SEPTEMBER 2007

JOHN N. WARFIELD: SHORT RESUME

PRESENT POSITION: Retired, University Professor Emeritus, George Mason University; President of Integrative Sciences (formerly a Florida corporation, unincorporated effective 2005) President of AJAR Publishing Company, a subsidiary of Integrative Sciences, Inc.

PREVIOUS POSITION. John N. Warfield was University Professor and Director of the Institute for Advanced Study in the Integrative Sciences (IASIS) at George Mason University, a state university, in Fairfax, Virginia. IASIS was a part of the Institute of Public Policy (TIPP) at George Mason University.

ACADEMIC DEGREES. He received the Bachelor of Arts (honors, mathematics), Bachelor of Science in Electrical Engineering (honors), and Master of Science in Electrical Engineering from the University of Missouri, Columbia, Missouri, in 1948, 1948, and 1949, respectively.

He received the Doctor of Philosophy degree from Purdue University, West Lafayette, Indiana, in 1952. His major was electrical engineering with a specialty in communications engineering.

ACADEMIC EXPERIENCE. He has over 40 years of university faculty service, 2/3 being in departments of electrical engineering, at the following universities: University of Missouri, Pennsylvania State University, University of Illinois, Purdue University, University of Kansas, University of Colorado, Ohio State University, University of Virginia, and George Mason University. He served as Chairman of the Department of Electrical Engineering at the University of Virginia from 1975 to 1979.

At the University of Virginia, he held the Harry Douglas Forsyth Professorship for eight years. At George Mason University he has held the title University Professor for seventeen years. Throughout his service in Virginia universities, he held the title "Eminent Scholar".

INDUSTRIAL EXPERIENCE He has about 10 years of industrial experience with these firms: Wilcox Electric Company (Director of Research), Battelle Memorial Institute (Senior Research Leader), and Burroughs Corporation (Senior Manager). His longest service in this group was with the Battelle Memorial Institute from 1968 to 1974.

SOCIETIES. He has been elected **President** of the Systems, Man, and Cybernetics Society of the Institute of Electrical and Electronics Engineers, and of the International Systems Sciences Society (formerly called the Society for General Systems Research). He served as **Editor** of the IEEE Transactions on Systems, Man, and Cybernetics from 1968 to 1971, and as founding **Editor-in-Chief** of the one-time Pergamon Press journal Systems Research, during the period 1981-1990. That journal is now called Systems Research and Behavioral Science, and is published by John Wiley.

He is a **Life Fellow** of the Institute of Electrical and Electronics Engineers, and holds both the IEEE Centennial Medal and the IEEE Third Millennium Medal (through the IEEE Systems, Man, and Cybernetics Society).

He is a **Fellow** of the Society for Design and Process Science.

He was a **member** of the Association for Integrative Studies for about a decade.

PUBLICATIONS AND INVENTIONS. He is the author of two U. S. patents on electronic equipment, and the inventor of Interpretive Structural Modeling, Interactive Management, Generic Design Science, and his own defined version of systems science (per his 2006 book titled AN INTRODUCTION TO SYSTEMS SCIENCE – World Scientific Publishers).

He is the sole author of several books, co-author of another, and co-translator of one book from German. He is the author or co-author of about 120 papers and many reports.. The subjects of these books and articles include computers, software,

systems, organizations, electrical networks, interactive management, and generic design science. His most recent books include A SCIENCE OF GENERIC DESIGN: MANAGING COMPLEXITY THROUGH SYSTEMS DESIGN, Second Edition, Ames, IA: Iowa State University Press 1994. In the same year (1994), Iowa State University Press also published the book A HANDBOOK OF INTERACTIVE MANAGEMENT, co-authored with Professor Roxana Cárdenas. In 2002 he published a book titled UNDERSTANDING COMPLEXITY: THOUGHT AND BEHAVIOR In 2003, he published THE MATHEMATICS OF STRUCTURE (taken from his 1976 book) His 2006 book is mentioned above..

CONSULTING AND PUBLIC SERVICE. He has served as a consultant to these corporations: IBM Corporation, Comsat Corporation, Ford Motor Company, Niagara-Mohawk Power Company, and Northern Telecom Corporation.

He has also served as consultant to the Saudi Arabian National Center for Science and Technology, the American Association for the Advancement of Science, the Technology Transfer Centre of the Council for Scientific and Industrial Research of Ghana, and the Lorain (Ohio) County Community College.

In 2000 he donated much of his extensive research library which was appraised at $1.6 million to the Fenwick Library at George Mason University, Fairfax, VA, at their request, where it is now titled "Warfield Special Collection" and the list of contents can be see at this web site:

http://www.gmu.edu/library/specialcollections/warfield.htm

INTERNATIONAL PRESENTATIONS. He has made presentations on his research results in Argentina, Brazil, Canada, China, Ghana, India, Japan, Mexico, Portugal, Saudi Arabia, and the Federal Republic of Germany. These included short courses in the Federal Republic of Germany, India, Mexico, Argentina, and Saudi Arabia. Most recently, he lectured at ITESM in Monterrey, Mexico, in the first week of March, 2004.

SPONSORED RESEARCH. In addition to the research carried out as part of his regular assignments, he has supervised and/or directed and/or carried out sponsored projects paid for by the following organizations: U. S. National Science Foundation, Saudi Arabian National Center for Science and Technology, U. S. Office of Environmental Education, Department of Defense (Office of the Under Secretary for Acquisition), Defense Systems Management College, National Computer Graphics Association, Agricultural Research Service, Fairfax Chamber of Commerce, Environmental Protection Agency, Naval Air Development Center, National Forest Service, National Marine Fisheries Service, Food and Drug Administration, Public Technology, Defense Advanced Research Projects Agency, Alliance of Nursing Organizations, Americans for Indian Opportunity, Associated Catholic Charities, Winnebago Tribe of Indians, American Public Power Association, Institute for Defense Analyses, Poarch Band of Creek Indians, University of Pennsylvania Center for School Study Councils, Naval Surface Warfare Center, IBM Corporation, Comsat Corporation, Instituto Tecnologico y de Estudios Superiores de Monterrey (Mexico), and the Ford Motor Company.

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JOHN N. WARFIELD
EDUCATION and SOCIETY MEMBERSHIPS

University of Missouri, Columbia, Missouri; Bachelor of Arts with Honors (mathematics), 1948, Bachelor of Science in Electrical Engineering with Honors, 1948, Master of Science in Electrical Engineering, 1949

Pennsylvania State University, Army Specialized Training Program, 1944-1946, and graduate study, 1949-51

Purdue University, Doctor of Philosophy, Electrical Engineering, Communications Engineering major, physics minor, 1952

SOCIETIES

Institute of Electrical and Electronics Engineers (IEEE)
Systems Science Committee Member, 1964-1966
Review Editor, IEEE Transactions on Systems Science and Cybernetics, 1966-1967
Editor, IEEE Transactions on Systems, Man, and Cybernetics, 1968-1971
Administrative Committee Member, Second Vice Chairman, and President, Systems, Man, and Cybernetics Society, 1969-1971, 1971, 1972, respectively
Publications Board Member, 1976-1977
Education Medal Committee Member, 1976-1978
Fellow Award, 1977; Life Fellow, 1990
Outstanding Contribution Award, Systems, Man, and Cybernetics Society, 1977
IEEE Centennial Medal Award, 1984
IEEE Third Millennium Medal Award, 2,000

American Society for Engineering Education
Western Electric Fund Award for Excellence in Instruction of Engineering Students (Midwest Section), 1966
Information Systems Commiteee, 1967
Member, 1960-1987

Society for General Systems Research (now called the International Society for Systems Sciences)
Member, 1980-1990
President, 1982

SOCIETIES (CONTINUED)

American Management Associations
Member, 1982-1984

International Federation for Systems Research
Editor-in-Chief, Systems Research, 1981-1990

Association for Integrative Studies,
Member, 1986-2005

Panetics Society
Member, 1993-present

United Kingdom Systems Society
Member, 1985-1988

Society for Design and Process Science,
Member, 1995-2004
Fellow, 1996

Honor Societies
 Member, Tau Beta Pi, 1947-present
 Member, Eta Kappa Nu, 1947-present
 Member, Sigma Xi, 1953-present

Charles S. Peirce Society (1999-present)

International Council on Systems Engineering (INCOSE),
Member 2007
Pioneer Award, June, 2007

RECOGNITION

(1951) Radio Corporation of America, Fellowship in Electronics

(1966) American Society for Engineering Education
> Western Electric Fund Award for Excellence in Instruction of Engineering Students (Midwest Section)

(1974-present) State of Virginia Eminent Scholar
> University of Virginia, 1974-1983
> George Mason University, 1984-present

(1977) IEEE Systems, Man, and Cybernetics Society
> Outstanding Contribution Award

(1977–2000) IEEE
> (1977) Fellow Award
> (1984) Centennial Medal Award
> (1990) Life Fellow Award
> (2000) Third Millennium Medal Award

(1987) Americans for Indian Opportunity, Washington, D. C. Peace Pipe Award

(1988) European Conference on Cybernetics and Systems, Vienna, Austria Best Paper
> Award, Design Symposium, April.

