

MATTHIAS SCHONLAU

RAND
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Pittsburgh, PA 15213

Telephone:(412) 683 2300 x4917
E-mail: matt@rand.org

CITIZENSHIP

German, U.S. Green Card

LANGUAGES

English and German (fluent, oral and written)
Spanish and French (working knowledge, oral and written)

INTERESTS

Applications in Criminal Justice and Health, Web Surveys, Data Mining

EDUCATION

1993-1997	UNIVERSITY OF WATERLOO PH.D. STATISTICS Advisor: Prof. William J. Welch Thesis Title: "Computer Experiments and Global Optimization"	Waterloo, Ontario
1991-1993	QUEEN'S UNIVERSITY M.SC., STATISTICS	KINGSTON, ONTARIO
1988-1991	UNIVERSITY OF ULM "VORDIPLOM" MATHEMATICS AND ECONOMICS, MINOR COMPUTER SCIENCE	ULM, GERMANY

EXPERIENCE

01/07-present	University of Pittsburgh, School of Medicine Adjunct Assistant Professor of Psychiatry	Pittsburgh, Pennsylvania
03/05-present	RAND Head, Statistical Consulting Service and Statistician	Pittsburgh, Pennsylvania
06/05-08/05	Lecturer for RAND course: Statistical Tools for Policy Analysis	Pittsburgh, Pennsylvania
09/03-03/05	RAND Statistician	Santa Monica, California
10/00-03/05	RAND Head, Statistical Consulting Service	Santa Monica, California
10/99-09/03	RAND Associate Statistician	Santa Monica, California
9/97-8/99	NATL. INST. OF STATISTICAL SCIENCES, AT&T LABS RESEARCH Postdoctoral Research Fellow	Florham Park, New Jersey
1/98-6/98	RUTGERS UNIVERSITY Lecturer Applied Multivariate Analysis (Graduate Course)	New Brunswick, New Jersey

July 2007

M. Schonlau/2

8/93-8/97	UNIVERSITY OF WATERLOO Teaching Assistant and Research Assistant Courses: (Introduction to) Statistics, Applied Linear Models, Sampling, (Introduction to) Probability, Applied Probability, Experimental Design	Waterloo, Ontario
1/93-7/93	STATLAB Statistical Consultant Independent consulting for non-statistics faculty and students	Kingston, Ontario
9/92-12/92	QUEEN'S UNIVERSITY Teaching Assistant Course: Statistics for Engineers	Kingston, Ontario
1987-1988	GERMAN MILITARY SERVICE	Germany

PUBLICATIONS

Peer Reviewed

- 28) Saigal CS, Gore JL, Krupski TL, Hanley J, **Schonlau M**, and Litwin MS, and the Urologic Diseases in America Project, Androgen Deprivation Therapy Increases Cardiovascular Morbidity in Men with Prostate Cancer, *Cancer*, to appear.
- 27) Couper M, Kapteyn A, Schonlau M, Winter J. (2007) Noncoverage and Nonresponse in an Internet Survey. *Social Science Research*. 36, 131-148.
- 26) Vargas RB, Mangione CM, Asch S, Keesey J, Rosen M, Schonlau M, Keeler EB, "Can a Chronic Care Model Collaborative Reduce Heart Disease Risk in Patients with Diabetes?" *Journal of General Internal Medicine* (to appear).
- 25) Saigal CS, Wessells H, Pace J, Schonlau M, Wilt T, and the Urologic Diseases in America Project, Predictors and Prevalence of Erectile Dysfunction in a Racially Diverse Population. *Archives of Internal Medicine* 2006 Jan 23;166(2):207-12.
- 24) Seid, M, Varni, JW, Cummings L, Schonlau, M. (2006). Access to Care and Health-Related Quality of Life for Children in the California State Children's Health Insurance Program: A Two-Year Prospective Cohort Study. *Journal of Pediatrics*. 149(3), 354-361.
- 23) Gore JL, Saigal CS, Hanley JM, Schonlau M, Litwin, MS, and the Urologic Diseases in America Project. Variations in Reconstruction after Radical Cystectomy. *Cancer*, 2006; 104, 4, 729-737.
- 22) Schonlau M., Welch WJ. Screening the Input Variables to a Computer Code Via Analysis of Variance and Visualization. In *Screening: Methods for Experimentation in Industry, Drug Discovery and Genetics*. Eds: A. M. Dean and S. M. Lewis, Springer Verlag, New York; 2006:308-327.
- 21) Schonlau M. Boosted Regression (Boosting): An introductory tutorial and a Stata plugin. *The Stata Journal*, 2005; 5(3), 330-354.
- 20) Schonlau M, Mangione-Smith R, Rosen M, Chan K, Louis T, Wu S, Keeler E. An evaluation of an adult asthma BTS collaborative and the effect of patient self-management, *Annals of Family Medicine*. *Ann Fam Med* 2005 3: 200-208. (also on <http://www.annfammed.org/cgi/reprint/3/3/200>).

