

Medini R. Singh

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Columbia Business School
3022 Broadway, Rm 314 Uris Hall
New York, NY 10027-6902

(646)823-5917 (w)
ms2149@columbia.edu

EDUCATION

- 1990 Ph.D. in Industrial Administration, Carnegie Mellon University
- 1988 M.S. in Industrial Administration, Carnegie Mellon University
- 1986 M.E. in Mechanical Engineering, Carnegie Mellon University
- 1983 B.E. in Industrial Engineering, Indian Institute of Technology, Roorkee, India

EXPERIENCE

- Columbia Business School, Columbia University, New York, NY**
Senior Lecturer in Discipline in Business 2010–present
- Columbia Business School, Columbia University, New York, NY**
Visiting Associate Professor of Decision, Risk and Operations 2001–2010
- Tuck School of Business, Dartmouth College, Hanover, NH**
Associate Professor of Business Administration 1994–2000
- The University of Michigan, Ann Arbor, MI**
Assistant Professor of Industrial and Operations Engineering 1990–1993
- IBM T. J. Watson Research Center, Yorktown Heights, NY**
Research Staff Member Summer 1988

RESEARCH INTERESTS

- Supply chains: design, operation and strategy
- Modeling and control of manufacturing systems with capacity, demand and yield variability
- Managing services in uncertain environment
- Speed and competitiveness

AWARDS

Singhvi Prize for Scholarship in the Classroom 2015, for dedication to teaching and ability to communicate knowledge, Columbia Business School.

Dean's Award for Teaching Excellence, 2011, Columbia Business School.

National Science Foundation Research Initiation Award, 1992.

Alpha Pi Mu Outstanding Teaching Award (Honorable Mention), Department of Industrial and Operations Engineering, University of Michigan, Ann Arbor, 1991-92.

Teacher of The Year Award, Department of Industrial and Operations Engineering, University of Michigan, Ann Arbor, 1990-91.

The Best Dissertation Award, Production and Operations Management Society, Washington, D.C., October 16, 1990.

The IBM Graduate Manufacturing Research Fellowship, IBM Research Division, T. J. Watson Research Center, Yorktown Heights, 1988-1989, and 1989-1990.

The William Larimer Mellon Fellowship, Carnegie Mellon University, 1986- 1988.

The Thomason Memorial Gold Medal for Best Engineering Design, University of Roorkee, 1983.

The University Prize for First Rank in Bachelor of Industrial Engineering, University of Roorkee, 1983.

University Merit Scholarship and Tuition Waiver for exceptional academic performance, University of Roorkee, 1979-1983.

RESEARCH GRANTS

"A study of global business strategy and supply chain innovations at Benetton SpA," Center for International Business Education (CIBE) Faculty Research Grant, Columbia University, 2001-2002, \$7,500, Co-PI (with Nelson Fraiman).

"Capacity Expansion and Replacement in an Uncertain Dynamic Technological Environment," National Science Foundation, 1992-95, \$89,848, PI.

"Development of a Simulation Model for Die Construction Process," GM, C-P-C Group, 1992-93, \$35,000, PI.

"Intelligent Unified Control of Unit Commitment and Generation Allocation," NSF/EPRI Program on Intelligent Control, 1992-94, \$300,000, Co-investigator (with John R. Birge and Romesh Jain).

"Impact of Design Decisions on Manufacturing Costs and Product Life Cycle," Whirlpool Foundation, 1991, \$12,500, PI.

"Determining the Flexibility Needs of GM Power Train," GM Advanced Manufacturing Engineering, 1992, \$20,000, Co-PI (with Kathy Stecke).

"Capacity Expansion and Replacement in an Uncertain Dynamic Technological Environment," Rakham Grant, 1992-94, \$9,994, PI.

"Incorporating Animation in Simulation Modeling," CRLT Faculty Development Fund, University of Michigan, 1992, \$4,000, PI.

ADVISORY BOARD MEMBERSHIPS

Member, Faculty Advisory Board, India Business Initiative, The Jerome A. Chazen Institute, Columbia Business School.

Member, Advisory Board, The W. Edwards Deming Center for Quality, Productivity, and Competitiveness, Columbia Business School.

