

## John O. Ledyard

### EDUCATION

A.B., Wabash College (Mathematics) 1963  
M.S., Purdue University (Economics) 1965  
Ph.D., Purdue University (Economics) 1967

### EXPERIENCE

Instructor, Wabash College, 1965-1966  
Assistant Professor, Carnegie-Mellon University, 1967-1970  
Research Associate, Northwestern University, 1969  
Assistant Professor, Northwestern University, 1970-1971  
Associate Professor, Northwestern University, 1971-1975  
Professor, Northwestern University, 1975-1982  
Sherman Fairchild Distinguished Scholar, California Institute of Technology, 1977-1978  
Associate Dean, College of Arts and Sciences, Northwestern University, 1982-1983  
Sydney G. Harris Professor of Social Science, Northwestern University, 1983-1985  
Visiting Professor, California Institute of Technology, 1983-1984  
Professor of Economics and Social Sciences, California Institute of Technology, 1985-  
Chairman, Division of the Humanities and Social Sciences, Caltech, 1992-2002  
Allen and Lenabelle Davis Professor of Economics and Social Sciences, 2002 -  
Director, Social and Information Sciences Laboratory, Caltech 2006 -  
Director, Interactive Political and Economic Systems (IPES), Caltech 2006 -

### OTHER PROFESSIONAL ACTIVITIES AND HONORS

Economic Theory Fellow, elected 2011  
Fellow of the American Academy of Arts and Sciences, elected 1999  
Fellow of Econometric Society, elected 1977  
Fellow of Public Choice Society, elected 2004  
Honorary Ph.D. Degree, Purdue University and Indiana University, 1993  
President, *Public Choice Society*, 1980-1982  
Executive Committee, Economic Science Association, 1986-88  
Nancy L. Schwartz Memorial Lecture, KGSM, Northwestern University, 2005  
Ida Beam Lecture, University of Iowa, 1988  
Hooker Distinguished Visiting Professor, McMaster University, 1995-96  
Sherman Fairchild Scholar, Caltech, 1976-77  
The Annual Koc University Prize for the Best Paper of the Year 1996 in *Economic Design*  
with Charles Noussair and David Porter for "The Allocation of a Shared Resource Within  
an Organization," *Economic Design*, Vol. 2, No. 2, November 1996, pp. 163-192.  
Associate Editor, *Journal of Economic Theory*, 1977-1980  
Associate Editor, *Journal of Economic Behavior and Organization*, 1987-95

Editorial Board, *Economic Theory*, 1989-2001  
Associate Editor, *Economic Design*, 1994-2006  
Editor, *Review of Economic Design*, 2006-  
Associate Editor, *Journal of Public Economic Theory*, 1999-  
Advisory Panel on Economics, National Science Foundation, 1978-1980  
Executive Committee of the Advisory Committee for Social and Economic Science, National  
Science Foundation, 1980  
Program Committee, World Congress of the Econometric Society, 1980  
Chairman, Program Committee, North American Meeting of the Econometric Society,  
December 1981  
National Academy of Sciences, Panel to Advise on National Science Fellowships, 1985  
Economics Program Oversight Committee, National Science Foundation, 1989

## **EDITED BOOK**

*The Economics of Informational Decentralization: Complexity, Efficiency and Stability*, editor,  
Kluwer Academic Publishers, 1995.

## **PUBLICATIONS**

1. "Resource Allocation in Unselfish Environments." *American Economic Review* 58, No. 2 (May 1968):227-237.
2. "A Convergent Pareto-Satisfactory Non-Tatonnement Adjustment Process for a Class of Unselfish Exchange Environments." *Econometrica* 39, No. 3 (May 1971):467-499.
3. "Cost Benefit Analysis as a Statistical Hypothesis Test: An Example from Urban Transportation." *Environment and Planning* 2, No. 3, 1970.
4. "The Relation of Optima and Market Equilibria with Externalities." *Journal of Economic Theory* 3, No. 1 (March 1971) :54-65.
5. "A Pseudo-metric Space of Probability Measures and the Existence of Measurable Utility." *The Annals of Mathematical Statistics* 42, No. 2 (April 1971):794-798.
6. "Nonvoting and the Existence of Equilibrium under Majority Rule," with M. Hinich and P. Ordeshook. *Journal of Economic Theory* 4, No. 2 (April 1972):144-153.
7. "A Theory of Electoral Equilibrium: A Spatial Analysis Based on the Theory of Games," with M. Hinich and P. Ordeshook. *Journal of Politics* 35 (1973):154-193.
8. "Electoral Equilibrium: A Spatial Analysis Based on the Theory of Games - Rejoinder," *Journal of Politics* 38(1) (1973).