- 19) Asch SM, Baker D, Keesey J, Broder M, Schonlau M, Rosen M, Wallace P, Keeler E. "Does the collaborative model improve care for chronic heart failure?" *Medical Care*, Vol. 43, No. 7, July 2005, pp. 667-675.
- 18) Chan K, Keeler E, Schonlau M, Rosen M, Mangione-Smith R. How do Ethnicity and Primary Language Spoken at Home Affect Management Practices and Outcomes in Children with Asthma? *Archives of Pediatric and Adolescent Medicine*. 2005; 159 (Mar): 283-289.
- 17) D'Amico EJ, Ellickson PL, Wagner EF, Turrisi R, Fromme K, Ghosh-Dastidar B, Longshore DL, McCaffrey DF, Montgomery MJ, Schonlau M, Wright D. Developmental Considerations for Substance Use Interventions from Middle School Through College, *Alcoholism: Clinical and Experimental Research*, 2005; 29, (3) : 474-482.
- 16) Mangione-Smith R, Schonlau M, Rosen M, Chan K, Louis T, Keeler E. Measuring the Effectiveness of a Collaborative for Quality Improvement in Pediatric Asthma Care: Does Implementing the Chronic Care Model Improve Processes and Outcomes of Care? *Ambulatory Pediatrics*. 2005; 5 (2): 75-82.
- 15) Schonlau, M. Visualizing Hierarchical and Non-Hierarchical Cluster Analyses with Clustergrams. *Computational Statistics*: 2004; 19(1): 95-111.
- 14) Schonlau M, Zapert K, Payne Simon L, Sanstad K, Marcus S, Adams J, Spranca M, Kan H-J, Turner R, Berry S. A comparison between a propensity weighted web survey and an identical RDD survey. *Social Science Computer Review*. 2004; 22(1): 128-138.
- 13) Adams JL, Schonlau M, Escarce J, Kilgore M, Schoenbaum M, Goldman DP. Sampling Patients Within and Across Health Care Providers: Multi-Stage Non-nested Samples in Health Services Research. *Health Services and Outcomes Research Methodology*. 2003; 4(3): 151-167.
- 12) Goldman D, Berry S, McCabe M, Kilgore M, Potosky A, Schoenbaum M, Schonlau M, Weeks J, Kaplan R, Escarce J. Incremental Treatment Costs in NCI- Sponsored Clinical Trials, *JAMA*. 2003; 289(22): 2970-2977.
- 11) Schonlau M, Asch BJ, Du C. Web surveys as part of a mixed mode strategy for populations that cannot be contacted by e-mail. *Social Science Computer Review*. 2003; 21(2): 218-222.
- 10) Schonlau M. The clustergram: a graph for visualizing hierarchical and non-hierarchical cluster analyses. *The Stata Journal*, 2002; 2 (4):391-402.
- 9) Fricker R, Schonlau M. Advantages and disadvantages of Internet research surveys: Evidence from the literature. *Field Methods*. 2002;14(4):347-367.
- 8) Lewis JH, Schonlau M, Muñoz J, Asch SM, Rosen MR, Yang H, Escarce JJ. Compliance among Pharmacies in California with a Prescription-Drug Discount Program for Medicare Beneficiaries. *The New England Journal of Medicine*. 2002;346(11):830-835.
- 7) Schonlau M, DuMouchel W, Ju W, Karr A, Theus M, Vardi Y. Computer intrusion: Detecting masquerades. *Statistical Science*. 2001;16(1):58-74.
- 6) Schonlau M, Theus M. Detecting masquerades in intrusion detection based on unpopular commands. *Information Processing Letters*. 2000;76:33-38.
- 5) Raghavan N, Bell R, Schonlau M, Pregibon D, Karr A. Defection detection: Using online activity profiles to predict ISP customer vulnerability. In: *Proceedings: The Sixth International Conference of Knowledge Discovery and Data Mining*, August 2000, New York, NY: ACM Press; 2000:506-515.

