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THOMAS J. SCHRIBER

Professor of Technology and Operations
Stephen M. Ross School of Business
The University of Michigan

EDUCATIONAL BACKGROUND

B.S.,	University of Notre Dame,	1957 (Magna Cum Laude)
M.S.E.,	University of Michigan,	1958
M.A.,	University of Michigan,	1959
Ph.D.,	University of Michigan,	1964

APPOINTMENTS

University of Michigan
- Professor, 1972-
- Associate Professor, 1969-72
- Assistant Professor, 1966-69

National University of Singapore
- Visiting Scholar (6 months), 1995

Swiss Federal Technical University (ETH Zurich)
- Visiting Scholar (6 months), 1987

Stanford University
- Visiting Scholar (9 months), 1972-73

Eastern Michigan University
- Assistant Professor and Director, Academic Computer Center, 1963-66

SCHOLARLY HONORS AND AWARDS

"Pioneer of Simulation" Designation, 2013
- (includes an NSF-sponsored 75 minute video-recorded interview available in the Simulation Archives sponsored by the INFORMS Simulation Society and housed in the library system at North Carolina State University).
- Link: http://d.lib.ncsu.edu/computer-simulation

Victor L. Bernard Faculty Award for Leadership in Teaching, 2013
"Titan of Simulation" Keynote Speaker, Winter Simulation Conference, 2009
Landmark Paper Award, Winter Simulation Conference (40th Anniversary), 2007
Winter Simulation Conference Board of Directors' Award for Distinguished Service, 2007
Lifetime Professional Achievement Award, INFORMS College of Simulation, 2001
Participant, U.S.-U.S.S.R. Joint Science and Technology Agreement, 1977-1980
Distinguished Service Award, INFORMS College of Simulation, 1996
Keynote Speaker, EUROSIM Congress '95, Vienna, 1995
Keynote Speaker, Silver Anniversary, Winter Simulation Conference Series, 1992
Office of Naval Research Grant, 1981-83
Decision Sciences Institute Fellow, 1979-
ACM National Lectureship Series (Lecturer; Co-Chairperson), 1969-1972
Fulbright Fellow (Germany), 1961-62
International Nickel Fellow, 1960-61
National Science Foundation Fellow, 1957-60

NATIONAL BIOGRAPHICAL LISTINGS

American Men and Women of Science
Leading Consultants in Computer Software
Leading Consultants in Technology
Who's Who in America

OFFICES AND POSITIONS IN PROFESSIONAL ASSOCIATIONS

Board Member, Winter Simulation Conference Foundation, 2003-2009
(Board Chair, 2007-2008)

Member, 2004 Lifetime Professional Achievement Award Committee,
INFORMS College of Simulation (Chair, 2003; Member, 2002)

Chair, 1998 Distinguished Service Award Committee,
INFORMS College of Simulation (Member, 1997; 1999)

Software/Modelware Track Chairman, 1998 Winter Simulation Conference

Vice Chairman, ACM's Special Interest Group for Simulation, 1991-94

Associate Editor, International Journal of Flexible Manufacturing Systems, 1986-

Associate Editor, Simulation, 1982-1994

Winter Simulation Conference Series
- ACM Member, Board of Directors, 1978-86
- Chairman, Board of Directors, 1982-83

Guest Co-editor, Annals of Operations Research, 1985

National Vice President, Decision Sciences Institute, 1977-79

Associate Editor, Decision Sciences, 1974-84

Associate Editor, ACM/SIGSIM Simuletter, 1973-84

Participant, Joint Science and Technology Exchange Agreement,
U.S.-U.S.S.R., 1977-80

Program Chairman, Bicentennial Winter Simulation Conference
(National Bureau of Standards, Gaithersburg, Maryland), 1976

ACM National Lectureship Series
- Lecturer, 1969-72
- Co-Chairman, 1970-72

MEMBERSHIPS IN PROFESSIONAL ORGANIZATIONS

ASIM (Arbeitsgemeinschaft Simulation: the German-language simulation society)

Decision Sciences Institute (DSI)

INFORMS (Institute For Operations Research and Management Science)

IIE (Institute of Industrial Engineers)

SELECTED PUBLICATIONS

Articles

"Inside Discrete-Event Simulation Software: How It Works and Why It Matters" (one in an annual series, with Daniel T. Brunner and as of 2012, Jeffrey Smith) *Proceedings of the 2015 Winter Simulation Conference*. INFORMS Simulation Society, 2015: 15 pages.

