

PAUL R. WILLIAMSON

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EDUCATION

A.B., Mathematics, University of Michigan, Ann Arbor
Ph.D., Political Science, University of Hawaii at Manoa

EXPERIENCE

Research:

- Grant recipient, Hoover Institution, Stanford University, **1996-present**. (Artificial neural network-based forecasting; global modeling.)
- Consultant, Decision Insights, Inc., New York, 1998. (Artificial neural network-based forecasting.)
- Collaborator, Los Alamos National Laboratory, Center for Nonlinear Studies, 1991.
- Consultant, Santa Fe Institute, 1991. (International data visualization project.)
- Visiting Scholar, Correlates of War project, University of Michigan, 1986-91.
- Fellow, East-West Center/Univ. of Hawaii, Global Modeling and Policy Process Project, 1984.
- Graduate Assistant, University of Hawaii, Dimensionality of Nations project, 1968-71.
- Research Associate, Strategic Analysis, Bendix Aerospace Systems Div., Ann Arbor, 1965-68.
- Research Analyst, Hudson Institute, Harmon-on-Hudson, NY, 1964-1965.

Research support development:

- President, Global Vision, Inc., **1994-present**. (Computational global modeling. See www.globechange.org.)
- Consultant, Peace Leaders International, San Diego, 1986-90. (Computational global modeling.)

Teaching:

- Tutor, Learning Support Services, Washtenaw Community College, **2000-present**.
- Instructor, Mathematics, Washtenaw Community College, 2002-2003.
- Lecturer, Political Science, Eastern Michigan University, 1992-97.
- Instructor, Economics, Kellogg Community College, Battle Creek, MI, 1992-94.
- Lecturer, Political Science, University of Michigan, Dearborn Campus, 1992.
- Visiting Assistant Professor, Political Science, Bowling Green State Univ., OH, 1989-90.
- Lecturer, Political Science, Texas Tech University, Lubbock, TX, 1986.
- Lecturer, Government, University of Texas, Austin, 1984-85.
- Visiting Assistant Professor, Economics, University of Northern Colorado, 1981.
- Instructor, Economics, Pikes Peak Community College, Colorado Springs, 1980.
- Lecturer, Political Science, California State University, Northridge, 1972-79.

Subjects taught at the above teaching assignments: calculus I and II, statistics, research methods, introductory macro- and micro- economics, world politics, U.S. –government, –public policy, –foreign/national security policy. Tutoring subjects above plus introductory physics and math.

Business consulting:

- Endoscopic Management Services Organization, Palo Alto, CA, 2005
- Cozen and O'Connor, Philadelphia, 1999.
- Plymouth Rock Assurance Corporation, Boston, 1998.
- Programming Sciences, Santa Monica, CA, 1985.

WRITING and CONFERENCE PARTICIPATION**Publications:**

"System Change, Linkage, Richardson Processes, and Utility Maximizing – Application of a Physical Analogue", see below *.

"A Basis on Which to Organize Diverse Contributions to Global Forecasting", see below *.

"Computational Global Forecasting. A Demonstration Model", see below *.

* The above three entries to appear in Wayman, Williamson, and Bueno de Mesquita (eds.), *Prediction: Breakthroughs in Science, Markets, and Politics*, University of Michigan Press, forthcoming. (Originally presented at conference, Illuminating the Shadow of the Future: Scientific Prediction and the Human Condition, University of Michigan, Ann Arbor, September 23 - 25, 2005.)

"Modeling the Number of United States Military Personnel Using Artificial Neural Networks," with Bruce Bueno de Mesquita, *Peace Economics, Peace Science and Public Policy*, 6, No. 4 (November 2000): 35-65, at <http://www.bepress.com/peps/vol6/iss4/>.

"Modeling Complex Human Social Dynamics Using Neural Networks of Fuzzy Controllers," with Myron S. Karasik, *Proceedings, World Congress on Neural Networks*, San Diego (1994): Vol. 1, 765-771.

"The Need for an Integrated Global System Approach," in V. Sulway, J. Scrimgeour, H. Chestnut and P. Kopacek (eds.) *SWIS '92. Supplementary Ways for Increasing International Stability*. IFAC Workshop Series, 1992. (International Federation of Automatic Control / Scientists for Peace Workshop.) New York, Pergamon (1993): 139-144.

"Forecasting for Effective Public Policy," *ICIS Forum* (ICIS, 121 Avenue of the Americas, New York, NY 10013), 22 (July, 1992):43-45.

"Modeling International Linkages," in Manfred Kochen (ed.) *The Small World*. Ablex Pub., Norwood, NJ (1989): 108-127. (Preliminary version was presented at annual meeting, International Studies Association, Anaheim, CA, 1986 and was nominated for "best paper at theme panels" award.)

