## CURRICULUM VITAE

### STANLEY REITER

Birth date:	April 26,1925
Marital Status:	June 13,1944 to Nina Breger
Children:	Carla Frances and Frank Joseph

#### **Education**

A.B. with Honors in Economics, Queens College 1947 M.A. in Economics, University of Chicago 1950 Ph.D. in Economics, University of Chicago 1955

### Post-Doctoral Awards, Honors and Fellowships

Purdue Research Foundation DL Grant, 1958 John Simon Guggenheim Memorial Grant, 1961 Krannert Distinguished Professor Fellow of The Econometric Society Fellow of the American Association for the Advancement of Science Fellow of the American Academy of Arts and Sciences

### **Employment**

1978 – present	Morrison Professor of Economics and Mathematics in the Weinberg College of Arts and Sciences, and of Managerial Economics and Decision Sciences in the Kellogg Graduate School of Management, Northwestern University
1974 – present	Director, The Center for Mathematical Studies in Economics and Management Science, Northwestern University
1973-1974	Chairman, Managerial Economics and Decision Sciences Department, Kellogg Graduate School of Management, Northwestern University
1967-1978	Professor of Economics and Mathematics, Weinberg College of Arts and Sciences, and of Managerial Economics and Decision Sciences in the Kellogg Graduate School of Management, Northwestern University

1960-1967	Krannert Professor of Economics and Mathematics Purdue University, West Lafayette, Indiana
1957-1960	Associate Professor of Economics and Mathematics Purdue University, West Lafayette, Indiana
1954-1957	Assistant Professor, Economics and Mathematics Purdue University
1953-1954	Research Associate, Applied Mathematics and Statistics Laboratory, Stanford University, Stanford, California
1950-1953	Instructor, Department of Economics, Stanford University, Stanford, California and Research Associate, Economics Department Research Project, Office of Naval Research
1949-1950	Research Associate, Cowles Commission for Research in Economics, University of Chicago, Chicago, Illinois
1948-1949	Research Assistant, Cowles Commission for Research in Economics, University of Chicago, Chicago, Illinois
1948-1949	Instructor, Woodrow Wilson Jr. College, Chicago, IL

# Visiting Positions

1984-1985 Winter Quarter	Visiting Faculty Associate, California Institute of Technology
1983-1984	Senior Member Institute for Mathematics and its Applications, University of Minnesota
1961-1962	Visiting Fellow, Churchill College Cambridge University, Cambridge, England

### **Publications**

#### Books

- 1. Reiter, S., editor, <u>Studies in Mathematical Economics</u>, Mathematical Association of America, 1987.
- 2. Reiter, S. (with T. Groves and R. Radner, editors), <u>Information, Incentives</u> <u>& Economic Mechanisms</u>, Essays in Honour of Leonid Hurwicz, University of Minnesota Press, 1987.

- 3. Reiter, S. (with K. Mount), <u>Computation Complexity in Economic Behavior</u> <u>and Organization</u>, Cambridge University Press, 2002.
- 4. Reiter, S. (with L. Hurwicz), <u>Designing Economic Mechanisms</u>, Cambridge University Press, 2006 (in press).

### **Published Papers**

- 1. Reiter, S. (with Koopmans, T.C.), "A Model of Transportation," <u>Activity</u> <u>Analysis of Production and Allocation</u>, John Wiley and Sons, Inc., 1951.
- Reiter, S., (with Hildreth, C.), "On the Choice of A Crop Rotation Plan," <u>Activity Analysis of Production and Allocation</u>, John Wiley and Sons, Inc., 1951.
- 3. Reiter, S. "Trade Barriers in Activity Analysis," <u>The Review of Economics</u> <u>Studies</u>, August 1963.
- 4. Reiter, S., "Review of J.C.C. McKinsey, 'Introduction to the Theory of Games,'" <u>American Economic Review</u>, December 1953.
- 5. Reiter, S., "Estimates of Bounded Relative Error for the Ratios of Variances of Normal Distributions," <u>Journal of the American Statistical Association</u>, 1956.
- 6. Reiter, S., "Surrogates for Uncertain Decision Problems--Minimal Information for Decision-Making," <u>Econometrica</u>, April 1957.
- 7. Reiter, S. (with J.R.T. Hughes), "The First 1945 British Steamships," Journal of the American Statistical Association, June 1958.
- 8. Reiter, S., "Market Price Formation, Part I," Econometric Society, Chicago, Illinois, December 1958, abstract in <u>Econometrica</u>, April 1959, p. 313.
- Reiter, S. (with L. Davis and J.R.T. Hughes), "Aspects of Quantitative Research in Economic History," <u>Journal of Economic History</u>, Vol. XX, No. 4, December 1960.
- 10. Reiter, S., "Efficient International Trade and Equalization of Factor Prices," International Economic Review, Vol. II, No. 1, January 1961.
- 11. Reiter, S., "A Note on Convexity of the Aggregate Production Set," <u>Journal</u> <u>of Political Economy</u>, Vol. LXIX, No. 4, August 1961.

