Prakash Mirchandani

- Professor of Business Administration
- Director, Center for Supply Chain Management
- Academic Director, Executive MBA Program
- Faculty Director, MS-SCM Program

Profile

Prakash Mirchandani is Director, Center for Supply Chain Management; Academic Director of EMBA Pittsburgh Program; Faculty Director, MS-SCM Program, and Professor of Business Administration at the Joseph M. Katz Graduate School. He previously served as the Associate Dean for MBA Programs at the School. He has a bachelor's degree in mechanical engineering from the Indian Institute of Technology, New Delhi, a post-graduate diploma in management (MBA) from the Indian Institute of Management, Ahmedabad, and a PhD in management from the Sloan School of Management at MIT. His prior work experience includes working with a large automotive manufacturer and as a management consultant.

Mirchandani has published in leading academic journals in the Management Science and Operations Management fields, including Management Science, Operations Research, Mathematical Programming, Networks, Operations Research Letters, INFORMS Journal on Computing, European Journal of Operational Research, Production and Operations Management, and SIAM Journal of Discrete Mathematics. He was Area Editor, Telecommunications and E-Commerce, of the INFORMS Journal on Computing (he was also briefly the Editor-in-Chief of the journal), and has served on the editorial boards of Manufacturing and Service Operations Management, Telecommunication Systems, and International Journal of Mobile Computing. His research interests include network design models for the transportation and telecommunication industries, polyhedral combinatorics and heuristic optimization for integer programming, and the impact of commonality and revenue management on supply chain effectiveness. He received the 2002 INFORMS Technical Section in Telecommunications Best Presentation Award (joint with Anant Balakrishnan), and in 2013, the Katz School Excellence in Research Award. He was also awarded the 1990 Zenon S. Zannetos prize for the best PhD thesis in the Sloan School of Management at MIT, and the Institute's Gold Medal for scholastic performance at the Indian Institute of Management, Ahmedabad in 1983.

Mirchandani is a recipient of the (university-wide) Chancellor's Distinguished Teaching Award. He teaches courses in decision technologies in manufacturing and operations management, statistical analysis, distribution networks, and global supply chain management. At the Katz School, he has developed executive education seminars as well as new elective courses for masters and doctoral students in these areas. The 1999, 2001, 2003, 2004, 2006, 2008, 2009, 2010, 2011, 2012, 2014, 2015, 2016, 2017, 2018, 2021 and 2023 Katz full-time masters students recognized him as the Outstanding Teacher of the Year. He has also been recognized as a finalist for the Outstanding Teacher of the Year Award during the 1994, 1996, 1997, 1998, 2000, and 2002 commencement ceremonies. The inaugural EMBA-Healthcare class of 2018 and the EMBA-Healthcare classes of 2019 and 2020 recognized him as a Distinguished Professor of the year, as did the IEMBA - Sao Paulo classes of 2006 and of 2007. He was a finalist for the 1996-97 and the 2001-02 University of Pittsburgh Chancellor's Distinguished Teacher Award.

Mirchandani has been a visiting faculty and taught MBA and Executive MBA courses at Sasin Graduate Institute of Business Administration, Chulalongkorn University, Bangkok, Thailand; and Pitt programs at Comenius University, Bratislava, Slovakia; Amcham/ Universidade Presbiteriana Mackenzie, Sao Paulo, Brazil; US Business School Praha, Prague, The Czech Republic; and the Universidad de Montevideo, Montevideo, Uruguay.

Mirchandani has worked on several industry projects including (i) a joint industry-university sponsored project to assess the business practices and performance at South Western Pennsylvania companies, and to help improve the region's competitiveness, (ii) the development of a decision support system to improve product offerings for a medium-size manufacturer, (iii) the analysis and improvement of process efficiencies at a loan processing center, (iv) a demand forecasting project for a consumer product, and (v) the development of models and strategies to offer tiered interest rates at a bank. Previously, for clients in different industries, he has carried out/supervised several projects including the development of a large-scale production-planning model for a mining company, a long term forecasting study for automobiles, a systems design and computerization feasibility study, project monitoring system design, and a wage survey and job evaluation study. He has also been the faculty advisor for various student projects relating to supply chain management initiatives at Bayer Materials Sciences (now, Covestro), UPS, FedEx Supply Chain, Thomson Reuters, Phillips Respironics, UPMC, ARMADA, and MSA, among others.

He is an Advisory Board Member of Prestige University, India and a Charter Member of TiE Pittsburgh. He is a member of INFORMS, POMS, APICS, Sigma Xi, and Beta Gamma Sigma for which he also serves as the Vice President (Katz) of the University of Pittsburgh.