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- 4) Mrawira D, Welch W, Schonlau M, Haas R. Sensitivity analysis of computer models: The World Bank HDM-III Model. *Journal of Transportation Engineering*. 1999; 125 (5):421-428.
- 3) Jones D, Schonlau M, Welch W. Efficient global optimization of expensive black-box functions. *Journal of Global Optimization*. 1998;13:455-492.
- 2) Schonlau M, Welch W, Jones D. Global versus local search in constrained optimization of computer models. In: Flournoy N, Rosenberger WF, Wong WK, eds. *New Developments and Applications in Experimental Design*. Vol. 34. Hayward, California: Institute of Mathematical Statistics; 1998:11-25.
- 1) DuMouchel W, Schonlau M. A fast computer intrusion detection algorithm based on hypothesis testing of command transition probabilities. In: *Proceedings of the Fourth International Conference of Knowledge Discovery and Data Mining*. New York, NY: AAAI Press; 1998:189-193.

Books

Schonlau, M., Fricker R., Elliott, M. *Conducting Research Surveys via Email and the Web*, Santa Monica, CA: RAND. 2002.

(Recommended by a Committee of Librarians from the American Association of School Libraries and the Committee of the Public Library Association in the "2003 Guide of University Press Books Selected for Public and Secondary School Libraries". The guide is mailed to 13,500 public and secondary school libraries throughout the United States and Canada.)

Editorials

Schonlau M. Will web surveys ever become part of mainstream research? *Journal of Medical Internet Research*. 2004; 6(3):e31. <<http://www.jmir.org/2004/3/e31/>>.

Non-Peer Reviewed

- 12) Couper M, Kapteyn A, Schonlau M Winter J. Noncoverage and Nonresponse in an Internet Survey. In *Proceedings of the International Conference on Social Science Methodology (RC33) Amsterdam, August 2004*.
- 11) Schonlau M., Van Soest A, Couper M, Winter J, Kapteyn . Attempting to adjust for selection bias in Web surveys with propensity scores: the case of the Health and Retirement Survey (HRS). In *Proceedings of the Section on Survey Statistics, American Statistical Association; 2004, CD-ROM*.
- 10) Stoto M , Schonlau M., Mariano L. Syndromic Surveillance : Is it Worth the Effort? *Chance*. 2004: 17, 1, 19-24.
- 9) Schonlau M. Visualizing Categorical Data Arising in the Health Sciences Using Hammock Plots. In *Proceedings of the Section on Statistical Graphics, American Statistical Association; 2003, CD-ROM*.
- 8) Schonlau M, Bigelow JH, Meili R. Exploratory analysis of patient level databases: Building patient profiles for the MEPS data. In *Proceedings of the 54th session of the International Statistical Institute. 2003. CD-ROM*.

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- 7) DuMouchel W, Schonlau M. A comparison of test statistics for computer intrusion detection based on Principal Components Regression of transition probabilities. In Proceedings of the 30th Symposium on the Interface: Computing Science and Statistics, 1999;30:404-413.
- 6) Theus M, Schonlau M. Intrusion detection based on structural zeroes. Statistical Computing & Graphics Newsletter. 1998;9(1):12-17.
- 5) Schonlau M, Welch W, Jones D. A data-analytic approach to Bayesian global optimization. In Proceedings of the Section on Physical and Engineering Sciences, American Statistical Association;1997:186-191.
- 4) Schonlau M, Welch W. Global optimization with nonparametric function fitting. Proceedings of the Section on Physical and Engineering Sciences, American Statistical Association;1996:183-186.
- 3) Welch WJ, Buck RJ, Sacks J, Wynn HP, Mitchell TJ, Morris MD, Schonlau M. Rejoinder to “Comments on Computer Experiments” by James M. Lucas. Technometrics. 1996;38:199-203.
- 2) Schonlau M, Hamada M, Welch W. Nonparametric function-fitting to suggest nonlinear parametric models. In Proceedings of the Section on Physical and Engineering Sciences, American Statistical Association; 1995:262-267.
- 1) Schonlau M, Hamada M, Welch W. Identifying nonlinear parametric models from nonparametric analyses of Computer Experiments. Institute for Improvement in Quality and Productivity. Research Report RR-96-02. Waterloo, Ontario: University of Waterloo.

