of Connecticut:

2004-2009 Operations Management for undergraduate business students, emphasis on quantitative and proficiency in software applications.

2009 OPIM PhD Seminar in Operations Research and Auction Applications, Spring 2009.

2008 Statistical Quality Control for Management and Engineering for Manufacturing (MEM) program.

Teaching Assistant, University of Maryland:

2003 *Graduate Assistant*, guest lecturer, grader for a doctoral course on Integer Programming.

2001 *Instructor*, summer course in Linear Algebra.

2001 *Instructor*, Probability and Geometry for undergraduate Education majors.

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.

Consulting Projects:

As a subcontracted consultant to Market Design, Inc. and/or Power Auctions Ltd.:

Designed and developed combinatorial auction optimization software used for spectrum license auctions by OfCom, the independent regulator and competition authority for UK communications industries.

Designed and developed combinatorial auction optimization software used in the 2009 Federal Aviation Administration (FAA) bidder seminar, preliminary activities for an auction of take-off/landing slots to control airport congestion.

Designed and developed combinatorial auction optimization software for potential use in the Federal Communications Commission (FCC) AWS3 auction.

Other Honors:

INFORMS Young Researcher Roundtable Selected Participant, April 30-May 2, 2006.

Vertical Integration of Research and Education in the Mathematical Sciences (VIGRE) Award. Spring 2004. National Science Foundation Dissertation Grant, University of Maryland.

Research Assistant, 2002-2003, National Science Foundation Grant: "Rapid Response Electronic Markets for Time-Sensitive Goods." Presentations given: "Matrix Bidding in Combinatorial Auctions," and "Time-Sensitive Goods and the Substitutes Property."

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

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

Mathematical Modeling in Industry - A Workshop for Graduate Students, Selected Participant, May 26- June 3, 2002, The Institute for Mathematics and its Application, University of Minnesota.

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

Editorial and Review Service:

National Science Foundation Proposal Review Panel, Manufacturing and Service Enterprise Systems, 2006.

Assistant to the Guest Editors for a Special Issue on Electronic Markets, *Management Science* **51**(3), March 2005.

Reviewer for:
Decision Analysis, Decision Sciences Journal, Decision Support Systems, European Journal of Operations Research, Information Systems Research, INFORMS Journal on Computing, INFORMS Telecom Conference 2008, Interfaces, International Journal of Game Theory, Journal of Artificial Intelligence Research, Management Science, Manufacturing and Service Operations Management, MSOM Conference, Operations Research, Networks, Production and Operations Management, Transportation Science.

Departmental Service:

(UConn OPIM department) Certificate in MIS program committee, 2007-2008, Departmental Seminar coordinator 2007-2008, PhD committee 2007-2009, PhD recruiting 2005-2008, Faculty recruiting 2005-2007.

Professional Memberships: INFORMS, The Econometric Society