"Accident and Deliberation as Elements in the Outbreak of War," *Peace Research Reviews*, X (1986):No. 4, 76-83.

"A 'Physical' Model of World Politics," *Systems Research*, 2 (October, 1985): 221-235. Abridgment in *Proceedings*, Society for General Systems Research (1985): 1110-1119.

Edited Book:

Co-editor, *Prediction: Breakthroughs in Science, Markets, and Politics*, University of Michigan Press, forthcoming, with Frank W. Wayman and Bruce Bueno de Mesquita.

Conference Papers:

"A Social Space-Time Dynamic Model as a Basis of International Network Theory". International Studies Association annual meeting, Honolulu, 2005, revised 2006, 76 pp.

"A Neural Network Approach to Modeling Inter- and Intra-State Conflict," with Myron S. Karasik. Peace Science Society (International) annual meeting, Urbana, IL. (Global Vision, Inc., PO Box 4394, Ann Arbor, MI 48106.) 1994, rev. 2001, 2003, 17 pp., at http://www.globechange.org/pdfs/peace-s-society_941106_rev031014.pdf .

"Proposal for Development and Implementation of a Global Information and Forecasting Service (GIFTS)," with Myron S. Karasik. Presented at Sigma Xi Forum on Sustainable Development, Loyola University, Chicago. (Global Vision, Inc., PO Box 4394, Ann Arbor, MI 48106.) 1994, rev. 2001, 17 pp., at http://www.globechange.org/pdfs/basic_ms_031017.pdf .

"Information, System Divergence, and the Outbreak of War," with J. David Singer. International Studies Association Annual Meeting, Washington, 1990, 29 pp. [Earlier version presented at Twenty-Second North American Peace Science Conference, Peace Science Society International, Detroit, 1986.]

"Investigation of Periodicities in International Conflict by Graphical Means." American Political Science Association Annual Meeting, Atlanta, 1989, 23 pp.

"Notes for Round Table on the Modeling of International Conflict." Third World Peace Science Congress, College Park, MD, 1988, 2 pp.

"A Model of International Dispute Onsets with Preliminary Application to the Impact of Nuclear Weapons," with J. Warner and S. A. Hopkins. Midwest Political Science Association, Chicago, 1987; revised 1988; 35 pp.

"Strategic Arms Race Interaction and the Richardson Model: Tentative Results," with M. McCubbins. Western Peace Science Society, Stanford University, 1978, 27 pp.

"Outline of a Program of Inquiry into a Formal Theory of World Political Economy." International Studies Association, St. Louis, 1977, 4 pp.

"Spatial Representation of Galtung's Feudal Interaction Hypothesis." International Studies Association/West, San Francisco, 1976, 83 pp.

Research Reports/Proposals, and Discussion Papers:

"Technical Plan For A Demonstration Global Forecasting Model" (Global Vision, Inc., P. O. Box 4394, Ann Arbor, MI 48106-4394) 2003, rev. 2005.

"Number of Nuclear Warheads versus Time. Comparison With the Standard Richardson Arms Race Model." (Global Vision, Inc., P. O. Box 4394, Ann Arbor, MI 48106-4394, Research Report 0401) 2004, 14 pp.

"New Considerations About Military Personnel Dynamics; Evidence Against the Standard Richardson Arms Race Model." (Global Vision, Inc., P. O. Box 4394, Ann Arbor, MI 48106-4394, Research Report 0201) 2002, 14 pp., at http://www.globechange.org/pdfs/04011302_rpt-0201.pdf.

"Use of an Artificial Neural Network to Enhance an Input-Output Dynamic Model". (Global Vision, Inc., PO Box 4394, Ann Arbor, MI 48106.) 1997, rev. 2000, 3 pp., at http://www.globechange.org/pdfs/dyn_in-o_031017.pdf.

"Predicting Changes In USA Military Personnel Using Neural Network Modeling -- Two Approaches." (Global Vision, Inc., P. O. Box 4394, Ann Arbor, MI 48106-4394, Research Report 9601) 1996, 24 pp., at http://www.globechange.org/pdfs/04011301_rpt-9601.pdf.

"Some Suggestions For Studying Nuclear Proliferation." (Global Vision, Inc., PO Box 4394, Ann Arbor, MI 48106.) 1995; revised 1996, 2003. 12 pp., at http://www.globechange.org/pdfs/Prop9511_proliferation.pdf.

"Capabilities Concentration, Dispute Contagion, and Global War: Findings and Synthesis" 1995, 38 pp.

