David B. Brown

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Contact Information

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Positions

Fuqua School of Business, Duke University, Durham, NC
Associate Professor **2010-**
Assistant Professor **2006-2010**

Education

Massachusetts Institute of Technology, Cambridge, MA **2001-2006**
Department of Electrical Engineering and Computer Science
Laboratory for Information and Decision Systems
Ph.D., June, 2006.
Dissertation title: "Risk and robust optimization."
Minors: Management (Sloan), Merrill-Lynch Financial Technology Option.

Stanford University, Stanford, CA **1996-2001**
Department of Electrical Engineering
M.S., March, 2001.
B.S. (With Distinction), June, 2000.

Publications

Brown, D.B., E. De Giorgi, and M. Sim (2012). "Aspirational preferences and their representation by risk measures." *Management Science*, to appear.

Brown, D.B. and J. Smith (2011). "Dynamic Portfolio Optimization with Transaction Costs: Heuristics and Dual Bounds." *Management Science*, 57(10), p. 1752-1770.

Bertsimas, D., D.B. Brown and C. Caramanis (2011). "Theory and Applications of Robust Optimization." *SIAM Review*, 53(3), p. 464-501.

Brown, D.B., B. Carlin and M.S. Lobo (2010). "Optimal Portfolio Liquidation with Distress Risk." *Management Science*, 56(11), p. 1997-2014.

Ben-Tal, A., D. Bertsimas and D.B. Brown (2010). "A soft robust model for optimization under ambiguity." *Operations Research*, 58(4), p. 1220-1234.

Brown, D.B., J. Smith and P. Sun (2010). "Information Relaxations and Duality in Stochastic Dynamic Programs." *Operations Research*, 58(4), p. 785-801.

Bertsimas, D. and D.B. Brown (2009). "Constructing uncertainty sets for robust linear optimization." *Operations Research*, 57(6), p. 1483-1495.

Brown, D.B. and M. Sim (2009). "Satisficing measures for analysis of risky positions." *Management Science*, 55(1), p. 71-84.

Brown, D.B. (2007). "Large deviations bounds for estimating conditional value-at-risk." *Operations Research Letters*, 35(6), p. 693-824.

Bertsimas, D. and D.B. Brown (2007). "Constrained Stochastic LQC: A Tractable Approach." *IEEE Trans. Aut. Control*, 52(10), p. 1826-1841.

Working papers

"Optimal Sequential Exploration: Bandits, Clairvoyants and Wildcats." (With J. Smith). 2011.

"Disappointment risk for mean-variance portfolio optimizers." 2008.

Teaching Experience

Fuqua School of Business, Duke University, Durham, NC **2007-**

- Decision Models (daytime MBA).
- Convex Optimization (Ph.D.).
- Global Academic Travel Experience (GATE): China (daytime MBA).

Honors and Awards

First Place, Junior Faculty Interest Group Paper Competition, INFORMS, Seattle, WA, 2007.

Second Place, George Nicholson Student Paper Competition, INFORMS, San Francisco, CA, 2005.

Presidential Fellow, MIT, 2001: awarded to top incoming graduate students.

Terman Award, Stanford Class of 2000: awarded to top 15 graduating seniors across all 650+ in School of Engineering.

Tau Beta Pi, Stanford chapter, 1999.

President's Award, Stanford University, 1997: awarded to top ∼50 students in freshman class of 1700.

Presidential Scholar, Stanford Class of 2000.

Professional Experience

Goldman Sachs Asset Management, Quantitative Equity Group, New York, NY **2004**

American Express, Asset Management Group, Cambridge, MA 2003 **2003**

Tamarind, Inc., Palo Alto, CA **2001**

Cariden Technologies, Inc., Menlo Park, CA **2001**

Hummingbird Hedge Fund, Palo Alto, CA **2001**

Panopticon/Broadbase Software, Menlo Park, CA **2000**

Selected Talks

"Gradient-based Bounds for Stochastic Dynamic Programs"

- *INFORMS Annual Meeting*, Charlotte, NC. November, 2011.

"Optimal Sequential Exploration: Bandits, Clairvoyants and Wildcats"

- University of Michigan IOE Department Seminar, Ann Arbor, Michigan. October, 2011.
- Algorithms Seminar, Computer Science Department, Duke University, Durham, NC. October, 2011.
- University of Auckland Department of Engineering Science Seminar, Auckland, New Zealand. July, 2011.
- *IFORS Conference*, Melbourne, Australia. July, 2011.

"Dynamic Portfolio Optimization with Transaction Costs: Heuristics and Dual Bounds"

- *DIMACS/CCICADA Workshop on Risk-Averse Algorithmic Decision Making*, Rutgers University, May, 2011.

- *INFORMS Computing Society Conference*, Monterey, CA. January, 2011.
- *INFORMS Annual Meeting*, Austin, TX. November, 2010.
- Decision Sciences Seminar, Fuqua School of Business, Duke University, Durham, NC. September, 2010.
- 12$^{\text{th}}$ *International Conference on Stochastic Programming*, Halifax, Nova Scotia. August, 2010.