“Simulation for the Masses: Spreadsheet-Based Monte Carlo Simulation”. Proceedings of the 2009 Winter Simulation Conference. INFORMS Simulation Society. 2009: 11 pages.

"Simulation Textbooks – Old and New" (with Ingolf Stahl et al.). *Proceedings of the 2003 Winter Simulation Conference*. The Society for Computer Simulation, 2003: 1952-1963.

"How Discrete-Event Simulation Software Works" (with Daniel T. Brunner). *Proceedings of the Simulation Solutions 2003 Conference*. Institute of Industrial Engineers, 2003.

"Web-Based Simulation Center: Professional Support for Simulation Projects" (with James O. Henriksen et al.). *Proceedings of the 2002 Winter Simulation Conference*. The Society for Computer Simulation, 2002: 807-815.

"Assessment of Simulation Models Based on Trace-File Analysis: A Metamodeling Approach" (with Juri Tolujev et al.). *Proceedings of the 1998 Winter Simulation Conference*. The Society for Computer Simulation, 1998: 443-450.

“How Discrete-Event Simulation Software Works” (with Daniel T. Brunner). Chapter 24 in *Handbook of Simulation: Principles, Methodology, Advances, Applications, and Practice*, ed. J. Banks. New York: John Wiley & Sons, 1998: 765-811.

“Web Support for a Simulation and Animation Course” (with Peter Lorenz et al.). *Simulation and Animation '98*. The Society for Computer Simulation International, 1998: 67-79.

“Towards a Web-Based Simulation Environment” (with Peter Lorenz et al.) *Proceedings of the 1997 Winter Simulation Conference.* The Society for Computer Simulation, 1997: 1338-1344.

"Internetbasierte Experimente und Praesentationen zum Canal-and-Lock System" (with Peter Lorenz et al.) *Simulation and Animation '97*. The Society for Computer Simulation International, 1997: 275-286.

"Teaching Introductory Simulation in 1996: From the First Assignment to the Final Presentation" (with Peter Lorenz). *Proceedings of the 1996 Winter Simulation Conference*. The Society for Computer Simulation, 1996: 1379-1386.

"Optimal and Heuristic Policies for Lot Sizing with Learning in Setups" (with Ram Rachamadugu). *Journal of Operations Management*, Vol. 13, 1995: 229-245.

"How Discrete-Event Simulation Software Works." *EUROSIM '95 Simulation Congress*. Elsevier, 1995: 17-28.

"Perspectives on Simulation Using GPSS." *Proceedings of the 1995 Winter Simulation Conference*. The Society for Computer Simulation, 1995: 451-456.

(Excerpts of this paper also appear in "Manufacturing Systems Simulation," *Encyclopedia of Computer Science and Technology* (A. Kent and J. G. Williams, Editors), Vol. 23, Supp. 8, Marcel Dekker, Inc., 1991: 229-252; and an earlier version of the paper was published in *Simulation Europe*, Vol. 3, No. 2,1988: 23-36)

"The Design, Implementation, Application and Comparison of Two Highly Automated Traffic Simulators" (with Peter Lorenz and Thomas Schulze). *Proceedings of the 1994 Winter Simulation Conference*. The Society for Computer Simulation, 1994: 1084-1092.

"Spreadsheet-Based Analysis of Simulation Output." *Simulation and Integration*, Vol. 42 of the Series in Advances in Simulation, ASIM, Vienna, 1994: 35-64.

"Scheduling with Sequencing Flexibility" (with Ram Rachamadugu and Udayan Nandkeolyar). *Decision Sciences*, Vol. 24, 1993: pp. 315-335.

"'Minimum Travel Time' and 'Follow the Leader' Techniques for Modeling Conveyor Systems" (with James 0. Henriksen). *Algorithms for Modeling Complexities in Discrete-Event Systems*, Vol. 36, Advances in Simulation, ASIM, Vienna, 1993: 99-119.