9. "On Sequences of Temporary Equilibrium." In *Essays on Economic Behavior under Uncertainty*, edited by Balch, McFadden, and Wu, pp. 332-338. New York: North Holland, 1974.
10. "On the Nature of Externalities: A Comment." In *Theory and Measurement of Economic Externalities*, edited by S.A.Y. Lin, pp. 23-28. Orlando, Florida: Academic Press, 1976.
11. "Dynamics and Land Use: The Case of Forestry," with L. Moses. In *Public and Urban Economics: Essays in Honor of William Vickery*, edited by R. Grieson, pp. 111-157. Lexington, Massachusetts: Lexington Books, 1976.
12. "Optimal Allocation of Public Goods: A Solution to the 'Free-Rider' Problem," with T. Groves. *Econometrica* 45, No. 4 (May 1977):783-809.  
Reprinted in *Library of Critical Writings in Economics*, edited by Mark Blaug, Volume on *Social Choice Theory* edited by C.K. Rowley, Cheltenham, England: Edward Elgar Publishing Ltd . 1992.
13. "Some Limitations of Demand-Revealing Processes," with T. Groves. *Public Choice* 29, No. 2 (Special Supplement to Spring 1977):107-124.
14. "Some Limitations of Demand-Revealing Processes," – Reply, with T. Groves. *Public Choice* 29, No. 2 (Special Supplement to Spring 1977):139-143.
15. "Incentive Compatible Behavior in Core-Selecting Organizations." *Econometrica* 45, No. 7 (Oct. 1977):1607-1623.
16. "Dominant Strategy Mechanisms and Incomplete Information." In *Aggregation and Revelation of Preferences*, edited by J. Laffont. New York: North Holland, 1979.
17. "Private Alternative to the Judicial Process – Discussion." *Journal of Legal Studies*, 8(2) (1979):323-398.
18. "Incentive Compatibility and Incomplete Information." *Journal of Economic Theory* 18, No. 1 (June 1978):171-189.
19. "The Existence of Efficient and Incentive Compatible Equilibria with Public Goods," with T. Groves. *Econometrica* 48, No. 6 (Sept. 1980):1487-1506.
20. "The Paradox of Voting and Candidate Competition: A General Equilibrium Analysis." In *Essays in Contemporary Fields of Economics*, edited by G. Horwich and J. Quirk. West Lafayette, Indiana: Purdue University Press, 1982.
21. "The Pure Theory of Large Two Candidate Elections." *Public Choice* 44 (1984):7-41.  
Reprinted in *The Economics of Politics*, edited by Dennis C. Mueller, Volumes on *The International Library of Critical Writings in Economics*, Series Editor: Mark Blaug, Cheltenham, England: Edward Elgar Publishing Ltd. 2000.

22. "Incentive Compatibility: Ten Years Later," with T. Groves, in *Information, Incentives, and Economic Mechanisms*, edited by T. Groves, R. Radner, and S. Reiter. University of Minnesota Press, 1988.
23. "The Scope of the Hypothesis of Bayesian Equilibrium." *Journal of Economic Theory* 39 (1986):59-82.
24. "The Economics of Space Station." In *Explorations in Space Policy: Emerging Economic and Technical Issues*, edited by M.K. Macauley, Resources for the Future and the National Academy of Engineering, Washington, D.C., 1987.
25. "Incentive Compatible Space Station Pricing." *American Economic Review* 76 (1986):274-279.
26. "Elections and Reputations: A Comment on the Papers of Coughlin and Ferejohn." *Carnegie Papers on Political Economy VI*. The Hague: Martinus Nijhoff/Dr. W. Junk, 1986.
27. "Market Failure," in *The New Palgrave*, London: MacMillan Press, 1987.
28. "Incentive Compatibility," in *The New Palgrave*, London: MacMillan Press, 1987.
29. "Economic Issues in the Development of New Technology," in *Symposium on NASA Space Communications: Research, Development and Application*. The National Academy of Science, 1987.
30. "Information Aggregation in Two-Candidate Elections," in *Contemporary Contributions to Political Theory*, edited by Peter Ordeshook. University of Michigan Press, 1989.
31. "Allocating Uncertain and Unresponsive Resources" with J. Banks and D. Porter. *The RAND Journal of Economics* 20, No. 1 (Spring 1989):1-25.
32. "Coordination in Shared Facilities: A New Methodology" *Journal of Organizational Computing*, Vol.1, No. 1 (1991):41-59.
33. "Political Competition in a Model of Economic Growth: An Experimental Study," with R. Boylan, A. Lupia, R. McKelvey, and P. Ordeshook. *Laboratory Research in Political Economy*, edited by T. Palfrey. Ann Arbor, MI: University of Michigan Press, pp.33-68, 1991.
34. "Theories of Price Formation and Exchange in Double Oral Auctions," with D. Easley. *The Double Auction Market: Institutions, Theories and Evidence*, edited by D. Friedman, J. Geanakoplos, D. Lane, and J. Rust, Santa Fe Institute Studies in the Sciences of Complexity, Proceedings Volume XV., Addison-Wesley 1992.