Courses Recently Taught

- Decision Technologies in Manufacturing and Operations Management (MBA)
- Decision Optimization and Risk Management (EMBA)
- Statistical Analysis: Uncertainty, Prediction and Quality Control (MBA)
- Distribution Networks (MBA)
- Global Supply Chain Management (PhD Seminar, EMBA and MBA)
- Managing Global Supply Chains (UG)
- Advanced Decision Technologies (MBA
- Healthcare Operations and Supply Chain Management (EMBA-Healthcare)

Research Interests

- Operations Research
- Network Design
- Supply Chain Management
- Information Systems
- Supply Chain Finance

Awards and Honors

- Recipient of the 2012 University of Pittsburgh Chancellor's Distinguished Teaching Award.
- Recognized as the "Distinguished Professor of the Year" by the EMBA Healthcare class of 2020, Katz Graduate School of Business.
- Recognized as the "Distinguished Professor of the Year" by the EMBA Healthcare class of 2019, Katz Graduate School of Business.
- Recognized as a "Distinguished Professor of the Year" by the (inaugural) EMBA Healthcare class of 2018, Katz Graduate School of Business.
- Recognized as the "Outstanding Teacher of the Year" by the full-time Masters students of 2023, Katz Graduate School of Business
- Recognized as an "Outstanding Teacher of the Year" by the full-time MBA Class of 2021, Katz Graduate School of Business.
- Recognized as the "Outstanding Teacher of the Year" by the full-time MBA Class of 2018, Katz Graduate School of Business.
- Recognized as the "Outstanding Teacher of the Year" by the full-time MBA Class of 2017, Katz Graduate School of Business.
- Recognized as the "Outstanding Teacher of the Year" by the full-time MBA Class of 2016, Katz Graduate School of Business.
- Recognized as the "Outstanding Teacher of the Year" by the full-time MBA Class of 2015, Katz Graduate School of Business.
- Recognized as the "Outstanding Teacher of the Year" by the full-time MBA Class of 2014, Katz Graduate School of Business.
- Recognized as the "Outstanding Teacher of the Year" by the full-time MBA class of 2012, Katz Graduate School of Business.
- Recognized as the "Outstanding Teacher of the Year" by the full-time MBA class of 2011, Katz Graduate School of Business.
- Recognized as the "Outstanding Teacher of the Year" by the full-time MBA class of 2010, Katz Graduate School of Business.
- Recognized as the "Outstanding Teacher of the Year" by the full-time MBA class of 2009, Katz Graduate School of Business.
- Recognized as the "Outstanding Teacher of the Year" by the full-time MBA class of 2008, Katz Graduate School of Business.

- Recognized as the "Distinguished Professor" by the EMBA Sao Paulo class of 2007, Katz Graduate School of Business.
- Recognized as the "Outstanding Teacher of the Year" by the full-time MBA class of 2006, Katz Graduate School of Business.
- Recognized as the "Distinguished Professor" by the EMBA Sao Paulo class of 2006, Katz Graduate School of Business.
- Recognized as the "Outstanding Teacher of the Year" by the full-time MBA class of 2004, Katz Graduate School of Business.
- Recognized as the "Outstanding Teacher of the Year" by the full-time MBA class of 2003, Katz Graduate School of Business.
- Recognized as the "Outstanding Teacher of the Year" by the full-time MBA class of 2001, Katz Graduate School of Business.
- Recognized as the "Outstanding Teacher of the Year" by the full-time MBA class of 1999, Katz Graduate School of Business.
- Recognized as one of the finalists for the Outstanding Teacher Award by the fulltime MBA classes of 2002, 2000, 1998, 1997, 1996, and 1994 at the Katz Graduate School of Business.
- Awarded the Pitt Business Excellence in Teaching Award (MBA Program) for the years 2000-01, 2001-02, 2002-03, 2003-04, 2004-05, 2005-06, 2006-2007, 2007-2008, 2008-2009, 2009-2010, 2010-2011, 2011-12, 2012-13, 2013-14, 2014-15, 2015-16, 2016-17, 2017-18, 2018-19, 2019-2020, 2020-21, and 2021-22..
- Awarded the Pitt Business Excellence in Service Award for the years 2014-15, 2020-21, and 2021-22.
- Nominated and then short-listed as a finalist for the 2001-02 and the 1996-97 University of Pittsburgh Chancellor's Distinguished Teaching Award.
- Awarded the 2002 INFORMS Technical Section in Telecommunications Best Presentation Award (joint with Anant Balakrishnan).
- Awarded the Zenon and Clotilde S. Zannetos 1990 best dissertation prize at Sloan School of Management, MIT.
- Awarded fellowship for four years at Sloan School of Management, MIT.
- Attended the doctoral students colloquium organized by ORSA/TIMS at St. Louis, Mo., in May 1988.
- Received the Institute's Gold Medal for outstanding scholastic performance at IIM, Ahmedabad, 1983.
- Awarded the Bank of America Industrial Scholarship at IIM Ahmedabad, 1982-83.
- Awarded merit scholarships for being in the top five percent of the class at IIT, Delhi for five years, and at IIM, Ahmedabad for two years.