(1993) City of Austin, Texas
> Mayor's Certificate for contributions to International Interactive Symposium, Austin, Texas, June 9-10,

(1994) The Minister of Social Development, The Governor of the State of Guanajuato,
The Guanajuato Foundation for the Twenty-First Century, and the Instituto Tecnologico
y de Estudios Superiores de Monterrey (Campus Leon)
> Plaque of recognition "por sus transcendentales contribuciones al avance cientifico y tecnico mundial y por sus aportaciones para la comprension y enfrentamiento de los problemas sociales complejos", presented in the Auditorium of the State of Guanajuato, March 23.

The International Society for Design and Process Science
> (1995) Special Recognition Award. Plaque of recognition "For Significant Contributions in the Area of System Design"Austin, Texas, December 6-9, 1995 (at the First Annual Meeting of the Society).
> (1996) Fellow Award

IEEE Systems,Man,andCyberneticsSociety The Joseph G. Wohl Award (the highest award given by the SMC Society), Oct., 2006.

Listings
> American Men and Women of Science
> Who's Who in the Computer Field
> Who's Who in Engineering
> Who's Who in Frontier Science and Technology
> Who's Who in America
> Who's Who in the World

United Cultural Convention
> International Peace Prize ("to celebrate the work of individuals who are achieving results across political, religious, business and ethnic divisions, to the greater good of society"), 2006

International Biographical Centre
> 2000 Outstanding Scientists of the Twentieth Century, 2nd. Ed.
> 1000 Founders of the 21st Century
> Achievement in Science Award 2004
> Archimedes Award, 2006

INCOSE Pioneer Award, 2007. It is not entirely clear why, since my research has been on systems science since 1968, which is not quite the same as systems engineering.

The INCOSE Pioneer Award is presented annually to one distinguished individual or team, who by their achievements in the engineering of systems, has contributed uniquely to major products or outcomes enhancing society or its needs. The criteria may apply to a single outstanding outcome or a lifetime of significant achievements in effecting successful systems.

The Pioneer Award recognizes outstanding pioneer-applications of Systems Engineering in the development of successful products or services of benefit to society. Examples include applying systems engineering principles to unique, highly complex problems; the successful application of systems engineering to brand new market segments and outstanding examples of advancing the state of the art and /or practice of systems engineering beyond its current bounds.

CITATION:

"John Warfield is widely recognized as the father of systems science. He has been an educator, a research scientist in complex systems and organizational dynamics, and a leader in integrating an extensive body of research into an organized hierarchy of systems sciences. Dr. Warfield and his colleagues analyzed complexity and human cognition for over forty years and developed the founding relationships for the still-emerging systems science discipline that underpins significant portions of modern systems engineering. His rich body of work embodies analytical methods and frameworks, behavioral science and philosophies that formalize our understanding of complexity in our world." June 26, 2007

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JOHN N. WARFIELD
EXPERIENCE

<u>ACADEMIC EXPERIENCE</u>

University of Missouri, Columbia, Missouri
Instructor of Electrical Engineering, 1949

Pennsylvania State University, University Park, Pennsylvania
Instructor of Electrical Engineering, 1949-1951
Assistant Professor of Electrical Engineering, 1952-1953
Associate Professor of Electrical Engineering, 1953-1955

University of Illinois, Urbana, Illinois
Assistant Professor of Electrical Engineering, 1955-1956
Associate Professor of Electrical Engineering, 1956-1957

Purdue University, West Lafayette, Indiana
Associate Professor of Electrical Engineering AND
        Associate Director of the Purdue Computer Laboratory, 1957-1958

University of Kansas, Lawrence, Kansas
Associate Professor of Electrical Engineering, 1958-1959
Professor of Electrical Engineering, 1959-1966

University of Colorado, Boulder, Colorado
Visiting Professor of Electrical Engineering, Summer, 1965

The Ohio State University, Columbus, Ohio
Adjunct Professor of Electrical Engineering, 1966-1973

University of Virginia, Charlottesville, Virginia
Chairman, Department of Electrical Engineering, 1974-1978
Harry Douglas Forsyth Professor of Electrical Engineering, 1974-1983
Director, Center for Interactive Management, 1981-1982

University of Northern Iowa, Cedar Falls, Iowa
Visiting Professor of Management, 1980-1981

George Mason University, Fairfax, Virginia
University Professor, 1984-2000
University Professor Emeritus, 2000-present
Director, Institute for Information Technology, 1984-1986
Director, Institute for Advanced Study in the Integrative Sciences, 1987-1999

Honorary Professor, China University of Mining and Technology, 2001-present

CONSULTING EXPERIENCE

Ordnance Research Laboratory, Pennsylvania State University, 1949-1955

HRB, Inc., State College, Pennsylvania, 1953-1955

Ramo-Wooldridge Corporation, Summer, 1956; Summer, 1957

Sylvania Electric Systems, Summer, 1959; Summer, 1960

Prentice-Hall, 1958-1973

Vendo Company, 1960-1963

Wilcox Electric Company, 1963-1964

Xebec Corporation, 1964

Lecturer, American Management Associations, Senior Management Program, 1974-1976

United Technologies Corporation, 1976

Far West Laboratory for Educational Research and Development, San Francisco, 1979-1981

IBM Corporation (Armonk, NY), 1979-1982

Comsat, Summer, 1981

Saudi Arabian National Center for Science and Technology, 1981-1982

American Association for the Advancement of Science, 1983

Technology Transfer Centre, C.S.I.R., Ghana, 1989-1992

Niagara-Mohawk Power Company, Syracuse, New York, Nuclear Division, 1989

Lorain County (Ohio) Community College, 1989

Instituto Tecnologico y de Estudios Superiores de Monterrey, Mexico, 1990

Northern Telecom, 1990

INDUSTRIAL EXPERIENCE

Wilcox Electric Company, Kansas City, Missouri
Director of Research, 1965-1966

His duties primarily related to the design and manufacture of the Wilcox Electric 807 VHF Transceiver. This is the first known VHF transceiver for large jet airplanes that incorporated electronic tuning, controlled by analog function generators that transform frequency settings into varactor bias current which, in turn, adjusts the capacitance of the tuned circuits to cause the filter band center to shift in response to the frequency input setting. Subsequently, this feature allowed the use of VHF reception in pilotless aircraft, with reception

remotely controlled. His contributions to this project included the design of the antenna filter, the design of the frequency synthesizing system, the design of the function generator for producing the electronic tuning voltage, consulting with other design engineers on other parts of the design, supervising the environmental testing, analysis of environmental test results, and directing changes to upgrade the reliability of the transceiver.

In addition, he invented and patented a "digital squelch system", and was the principal inventor of the electronic goniometer circuit that was developed to replace the mechanical goniometer used in the VHF Omnirange electronic navigation system throughout the United States and elsewhere. This patented system eliminated such problems as bearing wear that degraded the accuracy of the mechanical system, as well as the requirement to mechanically file rotating capacitors during production to obtain the precision required for this vital part of the air navigation system. (The state of the art of varactors at the time this invention went into service precluded its use in the 50-watt omnirange system, but allowed its immediate application in 10-watt systems placed in service at small airports.)

Battelle Memorial Institute, Columbus, Ohio
Senior Adviser, 1966-1970
Senior Research Leader, 1971-1974

His duties primarily involved (a) conducting publishable research on the science base for Battelle's Science and Public policy program and (b) serving as executive secretary of the joint Battelle-Ohio State University Committee for planning and implementing the Academy for Contemporary Problems, an institution charged with finding ways to resolve major social issues through systematic, science-based activity. In addition, he conducted internal workshops on systems engineering, and assisted the corporate office in liaison with the Frankfurt and Geneva Battelle Laboratories.

Burroughs Corporation, Detroit, Michigan
Senior Manager, University Sponsored Research Program,
l983-1984

His duties involved (a) developing and managing the program whereby Burroughs Corporation signed agreements with universities through which Burroughs would furnish supermicroprocessors (B-20 machines) and related items such as printers and software to universities, and the universities in turn agreed to develop specific software for educational use of these machines that would be owned by Burroughs, and (b) assisting in the development of that part of the corporate strategic plan that related to the educational market.