"Military Preparedness, National Security, and Major Power Decline", with J. David Singer, Walter R. Mebane, Jr., Carl P. Simon, et al. Final Report, United States Institute of Peace, USIP-464. (Correlates of War project, Department of Political Science, The University of Michigan, Ann Arbor, MI 48109-1045.) 1991, 40 pp. + illustrations.

"Steps Toward a Global Information and Forecasting Service. A Planning Grant Proposal by Global Vision, Inc." Submitted to the MacArthur Foundation. (Global Vision, Inc. PO Box 4394, Ann Arbor, MI 48106.) 1991, rev. 2000, 2003, 13 pp., at http://www.globechange.org/pdfs/large-conf_rev_031017.pdf.

"From War to War. The Role of Major Power Decline and Response, 1816-1985", with J. David Singer, Walter R. Mebane, Jr., and Carl P. Simon. Proposal submitted to the U.S. National Science Foundation. 1989, 49 pp. + illustrations.

"Utilities of Parties in a Richardson Process." 1985, 5 pp.

"Suggestions for Incorporating Richardson Processes into *Sarum*." (Global Modelling and the Policy Process project, University of Hawaii – East-West Center, Honolulu.) 1984, 5 pp.

"The Concept of the Center for World Studies, Inc.", with H. J. Hamilton, J. M. Firestone, A. J. Fedanzo, Jr., and Alan Munn. (Global Vision, Inc., P. O. Box 4394, Ann Arbor, MI 48106.) 1977, rev. 1983, 6 pp. at http://www.globechange.org/pdfs/concept-cws_1981-rev.pdf.

"Note on Partitioning of Societal Conflict of Interest." 1975, 4 pp.

"A Mathematical Model of A. F. K. Organski's Theory of Power Transition." (Bendix Corp. BSR 2171), 1967, 18 pp.

"Mark II Strategic Engagement Model," with C. Tieman, *et al.* (Bendix Corp. BSR 2244, Ann Arbor), 1967, 29 pp.

"A Study of Trade-Offs Between Offensive and Defensive Missiles." (U) (Bendix Corp. Dept. 290 Working Paper #61, Secret, Ann Arbor), 1966, 20 pp.

"The Spread of Nuclear Weapons and the Incidence of War, 1945-65." (Bendix Corp. BSR 1413, Appendix F, Ann Arbor), 1966, 36 pp.

"On the Value of Contingent Danger of Central War for Controlling Local War." (Bendix Corp. BSR 1491, Appendix F, Ann Arbor), 1966, 19 pp.

"On a New Arms Control Strategy," with H. Kahn, *et al.* (Hudson Institute HI-390-RR, Croton-on-Hudson, NY), 1965, 19 pp.

Other Conference Participation:

Organizer and panel chair, "Review of Conference on 'Illuminating the Shadow of the Future' ", Peace Science Society (International) / Global Vision, Inc. annual meetings (joint session), Iowa City, November, 2005.

Co-organizer, with Bruce Bueno de Mesquita, Joseph B. McCarthy, J. David Singer, and Frank W. Wayman, of conference, Illuminating the Shadow of the Future: Scientific Prediction and the Human Condition, University of Michigan, Ann Arbor, September 23 - 25, 2005.

Presented "Agenda for Global Forecasting", Peace Science Society (International) / Global Vision, Inc. annual meetings (joint session), Houston, November, 2004.

Organizer and panel chair. "Issues of Social Forecasting", Peace Science Society (International) / Global Vision, Inc. annual meetings (joint session), Ann Arbor, November, 2003.

Organizer and panel chair. "Evaluating the Peace Science Enterprise", Peace Science Society (International) / Global Vision, Inc. annual meetings (joint session), Tucson, November, 2002.

Panel chair. Problems of Quantitative International Conflict Modeling, Midwest Political Science Association annual meeting, Chicago, March 1990.

Invited discussant. Round Table on International Conflict Research, International Studies Association annual meeting, Washington, March 1990.

Participant. Twenty-Third North American Peace Science Conference, Ohio State University, Columbus, OH, November 1989. Presented "Use of Waiting-Times Analysis to Model International Dispute Onsets."

Invited discussant. Conference on Sanity, Science, and Global Responsibility, Brock University, St. Catharines, Ontario, July 1988.

Organizer and panel chair. Round Table on the Modeling of International Conflict, Third World Peace Science Congress, College Park, MD, June 1988.

Invited discussant. Panel on Physical Approaches to World Politics, International Studies Association annual meeting, Washington, March 1985.

Participant. Seminar on the Physics of Complex Systems, Crump Institute of Medical Engineering, University of California, Los Angeles, 1982-83.

Fellow. First National Security Education Seminar, Colorado College, Colorado Springs, CO, June-July 1971.