- Reiter, S. (with E. Ames), "Distribution of Correlation Coefficients in Economic Time Series," <u>Journal of the American Statistical Association</u>, Vol. LVI, No. 295, September 1961.
- Reiter, S., "Allocating Indivisible Resources Affording External Economics or Diseconomies," <u>International Economic Review</u>, Vol. III, No. 1, January 1962.
- 14. Reiter, S. (with J. Beshers), "Social Status and Social Change," <u>Behavioral</u> <u>Science</u>, Vol. 8, No. 1, January 1963.
- Reiter, S., "Choosing an Investment Program Among Interdependent Projects," <u>Review of Economic Studies</u>, Vol. XXX (1), No. 82, February 1963. Reprinted in <u>Readings in Welfare Economics</u>, a <u>Selection of Papers</u> <u>from the Review of Economic Studies</u>, edited by M.J. Farrell, (London: MacMillan; New York, St. Martin's Press, 1973.)
- 16. Reiter, S. (with G.R. Sherman), "Discrete Optimizing," <u>Journal of the</u> <u>Society for Industrial and Applied Mathematics</u>, , Volume 13, No. 3., September 1965.
- 17. Reiter, S., "A System for Managing Job Shop Production," <u>Journal of</u> <u>Business</u>, University of Chicago, July 1966, Vol. XXXIX, No. 3.
- Reiter, S. (with D. Rice), "Discrete Optimizing Solution Procedures for Linear and Nonlinear Integer Programming Problems," <u>Management</u> <u>Science</u>, Vol. 12, No. 11, pp. 829-850, July 1966.
- 19. Reiter, S., "Review of Dantzig, G., 'Linear Programming and its Extensions," Journal of the American Statistical Association, 1966.
- 20. Reiter, S. (with L. Davis and J.R.T. Hughes), "Aspects of Quantitative Research in Economics History," R.M. Robertson, (London: Edward Arnold).
- Reiter, S. (with L. Hurwicz), "On the Boundedness of the Feasible Set Without Convexity Assumptions," <u>International Economic Review</u>, Vol. 14, No. 3, 1973.
- 22. Reiter, S. (with K. Mount), "The Informational Size of Message Spaces," <u>Journal of Economic Theory</u>, Vol. 8, No. 2, pp. 161-192, June 1974.
- 23. Reiter, S., "The Knowledge Revealed by an Allocation Process and the Informational Size of the Message Space," <u>Journal of Economic Theory</u>, Vol. 8, No. 3, pp. 389-396, June 1974.