"KIMS: Knowledge-Based Integrated Manufacturing Systems" (with Daniel M. Min and Kathryn E. Stecke), *Proceedings of the Second International Conference on Flexible Automation and Information Management* (FAIM), 1992, pp. 339-350.

"Visualization of Simulated Systems Using Proof Animation." *Presentation and Visualization of Simulation Models and Results*, Vol. 31 of the Series in Advances in Simulation, ASIM, Vienna, 1992: 141-152.

"The Modeling of Perfect Sequencing Flexibility in a Scheduling Environment." *Proceedings of the 1991 Winter Simulation Conference*. The Society for Computer Simulation, 1991: 331-340.

"Performance of Dispatching Rules Under Perfect Sequencing Flexibility" (with Ram Rachamadugu). *Proceedings of the 1990 Winter Simulation Conference*. The Society for Computer Simulation, 1990: 71-84.

"Machine Utilizations Achieved Using Balanced FMS Production Ratios in a Simulated Setting" (with K. E. Stecke). *Annals of Operations Research*, Vol. 15, 1988: 229-267.

"Advances in Simulation Using GPSSIH." *Proceedings of the 1988 Annual Conference of the Decision Sciences Institute*, Decision Sciences Institute, 1988: 1193-1194.

"Simulation Output: Statistical Analysis" (with Richard W. Andrews). *Systems & Control Encyclopedia* (Madan G. Singh, Editor). Pergamon Press, 1988: 4393-4396.

"Using Mathematical Programming and Simulation to Study FMS Machine Utilizations" (with Kathryn E. Stecke). *Proceedings of the 1987 Winter Simulation Conference*. The Society for Computer Simulation, 1987: 725-730.

"The Nature and Role of Simulation in the Design of Manufacturing Systems." *Simulation in Computer Integrated Manufacturing*. The Society for Computer Simulation, 1987: 5-18.

"Simplified Approaches to Modeling Accumulating and Nonaccumulating Conveyor Systems" (with James O. Henriksen). *Proceedings of the 1986 Winter Simulation Conference*. The Society for Computer Simulation, 1986: 75-93.

"Machine Utilizations and Production Rates Achieved by Using Balanced Aggregate FMS Production Ratios in a Simulated Setting" (with Kathryn E. Stecke). *Flexible Manufacturing Systems* - Operations Research Models and Applications. Elsevier Science Publishing Company, 1986: 405-416.

"A GPSS/H Model for a Hypothetical Flexible Manufacturing System." *Annals of Operations Research*, Vol. 3, 1985: 171-188.

(This paper was republished in *Flexible Manufacturing Systems: Current Issues and Models*. Industrial Engineering and Management Press, 1986: 149-166.)

"An ARMA-based Confidence Interval Procedure for the Analysis of Simulation Output" (with Richard W. Andrews). *American Journal of Mathematical and Management Sciences*, Vol. 4, Nos. 3 & 4, 1984: 345-373.

"Analysis of the Immune Response to Malignant Cells Using Computer Simulation" (with William H. Murphy). *Proceedings of the 6th Annual Symposium of Computer Applications in Medical Care*. IEEE Press, 1982: 957-963.

"Computer Simulation of the Cellular Immune Response to Malignant Lymphoic Cells: Logic of Approach, Model Design, and Laboratory Verification" (with A. Thomas Look, et al.). *Immunology* Vol. 43, 1981: 677-690.

"A Conceptual Framework for Research in the Analysis of Simulation Output' (with Richard W. Andrews). *Communications of the ACM*. Vol. 4, No. 4,1981: 218-232.

"Interactive Optimization of a Production System." *Management Applications in APL*, edited by Ephraim R. McLean and John S. Schenck. UCLA Graduate School of Management, 1981: 127-154.

"Algorithmic Search in Management Decision Systems" (with Laurence A. Madeo). *International Journal of Man-Machine Studies*, Vol. 13, 1980: 423-435.

And 17 other articles prior to 1980.