PUBLICATIONS

I. REFEREED JOURNAL PUBLICATIONS

- [1] T. E. Morton, and M. R. Singh, "Implicit Costs and Prices for Resources with Busy Periods," *Journal of Manufacturing and Operations Management*, Vol.1, No.3, pp.305-322, Fall, 1988.
- [2] M. R. Singh, C. T. Abraham, and R. Akella, "A Wafer Design Problem in Semiconductor Manufacturing for Reliable Customer Service," *IEEE Trans. on Components, Hybrids, and Manufacturing Technology*, Vol.13, No.1, pp.103-108, March, 1990.
- [3] C. W. deSilva, M. R. Singh, and J. Zaldonis, "Improvement of Response Spectrum Specifications in Dynamic Testing," *ASME Journal of Engineering for Industry*, Vol.112, pp.384-387, November, 1990.
- [4] R. Akella, M. R. Singh, and B. Krogh, "Efficient Computation of Coordinating Controls in Hierarchical Structures for Failure-Prone Multi-Cell Flexible Assembly Systems," *IEEE Transactions on Robotics and Automation*, Vol.6, No.6, pp.659-672, December, 1990.
- [5] R. Akella, S. Rajagopalan, and M. R. Singh, "Part Dispatch in Random Yield Multi-Stage Flexible Test Systems for Printed Circuit Boards," *Operations Research*, Vol.40, No.4, pp.776-789, July-August, 1992.
- [6] Alan G. Kalton, Medini R. Singh, David A. August, Christopher M. Parin, and Elizabeth J. Othman, "Using Simulation to Improve the Operational Efficiency of a Multi-Disciplinary Clinic," *Journal of the Society for Health Systems of the Institute of Industrial Engineers*, Vol. 5, No. 3, pp.43-62, 1997.
- [7] S. Rajagopalan, Medini R. Singh, and Thomas E. Morton, "Capacity Expansion and Replacement in Growing Markets with Uncertain Technological Breakthroughs," *Management Science*, Vol. 44, No. 1, pp.12-30, January 1998.
- [8] Juhwen Hwang and Medini R. Singh, "Optimal Production Policies for Multi-stage Systems with Setup Costs and Uncertain Capacities," *Management Science*, Vol. 44, No.9, pp. 1279-1294, September, 1998.
- [9] Steve Erlebacher and Medini R. Singh, "Effect of Processing Time Variability on a Synchronous Assembly Line," *Operations Research*, Vol. 47, No. 4, pp. 601-618, July-August, 1999.
- [10] David A. August, J. Elizabeth Othman, Christopher Parin, Alan Kalton, Lynne C. Carpenter, Patricia Warner, and Medini R. Singh, "The Role of the Clinician in the Application of Management Methods to Improve Models of Patient Care," to appear in *Journal of Surgical Oncology*.

II. REFEREED CONFERENCE PROCEEDINGS AND BOOK CHAPTERS

- [11] C. W. deSilva and M. R. Singh, "A New Approach to Designing Vibration Isolators," *Proceedings, International Conference on Vibration Problems in Engineering*, Xi'an, Shaanxi, China, June 1986.

- [12] M. R. Singh, C. T. Abraham, and R. Akella, "Planning for Production of a Set of Components when Yield is Random," *Proceedings, Fifth IEEE/CHMT International Electronic Manufacturing Technology Symposium*, pp.196-200, Lake Buena Vista, FL, October 10-12, 1988.
- [13] R. Akella, M. R. Singh, and Y. Bassok, "Real-Time Part Dispatch in Flexible Assembly, Test, and Manufacturing Systems," in Soundar Kumara, R. L. Kashyap, and Allen Soyster (Eds.) *Artificial Intelligence: Manufacturing Theory and Practice*, pp.297-338, Industrial Engineering and Management Press, Institute of Industrial Engineers, 1989.