- Reiter, S., "Informational Efficiency of Interactive Processes and the Size of Message Spaces," <u>Journal of Economic Theory</u>, Vol. 8, No. 2, pp. 193-205, June 1974.
- 25. Reiter, S. (with L. Hurwicz and R. Radner), "A Stochastic Decentralized Allocation Process: Part I, <u>Econometrica</u>, Vol. 43, No. 2, March 1975.
- Reiter, S. (with L. Hurwicz and R. Radner), "A Stochastic Decentralized Resource Allocation Process: Part II," <u>Econometrica</u>, Vol. 43, No. 3, May 1975.
- 27. Reiter, S. (with K. Mount), "Construction of a Continuous Utility Function for a Class of Preferences," <u>Journal of Mathematical Economics</u>, Vol. 3, No. 3, pp. 227-247, December 1976.
- Reiter, S., "Information, Incentive and Performance in the (New)<sup>2</sup> Welfare Economics," Papers and Proceedings of the Eighty-Ninth Annual Meeting of the American Economic Association, <u>The American Economic Review</u>, Vol. 67, No. 1, February 1977. Reprinted in <u>Studies in Mathematical</u> <u>Economics</u>, ed. by S. Reiter, Mathematical Association of America, 1987.
- 29. Reiter, S. (with K. Mount), "Economic Environments for Which There are Pareto Satisfactory Mechanisms," <u>Econometrica</u>, Vol. 4, pp. 821-842, May 1977.
- Reiter, S., "A Dynamic Process of Exchange," <u>Essays in Contemporary</u> <u>Fields of Economics in Honor of E.T. Weiler</u>, ed. by George Horwich and James T. Quirk, 1981.
- Reiter, S. (with J.R.T. Hughes), "A Preface on Modeling the Regulated United States Economy," <u>Hofstra Law Review</u>, Vol. 9, No. 5, pp. 1381-1421, Summer 1981.
- Reiter, S. (with K. Mount), "On the Existence of a Locally Stable Dynamic Process with a Statically Minimal Message Space," February 1983, <u>Information, Incentives, and Economic Mechanisms, Essays in Honor of</u> <u>Leonid Hurwicz</u>, University of Minnesota Press, 1984.
- Reiter, S. (with K. Mount), "Approximation in a Continuous Model of Computing," <u>Journal of Complexity</u>, Vol. 1, pp. 158-168, 1985.
- Reiter, S., "Nancy Schwartz," The New Palgrave: A Dictionary of Economics, edited by J. Eatwell, M. Milgate and P. Newman, Macmillan Press, 1987, Pg. 128.

- 35. Reiter, S. (with S. Reichelstein), "Game Forms with Minimal Message Spaces," <u>Econometrica</u>, Vol. 56, No. 3, pp. 661-692, May, 1988.
- Reiter, S., "Efficient Allocation," The New Palgrave: A Dictionary of Economics, edited by J. Eatwell, M. Milgate and P. Newman, Macmillan Press, 1987, 108-120.
- 37. Reiter, S., "Final Report of the Working Group on Markets and Organizations, Ten Year Outlook in the Behavioral and Social Sciences," National Research Council, <u>Leading Edges In Social And Behavioral</u> <u>Science</u>, edited by R. Duncan Luce, Neil J. Smelser, and Dean R. Gerstein, published by the Russell Sage Foundation, 1989.
- Reiter, S. (with C. Simon), "Decentralized Dynamic Processes For Finding Equilibrium," <u>Journal of Economic Theory</u>, Vol. 56, No. 2, pp. 400-425, April 1992.
- Reiter, S., "A Decentralized Process for Finding Equilibria Given by Linear Equations," February, 1994. <u>Proceedings of the National Academy of</u> <u>Science</u>, Vol. 91, pp. 7169–7173, July 1994.
- 40. Reiter, S., "On Endogenous Economic Regulation," <u>Economic Design</u>, Vol. 2, 211-243, 1996.
- 41. Reiter, S., "Sobre la Regulacion Politica Endogena," <u>Cuardernos</u> <u>Economicos</u>, 1996/1, No. 62, 29-62.
- 42. Reiter, S. (with K. Mount), "A Lower Bound on Computational Complexity Given by Revelation Mechanisms," <u>Economic Theory</u>, Vol. 7, No. 2, pp. 237-266, March 1996.
- Reiter, S. (with K. Mount), "A Modular Network Model of Bounded Rationality," <u>Organizations with Incomplete Information</u> (ed. M. Majumdar), Cambridge University Press, New York, pp. 306-340, 1998.
- Reiter, S., "On Coordination, Externalities, and Organization," <u>Designing</u> <u>Institutions for Environmental and Resource Management, edited by Edna</u> <u>Tusak Loehman and D. Marc Kilgour, published by Edward Elgar</u> <u>Publishing Limited, Cheltenham, UK</u>,1998.
- 45. Reiter, S., "Knowledge, Discovery and Growth," <u>Coordination Theory and</u> <u>Collaboration Technology</u>, edited by G.M. Olson, T.W. Malone & J.B. Smith; Lawrence Erlbaum Associates, Mahwah, NJ, 2001.
- 46. Reiter, S., "Interdependent Preferences and Groups of Agents," <u>Journal of</u> <u>Public Economic Theory</u>, Vol. 3, No. 1, January 2001.

