

Mark A. Olson

Curriculum vitæ

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Education

- June 1991 **PhD. (Social Sciences/Economics)**, *California Institute of Technology*, Pasadena, CA.
- May 1980 **M. S. (Statistics)**, *University of Arizona*, Tucson, AZ.
- September 1977 **B. A. (Mathematics)**, *University of Arizona*, Tucson, AZ.

Selected Accomplishments

- A study of spectrum congestion for the U.S. Federal Communications Commission (FCC), developed and tested a mechanism for the endogenous allocation of licensed and unlicensed spectrum
- Design of computer optimized trading and information systems for pollution control for the National Science Foundation, experimental design, computer implementation and analysis
- Research in electric power with Nobel Laureate Dr. Vernon L. Smith and Dr. Steve Rassenti
- Research in gas pipeline joint ventures with Dr. Vernon L. Smith
- Institution design and software for the on-line trading of broadcast media advertising with Siena Holdings LLC.
- Experimental testing and design of a combinatorial auction for the FCC spectrum market
- The design and implementation of a combinatorial auction for transportation network routes (allocation of truckload traffic) for Sears Logistics
- The design and implementation of a combinatorial market (the Automated Credit Exchange) for trading pollution permits in the Los Angeles Basin: The ACE Market

Employment History

- Current **Full time online faculty, Economics**, *Grand Canyon University*, Phoenix, AZ.

- 2008–2014 **Economic, Statistical and Computer Consultant.**
- Consequences of net neutrality rules and allocation of unlicensed spectrum
 - Study of markets for Internet quality of service provision, application of cognitive radio for spectrum expansion
 - Research on the statistical design and analysis for experimental data
- 2002–2008 **Research Faculty**, *Interdisciplinary Center for Economic Science (ICES) George Mason University*, Fairfax, VA.
 Taught Statistics for Experimental Economics and advised students on research projects. Implemented networking, programming, hardware and software systems and provided statistical analysis for economic projects.
- 2001–2002 **Interim Director**, (ICES), *George Mason University*, Fairfax, VA.
 Managed the design, construction and operation of the ICES Laboratory.
- 1997–2001 **Research Scholar**, *Economic Science Laboratory, University of Arizona*, Tucson, AZ.
 Directed staff and managed economic research. Managed predictive and historical statistical analysis projects. Published research in the areas of energy, telecommunications and other areas of study.
- 1996–1997 **Visiting Assistant Professor**, *Department of Economics, Purdue University*, West Lafayette, IN.
 Taught introductory micro-economics and performed economic and statistical research.
- 1992–1996 **Senior Researcher**, *Center for Research in Experimental Economics and Political Decision Making (CREED), University of Amsterdam*, Amsterdam, the Netherlands.
 Performed experimental tests of combinatorial auctions for the allocation of rail transportation rights for the Netherlands Ministry of Transportation. Designed and implemented an experimental study of improvements for the Alsmeer Flower Auction. Studied the design of the Dutch radio frequency auctions for the Netherlands Ministry for Radio communications.
- 1991–1991 **Visiting Researcher**, *Department of Economics, Economics Science Laboratory, University of Arizona*, Tucson, AZ.
 Taught introductory micro-economics and performed economic and statistical research.
- 1985–1991 **Technical staff**, *Economic Analysis Group, Jet Propulsion Laboratory*, Pasadena, CA.
 Worked on economic and statistical analysis for engineering design, logistics, and cost analysis of Space Station Freedom. Designed and analyzed mechanisms/rules for the allocation of time on the deep space communications network.
- 1984–1985 **Staff Economist**, *Telecommunication group, Arizona Corporation Commission*, Phoenix, AZ.
 Analyzed policy and presented testimony on telecommunications issues.
- 1983–1984 **Economist**, *AT&T Communications*, NJ.
 Performed econometric modeling, analysis and forecasting of the telecommunications industry. Developed economic models of the impact of pricing strategies and regulatory changes.