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J. N. WARFIELD

PUBLICATIONS-Part 1-Books, Bibliographies, Patents

BOOKS

Knausenberger, G. E. and J. N. Warfield (1958), **Synthesis of Linear Communications Networks** (New York: McGraw-Hill. [Translation from German of the classic work <u>Theorie der Linearen Wechselstromschaltungen</u> by Wilhelm Cauer, originally publ. by Springer Verlag]

Warfield, J. N.(1959), **Introduction to Electronic Analog Computers,** Englewood Cliffs: Prentice-Hall.

Warfield, J. N. (1963), **Principles of Logic Design**, Boston: Ginn and Company.

Warfield, J. N. and J. D. Hill (1972), **A Unified Systems Engineering Concept**, Columbus, OH: Battelle Memorial Institute (Monograph #1).

Warfield, J. N. (1973), **An Assault on Complexity**, Columbus, OH: Battelle Memorial Institute (Monograph #3)

Warfield, J. N. (1974), **Structuring Complex Systems**, Columbus, OH: Battelle Memorian Institute (Monograph #4)

Warfield, J. N. (1976, 1989, 1993, part in 2003), **Societal Systems: Planning, Policy, and Complexity**, New York: Wiley Interscience, 1976 [reprinted in paperback--Salinas, CA: Intersystems, 1989] [Chinese translation published in 1993, directed by Professor Zhang Bihui, Chairman of the Wuhan Science and Technology Commission, and Director of The Administrative Office of Wuhan East Lake High Technology Development Zone; publisher is the Hubei Science and Technology Press, Wuhan, Hubei Province, China]

Warfield, J. N. (1990, 1994), **A Science of Generic Design: Managing Complexity Through Systems Design,** Salinas, CA: Intersystems, 1990 (two volume soft-cover set); Second Edition published by Iowa State University Press, Ames, IA, 1994 as a hard-cover single volume. Translated into Chinese–Xuefeng Song and students at the Chinese University of Mining and Technology, 2006.

Warfield, J. N. and A. Roxana Cárdenas (1994), **A Handbook of Interactive Management** published by Iowa State University Press, Ames, IA.

Warfield, J. N. (2002), **Understanding Complexity: Thought and Behavior**, published by AJAR Publishing Company, Palm Harbor, FL 2002.

Warfield, J. N. (2003), **The Mathematics of Structure**, published by AJAR Publishing Company, Palm Harbor, FL.

John N. Warfield (2004), **A Guide to the John N. Warfield Collection: Special Collections and Archives,**. George Mason University, 2nd Edition, Palm Harbor, FL: Ajar Publishing.

John N. Warfield (2006), **An Introduction to Systems Science**, Singapore: World Scientific Publishers.

BIBLIOGRAPHIES

Warfield, J. N., **Annotated Bibliography: Interpretive Structural Modeling and Related Work,** Fairfax, VA: IASIS, 1990, 131 pages (first edition was made available by the Department of Electrical Engineering at the University of Virginia in 1980).
Warfield, J. N., **Annotated Bibliography: Generic Systems Design and Interactive Management,** Fairfax, VA: IASIS, 1990, 141 pp.
BIBLIOGRAPHIES (continued)

Warfield, J. N., **Mathematics of Interpretive Structural Modeling,** 1992,

Warfield, J. N., **Annotated Bibliography: IASIS Products: 1993-1996,** 1996, 14 pages.

Warfield, J. N., **Warfield Publications on Computers** (1996)

Warfield, J. N., **Annotated Bibliography: Complexity Research** (1996), 37 pages.

Warfield, J. N., **IASIS Inventory** (1997), 100+ pages

Warfield, J. N., **The IASIS File: A Bibliography of Books and Papers Relevant to Complexity, Organizations, and Design,** Fairfax, VA: IASIS, 1994.

PATENTS

"Double Bridge Network for Producing Signals Having a Modulation Envelope Phase Difference", U. S. Patent Number 3,328,798 dated June 27, 1967, with G. M. Gooch and J. R. Hogan, assigned to Wilcox Electric Company.

"Digital Squelch System", U. S. Patent Number 3,437,937, dated April 8, 1969, assigned to Wilcox Electric Company.

PAPERS, BOOKS, AND MONOGRAPHS (1953-1965, this page)

Warfield, J. N. and D. L. Waidelich, **"A Table of Steady-State Transforms"**, University of Missouri Bulletin, Research Report Number 1, 1953.

Truxal, J. G. and J. N. Warfield, **"Synthesis of a Dynamically-Variable Electronic Filter"**, Proceedings of the National Electronics Conference, 8, 1953, 419-426.

Warfield, J. N., **"Little-Known Facts About Big Computer Developments"**, Pennsylvania State University Engineering Review, December, 1953, 68ff.

Warfield, J. N., Systems Engineering, United States Department of Commerce PB111801, 1956.

Warfield, J. N., **"Optimum Diagnostic Sequences for Systems With One Faulty Element"**, University of Illinois Control Systems Laboratory Report M-67, February, 1957.

Warfield, J. N., **"How to Improve Systems Engineering"**, Aeronautical Engineering Review, 16(7), July, 1957, 50-51.

Warfield, J. N., **"A Note on the Reduction of Switching Functions"**, Transactions of the IRE PGEC-7(2), June, 1958.

Warfield, J. N., **"Switching Circuits as Topological Models in the Discrete Probability Theory"**, Transactions of the IRE PGEC-7(3), September, 1958.

Butler, K. J. and J. N. Warfield, **"A Digital Computer Program for the Reduction of Logical Statements to Minimal Form"**, Proceedings of the National Electronics Conference, 1959, 456-466.

Warfield, J. N. and L. E. Weaver, **"Cut-Product Approximants for Time Delay in Electronic Analog Computers"**, Proceedings of the Southwest IRE Conference, April, 1959, 16.

Warfield, J. N., Solution Manual for 'Principles of Logic Design', Boston: Ginn and Company, 1963.

Warfield, J. N., and G. M. Gooch, **"A Precision Electronic Goniometer"**, Proceedings of the National Electronics Conference, 1965, 174-179.

Warfield, J. N., **"Corrective Systems for Minimizing TACAN-DME Spurious Radiation"**, IEEE Transactions on Aerospace and Navigation Engineering, 12, March, 1965, 89-90.

PAPERS, BOOKS, AND MONOGRAPHS (1965-1973, this page)

Warfield, J. N., **"Synthesis of Switching Circuits to Yield Prescribed Probability Relations"**, 1965 IEEE Conference Record on Switching Circuit Theory and Logical Design, Ann Arbor, MI, October, 1965, 303-309.

Warfield, J. N., and T. Channel, **"Spurious Signal Amplitudes in High-Frequency Transistor Mixers"**, Proceedings of the IEEE Mid-America Electronics Conference, November, 1965, 9I-95.

Warfield, J. N., and P. Lally, **"Comment on 'Corrective System for Minimizing TACAN-DME Spurious Radiation'"**, IEEE Transactions on Aerospace and Navigation Engineering, ES(2), September, 1966, 616-618.

Warfield, J. N., **"Switching Networks as Models of Discrete Stochastic Processes"**, in Applied Automata Theory, J. Tou (Ed.), Chapter 4, New York: Academic Press, 1968, 81-123.

House, R. W. and J. N. Warfield, **"What is System Planning?"** Automatica 5, 1969, 151-157.

Warfield, J. N., **"Modulation Measurements--Theory and Technique"**, IEEE Transactions on Instrumentation and Measurement, IM-18, June, 1969, 139-144.

Warfield, J. N. and J. D. Hill, **"The DELTA Chart: A Method for R&D Project Portrayal"**, IEEE Transactions on Engineering Management EM-18(4), November, 1971, 132-139.

Warfield, J. N. and J. D. Hill, et al, A Unified Systems Engineering Concept, Columbus: Battelle Memorial Institute, Monograph Number One, June, 1972.

Warfield, J. N., **"Participative Methodology for Public System Planning"**, Proceedings of an International Symposium on Systems Engineering and Analysis, West Lafayette: Purdue University, October, 1972, 23-40 . [reprinted in Computers and Electrical Engineering 1(1), 1973, 187-210, by invitation of the Editor]

Hill, J. D. and J. N. Warfield, **"Unified Program Planning"**, IEEE Transactions on Systems, Man, and Cybernetics SMC2(5), November, 1972, 610-621.

Warfield, J. N., **"On Arranging Elements of a Hierarchy in Graphic Form"**, IEEE Transactions on Systems, Man, and Cybernetics, March, 1973, 121-132.

PAPERS, BOOKS, AND MONOGRAPHS (1973-1975, this page)

Warfield, J. N., **"Intent Structures"**, IEEE Transactions on Systems, Man, and Cybernetics, March, 1973, 133-140.

Warfield, J. N., **An Assault on Complexity**, Columbus: Battelle Memorial Institute, Monograph No. 3, April, 1973.