- 47. Reiter, S., "Coordination of Economic Activity: An Example," <u>Review of Economic Design</u>, Vol. 6, pp. 263-288, 2001.
- 48. Reiter, S. (with L. Hurwicz), "Transversals, Systems of Distinct Representatives, Mechanism Design, and Matching," <u>Review of Economic</u> <u>Design</u>, Vol. 6, No. 2, 2001.

### **Preprints, Discussion Papers**

- 1. Reiter, S., "Additivity in Linear Models of Production," Econometric Society, abstract in <u>Econometrica</u>, July 1951.
- 2. Reiter, S., "Technological and Organizational Structures of Production," Technical Report No. 4, ONR Contract N60nn-25133, Department of Economics, Stanford University, June 1952, Discussion Paper.
- Reiter, S., "Some Considerations Affecting the Analysis of Economic Organization: An Example," Technical Report No. 7, Office of Naval Research Project, Contract No. N6 ONR-25133, Department of Economics, Stanford University, March 1953, Discussion Paper.
- 4. Reiter, S. (with H. Chernoff), "Selecting a Distribution Function to Minimize an Expectation Subject to Side Conditions," Stanford University Technical Report No. 23, 1954, Discussion Paper.
- 5. Reiter, S., "A Model of University Operations," Technical Report No. 1, Statistical Laboratory, Purdue University, July 1955, Discussion Paper.
- 6. Reiter, S., "A Market Adjustment Mechanism," Krannert School of Industrial Administration, Institute Paper Series No. 1, Purdue University, 1960, Discussion Paper.
- Reiter, S. (with D. Rice), "A Computational Method for Integer Programming With Linear or Quadratic Objectives and Constraints," The Institute of Management Science, Vienna, September 1965.
- Reiter, S. (with K. Mount), "Continuous Representation of Preferences," CMS-EMS (The Center for Mathematical Studies in Economics and Management Science, Northwestern University), April 1974, Discussion Paper No. 11.
- 9. Reiter, S. (with K. Mount), "On the Definition of Informational Size," CMS-EMS, December 1974, Discussion Paper No. 120.

- 10. Reiter, S., "A Model of Technology With Innovation," CMS-EMS, September 1978, Discussion Paper No. 346.
- 11. Reiter, S. (with L. Hurwicz and D. Saari), "On Constructing Mechanisms With Message Spaces of Minimal Dimension for Smooth Performance Functions," Mimeo, 1978.
- Reiter S., "A Market Adjustment Process: Institute paper No. 1 Revisited." Symposium in honor of E.T. Wiler, Purdue University, West Lafayette, Indiana. <u>Essays in Contemporary Fields of Economics in Honor of E.T.</u> <u>Weiler</u>, ed. by George Horwich and James T. Quirk, 1981.
- Reiter, S. (with L. Hurwicz and D. Saari), "On Constructing Informationally Decentralized Process Implementing a Given Performance Function," presented at Aix-en-Provence, France, Econometric Society World Congress, 1980.
- Reiter, S. (with L. Hurwicz and D. Saari), "An Explicit Analysis of the Case Where Each of the Two Agents Has Three Parameters (n=2, k<sub>1</sub> = k<sub>2</sub> = 3), " Mimeo, 1980.
- 15. Reiter, S. (with K. Mount), "Computational Complexity of Resource Allocation Mechanisms," Mimeo, November 1983.
- 16. Reiter, S., "How a Network of Processors Can Schedule Its Work," CMS-EMS, April 1984, Discussion Paper No. 605.
- 17. Reiter, S., "Computing and Organization," Handout, Decentralization Conference, University of Rochester, Rochester, New York, April 16, 1988.
- 18. Reiter, S., "Economic Organization and Distributed Computing," presented at Minisymposium SIAM Conference, Minneapolis, Minnesota, July 14, 1988.
- 19. Reiter, S., "A Decentralized Linear Process for Finding Equilibria," CMS-EMS, November 1991, Discussion Paper No. 967.
- 20. Reiter, S., "Knowledge, Discovery and Growth," CMS-EMS, November 1992, Discussion Paper No. 1011.
- Reiter, S. (with K. Mount), "Essential Revelation Mechanisms and Computational Complexity," CMS-EMS, May 1993, Discussion Paper No. 1047.
- 22. Reiter, S. (with K. Mount), "On Modeling Computing with Human Agents," CMS-EMS, January 1994, Discussion Paper No. 1080.

