

Mark A. Olson

PhD.

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Education

- June 1991 **Ph.D. (Economics)**, *California Institute of Technology*, Pasadena, CA.
- May 1979 **M.S. (Statistics)**, *University of Arizona*, Tucson, AZ.
- May 1977 **B.A. (Mathematics)**, *University of Arizona*, Tucson, AZ.

Employment History

- 2014–Present **Freelance Economic and Statistical Consulting.**
Design and analysis of industrial experiments for Shell Oil. Design of a market for online trading of advertising spots. Provided database structure, optimization algorithms and code, structural design and prototype. Data analysis for experimental data. Ongoing construction of R package and book for data analysis.
- 2014–2017 **Instructor**, *Grand Canyon University*, Phoenix, AZ.
Online instruction of economics and statistics. Built software to automate necessary tasks, provided analysis of student performance data.
- 2008–2014 **Economic and Statistical Consulting.**
Developed software for optimization of combinatorial advertising market exchanges. Simulations and data analysis of FCC auctions. Designed experiments and analyzed data for a study of spectrum allocation and congestion for the Federal Communications Commission. With Vernon Smith, provided experimental and data analysis for research into electric power and gas pipeline joint ventures in Alaska.
- 2002–2008 **Research Faculty**, *Interdisciplinary Center for Economic Science (ICES)*, *George Mason University*, Fairfax, VA.
Taught economic and statistical subjects both graduate and undergraduate. Analysis of Alaska pipeline proposal and FCC auctions.
- 2001–2002 **Interim Director**, (ICES), *George Mason University*, Fairfax, VA.
Conducted research with a focus on communications, energy, optimal mechanism design and statistical methods. Implemented networking, programming, hardware and software systems for complex economic analysis and client/server experimental software. Managed the design, construction and operation of the Vernon Smith ICES Laboratory.

- 1997–2001 **Research Scholar**, *Economic Science Laboratory, University of Arizona, Tucson, AZ.*
Modeling of electricity network for market trade.
- 1996–1997 **Visiting Assistant Professor**, *Department of Economics, Purdue University, West Lafayette, In.*
Taught both economic and statistical subjects both graduate and undergraduate.
- 1992–1996 **Senior Researcher**, *Center for Research in Experimental Economics and Political Decision Making (CREED), University of Amsterdam, Amsterdam, The Netherlands.*
Taught economic and statistical subjects both graduate and undergraduate. Study for the improvements for the Alsmeer Flower Auction and combinatorial optimization for rail transportation.
- 1991–1992 **Visiting Researcher**, *Department of Economics, Economics Science Laboratory, University of Arizona, Tucson, AZ.*
Taught economic and statistical subjects both graduate and undergraduate.
- 1985–1991 **Technical staff**, *Economic Analysis Group, Jet Propulsion Laboratory, Pasadena, CA.*
Economic and statistical analysis for engineering design and logistics for the shuttle, Space Station Freedom and the deep space communications network.
- 1984–1985 **Staff Economist**, *Telecommunication group, Arizona Corporation Commission, Phoenix, AZ.*
Policy analysis and testimony on telecommunications issues. Econometric analysis of the telecommunications industry.
- 1983–1984 **Economist**, *AT&T Communications, NJ.*
Econometric modeling, analysis and forecasting of the telecommunications industry.
- 1980–1983 **Research Assistant, Instructor**, *Department of Economics, Department of Statistics, Economic Sciences Lab., University of Arizona, Tucson, AZ.*
Taught both economic and statistical subjects to undergraduates.
- 1979–1980 **Mathematical Statistician, Computer Programmer**, *Bureau of the Census, US Government, Suitland, MD.*
Validation and statistical analysis for surveys.

Statistical Skills

- Statistical Learning
- Mathematical Analysis
- Data Visualization
- Statistical Computing
- Numerical Computation
- Statistical Analysis
- Numerical Optimization
- Experimental Design

Computer Skills

Operating Sys	Solaris/Unix/Linux, MS Windows	Web	HTML/CSS, JavaScript, PHP
Statistical	R, SAS, Excel	Computation	Gauss, Matlab, Julia
Programming	Java, C/C++, For- tran, Python	Scripting	shell, Perl, SQL

Publications

Current Research

- 2018** **2018a** (with Mark A. Olson and Vernon L. Smith). “Experimental Market Design and Methodology: The Alaska Gas Pipeline”. In preparation.
- 2018c** (with Mark A. Olson). “Statistics for Experimental Economists”. Working version, draft: estats.pdf.
- 2017** **2017** (with Mark A. Olson). “Optimal Queueing With Strategic Balking”.
- 2016** **2016** (with Mark A. Olson, David Porter, and Steve Rassenti). “Banking and Borrowing Pollution Credits in a Dynamic Investment Experiment”.