1980–1983 **Research Assistant, Instructor**, *Department of Economics, Department of Statistics, Economic Sciences Lab., University of Arizona, Tucson, AZ.*

Taught introductory economics and performed econometric analysis of the Arizona economy.

1979–1980 **Mathematical Statistician, Computer Programmer**, *Bureau of the Census, US Government, Suitland, MD.*

Analyzed survey data.

Grants

2005 **NSF grant SES-0196571**, *Spatial Pollution Externalities: The Design Of Institutions For Marketable Permits.*

Computer skills

Operating Sys	Sun Solaris, Unix/Linux, MS Windows	Web	HTML/CSS, JavaScript, PHP
Statistical Programming	S, R, S-Plus, and others	Computation	Gauss, Matlab, Mathematica
	Java, C/C++, Fortran, Pascal, and others	Scripting	shell, Perl, PHP, SQL

Statistical Skills

- Experimental design and data analysis
- Longitudinal data and repeated measures analysis
- Categorical data analysis, time series analysis, nonparametric and multivariate methods, randomization tests, general linear models, econometrics and other methods

Publications and Reports

Statistics for Experimental Economics and Economists, with **R** (online draft available). 2013.

with Mark M. Bykowsky and William W. Sharkey. Efficiency Gains from Using a Market Approach to Spectrum Management. *Information, Economics and Policy*, 22:73–90, 2010.

with Stephen Rassenti, and Vernon L. Smith. Energy reserve and adjustment market behavior with industry network, demand and generator partners. In *Handbook of Experimental Economics Results*, Elsevier, North-Holland, 2008.

with Mark M. Bykowsky, Kenneth R. Carter, and William W. Sharkey. Enhancing spectrum's value through market-informed congestion etiquettes. Technical Report 41, Federal Communications Commission, December 2007.

with Mark M. Bykowsky and William W. Sharkey. Modeling the efficiency of

spectrum designated to licensed service and unlicensed operations. Technical Report 42, Federal Communications Commission, December 2007.

with Mark M. Bykowsky and William W. Sharkey. A market-based approach to establishing licensing rules: Licensed versus unlicensed use of spectrum. Technical Report 43, Federal Communications Commission, December 2007.

Spatial pollution externalities: the design of institutions for marketable permits. Technical report, National Science Foundation, April 2005. Final report.

with Yvonne Durham, Kevin McCabe, Stephen Rassenti, and Vernon Smith. Oligopoly competition in fixed cost environments. *International Journal of Industrial Organization*, 2005.

with Stephen J. Rassenti and Vernon L. Smith. Market design and motivated human behavior in electricity markets. *IIE Transactions*, 35(9), July 2003.

with Jeffrey Banks, David Porter, Steve Rassenti, and Vernon Smith. Theory, experiment and the federal communications commission spectrum auctions. *Journal of Economic Behavior and Organization*, 51:303–350, 2002.

with John O. Ledyard, David Porter, Joseph A. Swanson, and David P. Torma. The first use of a combined value auction for transportation services. *INFORMS-Interfaces*, 32(5):4–12, Sep/Oct 2002.

with James C. Cox, Theo Offerman, and Arthur J. H.C. Schram. Competition for versus on the rails: A laboratory experiment. *International Economic Review*, 43(3):709–736, August 2002.

with 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*, volume 8. Elsevier Science, 2000.

with S. Rassenti, V. Smith, and M. Rigdon. Market design and motivated human trading behavior in electricity markets. *Proceedings of the 32th International Conference on Systems Sciences*, 1999.

with M. Bykowsky. A “smart market” for the trading of radio spectrum. Technical report, Radio Communications Agency of the Department of Trade and Industry (United Kingdom) on behalf of MediaOne International, 1999.

with P. Alsemgeest and C. Noussair. Experimental comparisons of auctions under single- and multi-unit demand. *Economic Inquiry*, XXXVI(1):87–97, January 1998.