- 23. Reiter, S., "On Endogenous Economic Regulation," CMS-EMS, October 25, 1993, revised January 5, 1994, Discussion Paper No. 1082.
- 24. Reiter, S. (with K. Mount), "A Lower Bound on Computational Complexity Given by Revelation Mechanisms," CMS-EMS, March 1994, Discussion Paper No. 1085.
- 25. Reiter, S., "Coordination and the Structure of Firms," CMS-EMS, May 1995, revised September 1996, Discussion Paper No. 1121.
- Reiter, S. (with L. Hurwicz), "On Transversals and Systems of Distinct Representatives," (formerly entitled "On Representing Classes of Sets), CMS-EMS, January 1997, revised January 2000, Discussion Paper No. 1176R.
- 27. Reiter, S., "Interdependent Preferences and Groups of Agents," CMS-EMS, August 1998, revised March 2000, Discussion Paper No. 1217R.
- 28. Reiter, S., "Coordination of Economic Activity: An Example" CMS-EMS, June 1999, Discussion Paper No. 1263.

### Recent Professional Lectures, Talks, Seminars, Conferences and Conventions

March 1977	"Informational Properties of Resource Allocation Mechanisms," University of Ottawa, Canada.
November 1977	Conference of the Midwestern Mathematical Association, University of Wisconsin at Madison, Wisconsin.
January 1978	"A Market Adjustment Process: Institute Paper No. 1 Revisited." Symposium in honor of E.T. Weiler, Purdue University, West Lafayette, Indiana.
February 1978	"On the Comparative Study of Alternative Resource Allocation Mechanisms." Conference on Resource Allocation and Imperfect Information, Bell Laboratories at Holmdel, New Jersey.
April 1978	Decentralization Conference, National Bureau of Economic Research, Minneapolis, Minnesota.
June 1978	"On Constructing Mechanisms With Message Spaces of Minimal Dimension for Smooth Performance Functions,"

	Econometric Society Summer Meeting at Boulder, Colorado, (with Leonid Hurwicz and Don Saari).
October 1978	"A Model of Technology With Innovation," University of Minnesota, Minneapolis, Minnesota.
November 1978	Conference on the "Theory of Incentives in the Soviet Eastern European Economies," Wayne State University, Detroit, Michigan.
February 1979	"The Decentralization Conference," National Bureau of Economic Research, University of California, San Diego, California.
May 1979	"Theory of General Economic Equilibrium," Conference Seminar, National Bureau of Economic Research, University of California, Berkeley.
February 1980	"Recent Developments in Welfare Economics," University of Miami, Coral Gables, Florida.
September 1983	"The Informational Size of Message Spaces," Workshop on Decentralized Implementation of Performance Functions, Institute for Mathematics and it Applications, University of Minnesota, Minneapolis, Minnesota.
November 1983	"Computational Complexity of Resource Allocation Mechanisms," Decentralization Conference, Institute for Mathematics and its Applications, University of Minnesota, Minneapolis, Minnesota.
May 1984	"On Constructing an Informationally Decentralized Process Which Implements a Given Performance Function," Mathematical Models for the Economics of Decentralized Resource Allocation, Institute for Mathematics and its Applications, University of Minnesota, Minneapolis, Minnesota.
December 1984	Workshop on Applications of Supercomputers to Information Science, Intelligent Computer Systems Research Institute, University of Miami.
February 1985	"Local Stability of Resource Allocation Processes," California Institute of Technology.