Publications and Reports

- 2018** **2018b** (with Kathy K. Archer and Mark A. Olson). “Practice. Practice. Practice. Do Homework Management Systems Work?” In: *International Journal for the Scholarship of Teaching and Learning* 12.2, pp. 12–22.
- 2010** **2010** (with Mark A. Olson, Mark M. Bykowsky, and William W. Sharkey). “Efficiency Gains from Using a Market Approach to Spectrum Management”. In: *Information, Economics and Policy* 22, pp. 73–90.
- 2008** **Aug. 2008** (with Mark A. Olson, Stephen J. Rassenti, and Vernon L. Smith). “Energy Reserve and Adjustment Market Behavior with Industry Network, Demand and Generator Parameters”. In: *Handbook of Experimental Economics Results*. Ed. by Charles Plott and Vernon Smith. Vol. 1. Handbooks in Economics. Amsterdam, The Netherlands: Elsevier, North-Holland, pp. 681–699.
- 2007** **Dec. 2007** (with Mark M. Bykowsky, Mark A. Olson, and William W. Sharkey). *A Market-based Approach to Establishing Licensing Rules: Licensed Versus Unlicensed Use of Spectrum*. Report 43. Federal Communications Commission.
- Dec. 2007** (with Mark M. Bykowsky, Kenneth R. Carter, Mark A. Olson, and William W. Sharkey). *Enhancing Spectrum’s Value Through Market-informed Congestion Etiquettes*. Report 41. Federal Communications Commission.
- Dec. 2007** (with Mark M. Bykowsky, Mark A. Olson, and William W. Sharkey). *Modeling the Efficiency of Spectrum Designated to Licensed Service and Unlicensed Operations*. Report 42. Federal Communications Commission.
- 2005** **2005a** (with Mark A. Olson et al.). “Oligopoly Competition in Fixed Cost Environments”. In:

International Journal of Industrial Organization.

- Apr. 2005** (with Mark A. Olson). *Spatial Pollution Externalities: the Design of Institutions for Marketable Permits*. Final report. National Science Foundation.
- 2003 July 2003** (with Mark A. Olson, Stephen J. Rassenti, and Vernon L. Smith). "Market Design and Motivated Human Behavior in Electricity Markets". In: *IIE Transactions* 35.9.
- 2002 Aug. 2002** (with Mark A. Olson, James C. Cox, Theo Offerman, and Arthur J. H.C. Schram). "Competition For Versus On the Rails: A Laboratory Experiment". In: *International Economic Review* 43.3, pp. 709–736.
- 2002b** (with Mark A. Olson et al.). "The First Use of a Combined Value Auction for Transportation Services". In: *INFORMS-Interfaces* 32.5 (Sep/Oct), pp. 4–12.
- 2002c** (with Mark A. Olson et al.). "Theory, Experiment and the Federal Communications Commission Spectrum Auctions". In: *Journal of Economic Behavior and Organization* 51, pp. 303–350.
- 2000 2000** (with Mark A. Olson, Takashi Ishikida, John Ledyard, and David Porter). "Experimental Testbedding of a Pollution Trading System: Southern California's RECLAIM Emissions Market". In: *Research in Experimental Economics*. Vol. 8. Elsevier Science.
- 1999 1999a** (with Mark A. Olson and Mark Bykowsky). *A "Smart Market" for the Trading of Radio Spectrum*. Radio Communications Agency of the Department of Trade and Industry (United Kingdom) on behalf of MediaOne International.
- 1999b** (with Mark A. Olson, Stephen J. Rassenti, Vernon L. Smith, and Mary Rigdon). "Market Design and Motivated Human Trading Behavior in Electricity Markets". In: *Proceedings of the 32th International Conference on Systems Sciences*.
- 1998 Jan. 1998** (with Mark A. Olson, Paul Alsemgeest, and Charles Noussair). "Experimental Comparisons of Auctions Under Single- and Multi-Unit Demand". In: *Economic Inquiry* XXXVI.1, pp. 87–97.
- 1997 1997a** (with Mark A. Olson, Jeff Banks, and David Porter). "An Experimental Analysis of the Armed Bandit Problem". In: *Economic Theory* 10.1, pp. 55–78.
- 1997b** (with Mark A. Olson and Charles Noussair). "Dynamic Decisions in a Laboratory Setting". In: *Southern Economic Journal* 63.4.
- Nov. 1997** (with Mark A. Olson, J. Cox, T. Offerman, and A. J.H. C. Schram). *Experimental tests of combinatorial auctions for the allocation of rail transportation rights*. Research Memorandum. Amsterdam, The Netherlands: The Netherlands Ministry of Transportation.
- 1996 1996c** (with Mark A. Olson and Claudia Keser). "The Declining Price Anomaly in Sequential Auctions". In: *Economics of the Arts*. Ed. by Victor A. Ginsberg and Pierre-Michel Menger. Amsterdam, NL: Elsevier, pp. 151–176.
- Oct. 1996** (with Mark A. Olson and A. J.H. C. Schram). *The design of the Dutch radio frequency auctions*. Research Memorandum. Amsterdam, The Netherlands: The Netherlands Ministry for Radio communications.
- 1995 1995a** (with Mark A. Olson, T. M. McDaniel, A. J.H. C. Schram, and F. A.A. M. van Widen). *Information and Auction Design in the Dutch Flower Auctions*. Research Memorandum. The Bloemenveiling Aalsmeer.
- 1995b** (with Mark A. Olson, Mark Bykowsky, and Arthur Schram). "Veiling van etherfrequenties (The auctioning of the radio spectrum)". In: *Economisch Statistische Berichten* 80, pp. 201–205.