35. "The Design of Coordination Mechanisms and Organizational Computing," *Journal of Organizational Computing*, 3(1), pp. 121-134, 1993.
36. "Designing Organizations for Trading Pollution Rights," with K. Szakaly. *Journal of Economic Behavior and Organization*, Vol. 25 (1994): 167-196.
37. "Voting and Lottery Drafts as Efficient Public Goods Mechanisms," with T. Palfrey. *The Review of Economic Studies*, 61:327-355, 1994.
38. "Public Goods: A Survey of Experimental Research," in *Handbook of Experimental Economics*, edited by J. Kagel and A. Roth, Princeton University Press, 1995.
39. "Using Computerized Exchange Systems to Solve an Allocation Problem in Project Management," with David Porter and Antonio Rangel. *Journal of Organizational Computing*, Vol. 4, Number 3, 1994, pp. 271-296.
40. "Introduction," with Thomas R. Palfrey. *Games and Economic Behavior*, Vol 10, Number 1, 1995, pp. 1-5
41. "Political Competition in a Model of Economic Growth: Some Theoretical Results," with R. Boylan and R. McKelvey, *Economic Theory*, Vol. 7, No.2, 1996, pp. 191-207.
42. "The Allocation of a Shared Resource within an Organization," with Charles Noussair and David Porter, *Economic Design*, Vol. 2, No. 2, November 1996, pp. 163-192.
43. "Experiments Testing Multiobject Allocation Mechanisms," with David Porter and Antonio Rangel, *Journal of Economics and Management Strategy*, Vol. 6, No. 3, 1997, pp. 639-675.
44. "Repeated Implementation," with Ehud Kalai, *Journal of Economic Theory*, Vol. 83, No. 2, December 1998, p. 308-317.
45. "Interim Efficiency in a Public Goods Problem," with Thomas R. Palfrey, in *La Bibliotheque Scientifique Francqui Vol. 2, "Social Organization and Mechanism Design, Proceedings of the Second Francqui Colloquium, 10-11 June 1996, Brussels,"* edited by Claude d'Aspremont, De Boeck & Larcier s.a., Brussels, 1999.
46. "A Characterization of Interim Efficiency with Public Goods," with Thomas R. Palfrey, *Econometrica*, Vol. 67, No. 2 (March, 1999), 435-448.
47. "A Market-Based Mechanism for Allocating Space Shuttle Secondary Payload Priority," with David Porter and Randii Wessen. *Experimental Economics*, 2(3): 173-195, March 2000.
48. "Mutually Destructive Bidding: The FCC Auction Design Problem," with Mark M. Bykowsky and Robert J. Cull. *Journal of Regulatory Economics*, 17(3): pp. 205-228, May 2000.