Professional Service and Activities

- Former Area Editor, Telecommunications and E-commerce, INFORMS Journal on Computing.
- Vice President, Katz Chapter, Beta Gamma Sigma.
- Invited Sessions Co-Chair, INFORMS 2006.

Consulting Activities

Mirchandani has worked on consulting projects with a number of private and public sector, and government and non-government organizations. These include Promistar Financial Corporation, First National Bank of Pennsylvania, GlaxoSmithKline, ASKO, Alpern Rosenthal, Duquesne Light Company, the World Bank, Indian Military Services, Ministry of Industry (Government of India), Modi Xerox, and Philip Morris (India). He has also been a faculty advisor for consulting field projects at Bayer Materials Sciences (Covestro), Phillips Respironics, UPS, MSA, FedEx Supply Chain, Thomson Reuters, FedEx Ground, Giant Eagle, ARMADA, UPS, UPMC and other companies.

Degrees

- PhD, Sloan School of Management, Massachusetts Institute of Technology
- Postgraduate Diploma in Management (MBA), Indian Institute of Management (IIM), Ahmedabad, India
- Bachelor of Technology, Indian Institute of Technology (IIT), New Delhi, India

Recent Publications

Magnanti, T. L., P. Mirchandani and R. Vachani, "Modeling and Solving the Network Loading Problem," *Operations Research*, 43 (1995) 142-157.

P. Mirchandani, "A Simple O(n2) Algorithm for the All-pairs Shortest Path Problem on Interval Graphs," *Networks*, 27 (1996), 215-218.

P. Mirchandani, "Projections of the Network Loading Problem," *European Journal of Operational Research*, 122 (2000), 534-560.

P. Mirchandani, G.G. Hegde, and R.E. Wendell, "Enhancing Competitiveness of the Customer Loan Center at Promistar Financial Corporation," *Interfaces,* 31 (2001), 28-43.

Balakrishnan, A., T.L. Magnanti, and P. Mirchandani, "Intuitive Solution-doubling Techniques for Worst-case Analysis of Some Survivable Network Design Problems," *Operations Research Letters*, 29 (2001), 99-106.

Mirchandani, P. and A. Mishra, "Component Commonality: Models with Product-specific Service Constraints," *Production and Operations Management,* 11 (2002), 199-215.

Balakrishnan, A., T.L. Magnanti, and P. Mirchandani, "Connectivity Splitting Models for Survivable Network Design," *Networks*, 43 (2004), 10-27.

Kohli, R., R. Krishnamurti, and P. Mirchandani, "Average Performance of Greedy Heuristics for the Integer Knapsack Problem," *European Journal of Operations Research*, 154 (2004), 36-45.

Balakrishnan, A., P. Mirchandani, and H. Natarajan, "Connectivity Upgrade Models for Survivable Network Design," *Operations Research*, 57 (2009) 170-186.

P. Mirchandani, "Process Improvement and Design of Experiments/ANOVA," *INFORMS Transactions on Education*, 10 (2010) 74-78.

Banciu, M., E. Gal-Or, and P. Mirchandani, "Bundling Strategies When Products are Vertically Differentiated and Capacities are Limited," *Management Science*, 56 (2010) 2207-2223.

Balakrishnan, A, M. Banciu, K. Glowacka, and P. Mirchandani, "Hierarchical Approach for Survivable Network Design," *European Journal of Operational Research*, 225 (2013) 223-235.

Banciu, M., and P. Mirchandani. "Technical Note: New Results Concerning Probability Distributions with Increasing Generalized Failure Rates." *Operational Research*, 61 (2013) 925-931.

Balakrishnan, A., G. Li, and P. Mirchandani. "Optimal Network Design with End-to-End Service Requirements." *Operations Research*, 65 (2017) 729-750.

Mirchandani, P. 2020. "Healthcare Supply Chains: COVID-19 Challenges and Pressing Actions." Annals of Internal Medicine, https://doi.org/10.7326/M20-1326.

