DONALD R. (BOB) SMITH

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CONTACT INFORMATION

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EDUCATION

Ph.D. Operations Research, University of California, Berkeley, 1975
M.S. Operations Research, Columbia University, 1974
A.B. Physics, magna cum laude, Cornell University, 1969

WORK EXPERIENCE

MONMOUTH UNIVERSITY (2001- PRESENT)

Associate Professor (initially Visiting Assistant Professor), School of Business Administration

- Teaching courses in Statistics and Operations Management (undergraduate and graduate level) and courses in Stochastic Processes and Management Science (graduate level).
- Director, MBA Program 2004-.
- Member of Faculty Council 2005-, Executive Secretary Faculty Council 2006-2008, Vice Chair of Faculty Council 2008-. Chair of University Committee on Writing (2003-2006).

LUCENT TECHNOLOGIES (AND PREVIOUSLY AT&T) BELL LABORATORIES (1980-2001)

Technical Manager, Bell Laboratories (1984 to 2001)

- Led group of 6-8 Operations Research professionals, mostly with Ph.D.s, in the application of state-of-the-art Operations Research to corporate problems. Specialization in the design and execution of global supply chain process and systems, inventory and logistics, as well as performance modeling of telecommunications systems.

- Managed several projects in the area of Network Planning and Reliability. Was the overall Development Manager for INDT (Integrated Network Design Tool), a multi-purpose proprietary internal network design tool of Lucent Technologies, used extensively by Lucent Technologies in planning networks.

- Conceived the need for and led the algorithmic determination, requirements generation, development and implementation of IRP (Inventory Requirements Planning), an inventory planning decision support system. IRP was implemented at 8 AT&T/Lucent/NCR locations and had dramatic impact on inventory and service at each. For example, IRP was the decision support methodology used by Oklahoma City in 1999 to decrease inventory by $47M, while simultaneously increasing service and reducing cycle time. Similar results were experienced by other locations. Oversaw commercial sale of IRP to i2 Technologies, Inc.

- Led conception and requirements generation of an optimization tool for the placement of broadband wireless hubs. The tool reduced the time to generate a city plan by a factor of 30, while increasing the overall quality of the plan.

- Led development of tool for allocation of scarce material across multiple products.

- Led team of consultants in an intensive evaluation of all of the inventory processes and systems of a major US Regional Bell Operating Company, and a major South American telecommunications company.

- Led numerous successful inventory reduction initiatives, and other areas of the application of Operations Research. These efforts included algorithm development and process redesign, as well as teaming with numerous organizations on implementation of processes and systems.

Member of Technical Staff, Bell Laboratories (1980-1984)

- Worked on a variety of problems in the performance of telecommunications systems. Developed algorithms that quantified the performance of telecommunications packet systems subject to bursty traffic. Performed work that quantified the economies of scale of telecommunications systems. Determined methodology for the allocation of scarce resources. Modeled the performance of Digital Access Cross Connect Systems (DACS) and co-developed a tool DACSPET (DACS Performance Evaluation Tool) that radically altered the engineering of DACS locations subject to circuit churn.

COLUMBIA UNIVERSITY (1975-1980)

Assistant Professor of Operations Research

- Conducted research, supervised dissertations and taught undergraduate and graduate courses in Operations Research at the School of Engineering and Applied Science and the Columbia Business School. Courses taught included Statistics, Probability, Stochastic Processes, Queueing Theory, Linear Programming, Dynamic Programming, Markovian Decision Processes, and the core MBA course in quantitative methods. Independent student evaluations from the *Columbia-Barnard Course Guide* averaged an instructor rating of 4.8 out of a possible 5. Research areas included reliability theory, Markovian decision processes and application of Operations Research to telecommunications systems. Adjunct Associate Professor 1980-1984 – taught graduate level courses in the School of Engineering and Applied Science.

ADAPTIVE TECHNOLOGIES, PISCATAWAY, NEW JERSEY (1970-1973)

Member of Technical Staff

- Determined performance of newly patented statistical multiplexing techniques.

RUTGERS UNIVERSITY (1972-1973)

Instructor, University College

- Full responsibility for teaching of courses in numerical methods and computer programming as adjunct.

PROFESSIONAL ACTIVITIES

Active in INFORMS (Institute for Operations Research and the Management Sciences), a professional society. Member of CPMS (served as Treasurer, Vice President and am currently President). Past editor of *Operations Research.* Member of INFORMS prize committee (1996) and chair (1997). Coach of winner of Edelman Prize (1999). Edelman Prize Judge (2000, 2003-2008). Edelman Prize Chair 2001 and 2002. Conference Advisory Council member for the 2001 INFORMS practice meeting, May 2001. Council Advisory member for 2002 conference on practice. Cluster organizer for Fall INFORMS meeting 2004. Numerous presentations at Operations Research professional conferences.