"Dual representation of choice and aspirational preferences"
- *Institute for Pure and Applied Mathematics: Workshop on Robust Optimization*, UCLA, Los Angeles, CA. November, 2010.
- 24$^{\text{th}}$ *European Conference on Operational Research*, Lisbon, Portugal. July, 2010.
- *Risk, Uncertainty, and Decision (RUD) 2010 Conference*, Paris, France. June, 2010.

"Robust Optimization: A Quick Tour"
- *NAS/CSTB Workshop on Computing for Sustainability*, Washington, D.C. May, 2010.

"A satisficing alternative to prospect theory"
- *INFORMS Annual Meeting*, San Diego, CA. October, 2009.
- Session: Applications and Methodology of Robust Optimization, 20$^{\text{th}}$ *International Symposium on Mathematical Programming*, Chicago, IL. August, 2009.

"A soft robust model for optimization under ambiguity"
- *INFORMS Annual Meeting*, Washington, D.C. October, 2008.

"Information Relaxations and Duality in Stochastic Dynamic Programs"
- UNC Stat-OR Colloquium, Chapel Hill, NC. December, 2009.
- CMU Tepper School of Business Operations Research Seminar, Pittsburgh, PA. November, 2009.
- Stanford GSB Seminar, Stanford, CA. October, 2009.
- MIT Operations Research Seminar, Cambridge, MA. July, 2009.
- *INFORMS Annual Meeting*, Washington, D.C. October, 2008.
- Algorithms Seminar, Computer Science Department, Duke University, Durham, NC. February, 2008.
- ISE Seminar, Lehigh University, Bethlehem, PA. February, 2008.
- *INFORMS Annual Meeting*, Seattle, WA. November, 2007.

"Satisficing measures for analysis of risky positions"
- *INFORMS Annual Meeting*, Washington, D.C. October, 2008.
- *INFORMS Optimization Society Meeting*, Atlanta, GA. March, 2008.
- *INFORMS Annual Meeting*, Seattle, WA. November, 2007.
- *RISK: Perception, Policy & Practice Workshop*, Statistical and Applied Mathematical Sciences Institute, Research Triangle Park, NC. October, 2007.
- *Second International Conference on Continuous Optimization + Modeling and Optimization: Theory and Applications*, McMaster University, Hamilton, Ontario. August, 2007.
- Fuqua Brown Bag Seminar, Fuqua School of Business, Duke University, Durham, NC. July, 2007.

"Risk and robust optimization"

- ORIE Seminar, Operations Research and Industrial Engineering, The University of Texas at Austin, Austin, TX. April, 2007.
- Algorithms Seminar, Computer Science Department, Duke University, Durham, NC. December, 2006.

"A flexible approach to robust optimization via convex risk measures"

- *INFORMS Annual Meeting*, Pittsburgh, PA. November, 2006.
- Decision Sciences Seminar, Fuqua School of Business, Duke University, Durham, NC. September, 2006.
- Session: New Directions in Robust Optimization, 19$^{\text{th}}$ *International Symposium on Mathematical Programming*, Rio de Janeiro, Brazil. August, 2006.

"Data, risk, and robust optimization"

- Workshop in Operations/Management Science, Graduate School of Business, The University of Chicago, Chicago, IL. February, 2006.
- Decision Sciences Seminar, Fuqua Schoolof Business, Duke University, Durham, NC. January, 2006.

"Robust linear optimization and coherent risk measures"

- Nicholson Student Paper Prize Session, *INFORMS Annual Meeting*, San Francisco, CA. November, 2005.
- *Autumn 2005 Operations Research Colloquia*, Department of Management Science and Engineering, Stanford University, Stanford, CA. October, 2005.
- Department of Electrical Engineering and Computer Science, Massachusetts Institute of Technology., Cambridge, MA. May, 2005.

"Constrained Stochastic LQC: A Tractable Approach"

- *LIDS Student Conference*, Department of Electrical Engineering and Computer Science, M.I.T., Cambridge, MA. January, 2005.
- Operations Research Center, M.I.T., Cambridge, MA. November, 2004.

Academic service and leadership

Reviewer: Operations Research, *Management Science*, *Manufacturing & Service Operations Management*, *Math. Programming*, *IEEE Transactions on Automatic Control*, *INFORMS Journal on Computing*, *Operations Research Letters*, *SIAM Journal on Financial Mathematics*, *Quantitative Finance*, *Computational Optimization and Applications*, and several others.

Panelist, NSF grant proposals.

Massachusetts Institute of Technolgy, Cambridge, MA **2002-2006**
Graduate Resident Tutor

Stanford University, Stanford, CA **1998-1999**
Resident Assistant

Skills

Language: English (native), German.
Computer: Matlab, C-PLEX, C/C++, Java, S-Plus, HTML, XML, LISP, Basic, PASCAL.