March 1985	"Informational Properties of Decentralized Mechanisms," California Institute of Technology.
April 1985	"Approximation in a Continuous Model of Computing," Symposium on the Complexity of Approximately Solved Problems, Columbia University, New York.
May 1985	"Evolution, Games and Learning: Models for Adaptation in Machines and Nature," the Center for Nonlinear Studies, Fifth Annual International Conference, Los Alamos National Laboratory. Invited address.
May 1986	"Decentralized Allocation Mechanisms and Distributed Computing," NSF/NBER Conference Seminar on Decentralization, University of California, Berkeley.
May 1987	Conference Seminar on Decentralization, New York University.
June 1987	Workshop on Organizational Science, Massachusetts Institute of Technology, Boston, Massachusetts.
	"Computational Complexity in Economic Mechanisms," Center for Complex Systems Research, University of Illinois, Champaign-Urbana, Illinois.
July 1987	"Complexity and Organization," Department of Economics, Cornell University, Ithaca, New York.
November 1987	Conference on Knowledge and Institutional Change, Chairman of panel discussion, University of Minnesota.
February 1988	Workshop on Coordination Theory, supported by National Science Foundation, Massachusetts Institute of Technology, Boston, Massachusetts.
April 1988	"Computing and Organization," Handout, NSF Decentralization Conference, University of Rochester, Rochester, New York, April 16, 1988.
May 1988	Meeting of Advisory Committee; Division of Information, Robotics and Computing, Xerox Palo Alto Research Center, Palo Alto, California.

June 1988	Open Systems Workshop on "Organizational Knowledge Processing" and "Natural and Artificial Open Systems," Xerox Palo Alto Research Center, Palo Alto, California.
July 1988	"Computing and Organization" lecture at University of Michigan, Ann Arbor, Michigan.
	Organizer & Chairman, Minisymposium on Parallel Processing, Distributed Computing and Economics, 1988 SIAM Annual Meeting, Minneapolis, Minnesota.
	"Economic Organization and Distributed Computing," presented at 1988 SIAM Annual Meeting, Minneapolis, Minnesota.
May 1989	Conference, by invitation, in honor of Lionel McKenzie, University of Rochester, Rochester, New York.
	Conference Seminar on Decentralization, California Institute of Technology, Pasadena, California.
June 1989	"A Class of Dynamic Processes for Finding Equilibrium," presented at Workshop on Decentralized Decision Making: Information and Incentives, Universitat Automa de Barcelona, Bellaterra, June 12 - 14, 1989.
August 1989	"A New Class of Dynamic Processes," presented at Cornell University, August 11, 1989.
September 1989	"Bounded Rationality, Computation and Economic Organization," Conference on the Effective Content of Mathematical Models in the Social Sciences, University of California, Irvine, September 7, 1989.
April 1991	"A Model of Computing with Human Agents," presented at Cornell University, April 11 - 13, 1991.
June 1991	"Decentralized Methods for Finding Equilibrium," presented at NSF Grantees Workshop, Washington, D.C. Panel on Directions for Research.
March 1992	"A Decentralized Linear Process for Finding Equilibria," presented at NBER-NSF Conference on Decentralization, University of Arizona, March 27-29, 1992.

May 1992	"Decentralized Processes for Finding Equilibria in Linear Models," Conference of Computational Economics, University of Texas at Austin, May 17 -19, 1992.
December 1992	"Knowledge, Discovery and Growth," presented at California Institute of Technology, December 15, 1992.
February 1993	"Knowledge, Discovery and Growth," Economic Theory Seminar, University of Minnesota, February 22, 1993.
March 1993	"A Theory of Computation with Human Agents," joint with Kenneth Mount, University of California, Berkeley, Interdisciplinary Workshop on Coordination and Complexity, March 24-25, 1993.
March 1993	"Designing Mechanisms by the 'Method of Rectangles,' joint with Leonid Hurwicz, 1993 Decentralization Conference, University of California, Berkeley, March 25-27, 1993.
July 1993	"Distributed Algorithms for Linear Systems" Coordination Theory and Collaboration Technology Workshop sponsored by the National Science Foundation, Arlington, VA, July 8-10, 1993.
October 1993	"Modeling the Regulated US Economy," University of St. Thomas, MI, Minnesota Economic Association annual Fall meeting, October 8, 1993.
July 1994	"On Endogenous Economic Regulation," presented at the Second International Meeting of the Society for Social Choice and Welfare at the University of Rochester, Rochester, New York, July 8-11, 1994.
April 1995	"Coordination and the Structure of Firms," presented at the Economic Theory Seminar, California Institute of Technology, April 6, 1995.
	"Coordination and the Structure of Firms," presented at the 1995 Decentralization Conference, University of Illinois at Urbana-Champaign, April 28-30, 1995.
April 1996	"Coordination and the Structure of Firms," presented at the Seminar in Mathematical Economics, Ohio State University, April 12-13, 1996.