Warfield, J. N., **"Binary Matrices in Systems Modeling"**, IEEE Transactions on Systems, Man, and Cybernetics, September, 1973, 441-449.

Warfield, J. N., **"Constructing Operational Value Systems for Proposed Two-Unit Coalitions"**, Proceedings 1973 IEEE Conference on Decision and Control, 204-213.

Warfield, J. N., **"Developing Subsystem Matrices in Structural Modeling"**, IEEE Transactions on Systems, Man, and Cybernetics, January, 1974, 74-80.

Warfield, J. N., **"Developing Interconnection Matrices in Structural Modeling"**, IEEE Transactions on Systems, Man, and Cybernetics, January, 1974, 81-87.

Warfield, J. N., **Structuring Complex Systems**, Columbus: Battelle Memorial Institute Monograph No. 4, April, 1974.

Warfield, J. N., **"Toward Interpretation of Complex Structural Models"**, IEEE Transactions on Systems, Man, and Cybernetics, September, 1974, 405-417.

Warfield, J. N., **"An Interim Look at Uses of Interpretive Structural Modeling"**, Research Futures, Third Quarter, 1974.

El Mokadem, Ahmed, J. N. Warfield, D. Pollick, and K. Kawamura, **"Modularization of Large Econometric Models: An Application of Structural Modeling"**, Proceedings of the 1974 IEEE Conference on Decision and Control, November, 1974, 683-692.

Warfield, J. N., **"Transitive Interconnection of Transitive Structures"**, Proceedings of the 6th Pittsburgh Conference on Modeling and Simulation, Pittsburgh: Instrument Society of America, April, 1975.

Warfield, J. N., **Improving Behavior in Policymaking,** Approaches to Problem Solving, No. 2, Columbus: Academy for Contemporary Problems, August, 1975.

Warfield, J. N., **Totos: Improving Group Problem-Solving**, Approaches to Problem Solving, No. 3, Columbus: Academy for Contemporary Problems, August, 1975.

PAPERS, BOOKS, AND MONOGRAPHS (1975-1979, this page)

Warfield, J. N., H. Geschka, and R. Hamilton, **Methods of Idea Management**, Approaches to Problem Solving No. 4, Columbus: Academy for Contemporary Problems, August, 1975.

Warfield, J. N., **"Profiles of Metapolicy"**, Proceedings of the 1975 Conference on Cybernetics and Society, September, 1975, 14ff.

Warfield, J. N., **"Implication Structures for System Interconnection Matrices"**, IEEE Transactions on Systems, Man, and Cybernetics, January, 1976, 18-24.

Warfield, J. N., **"Extending Interpretive Structural Modeling"**, Proceedings of the Pittsburgh Conference on Modeling and Simulation, Pittsburgh: Instrument Society of America, 1976, 1163-1167.

Fertig, J.A., and J. N. Warfield, **"Relations and Decision Making"**, Proceedings of the Pittsburgh Conference on Modeling and Simulation, Pittsburgh: Instrument Society of America, 1976, 1177-1181.

Warfield, J. N., **"Crossing Theory and Hierarchy Mapping"**, IEEE Transactions on Systems, Man, and Cybernetics, July, 1977, 502-523.

Warfield, J. N., **"Notes on Conceptual Sciences"**, IEEE Transactions on Systems, Man, and Cybernetics, October, 1978, 744-745.

Warfield, J. N., **"The Interface Between Models and Policymakers"**, Journal of Policy Analysis and Information Systems, 3(1), June, 1979, 53-64.

Warfield, J. N., **"Some Principles of Knowledge Organization"**, IEEE Transactions on Systems, Man, and Cybernetics, June, 1979, 317-325.

Warfield, J. N., **"Systems Oriented Environmental Education"**, Proc. Society for General Systems Research, August, 1979, 797-799. Reprinted in B. H. Banathy, (ed.), Systems Education: Perspective, Programs, Methods. Intersystems Publications, Seaside, CA ,1983, 61-63.

Warfield, J. N., **"Systems Planning for Environmental Education"**, IEEE Transactions on Systems, Man, and Cybernetics, December, 1979, 816-823.

PAPERS, BOOKS, AND MONOGRAPHS (1980-1982, this page)

Warfield, J. N., **"Science and Systems Science: A Technology Perspective"**, Proc. Society for General Systems Research , January, 1980, 212-218.

Warfield, J. N., **"Modeling Management"**, IEEE Transactions on Systems, Man, and Cybernetics, April, 1980, 197.

Warfield, J. N., **"Complementary Relations and Map Reading"**, IEEE Transactions on Systems, Man, and Cybernetics, June, 1980, 285-291.

Warfield, J. N., **"Priority Structures"**, IEEE Transactions on Systems, Man, and Cybernetics, October, 1980, 642-645.

Warfield, J. N., **"A Role for Values in Educational System Design"**, Proceedings 1980 IEEE Conference on Cybernetics and Society, October, 1980, 234-241.

Warfield, J. N., **"Learning Through Model Building"**, in Computer-Assisted Analysis and Model Simplification (H. J. Greenberg and J. Maybee, Eds.), New York: Academic Press, 1981, 69-78.

Warfield, J. N., **"Mapping Environmental Education"**, University of the District of Columbia Graduate Journal 1(1), Fall, 1981, 23-28.

Warfield, J. N., **"Interpretive Structural Modeling"**, Chapter 5 in Group Planning and Problem-Solving Methods in Engineering (S. A. Olsen, Ed.), New York: Wiley, 1982, 155-201.

Warfield, J. N., **"Organizations and Systems Learning"**, General Systems, 27, 1982, 5-74.

PAPERS, BOOKS, AND MONOGRAPHS (1983-1986, this page)

Warfield, J. N., "Comments on B. Golden and A. Assad: 'A Preliminary Framework for Urban Model Building'" in Adequate Modeling of Systems (H. Wedde, Ed.), WestGermany:
Springer, Verlag, 1983, 333-335.

Warfield, J. N., "Selecting Participation Methodologies for Systems Design", Proc. International Conference on Cybernetics and Society, New York: IEEE, January, 1983, 762-764.

Warfield, J. N., "Principles of Interactive Management", Proc. International Conference on Cybernetics and Society, New York: IEEE, January, 1983, 746-750.

Warfield, J. N., "Progress in Interactive Management", Proc. 6th International Congress of the World Organization of General Systems and Cybernetics, Paris: AFCET, 1984, XXIX-XXXV.

Warfield, J. N., "A Model of a Discipline", Proc. of the Systems, Man, and Cybernetics Society, New York: IEEE, 1984, 78-84.

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John N. Warfield (2007), **"Tear Down That Wall"**, submitted to *The Atlantic Monthly*, under review

> **In a nutshell, this article carries this message: politicians almost everywhere are unwilling to tear down the cognitive wall that prevents them from working systematically to resolve the issues that threaten world peace and economic stability; even though the means now exist to demolish that wall. It involves computer assistance in structuring the logic of inference that relates the numerous logic components of the situation.**

John N. Warfield (2007) **"Science to the Second Power"**, A brief proposal for an article sent to *Scientific American*, April 26, 2007.

John N. Warfield (2007), **"The Jekyll-Hyde Congressional Paradox"**, submitted to Cornell University June 29, 2007.

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The Atlantic Monthly
Cornell University
International Council on Systems Engineering
International Journal of Innovative Management

SEPTEMBER 2007

JOHN N. WARFIELD

PRESENTATIONS 1976-1979 on this page

"Compromising the Future: The Problem of Bounding Utility Measures for Technological Endeavors", Annual Meeting, American Association for the Advancement of Science, February 23, 1976, Boston, MA.

"Extending Interpretive Structural Modeling", 7th Annual Pittsburgh Conference on Modeling and Simulation, University of Pittsburgh, April 26, 1976.

"Societal Forces Influencing R&D in the 1980's", Industrial Research Institute Annual Meeting, The Greenbrier, White Sulphur Springs, West Virginia, May 29-June 1, 1977.

"Applying Systems Methodology to Societal Problems", American Association for the Advancement of Science/Society for General Systems Research Annual Meeting, The Mayflower Hote, Washington, D. C., February 13-16, 1978.

"Office of Environmental Education Contracts", The Institute '78 on Environmental Education, Xerox Learning Center, Leesburg, Virginia, September 19, 1978.

"Some Applications of Interpretive Structural Modeling", Industrial Policy Research Institute, Tokyo, Japan, University of Tokyo, November 6, 1978.

"Environmental Education", Virginia Council on Environmental Education, Richmond, Virginia, March 13, 1979.

"Portraying the Complexities of Environmental Education and Strategies for Learning", American Education Research Association Annual Meeting, San Francisco, CA, April 9, 1979.

"History and Applications of Interpretive Structural Modeling", Canadian Operational Research Society, Ontario, May 22, 1979.