RAND Publications

- Schonlau, M. Charging Decisions in Death-Eligible Federal Cases (1995-2000): Arbitrariness, Capriciousness, and Regional Variation in: Klein, Berk and Hickman (editors) Race and the Decision to Seek the Death Penalty in Federal Cases. RAND Corporation, 2006, TR-389-NIJ.
- Stephen J. Carroll, Deborah R. Hensler, Jennifer Gross, Elizabeth M. Sloss, Matthias Schonlau, Allan F. Abrahamse, J.Scott Ashwood. Asbestos Litigation, 2005 RAND, MG-162-ICJ.
- Beth J. Asch, Can Du, Matthias Schonlau, Policy Options for Military Recruiting in the College Market: Results from a National Survey, 2004, RAND, MG-105-OSD.
- Damberg C, Hiatt L, Chan K, Nolind R, Greenberg M, Steinberg M, Schonlau M, Malin J, McGlynn E. Evaluating the Feasibility of Developing National Outcomes Data Bases to Assist Patients with Making Treatment Decisions. 2003, RAND, MR-1708-AHRQ.
- Schonlau, M. A Classification of Companies Named in Asbestos Lawsuits by SIC Code, 2003, RAND, PM-1438-ICJ.
- Joy H. Lewis, Matthias Schonlau, Jorge Munoz, Steven M. Asch, Mayde R. Rosen, Hannah Yang, Jose J. Escarce. Compliance Among Pharmacies in California with a Prescription-Drug Discount Program for Medicare Beneficiaries., 2002, RAND, LRP-200203-04.

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Goldman DP, Adams JL, Berry SH, Escarce JJ, Kilgore M, Lewis J, Rosen MR, Schoenbaum ML, **Schonlau** M, Wagle N, Weidmer BA. *The cost of cancer treatment study's design and methods*. Santa Monica, CA: RAND Health; 2000. RAND MR-1169-NCI/NIH/OSTP.

RAND Research Briefs about Work co-authored by Schonlau

Hitting the Books Before Military Service: Policy Options for Recruiting in the College Market, RAND, National Defence Research Institute, Research Briefs, RB9046, 2004.

Syndromic Surveillance: An effective Tool for detecting bioterrorism? RAND, Center for Domestic and International Health Security, Research Brief, RB9042, 2004. Available at <http://www.rand.org/publications/RB/RB9042/>

Submitted:

Schonlau M., Van Soest A, Kapteyn A, Couper M, Winter J . Selection bias in Web surveys and the use of propensity scores. (submitted) *Sociological Methods and Research*.

Bazzano A, Mangione-Smith R, **Schonlau, M**, Suttorp M, Brook R, Understanding off label prescribing to children: which drugs, how often, and who gets them? (submitted to Pediatrics)

PRESENTATIONS:

- 2007# Are "Webographic" questions useful for reducing the selection bias in web surveys?
Workshop on Web Surveys The Netherlands
- 2007 (poster) "The sinking of the Titanic: An application of Interactive Visualization of Data"
presented at the Museum of Natural History, Pittsburgh, PA for their exhibition "Night of the Titanic"
- 2007# "On Web Surveys"
Annual Review of the RAND Education business unit Pittsburgh, PA
- 2007# Beyond demographics: are "Webographic" questions useful for reducing the
selection bias in web surveys? (abstract submitted)
American Statistical Association Annual Meeting Salt Lake City, UT
- 2006# Is there evidence of racial bias in the federal death penalty?
American Statistical Association Annual Meeting Seattle, WA