May 1996	"Coordination and the Structure of Firms," presented at the Economics and Management Seminar, University of Rochester, May 14, 1996.
April 1998	"On Representation of Sets," with Leonid Hurwicz, NSF/NBER Conference on Decentralization 1998, University of Minnesota Department of Economics, April 17-19, 1998.
May 1998	"On a Special Class of Externalities in Preferences," International Conference on Public Economic Theory, Association for Public Economic Theory, University of Alabama, May 28-31, 1998.
April 1999	"Coordinating Economic Activity: An Example," NSF/NBER Decentralization Conference, Leonard N. Stern School of Business, New York University, April 16-19, 1999.
May 1999	"Interdependent Preferences and Groups of Agents," Midwest Economic Theory Conference, Purdue University April 30-May 2, 1999.
March 2000	"Interdependent Preferences and Groups of Agents," Economics Department, Pennsylvania State University, March 3, 2000.
	"Interdependent Preferences and Groups of Agents," Economics Department, Ohio State University, March 31, 2000.
October 2001	"Interdependent Preferences and Groups of Agents," U-M Center for the Study of Complex Systems, University of Michigan, Ann Arbor, October 11, 2001.

## **Professional Services**

Associate Editor, Economic Design.

Associate Editor, Complex Systems.

Member Advisory Committee, Division of Information, Robotics and Intelligent Systems, National Science Foundation.

Chairman of NSF site visit team evaluating proposal from University of Arizona for Science & Technology Center, 1988.

Member of NSF site visit team evaluating proposal from Duke University, 1988.

Reviewer of Proposals for NSF Science & Technology Centers (1988).

Reviewer for Information Technology & Organizations Program, National Science Foundation.

Reviewer for NSF Research proposals for the Physics Program, the Information Impact Program and the Economics Program.

Member of Visiting Review Committee, Department of Economics, University of Minnesota.

Member of Visiting Review Committee, Department of Economics, University of Arizona, 1990.

National Research Council -- Chairman, Working Group on Markets and Organizations, Ten Year Outlook on Research.

### Northwestern University Committees

Member, WCAS Committee to Review Promotion and Tenure procedures, and several departmental ad hoc promotion review committees.

CAS Committee on Promotions and Tenure, 1987-1988; 1994-97

CAS Committee on Lectures and Convocations, 1989-1990

KGSM Art Committee for the Allen Center

Member - University Program Review Council 1989-94. Chairman, review committees for: Office of the General Council; Office of the Provost; Women's Center; Course and Teacher Evaluation Council; English Department; Writing Program.

Program Review Committee - Physics Department, 1986-1987

Program Review Committee for Engineering Science and Applied Mathematics, 1987-1988

Committee to Review the University Calendar, 1989

Nemmers Prize Selection Committee April 1994

Member Arts and Sciences Lecture Committee

#### Research Grants

- Principal Investigator, Office of Naval Research Contract in Mathematical Economics at Purdue University, 1958-1967
- General Electric Foundation -- October 6, 1970 (through Graduate School of Management)
- National Science Foundation -- Grant No. SOC71-03784 A04 "Comparison and Analysis of Systems and Techniques of Economic Organization", October 15, 1971 - March 31, 1977
- National Science Foundation -- Grant No. SES-7715793 "Information Incentives in Resource Allocation" March 1, 1978 - February 28, 1983
- National Science Foundation -- Grant No.IST-8314504 "Computational Complexity of Resource Allocation Mechanisms" April 1, 1984 -- September 30, 1986
- National Science Foundation -- Grant No.IST-8509678 "Informational Aspects of Distributed Computing and Decentralized Resource Allocation," October 15, 1985 – September 30, 1989

National Science Foundation -- Grant No. IRI-9020270/01 "Decentralized Dynamic Processes and Distributed Algorithms" December 15, 1990 - November 30, 1993. Special Creativity Extension awarded for 1994 – 1996.