"Collective Inquiry Methods", NASA-ASEE Summer Design Workshop on Systems Engineering, Langley Field, Virginia, June 18, 1979.

"Mapping Environmental Education", University of the District of Columbia, August 21, 1979.

PRESENTATIONS (1979-1980 on this page)

"Systems Planning for Environmental Education", IEEE-SMC International Conference on Cybernetics and Society, Denver, Colorado, October 8, 1979.

"War and Peace as a Systems Problem: How Can Technology Help?" IEEE-SMC International Conference on Cybernetics and Society, Denver,Colorado, October 9, 1979.

"Methodology for Large-Scale Systems", a series of workshops in India:

------Tata Management Training Center, Pune, December 12-14, 1979
------Bombay Section of the IEEE, Bombay, December 16-17, 1979
------Bangalore Section of the IEEE, Bangalore, December 18-19, 1979 in collaboration with   Dr. R. W. House of Vanderbilt University and Dr. P. N. Murthy of IIT, Kanpur.

"Learning Through Model Building", Symposium on Computer-Assisted Analysis & Model Simplification, sponsored by U.S. Department of Energy, on March 24, 1980, at University of Colorado, Boulder.

"Workshop on Collective Inquiry Methods", Far West Laboratory for Educational Research and Development, San Francisco, CA, July 21-23, 1980.

"Interdisciplinary Learning Methods", National Science Teachers Association, Pocono Mountains Annual Meeting, August ll, 1980.

"Short Course on Interpretive Structural Modeling", International Conference on Cybernetics and Society, Cambridge, MA, October 8-9, 1980.

"A Role for Values in Educational System Design", IEEE SMC International Confernce on Cybernetics and Society, Systems Man and Cybernetics Society, Boston, MA, October 8, 1980

"Methods for Enhancing Group Productivity", Executive Advisory Council of the School of Business, University of Northern Iowa, Cedar Falls, IA, November 14, 1980.

"Workshop on Consensus Methodologies", Saudi Arabia National Center for Science and Technology, Riyadh, Saudi Arabia, with Dr. Kazuhiko Kawamura of Vanderbilt University and Dr. Robert J. Waller of the University of Northern Iowa, December 13-18, 1980.

PRESENTATIONS (1981-1986, this page)

"Interpretive Structural Modeling", Operations Research Society of America and The Institute of Management Science (ORSA/TIMS) Annual Meeting, Houston, TX, October 13, 1981.

"Consensus Methodologies", Workshop in Bonn, Germany, managed by Carl Cranz Gesellschaft, April 26-28, 1982.

"Interpretive Structural Modeling and the Sigma-4 Process" Workshops in Brazil:
University of São Paulo, São Paulo, Brazil, May 20-21, 1982 IBM Science Center, Brasilia ,
May 27-28, 1982.

"The Process Alternative", Governor's Commission on Virginia's Future, Richmond, Virginia, February 3, 1983.

"Keeping Conflict Resolution in its Place", Case-Western Reserve University, Cleveland, OH, April 29, 1983.

"Organizations and Systems Learning", SGSR Presidential Address. Presented at 27th Annual Meeting Society for General Systems Research, Book-Cadillac Hotel, Detroit, Michigan on May 26, 1983.

"Progress in Interactive Management", World Congress on General Systems and Cybernetics, Paris, France, September, 1984.

"A Model of a Discipline", IEEE International Conference on Systems, Man and Cybernetics, Halifax, Nova Scotia, October, 1984.

"Structural Analysis of a Computer Language", l7th Southeastern Symposium on Systems Theory, Auburn University, Auburn, AL, March 26, 1985.

"Some Laws and Principles of Design", l985 Annual Meeting, Society for General Systems Research, Los Angeles, CA, May, 1985.

"On the Choice of Frames for Systems Studies", 1985 Annual Meeting, Society for General Systems Research, Los Angeles, CA, May, 1985.

"A Typology of Laws", Annual Meeting, American Society for Cybernetics, Virginia Beach, VA, February, 1986.

"Cooperative Nonaccountability in Organizations", Annual Meeting, American Society for Cybernetics, Virginia Beach, VA, February, 1986.

<u>PRESENTATIONS (1986-1988, this page)</u>

"Education in Generic Design", SGSR Annual Meeting, University of Pennsylvania, May, 1986.

"The Domain of Science Model: Evolution and Design", SGSR Annual Meeting, University of Pennsylvania, May, 1986.

"Interactive Management and its Applications", faculty retreat for the Defense Systems Management College, Airlie House, Virginia, 1986.

"Dimensionality", IEEE SMC Annual Meeting, Atlanta, GA, October, 1986.

"Micromathematics and Macromathematics", IEEE SMC Annual Meeting, Atlanta, GA, October, 1986.

"The Magical Number Three--Plus or Minus Zero", 1987 Annual Meeting, SGSR, Budapest, Hungary, June, 1987.

"Implications of Scale for Systems Design", 1987 Annual Meeting, SGSR, Budapest, Hungary, June, 1987.

"What Disciplines Large-Scale Systems Design?", International Congress on Design, Planning, and Theory, American Society Mechanical Engineers (ASME), Boston, MA, August, 1987.

"A Complexity Metric for High-Level Software Languages", IEEE SMC Conference, Alexandria, VA, October, 1987.

"Systems Groups Around the World", Annual Meeting, Association for Integrative Studies, Pennsylvania State University, November, 1987.

"Influences", a series of seminars aimed at identifying semi-forgotten influences from the past on our present ways of thinking and acting, George Mason University, 1987-88 academic year.

"Methods for Working With Complexity", Polytechnic Institute of Mexico, Mexico City, Mexico, week of January 2, 1988.

PRESENTATIONS (1988-1989, this page)

"On the Design of Language for Systems Design", European Conference on Cybernetics and Systems, University of Vienna, April, 1988 [presentation and paper won the award for the best paper in the Design Symposium]

"Criteria for a Science of Design", 19 Annual Pittsburgh Conference on Modeling and Simulation, University of Pittsburgh, May, 1988.

"Technomyopia Threatens our National Security", Washington Section of the Institute of Electrical and Electronics Engineers, Joint Chapters on Computers and Social Implications of Technology, Washington, D. C., June 22, 1988.

"Universal Priors to Science: How the Liberal Arts Could Revitalize Science", Annual Meeting, Association for Integrative Studies, University of Texas at Arlington, Arlington, TX,
October, 1988.

"Findings and Recommendations for the Continuing Development of Ghana", Quarterly meeting of the Board of the Council for Scientific and Industrial Research, Accra, Ghana, Jan. 18, 1989.

"Systems Engineering: Methodology for Large-Scale-System Design", Howard University joint NASA-Electrical Engineering Seminar, February 28, 1989.

"Underconceptualization", Conference on Mutual Uses of Cybernetics & Science, University of Amsterdam, March, 1989

"Design Science: Need, Basis, Discipline, and Application to Large System Design", American Society for Engineering Education, Lincoln, Nebraska, June 26, 1989.

"Artificial Philosophy and the Decline of Technology", Lisbon International Symposium on Communication, Meaning, and Knowledge versus Information Technology, September 15, 1989.

"Valid and Spurious Conflict Resolution Theory", a Colloquium sponsored by the Center for the Study of Race and Ethnic Relations, George Mason University, with Joseph Gittler and Kenneth Boulding, November 1, 1989.

"The Great University", a seminar series held at George Mason University, 1989-90 academic year to explore the concept of what would constitute a great university, and how such an institution might be established.

"The Management of Complexity Through Systems Design", ITESM (Instituto Tecnologico y de Estudios Superiores de Monterrey), a workshop presented during the week December 11-15, 1989, Monterrey, Mexico.

PRESENTATIONS (1990-1992, this page)

"Success Factors in Technology Transfer for Developing Nations", Quarterly meeting of the Board of the Technology Transfer Centre, Council for Scientific and Industrial Research, Accra, Ghana, January 16, 1990.

"Twelve Laws of Systems Design", Fourth International Symposium on Industrial Engineering and Systems, ITESM (San Luis Potosi), San Luis Potosi, Mexico, April 4, 1990.

"Design Theory and Methodology Symposium", co-organized by Dr. Scott Staley of Ford Motor Company Research Laboratories and John N. Warfield. Dearborn, MI, May 7-8, 1990. Emphasis was on how manufacturing firms can enhance their total quality management through the use of Interactive Management based in the Science of Generic Design.

"Economics and Systems Science", International Congress on Cybernetics and Systems, Hunter College of CUNY, New York City, June 15, 1990.

"Decision Support Center Requirements", A presentation to faculty and staff of Defense Systems Management College, Ft. Belvoir, VA, September 5, 1990.

"On Language Components for Integrative Studies", Asssociation for Integrative Studies Annual Meeting, St. Anselm College, Manchester, New Hampshire, November 1-4, 1990.