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- 2006# Inference from Web surveys using Propensity scoring
University of New Mexico, Dep of Statistics Albuquerque, NM
- 2006# Inference from Web surveys using Propensity scoring
Los Alamos National Laboratory Los Alamos, NM
- 2006# The sinking of the Titanic: An application of Interactive Visualization of Data
University of Pittsburgh, Dep of Biostatistics Pittsburgh, PA
- 2005* From statistician to involved colleague
American Statistical Association Annual Meeting Minneapolis, Minnesota
- 2004 Adjusting for selection bias in Web surveys with propensity scores
Workshop on the HRS survey Northern Michigan
- 2004+ Adjusting for selection bias in Web surveys with propensity scores: the case of the Health and Retirement Survey (HRS)
American Statistical Association Annual Meeting Toronto, Ont, Canada
- “Dragging Survey Sampling into the 21st century”
2004 University of British Columbia, Department of Statistics Vancouver, BC, Canada
- “An evaluation of an adult asthma Breakthrough-Series collaborative”
2004 Annual Meeting of the Academy of Health San Diego, CA
- “Visualizing Categorical Data with Hammock plots”
2003# University of British Columbia, Department of Statistics Vancouver, BC, Canada
- “Exploratory Analysis of Patient Level Databases: Building Profiles for the MEPS data”
2003* International Statistical Institute Annual Meeting Berlin, Germany
- “Visualizing Categorical Data arising in the Health Sciences”
2003+ AMERICAN STATISTICAL ASSOCIATION ANNUAL MEETING San Francisco, California
- “Visualizing Categorical Data arising in the Health Sciences”
2003# Iowa State University, Department of Statistics Ames, Iowa
- “Visualizing Categorical Data arising in the Health Sciences”

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2003#	UCLA, Department of Biostatistics	Los Angeles, California
	“Visualizing Hierarchical and Non-Hierarchical Cluster Analyses with Clustergrams.”	
2002#	UCLA, Center For Community Health	Los Angeles, California
	“Recruiting Respondents for Web Surveys: Random and Other Samples”	
2002*	Workshop on Web Surveys	Mannheim, Germany
	“Visualizing Hierarchical and Non-Hierarchical Cluster Analyses with Clustergrams.”	
2002	Workshop on Visualizing Large Data Sets	Augsburg, Germany
	“The Clustergram: A Graph for Visualizing Non-Hierarchical Cluster Analyses of Large Data Sets”	
2002	AMERICAN STATISTICAL ASSOCIATION ANNUAL MEETING	New York, New York
	“Data Mining and Statistics”	
2001*	AMERICAN STATISTICAL ASSOCIATION ANNUAL MEETING	Atlanta, Georgia
	“Modeling churn of Internet service provider customers”	
2000*	AMERICAN STATISTICAL ASSOCIATION ANNUAL MEETING	Indianapolis, Indiana
	“A comparison of Internet and telephony surveys”	
2000#	AT&T Labs Research	Florham Park, New Jersey
	“Cyber crime and counter measures”	
2000*	Interface: Computing Science and Statistics	New Orleans, Louisiana
	“Statistical methods for computer intrusion detection”	
1999*	AMERICAN STATISTICAL ASSOCIATION ANNUAL MEETING	Baltimore, Maryland
	“Computer intrusion: Detecting masquerades”	
1999	NEW RESEARCHERS CONFERENCE	Baltimore, Maryland
	“Statistical Mardi Gras: Methods for Finding Masqueraders in Computer Intrusion”	
1999*	WORKSHOP ON LARGE DATA SETS	Waterloo, Ontario
	“Statistical methods for computer intrusion detection”	
1999#	RAND	Santa Monica, California
1998	KNOWLEDGE DISCOVERY AND DATA MINING	New York, New York
1998*	AT&T WORKSHOP ON NETWORK INTRUSION	Florham Park, New Jersey
1998*	INTERFACE: COMPUTING SCIENCE AND STATISTICS	Minneapolis, Minnesota
1998*	KNOWLEDGE AND DISTRIBUTED INTELLIGENCE	Research Triangle Park, North Carolina
	Computer experiments and global optimization	
1998*	INSTITUTE FOR OPERATIONS RESEARCH AND THE MANAGEMENT SCIENCES NATIONAL MEETING	Seattle, Washington
1997	FALL RESEARCH CONFERENCE	Baltimore, Maryland