III. WORKING PAPERS

- [W1] Medini R. Singh, Jing-Sheng Song, Candace A. Yano and Augusto Moreno-Beltran, "Production and Repair Decisions with Time-Consuming Repair and a Deadline."
- [W2] Steve Erlebacher and Medini R. Singh, "Allocation of Variability among Components for Optimal System Performance."
- [W3] Juhwen Hwang and Medini R. Singh, "Optimal Operating Policy for a Hydro-Electric Pumped Storage Plant."
- [W4] Juhwen Hwang and Medini R. Singh, "The Cash Balance Problem with Uncertainty in Cash Transfer."
- [W5] Walid R. Abillama and Medini R. Singh, "Optimal Order Quantities of Style Products."
- [W6] Walid R.. Abillama and Medini R. Singh, "Optimal Starting Times and Suppliers Delivery Dates in a Stochastic Assembly System."
- [W7] Walid R.. Abillama and Medini R. Singh, "Optimal Assignment of Due Dates and Starting Times to Identical Jobs on a Single Machine with Random Processing Times."

IV. CASE STUDIES

- [C1] Nelson F. Fraiman and Medini R. Singh, "Zara," Graduate School of Business, Columbia University, 2003. (Available with teaching notes, overhead slides and video)
- [C2] Nelson F. Fraiman and Medini R. Singh, "Mango," Graduate School of Business, Columbia University, 2003.
- [C3] Medini R. Singh, "Consumer Powers," 1999.

DOCTORAL COMMITTEES

CHAIRMAN

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|------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Steve Erlebacher | "Design and Operating Policies for Mixed-Model Assembly Lines.", Graduated May, 1993, joined Olin School of Management, Washington U., St. Louis. |
| Juhwen Hwang | "Production Smoothing, Set-up Reduction, and Cost of Imperfect Production in Manufacturing Systems.", Graduated May, 1994. joined National Dong Hwa University, Hualien, Taiwan. |

Walid R. Abillama "Release Control Policies for Manufacturing Systems with Uncertain Yields.", Graduated, December, 1994.

MEMBER

James Ting
Jay Baron
Piyush Goyal
Sheng-Luen Chung
Sriram Padmanabhan
Jae Wook Yoon

PROFESSIONAL ACTIVITIES

I. EDITORIAL WORK

- Member, Editorial Board, *IIE Transactions*, 1996–Present
- Member, Editorial Review Board, *Manufacturing & Service Operations Management*, 1997–Present.
- Member, Editorial Review Board, *Production and Operations Management*, 1995–2000.
- Associate Editor, *Production and Operations Management*, 1991–94.
- Associate Editor, *IIE Transactions*, 1993–96.
- Editor, *TIMS/ORSA Annual Comprehensive Index*, 1994–95.
- Associate Editor, *TIMS/ORSA Annual Comprehensive Index*, 1992–94.
- Guest Editor, *International Journal of Flexible Manufacturing Systems*, Special Issue on Electronic Manufacturing.
- Member, *The Best Dissertation Award Committee*, Production and Operations Management Society, 1991.
- Reviewer for several journals, including *Operations Research*, *Management Science*, *Naval Research Logistics Quarterly*, *IIE Transaction*, *Annals of Operations Research*, *Interfaces* and *IEEE Transaction on Robotics and Control*.

II. INVITED SEMINARS

- Gave research seminars at
 - Columbia Business School
 - GM Research Labs
 - GE R&D, Schenectdy
 - IBM Thomas J. Watson Research Center
 - University of Michigan Business School
 - Sloan School (MIT)
 - University of Waterloo.
- Presented over 30 invited papers at various TIMS/ORSA Joint National Meetings and INFORMS meetings and IIE Research Conferences.

III. ORGANIZATIONAL WORK

- Program Chair, *1996 MSOM Conference*, Dartmouth College, Hanover, NH.
- Organizer, *The 1996 Multi-Echelon Conference*, June 23, 1996.
- Member, *Program Committee, 1994 TIMS/ORSA Detroit Meeting*. Coordinated the invited sessions for TIMS, arranged ten tutorial speakers, finalized the meeting theme, logo and various other arrangements.
- Member, Organizing Committee, *15th International Symposium on Mathematical Programming*, Ann Arbor, 1994.
- Cluster Chair, ORSA Technical Section on Manufacturing, Detroit National Meeting.
- Member and Acting Chair, Production and Operations Management Society Nominating Committee 1992.
- Member, Organizing Committee POMS Annual Meeting, New York, 1991.
- Chairman and Session Organizer/Tutorial Speaker for over a dozen TIMS/ORSA meeting sessions on various technical topics.