"Translating the Theory of the Science of Generic Design into Practice", Instituto Tecnologico y de Estudios Superiores de Monterrey, Monterrey, Industrial and Systems Engineering Department Seminars, December 10 and 11, 1990.

"Complexity and Cognitive Equilibrium: Experimental Results and Their Implications", presented at the Annual Meeting, American Association for the Advancement of Science, Washington, D. C., February 19, 1991.

"Overview of Generic Design Science and Interactive Management", National Center for Manufacturing Sciences, Ann Arbor, Michigan, October 22, 1991.

"Overview of Generic Design Science and Interactive Management", University of Michigan-Dearborn, School of Engineering, February 18, 1992.

"Science and Society", a series of invited seminars presented in Buenos Aires, Argentina, arranged by the Asociacion Argentina de Teoria General de Sistemas y Cibernetica (The Argentine Association for General Systems Theory and Cybernetics),
-----**"Systemic Design: Organizing Systems Thinking for Human Purposes"**, University of Palermo, April 6, 1992.
-----**"The Management of Complexity: Organizations and Processes"**, University of Buenos Aires, April 7, 1992.
-----**"Economic Development: Comparative Multi-National Assessment of the Critical Role of the Research Institute"**, University of Buenos Aires, April 8, 1992.
-----**"Perspectives on Language as an Integrative Social Force"**, University of Buenos Aires, April 9, 1992.
-----**"The Philosophy of Science According to Charles S. Peirce"**, The Labor Court Building, April 10, 1992.

PRESENTATIONS (1992-1993, this page)

"The Mathematics of Modeling: Organizing and Interpreting Language and Knowledge", one-week course for the Center of Academic Excellence, Instituto Tecnologico y de Estudios Superiores de Monterrey, Monterrey, Mexico, July 27-31, 1992.

"The Learning Organization: Its Relevance to Policymaking", presented October 8, 1992, in the Colloquium of the Institute of Public Policy, George Mason University.

"Some Magnificent Academic Trusels and Their Social Consequences", presented at Pomona, CA, November 20th, 1992, at the Annual Meeting of the Association for Integrative Studies

"The Mathematics of Modeling: Organizing and Interpreting Language and Knowledge", one week course for The Institute of Public Policy, George Mason University, January 18-22, 1993.

"Clanthink", lecture presented at the Bell Northern Research Laboratory, Ottawa, Canada, June 3, 1993.

"Interactive Management", lectures presented at the International Interactive Symposium, Austin, TX, June 9, 1993.

"Generic Design", lecture presented to the Monterrey Section of the Institute of Electrical and Electronics Engineers, Monterrey, Mexico, June 29, 1993

"Science of Generic Design", lectures presented at the Instituto Tecnologico y de Estudios Superiores de Monterrey, Monterrey, Mexico, June 21-July 2, 1993

"Criteria for Structural Thinking", presentation at the 15th Annual Meeting, Association for Integrative Studies, Detroit, MI, October, 8, 1993

"Structural Thinking and Interactive Management", A one-week course presented at the Bell Northern Research Laboratories, Ottawa, Canada, November 22-26, 1993, in collaboration with A. Roxana Cárdenas.

PRESENTATIONS (1994, this page)

"Comments on Two Future-Related World Issues", invited talk presented at the First Interloquium on the Twenty-First Century, Guanajuato, Mexico, March 21, 1994.

"Structural Thinking and Interactive Management", a one-week course presented for The Institute of Public Policy and the Computer Aided Logistics Shared Resource Center Network, George Mason University, June 6-10, 1994, in collaboration with A. Roxana Cárdenas.

"Spreadthink", presented at the 16th Annual Meeting, Association for Integrative Studies, Duquesne University, Pittsburgh, PA, September 30, 1994

"Accelerating Productivity of Intellectual Organizations by Systems Methodologies", invited talk presented at the Association of Industrial Engineers (Mexico) Industrial and Systems Engineering Symposium, Mexico City, D.F., Mexico, October 22, 1994.

"Accelerating Productivity of Intellectual Organizations by Systems Methodologies", invited talk presented at the Science and Technology Agency of Japan Symposium on "Intellectual Facilitation of Creative Activities", Session on Management Support Systems for R &D Organizations, University of Tokyo, Miel Parque Tokyo, November 15, 1994.

"Trends of Systems Science and Technology", invited lecture at the Hitachi Systems Development Laboratory, Kawasaki, Japan, November 16, 1994.

PRESENTATIONS (1995 AND 1996, this page and next)

"Structural Thinking and Interactive Management", a three-day short course presented for graduate students in The Institute of Public Policy, George Mason University, January 9-11, 1995 [with collaboration of Dr. Scott M. Staley, Ford Research Laboratory, Dearborn, MI.]

"Demands of Complexity on Higher Education", seminar presentation at George Washington University Center for Social and Organizational Learning, March 28, 1995.

"Interactive Management", presentation to members of the Brucheum Society, home of Tom Burke, 6003 Nassau Drive, Springfield, Virginia, March 29, 1995.

"Demands of Complexity on Higher Education", presentation at the Colloquium of The Institute of Public Policy, George Mason University, April 6, 1995.

"A Panel of Philosophers and a Poet", invited presentation at the Headquarters of the United States Food and Drug Administration, Rockville, Maryland, for the Center for Drug Evaluation and Research, April 18, 1995.

"Complexity and Drummers", a five-day short course presented at George Mason University for industrial researchers and graduate students in The Institute of Public Policy [with collaboration of Dr. Scott M. Staley, Ford Research Laboratory, Dearborn, MI; and D. E. A. Roxana Cárdenas, Department of Systems Engineering, Monterrey Institute of Technology, Monterrey, Mexico] in Fairfax Virginia, June 5-9, 1995.

"Interactive Management", Headquarters, United States Army Research Office, Adelphia Maryland, June 15, 1995.

"Interactive Management", Ford Motor Company of Europe, Warley, United Kingdom, July 5, 1995.

"Demands Imposed on Systems Science by Complexity", plenary presentation at the Fourth Annual Meeting, United Kingdom Systems Society, University of Humberside, Kingston-on-Hull, United Kingdom, July 14, 1995.

"Interactive Management", two half-days of lecturing at the Fourth European Systems School, University of Humberside, Kingston-on-Hull, United Kingdom, July 17-18, 1995.

"Complexity and Higher Education", George Washington University, University Club, August 16, 1995.

"Interactive Management", Second Industrial Engineering Conference, Instituto Tecnologico y de Estudios Superiores, Monterrey, Mexico, September 13-16, 1995.

"Procrustes is Alive and Well and Teaching Composition in the English Department", presentation at the 17th Annual Meeting, Association for Integrative Studies, Arizona State University West, Phoenix, Arizona, September 30, 1995.

"Demands of Complexity on Integrative Communications", panel presentation, 17th Annual Meeting, Association for Integrative Studies, Arizona State University West, Phoenix, Arizona, September 30, 1995. Panel members: John N. Warfield, Scott Cawelti, and Michael Litzelman.

"Surfers, Skin Divers, Pearl Divers, and Deep-Sea Divers", George Washington University Center for Social and Organizational Learning, October 10, 1995.

"The Great University", George Mason University Faculty Seminar, Mason Hall, October 26, 1995.

PRESENTATIONS (1995 AND 1996 , continued)

"Comparing American and Japanese Manufacturing-Related Methodologies",
George Washington University, Center for Social and Organizational Learning", November 14, 1995.

"The Science of Generic Design: Foundations and Applications", plenary presentation at the First Annual Meeting of the International Society for Design and Process Science, University of Texas, IC^2 Center, Austin, Texas, December 9, 1995.

"The Work Program of Complexity: From Origins to Outcomes", presentation at the Third Annual Industrial and Systems Engineering Conference, ITESM, Chihuahua Branch, March 21, 1996.

"Reflections on the History of Systems Engineering", presentation at NASA Short Course in Hagerstown, Maryland, July 30, 1996.

"Science and Systems Engineering", presentation at NASA Short Course, in Williamsburg, VA, September 17, 1996.

"A Philosophy of Design", presentation at NASA Software Workshop Dinner Meeting, George Mason University, September 26, 1996.

"Interdisciplinary Domains and Complexity: Five Schools of Thought and Their Implications for Integrative Inquiry. " presentation at 18th Annual Conference Association for Integrative Studies, Ypsilanti, Michigan, on October 4, 1996.

"Contrasts", presentation at NASA Short Course, Virginia Beach, VA, November 19, 1996.