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1997#	THE BOEING COMPANY	Seattle, Washington
1997#	NATIONAL INSTITUTE OF STATISTICAL SCIENCES	Research Triangle Park, North Carolina
1996#	UNIVERSITY OF TORONTO	Toronto, Ontario
1996	AMERICAN STATISTICAL ASSOCIATION ANNUAL MEETING	Chicago, Illinois
1996	STATISTICAL SOCIETY OF CANADA ANNUAL MEETING	Waterloo, Ontario

“Identifying parametric nonlinear models through data visualization”

1995	SPRING RESEARCH CONFERENCE ON STATISTICS IN INDUSTRY AND TECHNOLOGY	Waterloo, Ontario
1995	STATISTICS AND CONTROL IN CHEMICAL ENGINEERING MEETING	Waterloo, Ontario

“Stepwise regression and suppressor variables”

1994	STATISTICAL SOCIETY OF CANADA ANNUAL MEETING	Banff, Alberta
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*Invited Conference Talk, + JSM Special Contributed Talk, #Colloquium Talk

STUDENTS:

Thesis committee member:

Alicia Bazzano, M.D., UCLA Clinical Scholar Program, Candidate for Master’s in Public Health (MPH)

AWARDS AND SCHOLARSHIPS:

2001	2 nd place, KDD Data Mining Competition in Genomics jointly with C. Cortes, B. DuMouchel, and C. Volinsky, at AT&T Labs Research
1994-1997	University of Waterloo Graduate Scholarship
1992-1993	Queen's Dean's Award, Queen's University
1992-1993	Queen's Graduate Award, Queen's University
1991-1992	Konrad-Adenauer-Stiftung Scholarship for Studies Abroad, (<i>National German Scholarship Foundation</i>)
1990-1991	Konrad-Adenauer-Stiftung Scholarship

COMPUTER SKILLS:

Computer Languages	:	C/C++
Statistical Packages	:	Stata, R

SOFTWARE:

"SPACE": Software for the Analysis of Computer Experiments (10,000 lines of C code)

“The Clustergram”, Stata add-on command, downloadable from

<http://www.stata-journal.com/software/sj2-4>

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ACTIVITIES AND SERVICES:

- Societies American Statistical Association
- NSF Grant Information + Intelligence Division, Computer Science + Engineering Directorate, April 2004
Review Panel
- Program Committee Program Committee for “The Seventh International Conference of Knowledge Discovery and Data Mining” in San Francisco, August 2001.
Program Committee for “The Eight International Conference of Knowledge Discovery and Data Mining” in Edmonton, July 2002.
Program Committee for “The Tenth International Conference of Knowledge Discovery and Data Mining” in Seattle, Washington, August 2004.
Program Committee for “The Eleventh International Conference of Knowledge Discovery and Data Mining” in Chicago, August 2005.
- Associate Editor Special issue of Journal of Official Statistics on Web Surveys (2005)
- Conference Session Chair Chair, “Web surveys”, Joint Statistical Meetings, Salt Lake City , 2007
Chair, Roundtable luncheon on Graphics, Joint Statistical Meetings, Seattle, 2006
Organizer and Chair, “Data Mining in Practice”, Joint Statistical Meetings, New York, 2002.
Chair, “Massive Data Sets”, The Interface, Orange County, June 2001.
Chair, “Exploration and Visualization in High Dimensions”, The Interface, New Orleans, April, 2000.
Chair, “Interactive Statistical Graphics - Mathematical Concepts and Implementations”, Joint Statistical Meetings, Baltimore, 1999.
- Referee Biometrical Journal, Field Methods, Journal of Official Statistics, Journal of Medical Internet Research, Journal of the Royal Statistical Society (Series A), Informs, Drug and Alcohol Review, Social Science Computer Review, Social Science and Medicine, Journal of Clinical Outcomes Management, Statistica Sinica, Computational Statistics, Naval Research Logistics, Public Opinion Quarterly, IEEE Transactions on Knowledge and Data Engineering, Journal of Computational and Graphical Statistics, The International Conference on Dependable Systems and Networks, Conference on Knowledge Discovery and Data Mining
- Book Referee Springer Verlag (3), Chapman and Hall (1)
- Tenure Review Virginia Commonwealth U., School of Mass Communications (2003)
Virginia Commonwealth U., School of Mass Communications (2007)
- Service to RAND
Webmaster for the Statistics Group, 1999 – 2001
Member of the Statistics Recruiting Committee 2000-2003

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