Ma, P., Y. Gong, and P. Mirchandani. 2020. "Trade-in for remanufactured products: Pricing with double reference effects." International Journal of Production and Economics, 230, December 2020, 107800.

Bo H., P. Mirchandani, and Y. Wang. 2020. "Removing barriers for grocery stores: O2O platform and self-scheduling delivery capacity." Transportation Research Part E: Logistics and Transportation Review, 141, September 2020, 102036.

Balakrishnan, A., P. Mirchandani, and S. Lin. Crew Assignment with Duty Time Limits for Transport Services: Tight Multi-commodity Models. Accepted for Publication in Operations Research. 2021.

He B., V. Gupta and P. Mirchandani. 2021. Online Selling Through O2O Platform or on Your Own? Strategic Implications for Local Brick-and-Mortar Stores. Omega. 103, September 2021, 102424

Balakrishnan, A., P. Mirchandani, and S. Lin. Crew Assignment with Duty Time Limits for Transport Services: Tight Multi-commodity Models. Operations Research. 2021.

Laik, J. and P. Mirchandani. Effect of Seasonality, Sales Growth Rate, and Fiscal Year End on Cash Conversion Cycle. Decision Sciences. Early View. August 2021.

He, B., P. Mirchandani, Q. Shen, and G. Yang. How should Local Brick-and-Mortar Retailers Offer Delivery Service in a Pandemic World? Self-building Vs. O2O platform. Transportation Research Part E. (154) 2021.

Bao, X., Mirchandani, P., Shang, J., Narayan, R., 2023. Playing politics or playing right: Impacts of reputation-seeking on short-term disruptions management. Omega 116, 102797.

Balakrishnan, A. and P. Mirchandani. 2023. Modeling and Solution Approaches for Resource Assignment with Deployment. Accepted for publication in Springer Volume edited by Faiz Ahmed.

Balakrishnan, A. and P. Mirchandani, "A New Approach for Designing Robust Networks," *Proceedings of the 2003 NSF Grantees Conference.* January 2003. Birmingham, Alabama.

Balakrishnan, A. and P. Mirchandani, "Optimal Routing in Service Networks," *Proceedings* of the 2004 NSF Grantees Conference. January 2004. Dallas, Texas.

P. Mirchandani and D. Simchi Levi, "Communication Network Design Models" in Handbook of Graph Theory, J.L. Gross and J. Yellen (editors), CRC Press, Florida. 2004.

Balakrishnan, A., P. Mirchandani and B. Zhang, "A Cutting-Plane Approach for the Weight-Constrained Network Design Problem," *Proceedings of the 2005 NSF Grantees Conference.* January 2005. Scottsdale, Arizona.

Balakrishnan, A. P. Mirchandani and B. Zhang, "Valid Inequalities for the Constrained Shortest Path Problem," *Proceedings of the Second International Network Optimization Conference INOC 2005*,Lisbon, Portugal, March 2005, L. Gouveia and C. Mourao (eds.), pp. B1.24 - B1.30.

P. Mirchandani and D. Simchi Levi, "Communication Network Design Models" in *Handbook of Graph Theory*, J.L. Gross and J. Yellen (editors), CRC Press, Florida. 2004.

P. Mirchandani and D. Simchi Levi, "Communication Network Design Models" (revised) for publication in in *Handbook of Graph Theory*, J.L. Gross and J. Yellen, P. Zhang (editors), CRC Press, Florida. 2012.

Recent Working Papers

Bao, X., P. Mirchandani, and J. Shang. Operational Decisions at a Venture Capital Funded Superstar-Manufacturer Supply Chain.

New Results Concerning Probability Distributions with Increasing Generalized Failure Rates. With M. Banciu.

INFORM: A Decision Support System for Tool Management with A. Mishra.

New Solution Approaches for Optimal Topological Design of Robust Networks with A. Balakrishnan (2002). An abridged version of this paper appeared in the *Proceedings of the 2003 NSF Grantees Conference*.

Cases

P. Mirchandani, "The MotoTech Manufacturing Company: Process Control and Improvement," (refereed) INFORMS Transactions on Education (2010). Teaching Note for above (refereed).

P. Mirchandani, "The MotoTech Manufacturing Company: Design of Experiments/ANOVA," (refereed) INFORMS Transactions on Education (2010). Teaching Note for above (refereed).

Acusis, Inc. (2012). With Tobias (Tim) Ehlich. INFORMS Transactions on Education, 13 (2013) 162-171. Supported in part by a grant from the International Business Center at the University of Pittsburgh.

Center Affiliation

Supply Chain Management