"The Corporate Observatorium: Sustaining Management Communication and Continuity in an Age of Complexity", presentation at 2nd World Conference on Integrated Design & Process Technology, Marriott Hotel, Austin, Texas, on December 3, 1996

"Five Schools of Thought About Complexity: Implications for Design and Process Science", presentation at 2nd World Conf. Integrated Design & Process Technology, Marriott Hotel, Austin, Texas, December 4, 1996

PRESENTATIONS (1997 and 1998, this page)

"Comments on Interactive Management", presentation for the Center for Scientific and Industrial Research, Accra, Ghana, January 7, 1997.

"The Alberts Pattern In Organizations", presentation for the Industrial and Systems Engineering Conference, ITESM, Campus Léon, Mexico, January 31, 1997.

"Complexity in Organizations", presentation to NASA engineers, Wallops Island, VA, February 5, 1997

"Case Studies in the Application of Interactive Management in Large Organizations: Government and Industry", presentation for the 4th Annual International Symposium on Industrial and Systems Engineering, ITESM, Campus Toluca, Mexico, February 28, 1997.

"Interpretive Structural Modeling in 1997", Invited PictureTel presentation to ITESM (Mexico) faculty and students, March 13, 1997, with assistance from Tim Huff, Graduate School of Business, George Mason University.

Participant, Workshop on Defense Acquisition Research, Defense Systems Management College, April 8-9, 1997.

"Complexity Management in Policy Design", AAAS Fellows Program, American Association for the Advancement of Science, May 13, 1997.

"Five Milestones in the History of Thought", presentation before the Association for Integrative Studies for October 23-26 Conference at Appalachian State University, Boone, North Carolina.on Saturday, October 25, 1997.

"Managing Complexity" lecture presented November 5, 1997, at the University of Cape Town, South Africa, International Systems Thinking Conference and Workshops

"Managing Complexity Workshop" presented November 7th as an all-day session at the University of Cape Town, South Africa, International Systems Thinking Conference and Workshops

"The Demands of Complexity Meet the Killer Assumptions", one-week short course at George Mason University, May 18-22, 1998 (details on Web page, see below).

"Summary of Results of Research on Complexity", Presentation in Beijing, China, July 24, 1998, Chinese Academy of Science.

"The Demands of Complexity Meet the Killer Assumptions", keynote speech, Third International Conference on Management (ICM-98), Shanghai, China, July 26, 1998.

"The Work Program of Complexity: Its Scientific Foundations and Practice", a series of four short courses for the Ford Motor Company, offered in Dearborn, MI, July-October, 1998.

"Reflections on Innovation and Complexity", presentation in the NASA Great Author Colloquium "Topics in Engineering", Hagerstown, MD, August 20, 1998.

"Demands of Complexity Meet the Killer Assumptions", presented at the TIPP Colloquium on Thursday, October 1, 1998, substituting for Prof. Seymour Lipset, who had a death in his family.

PRESENTATIONS (1999)

Interactive Management Short Course, GMU Johnson Center, February 15-18, Room 311.:
> **"The Mathematics of Structure"** (4 days, for on-campus and off-campus personnel, with international
>> visitors from Peru and Mexico
> **"The Work Program of Complexity: Resolving Complexity Cooperatively"**

"Vertical Coherence in 3-Level Organizations: Organizing to
> **Manage Complexity"** (for about 300 students & faculty), ITESM Chihuahua Campus, Chihuahua,
> MEXICO April 7, 1999

"Vertical Coherence in 3-Level Organizations: Organizing to
> **Manage Complexity"** (for about 60 students & faculty), ITESM Monterrey Campus, Monterrey, MEXICO
> April 8, 1999

"Vertical Coherence in 3-Level Organizations: Organizing to
> **Manage Complexity"** (for about 15 faculty), ITESM Monterrey Campus, Monterrey, MEXICO
> April 9, 1999.

"Short Presentation on the Work of Mrs. Carol Jeffrey in
> **Liberia, who was Using Interactive Management (IM)"**
> April 26, 1999 – Panetics Society Presentation, Annual Meeting, Cosmos Club, Washington, D. C. (in remembrance of the late
> Dr. R. G. H. Siu, Founder and Financial Donor for the Panetics Society)

"Complexity Implications" April 28, 1999 -- **Tri-Service Chaplains presentation GMU Arlington Campus, for Dr. Ivan King** (mans 232
> and 234)

"Vertical Incoherence in 3-Level Organizations" (see cpk 213)
> July 5, 1999 – **Presentation at Ford Motor Company Aveley location in the United Kingdom**

"Common Sense in the Stone Age"   July 7, 1999 – United Kingdom Systems Society Annual Meeting,
> Plenary Presentation: Lincoln Campus, University of Lincoln and Humberside

"Vertical Incoherence in 3-Level Organizations" (cpk213)
> July 8, 1999, One-Afternoon International Workshop at the United Kingdom Systems Society Annual Meeting, Lincoln Campus,
> University of Lincoln and Humberside

"Four Funerals and a Wedding: How the Grinch Stole Science"
> September 2, 1999 – The George Mason University Institute of Public Policy
> Colloquium Presentation (last-minute substitute for speaker who could not attend) Cpk214

"Enhancing Understanding in the Domain of Complexity Through a Model Exchange Strategy" (man233)
> September 28, 1999 – MIT Design Structure Matrix (DSM) Workshop, Presentation, Sloan School

"The Evolution of Thought About Thought (Second-Order Thought), From Aristotle to Foucault"   October 22, 1999 –
Washington (DC) Evolutionary Systems Society Presentation, GWU, Warfield substitutes as speaker for Dr. Sadofsky of Russia, who
cannot make it to the meeting of the Washington Evolutionary Systems Society, George Washington University,   (WESS Final)

"Interactive Management for Research Agenda Planning"
> October 28, 1999 – Tri-Service Nursing Research Agenda, TIPP, GMU

PRESENTATIONS (2000)

GMU Videotaping at GMU-TV, **"Managing the Unmanageable: Process Leadership in Organizations"**, February 23, 2000

Picture-Tel (two-way) Presentation to ITESM Virtual University, class of Professor Palacio, **"The Work Program of Complexity"**given at George Washington University TV studios, Washington, D. C., April 13, 2000. The ITESM Virtual University produced a videotape of this Picture-Tel class titled **"Modulacion Estructural de Sistemas"**.

Short Videotaping at IASIS office at GMU (by employees of TATA Consultancy): **"A Tribute to Faqir Kohli on his Retirement"**, April 20, 2000

April 24, 2000, **"Why Johnny Can't Design Software"**, an IEEE Computer Society Distinguished Visitor Lecture for the Southern Maryland IEEE Chapter

April 27-28, 2000. Presentations at Monterrey Campus of ITESM for Dr. Mitre and his colleagues, including Dean Bustani and Professor Roxana Cardenas: **"Managing the Unmanageable: Process Leadership in Organizations"** and related topics

June 16 to June 19, 2000, Videotaping of a set of lectures under the general heading **"Managing the Unmanageable"** at the George Washington University Television Studios, with cooperation from Professor Stuart Umpleby.

November 14, presentation at Arizona State University, Tempe, on **"A Chronology of Interactive Management"** for Professor Benjamin Broome in the Department of Communications.

PRESENTATIONS (2001-2007)

May 9, **2001**, IEEE Computer Society Distinguished Visitor Lecture for Long Island IEEE Section titled **"Managing the Unmanageable: Metrics of Complexity"**

June 27, **2001** Lecture for the School of Business, University of Hull, **"Understanding Complexity"**.

June 27, **2001,** Substituing for another–lecture for the School of Business, University of Hull, **"" Process Leadership in Organizations"** [not the same as the MTU#1 video]

July 2-6, **2001**, Morning Lectures from 9 to 12 each day for 42 Mexican ITESM students, a series on **"Managing the Unmanageable"** This was a short course as part of a 4-week program for these students under agreement with the School of Business, University of Hull, Michael C. Jackson, Dean.

October 29, **2001**. Video Conference for ITESM Students of Professor Rios of ITESM Chihuahua Campus on subject of **"Diseno y Practica de Sistemas"**.

April 19, **2002**. Presentation at the 6th Annual Conference on Industrial and Systems Engineering, ITESM, Chihuahua Campus. on the subject: **"The Design of Organizations"**

August 3, **2002**, Bertalanffy Lecture, Part 1 (Short Version), International Society for the Systems Sciences, Shanghai, China, **"Middle Human Science"**.

August 4, **2002**, Bertalanffy Lecture Part 2 (Long Version), International Society for the Systems Sciences, Shanghai, China, **"Managing the Unmanageable: The Road less Traveled"**.

August 6, **2002**, To the Complexity Symposium at the Shanghai Jiatong University, **"Thought Leaders"**.

August 9, **2002.** To faculty and students at the China University of Mining and Technology (Xuzhou), **"Twenty Laws of Complexity"**.

August 9, **2002.** To faculty and students at the China University of Mining and Technology (Xuzhou), **"Understanding Complexity"**.