AWARDS AND HONORS

Bell Labs Advanced Technologies Excellence Award, 1998
Bell Labs President's Silver Quality Award, 1997
Inventory Management work featured in general article on inventory management (with full-page picture) in *Lucent Magazine,* June 1997, an all employee magazine of Lucent Technologies (circulation about 100,000 at time).
Supervised Lucent Technologies winning application for the INFORMS prize, the highest honor for the sustained application of Operations Research and Management Science.
Certified in Production and Inventory Management (CPIM) by the American Production and Inventory Control Society (APICS).

PUBLICATIONS (all refereed except 19 and 20)

1. "A New Proof of the Optimality of the Shortest Remaining Processing Time Discipline," *Operations Research,* 26, 197-199 (1978).
2. "Optimal Repairman Allocation – Asymptotic Results," *Management Science,* 24, 665-674, (1978).
3. "Optimal Repair of a Series System," *Operations Research,* 26, 653-662, (1978).
4. "On a Renewal Decision Problem," *Management Science,* 24, 562-563, (1978).
5. "Renewal Decision Problem – Random Horizon," *Mathematics of Operations Research,* 4, 225-232, (1979), (with C. Derman).
6. "An Alternative Proof of the IFRA Property of Some Shock Models," *Naval Research Logistics Quarterly,* 27, 703-707, (with C. Derman).
7. "Priority Channel Assignment in Tandem DSI," *IEEE Transactions on Communications,* COM-28, 1802-1808, (1980), (with M. Schwartz and K. Mase).
8. "Resource Sharing for Efficiency in Traffic Systems," *The Bell System Technical Journal,* 60, 39-55, (1981), (with W. Whitt).
9. "Asymptotic Analysis of a Queueing Model with Bursty Traffic," *The Bell System Technical Journal,* 62, 1433-1453, (1983), (with D. Burman).
10. "A light Traffic Theorem for Multi-Server Queues," *Mathematics of Operations Research,* 8, 15-25, (1983), (with D. Burman).
11. "A model for Special Service Circuit Activity," *The Bell System Technical Journal,* 62, 2911-2934, (1983).
12. "Probabilistic Analysis of Interframe Tie Requirements for Cross-Connect Systems," *AT&T Bell Laboratories Technical Journal,* 63, 643-664, (1984), (with C. Monma).
13. "An Asymptotic Analysis of a Queueing System with Markov-Modulated Arrivals, *Operations Research,* 34, 105-119, (with D. Burman).

14. "Resource Sharing for Efficiency Problem Solution," *The American Mathematical Monthly,* 93, 488-489, (1986), (with W. Whitt).

15. "Resource Allocation among Competing Activities: A Lexicographic Minimax Approach," *Operations Research Letters,* 5, 227-231, (1986), (with H. Luss).

16. "Multiperiod Allocation of Limited Resources: A Minimax Approach," *Naval Research Logisitics,* 35, 491-501, (1988), (with H. Luss).

17. "A Lexicographic Minimax Algorithm for Multiperiod Resource Allocation," *Mathematical Programming,* 55, 213-234, (1992), (with R. Klein and H. Luss).

18. "Engine for Inventory Management," *ORMS Today,* 34-37, February, 1996, (with A. Bangash and H. Shulman).

19. "Franz Edelman Award for Achievement in Operations Research and the Management Sciences," *Interfaces*, Vol 32 Number 1, 1-4 (with Steven C. Graves) [non-refereed journal appearance indicative of activity of high-value for maintaining currency in the field of applied Operations Research].

20. "2002 Franz Edelman Award for Achievement in Operations Research and the Management Sciences," *Interfaces,* Vol 33 Number 1, 1-4 (with Steven C. Graves) [non-refereed journal appearance indicative of activity of high-value for maintaining currency in the field of applied Operations Research].

21. "Inventory Requirements Planning at Lucent Technologies," *Interfaces,* Vol 34, Number 5, 342-352, September-October, 2004.

22. "Optimal Initial Billing Period," (with R. Scott, III) *Journal of Applied Business and Economics*, Volume 7, February 2007.

23. "Applying Merton's Theory of Anomia to Career Disruptions," Michaeline Skiba, Donald R. Smith and Kimball P. Marshall. *Management Research News***,** Issue 4, Volume 32 (2009), to be published April 4, 2009.