49. "Concurrent Trading in Experimental Markets with Demand Interdependence," with Arlington Williams, and Vernon Smith. *Economic Theory*, Vol. 16, No. 3, November 2000, pp. 511-528.
50. "Experimental Testbedding of a Pollution Trading System: Southern California's RECLAIM Emissions Market," with Takashi Ishikida, Mark Olson, and David Porter, in *Research in Experimental Economics*, edited by R. Mark Issac, pp. 185-220, JAI Press, 2001.
51. "The Approximation of Efficient Public Good Mechanisms by Simple Voting Schemes," with Thomas Palfrey. *Journal of Public Economics* 83(2):153-171, February 2002.
52. "The First Use of a Combined Value Auction for Transportation Services," with Mark Olson, David Porter, Joseph A. Swanson, and David P. Torma. *Interfaces*, 32(5):4-12, September - October 2002.
53. "Inducing Liquidity In Thin Financial Markets Through Combined-Value Trading Mechanisms," with Peter Bossaerts, and Leslie Fine. *European Economics Review*, 46(9): 1671-1695, October 2002.
54. "Information and Dynamics: Sequences of Call Markets," with Jasmina Arifovic. *Information Systems Frontiers*, 5(1): 39-45, 2003.
55. "A New and Improved Design for Multi-Object Iterative Auctions," with Anthony M. Kwasnica, David Porter, and Christine DeMartini. *Management Science* 51(3) 419-434, 2005
56. "Scaling up Learning Models in Public Good Games," with Jasmina Arifovic *Journal of Public Economic Theory*, 6(2) 203-238, 2004
57. "Voting and Efficient Public Goods Mechanisms" chapter 26 in *The Handbook of Political Economy*, eds. Barry Weingast and Donald Wittman, Oxford University Press 2006
58. "Designing Information Markets for Policy Analysis" in *Information Markets: A New Way of Making Decisions in the Public and Private Sectors*, ed. Robert Hahn, AEI-Brookings Joint Center, 2005. <http://www.aei-brookings.org/publications/abstract.php?pid=1058>.
59. "Contracting Inside an Organization: An Experimental Study," with C. Noussair, H. Thronson, P. Ulrich, and G. Varsi, *Experimental Economics* February 2007, <http://dx.doi.org/10.1007/s10683-006-9137-x>
60. "A General Characterization of Interim Efficient Mechanisms for Independent Linear Environments", with Tom Palfrey, *Journal of Economic Theory* 133 (2007) 441-466.

61. “Call Market Book Information and Efficiency”, with Jasmina Arifovic, *Journal of Economic Dynamics and Control*, 31, 2007, 1971-2000
62. “An Experimental Test of Combinatoric Information Markets” with Robin Hanson and Takashi Ishikida, *Journal of Economic Behavior and Organization*, 69 (2) 2009, 182-189
63. “Market Design Experiments” with Yan Chen, *The New Palgrave Dictionary of Economics*, second edition, 2009
64. “Individual Evolutionary Learning with Many Agents” with Jasmina Arifovic, *The Knowledge Engineering Review*, Volume 27, Issue 02, June 2012, pp 239-254  
<http://journals.cambridge.org/action/displayIssue?decade=2010&jid=KER&volumeId=27&issueId=02>
65. “An Experimental Test of Flexible Combinatorial Spectrum Auction Formats” with Charles Holt, Jacob Goeree, and Christof Brunner, in *American Economic Journal*, Feb 2010
66. “Using neural measures of economic value to solve the public goods free-rider problem” with Ian Krajbich, Colin Camerer, and Antonio Rangel, *Science* 326, p. 596-99, October 2009
67. “Prediction Markets: Alternative Mechanisms for Complex Environments with Few Traders” with Paul J. Healy, Sera Linardi, J. Richard Lowery, in *Management Science*, 2010  
<http://dx.doi.org/10.1287/mnsc.1100.1226>
68. “A Behavioral Model for Mechanism Design: Individual Evolutionary Learning” with Jasmina Arifovic, *Journal of Economic Behavior & Organization*, [Volume 78, Issue 3](#), May 2011, Pages 374-395  
<http://dx.doi.org/10.1016/j.jebo.2011.01.021>
69. “Efficiency of Continuous Double Auctions under Individual Evolutionary Learning with Full or Limited Information” with Mikhail Anufriev, Jasmina Arifovic, Valentyn Panchenko, *Journal of Evolutionary Economics*, accepted for publication 2011
70. “Non-Coercion, Efficiency and Incentive Compatibility in Public Goods Decisions”, to appear in *Coercion and Social Welfare*, eds. Jorge Martinez and Stanley Winer, 2012
71. “Individual Evolutionary Learning, Other-regarding Preferences, and the Voluntary Contributions Mechanism” with Jasmina Arifovic, *Journal of Public Economics*, 96 (2012) 808–823  
<http://dx.doi.org/10.1016/j.jpubeco.2012.05.013>
72. “Optimal dynamic nonlinear income taxes with no commitment” with Marcus Berliant, accepted (subject to very minor revisions) at *Journal of Public Economic Theory*

73. “The Speed of Information Revelation and Eventual Price Quality in Markets with Insiders: Comparing Two Theories” with Peter Bossaerts and Cary Frydman, accepted at the Review of Finance 2012