February 2, **2003**, Presentation to the INCOSE meeting at the Tampa International Airport on **"Managing the Unmanageable: The Work Program of Complexity"** (arranged by Jack Ring of Scottsdale, AZ)

October 9, **2003**, Panel presentation at the Association for Integrative Studies Annual Meeting at the Renaissance Center in Detroit with Dr. Scott M. Staley of Ford Motor Company: **"Using Interactive Management (IM) in a Pinch: Investigating a 3-Billion Dollar Question Using 8 Hours of Interactive Management"**

December 5, **2003**, Presentation at the Arizona Club, Phoenix, AZ, organized by the Phoenix Chapter of INCOSE, on the subject: **"Managing the Unmanageable: Overview and References"**.

March 1-5, **2004**, Lectures on **"Applications of Systems Science"** and **"Reading Structures"** to about 300 students and a few faculty of the ITESM system (some in scheduled regular classes and some to a portion of the ITESM Virtual University)

July 14, **2004**, George Mason University School of Public Policy Lecture, *"Understanding and Overcoming Complexity In Organizations"*

October, **2005**, George Washington University Lecture, American Society for Cybernetics, **"THOUGHT ABOUT THOUGHT: Twenty-Four Centuries of Now-and-Then Development and the Consequences"**

October, **2006**, Taipei, Taiwan, by a DVD specially tailored to the occasion (on receipt of the Joseph G. Wohl Award from the IEEE Systems, Man, and Cybernetics Society), the DVD on *The Systems, Man and Cybernetics Society: The Beginnings* and some aspects of my role in it. This DVD was made by Mike Boston and included 8 PowerPoint Slides, along with my presentation. Extra copies were made and are preserved. The presentation was limited to less than 10 minutes, and was prepared for presentation at the Conference Banquet in Taipei, Taiwan. The IEEE Award is $2,000 and a plaque. The Award is described on the web site of the IEEE SMC Society. It is the highest Award offered by this Society.

July 5, **2007** World Forum, Hotel Palomar. Washington, D. C., *"The Aristotle Index: Measuring Complexity in the 21st Century"*.

July 11-15, **2007**, Short Course for University of Missouri-Rolla and Boeing Company Representatives, **"Systems Science In a University Setting" was the primary purpose of the course** with database records as follows:
- **Systems Science In a University Setting**: Notes and List of Materials
- **Systems Science In a University Setting**: Work Plan for Short Course
- **Systems Science In a University Setting**: Structured Programs

POPULARIZED ARTICLES PUBLISHED IN THE W. L. LIVINGSTON NEWSLETTER, "SHORT CIRCUIT":

SHORT CIRCUIT ("The Newsletter of Engineering Empowerment")

First Issue, Autumn, 1992

"Thinking In, and Not Thinking In Sets"

Second Issue, Winter, 1992

"So You Are A Good Modeler: NOT YET!"

Third Issue, Spring, 1993

"So You Believe X...WHY?"

Fifth Issue, Winter, 1993

"Organizations and Structural Thinking"

POPULARIZED ARTICLES PUBLISHED IN THE CAROL SAGER NEWSLETTER "CRITICAL LINKAGES II" from the Center for Essential Linkages and Learning:

Vol. 3, Number 2, April, 1996,

"Goldmining for Successful Teams Saves $ and Gets Results"

PARTICIPATION IN LIST SERVERS VIA EMAIL (Some of the contributions have been archived on the WorldWideWeb).

● Interactive Management List (IMList), 1996-1999)

● Organizational Learning List, 1993-1996

● C. S. Peirce List, 1996

November, 2003

WEB SITES THAT CARRY RELEVANT INFORMATION

1) George Mason University--The Institute of Public Policy

http://www.gmu.edu/departments/tipp/faculty/warfield/warfield.htm

2) George Mason University--The Institute for Advanced Study in the Integrative Sciences

http://www.gmu.edu/departments/t-iasis

3) Warfield's Frequently-Asked Questions about Interactive Management and Complexity (FAQ) Site

http://hometown.aol.com/jnwarfield/myhomepage/index.html

4) Warfield's personal web site volunteered by Gregory Thomas at Vanderbilt University, School of Medicine.

http://www.jnwarfield.com/

5) Web site at George Mason University Library for "Warfield Special Collection"

http://www.gmu.edu/library/specialcollections/warfield.htm

1999 CHRONOLOGICAL FILE: A WINDOW ON ONE YEAR OF HIS LIFE

● No Specific Time Indicated, But Rather Off-and-on this Year
  PhD Advisory Committee Meetings with George H. Perino, Jr. ("Tony")
  Making Student-Done Course Videotapes and CDs from the Tapes

● January 30–Started Spring, 1999, Course on "Resolving Complexity
  in Organizations", 3 credits, Saturday mornings in TIPP Large
  Conference Room from 9 to Noon.

● February 15–Ran a short course on Interactive Management for outsiders and
  insiders, from 8 AM this date to 4 PM on the 19th. Attending were people
  from other countries as well as here–namely from Peru and Mexico. Attending from Ford Motor Co., was Philip Ernzen, who was
  planning to start a partnership with another consultant to do IM work at Ford and possibly elsewhere.

● April 7 – Presented a student-invited talk at the Chihuahua, MX campus of ITESM, on the subject: "The Work Program of
  Complexity" in their Colloquium on Industrial and Systems Engineering.

● April 8-10 – Repeated (with variations) the talk given in Chihuahua to two groups on the Monterrey Campus of ITESM
  (one large student group, one small faculty group)

● April 26 – Presented at the Cosmos Club, Mass. Ave., D. C., Annual Meeting of the Panetics Society on the pioneering
  work of Carol Jeffrey in bringing peace to Liberia, as an example how Interactive Management can help alleviate
  human suffering on a significant scale. (This presentation is now published in the Panetics Journal, first issue of year
  2000).

● April 28 – Presented at the GMU Arlington Campus for Dr. Ivan King at a meeting of tri-service chaplains on the subject
  "Complexity"

● **June 18**, contracted to sell home of 15 years in Annandale, so moved to Fairfax Square Apartments on Little River
  Turnpike

● July 1-12 – Traveled to the United Kingdom, and made three presentations
  Presented at Ford Motor Company, Aveley, on the Work Program of
    Complexity
  Presented a plenary talk at the UKSystems Society titled "
  Presented at "last minute" a one-day workshop substituting for a professor
    from Australia who had a death in the family

● **July 27** — Settled on home sale

● August 20 — Took part in G. H. Perino, Jr., Ph. D. final oral, TIPP Large
  Conference Room, Prof. Tom Gulledge, Chair

● September 2 – Warfield agrees to be last-minute substitute for TIPP Colloquium Speaker, who had to decline presentation–Warfield
  speaks on the subject:"Four Funerals and a Wedding: How the Grinch Stole Science"

● September 27 – Presented by invitation, at talk at MIT Design Structure Matrix Workshop titled "

● September 28 — Met Dr. SONG Xuefeng at National Airport as he arrives from China for his six-month study leave with John Warfield.

1999 CHRONOLOGICAL FILE: A WINDOW ON ONE YEAR OF HIS LIFE (continued)

● October 15 — Dr. Siwei Cheng (Chinese VIP) arrives for a visit to verify the arrangements made with Dr. Song and Dr. Warfield, and to get a plan for the six-month period. (A plan was submitted the week following, and seems to have met with approval.) Dr. Cheng wants Dr. Song to continue Chinese National Science Foundation - funded research on complexity when he returns to his university in China, where he is Graduate Dean.

● October 22 – Once again Warfield presents as a last-minute substitute (this time for Sadofsky, a Russian speaker who could not make it) at the Washington Evolutionary Systems Society Meeting at George Washington University, on the topic"

● October 28 – Warfield spoke to a group of tri-service nurses, operating from the Henry ("Scoop") Jackson Foundation in Rockville, who want to develop a research agenda for military nursing. They are now following up on this with an Interactive Management Session to be run by Dr. Benjamin Broome at Arizona State University (formerly at GMU) in February, 2000.

● October 31 – Visitor, Dr. Graham Hereford (Emeritus from UVA, consultant to Colorado School of Mines) to discuss the use of the generic design science in undergraduate education

● November 3 – Visitor, Dr. Alberto Montbrun, regularly a faculty member and member of the legislature in Argentina; who this year is a visiting fellow at the University of Minnesota Twin Cities Campus, Hubert H. Humphrey Institute of Public Affairs, 55 Humphrey Center, Minneapolis.

● November 14 – Dr. Benjamin Broome visited to discuss his new appointment at the Arizona State University and other aspects of his work, including his Fulbright work in Cyprus

● November 26 – Warfield attended the wedding of Dr. Scott M. Staley (Ford Motor Company sponsor) in Dearborn, MI