Books and Monographs

Chapter 3, "Harbour Process Modeling and Visualization" (with Peter Lorenz et al.), *Application of Modern Concepts in Automated Information Management in Harbours by Using Advanced IT Solutions*, edited by Eberhard Bluemel, Fraunhofer Institute for Factory Operation and Automation, Copernicus Project 312, European Union Commission, 1997: 89-171.

An Introduction to Simulation Using GPSSIH (with Student GPSS/H on an included disk). New York: John Wiley & Sons, Inc., 1991, 437 pp.

The Nature and Role of Simulation in the Design of Manufacturing Systems. Dearborn Ml: Computer and Automated Systems Association (CASA), Society of Manufacturing Engineering, Revised Edition, 1987 (1st Edition, 1986).

Modeling Manufacturing Systems with GPSS. Dearborn Ml: Computer and Automated Systems Association (CASA), Society of Manufacturing Engineering, 1986.

Fundamental Use of the Michigan Terminal System, 5th Edition (revised). Ann Arbor Ml: Ulrich's Books, Inc., 1983, 376 pp.

Proceedings of the 1976 Bicentennial Winter Simulation Conference, Vols. 1 and 2 (edited with Harold J. Highland and Robert G. Sargent). New York: ACM, Special Interest Group for Simulation (SIGSIM), 1976.

Simulation Using GPSS. New York: John Wiley & Sons, Inc., 1974, 533 pp.

(Solutions Manual, 1975; Transparency Masters, 1975; Russian-language edition, Moscow: Mashinostroyenie Press, 1980)

Simulation Using GPSS (Russian language translation). Moscow: Mashinostroyenie Press, 1980, 533 pp.

Proceedings of the 1976 Bicentennial Winter Simulation Conference, Vols. 1 and 2 (co-edited with Harold J. Highland and Robert G. Sargent). New York: ACM, 1976.

Simulation Using GPSS. New York: John Wiley & Sons, Inc., 1974, 533 pp.
(Solutions Manual, 1975; Transparency Masters, 1975)

FORTRAN Applications in Business Administration, Vol. III (co-edited with Laurence A. Madeo). Ann Arbor: The University of Michigan, 1973, 312 pp.

“GPSS – a Special-Purpose Language for Modeling Queuing Systems,” Chapter 12 in: *Systems Analysis: A Computer Approach to Decision Models,* by Claude McMillan and Richard F. Gonzalez, Homewood, Illinois: Richard D. Irwin, Inc., 1973: 280-356.

Fundamentals of Flowcharting (Spanish language translation). New York: John Wiley & Sons, Inc., 1971, 127 pp.

FORTRAN Applications in Business Administration, Vol. II (co-edited with Laurence A. Madeo). Ann Arbor: The University of Michigan, 1971, 530 pp.

Overhead Projector Lectures for Fundamentals of Flowcharting, New York: John Wiley & Sons, Inc., 1970, 159 pp.

FORTRAN Applications in Business Administration, Vol. I (co-edited with Laurence A. Madeo). Ann Arbor: The University of Michigan, 1970, 225 pp.

FORTRAN Case Studies for Business Applications. New York: John Wiley & Sons, Inc., 1969: 98 pp.

Fundamentals of Flowcharting. New York: John Wiley & Sons, Inc., 1969, 127 pp.

RESEARCH INTERESTS

My major interest area is discrete-event simulation, which is a methodology for building computer-based models of systems and then conducting experiments with the models to make inferences about the behavior of the systems being modeled. (Simulation is used to design complex systems that are not amenable to complete mathematical analysis, such as manufacturing systems, logistics systems, and information systems.) Simulation encompasses a broad set of activities, including the design and implementation of modeling languages; the verification and validation of models; the visualization of systems through the animation of models; the analysis of input (data) to simulation models; statistical design of experiments; statistical analysis of output; the education of simulation modelers and simulation consumers; and the effective “selling” of simulation results to high-level decision makers. Within this broad arena, some of my activities include or have included: the logical foundations of simulation software; the implementation of variance-reduction techniques in the design of models; simulation applications in the design and control of manufacturing and transportation systems; automation of output analysis; automatic model generation; the writing of simulation textbooks; and the use of Web-based tools in simulation education.