## **REFEREED CONFERENCES**

C1. “A Pricing Mechanism which Implements a Network Rate Allocation Problem in Nash Equilibria”, with T. Stoenescu, Proceedings of the 45<sup>th</sup> IEEE conference on Decision and Control, 2006

Also as “Implementation in Nash Equilibria of a Rate Allocation Problem in Networks”, with T. Stoenescu, Proceedings of the 44<sup>th</sup> Annual Allerton Conference on Communication Control and Computing, 2006

C2. “Optimal Combinatoric Auctions with Single-Minded Bidders” 8<sup>th</sup> ACM conference on Electronic Commerce, 2007

## **PRESENTATIONS**

P1 “Information Mechanisms” a presentation for the Schwartz Lecture April 2005

## **WORKING PAPERS**

W3. “Market Design for Fishery IFQ Programs”

W5. Price Formation In Continuous Double Auctions; With Implications For Finance, with Peter Bossaerts

W6 “Neurometrically Informed Mechanism Design” with Ian Krajbich, Colin Camerer, Antonio Rangel

W7 “Residential Demand Response Program Design: Engineering and Economic Perspectives” with Johanna L. Mathieu, Tobias and Goran Andersson, 2013 submitted to EEM2013

## **UNPUBLISHED MANUSCRIPTS OF SOME INTEREST**

A. “Decentralized Disequilibrium Trading and Price Formation.” Discussion Paper No. 86. The Center for Mathematical Studies in Economics and Management Science, Northwestern University, June 1974.

- B. “On the Incentive Problem with Public Goods,” with John Roberts. Discussion Paper No. 116. The Center for Mathematical Studies in Economics and Management Science, Northwestern University, January 1975.
- C. “The Allocation of Public Goods with Sealed-Bid Auctions: Some Preliminary Evaluations.” Discussion Paper No. 336. The Center for Mathematical Studies in Economics and Management Science, Northwestern University, September, 1978.
- D. “Space Station Pricing Options.” Economic Research Series No. 20, Jet Propulsion Laboratory, Pasadena, October 1984.
- E. “Pricing, Evolution, and Design Planning of Space Station under Uncertainty,” with J. Banks and D. Porter. Economic Research Series No. 22, Jet Propulsion Laboratory, Pasadena, August 1985.
- F. “An Analysis and Recommendation for the Terms of the RECLAIM Trading Credit,” with Dale Carlson, Charles Forman, Nancy Olmstead, Charles Plott, David Porter, and Anne Sholtz. South Coast Air Quality Management District, April 1993.
- G. “An Analysis of the Information and Reporting Requirements, Market Architectures, Operational and Regulatory Issues, and Derivative Instruments for RECLAIM,” with Dale Carlson, Charles Forman, Nancy Olmstead, Charles Plott, David Porter and Anne Sholtz. South Coast Air Quality Management District, July 1993.
- H. “First Best Bayesian Privatization Mechanisms,” with Maciej K. Dudek and Taesung Kim. Social Science Working Paper No. 896, California Institute of Technology, Pasadena, rev. April 1995.
- I. “Modeling the Space Craft Design Process,” with Sandra Richardson, Dillard University, August 1999.
- J. “Contracting Between a Retailer and a Supplier,” with V. Bali, S. Callander, and K. Chen, September 2001.
- K. “Information Markets” Schwartz Lecture, April 2005
- L “Optimal Combinatoric Auctions with Single-Minded Bidders” (with experimental results)

## **WORK IN PROGRESS**

- M “Buy back Auctions” with Ted Groves
- N “Project Management Mechanisms” with JPL

**RECENT PHD STUDENTS (current location)**

- 2012 Luke Boosey (Florida State)  
Guilherme de Freitas
- 2011 Mohammed Mostigir (MIT)
- 2010 Sera Linardi (Pittsburgh)  
Julian Romero (Purdue)
- 2009 Serkan Kucuksenl (Turkey)  
Guido Maretto (Belgium)
- 2008 David Young (EPRI)
- 2005 PJ Healy (Ohio State University)
- 1999 Leslie Fine (Crowdcast)
- 1998 Anthony Kwasnica (Penn State)
- 1996 Robin Hanson (George Mason University)
- 1995 Szilvia Papai (Concordia)
- 1994 Yan Chen (University of Michigan)  
Katya Sherstyuk (University of Hawaii)
- 1993 Kay-yut Chen (Hewlett-Packard Labs)  
Charles Polk
- 1992 Charles Noussair
- 1991 Mark Olson
- 1990 Guofu Tan (University of Southern California)

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