- 1994** **1994a** (with Mark A. Olson and David P. Porter). "An experimental examination into the design of decentralized methods to solve the assignment problem with and without money". In: *Economic Theory* 4.1, pp. 11–40.
- 1994d** (with Mark A. Olson, John O Ledyard, and David P. Porter). *The Design and Implementation of a Combinatorial Auction for Transportation Network Routes*. Sears Logistics.
- 1993** **Aug. 1993** (with Mark A. Olson, C. van Marrewijk, and Charles Noussair). "Experiments in Disequilibrium Dynamics". In: *Conference proceedings of the Conference of Disequilibrium Dynamics*.
- 1989** **Aug. 1989** (with Mark A. Olson and David P. Porter). *Resource allocation in Complex Systems: Auctions, Priority, and Scheduling*. Pasadena, CA: Jet Propulsion Laboratory.
- 1989b** (with Mark A. Olson, J. Quirk, H. Habib-Agahi, and George Fox). "Uncertainty and Leontief Systems: An Application to the Selection of Space Station System Designs". In: *Management Science* 35.5.

Working Papers

- 2011** **2011a** (with Mark A. Olson). "An Embedded market for Dynamic Bandwidth Allocation".
- 2011b** (with Mark A. Olson). "Design of an Experiment for testing Net Neutrality Assumptions".
- 2008** **2008b** (with Mark A. Olson). "Serial Cost Sharing Mechanisms".
- 1996** **1996a** (with Mark A. Olson, T. M. McDaniel, A. J.H. C. Schram, and F. A.A. M. van Winden). "Information in the Dutch Flower Auctions: an experimental analysis". Amsterdam, The Netherlands.
- 1994** **1994b** (with Mark A. Olson and Rebecca Morton). "Entry in spatial Competition and Strategic Uncertainty". TRACE discussion paper, Tinbergen Institute, Amsterdam-Rotterdam revise and resubmit for Games and Economic Behavior.
- July 1994** (with Mark A. Olson and Claudia Keser). "Strategic Behavior in Sequential Auctions".
- 1993** **1993a** (with Mark A. Olson). *Dominant and Nash Strategy Mechanisms without Transfers in the Assignment Problem*. discussion paper 17. Amsterdam-Rotterdam: TRACE, Tinbergen Institute.
- 1992** **Apr. 1992** (with Mark A. Olson). "Bayesian Equilibria for a Point Count Voting Scheme or Chit Mechanism". Research Memorandum. Amsterdam, The Netherlands.
- Apr. 1992** (with Mark A. Olson). *Computing Bayesian Equilibria for a Chit Mechanism Using a Genetic Algorithm*. Research Memorandum 9218. Amsterdam, The Netherlands: CREED, University of Amsterdam.

References

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