with J. Banks and D. Porter. An experimental analysis of the armed bandit problem. *Economic Theory*, 10(1):55–78, 1997.

with Charles Noussair. Dynamic decisions in a laboratory setting. *Southern Economic Journal*, 63(4):978–92, 1997.

with J. Cox, T. Offerman, and A. J.H. C. Schram. Experimental tests of combinatorial auctions for the allocation of rail transportation rights. Research memorandum, The Netherlands Ministry of Transportation, Amsterdam, The Netherlands, November 1997.

with C. Keser. The declining price anomaly in sequential auctions. In Victor A. Ginsberg and Pierre-Michel Menger, editors, *Economics of the Arts*, pages 151–176. Elsevier, Amsterdam, NL, 1996.

with A. J.H. C. Schram. The design of the dutch radio frequency auctions. Research memorandum, The Netherlands Ministry for Radio communications., Amsterdam, The Netherlands, October 1996.

with 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, 1995.

with M. Bykowsky and A. Schram. Veiling van etherfrequenties (the auctioning of the radio spectrum). *Economisch Statistische Berichten*, 80:201–205, 1995.

with J. Ledyard and D. Porter. The design and implementation of a combinatorial auction for transportation network routes. Technical report, Sears Logistics, 1994.

with D. Porter. An experimental examination into the design of decentralized methods to solve the assignment problem with and without money. *Economic Theory*, 4(1):11–40, 1994.

with C. van Marrewijk and C. Noussair. Experiments in disequilibrium dynamics. *Conference proceedings of the Conference of Disequilibrium Dynamics*, August 1993.

with D. Porter. Resource allocation in complex systems: Auctions, priority, and scheduling. Technical report, Jet Propulsion Laboratory, Pasadena, CA, August 1989.

with J. Quirk, H. Habib-Agahi, and G. Fox. Uncertainty and leontief systems: An application to the selection of space station system designs. *Management Science*, 35(5), 1989.

Working Papers

Strategic balking in queueing systems. 2011.

with Vernon L. Smith. *Experimental Methods explained: The Alaska Gas Pipeline Experiments* 2007.

with Vernon L. Smith. Designing auctions to determine capacity and joint venture capacity shares, the Alaska gas pipeline. 2005.

with Vernon L. Smith. Regulatory reform of oil and gas development: simultaneous periodic auctions of facility access and exploration rights. 2005.

with Jeffrey Banks and David Porter. Nash versus Evolutionary Strategies in Voluntary Contribution Experiments. 1996

with T. M. McDaniel and A. J.H. C. Schram and F. A.A. M. van Winden, *Information in the Dutch Flower Auctions: an experimental analysis*, CREED, University of Amsterdam, Amsterdam, the Netherlands, 1996.

with R. Morton. Entry in spatial competition and strategic uncertainty. TRACE discussion paper, Tinbergen Institute, Amsterdam-Rotterdam, 1994.

Dominant, Nash, and Bayesian mechanisms without transfers for the assignment problem. discussion paper 17, TRACE, Tinbergen Institute, Amsterdam-Rotterdam, 1993.

with C. van Marrewijk and C. Noussair. Experiments in disequilibrium dynamics. 1993.

Computing bayesian equilibria for a chit mechanism using a genetic algorithm. Research Memorandum 9218, CREED, University of Amsterdam. 1992.

References

- **Nobel Laureate Vernon L. Smith**, *Professor of Economics and Law, Chapman University*.
contact: Sharon Krueger, Telephone: (714) 628-2830,
E-mail: vlomaxsmith@gmail.com or Krueger@chapman.edu
- **David P. Porter**, *Professor of Economics and Mathematics, Chapman University*.
Telephone: (714) 997-6915, E-mail: dporter@chapman.edu
- **Mark Bykowsky**, *Office of Strategic Planning and Policy Analysis, Federal Communications Commission*.
Telephone: (301) 219-3036, E-mail: bykowsky@verizon.net