Richard L. Valliant

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Business Address:

Joint Program for Survey Methodology
Universities of Michigan & Maryland
1218 Lefrak Hall
College Park MD 20742

(301) 405-0932
FAX: (301) 314-7912
Email: rvallian@umd.edu

Summary:

Dr. Richard L. Valliant is a Research Professor at the University of Michigan and the Joint Program for Survey Methodology at the University of Maryland. He has over 40 years of experience in survey sampling, estimation theory, and statistical computing. He was formerly an Associate Director at Westat and a mathematical statistician with the Bureau of Labor Statistics. He has a range of applied experience in survey estimation and sample design on a variety of establishment and household surveys. He is also a Fellow of the American Statistical Association and has been an editor of several statistical journals.

Education:

Ph.D., Johns Hopkins University (Biostatistics), 1983
M.S., Cornell University (Statistics) 1975
B.S., University of Arkansas (Mathematics) 1972

Professional Experience:

2003 – present	Research Professor, Institute for Social Research University of Michigan and Joint Program in Survey Methodology, University of Maryland
2010 – 2016	Associate Director, Joint Program in Survey Methodology, University of Maryland
1998 – 2003	Associate Director Westat Rockville MD
1983 – 1997	Mathematical statistician Bureau of Labor Statistics Washington DC
1981 – 1983	Consultant at Westat and full-time student at Johns Hopkins

	University, Baltimore MD
1980 – 1981	Manager/statistician, Arthur Young & Company Washington DC
1975 – 1980	Statistician, Westat Rockville MD

Memberships and Honors:

Elected member of the International Statistical Institute 2001
Fellow of American Statistical Association, 1992
Phi Beta Kappa, 1972

American Statistical Association, member
International Association of Survey Statisticians, member
Washington Statistical Society, member

Center for Disease Control, 2008 Statistical Science Awards— Applied Paper Category for "Cell Collapsing in Poststratification" with J.J. Kim and J. Li

Opponent for the dissertation defense of Sixten Lundström, Stockholm University, Stockholm Sweden, October 1997

Commissioner's Eminent Achievement Award, 1996, for work on the formula bias question in the Consumer Price Index

Department of Labor Secretary's Exceptional Achievement Award, 1994, for work on redesign of the Current Population Survey

Other Professional Activities:

Associate editor, *Survey Methodology*, 1996-2007

Associate editor, *Journal of Official Statistics*, 2003-2010

Associate editor, *Journal of the American Statistical Association—Applications and Case Studies*, 1996-1999

Associate editor, *Journal of the American Statistical Association—Theory and Methods*, 1989-1993

Referee for the *Journal of the American Statistical Association*, *Australian and New Zealand Journal of Statistics, Journal of the Royal Statistical Society B*, *Journal of Business and Economic Statistics*, *Biometrika, Cancer & Epidemiology, Communications in Statistics*, *Computational Statistics and Data Analysis, The American Statistician*, *Canadian Journal of Statistics*, *East African Journal of Science, International Journal of Public Opinion Research, Journal of Official Statistics*, *Journal of Statistical Planning and Inference*, *Journal of Statistical Software, Metrika, Naval Logistics Research Journal Pakistan Journal of*

Statistics, Public Opinion Quarterly, Quantitative Criminology, Sociological Methodology, Statistical Methodology, *Survey Methodology*, *Survey Research Methods, TEST*, *Journal of Survey Statistics and Methodology*.

Member, Committee on National Statistics, National Academy of Sciences: Reengineering the Census Bureau's Annual Economic Surveys, 2015-2017

Member, National Agricultural Statistics Service Expert Panel on Federal Statistics on Women and Beginning Farmers in U.S. Agriculture, 2015-2016

Member, American Statistical Association Census Advisory Council, 2007-2009

Member, Gemini Project Expert Panel, Consumer Expenditure Survey, Bureau of Labor Statistics, 2009.

Member, Morris H. Hansen Memorial Lecture Committee, Washington Statistical Society, 2008-2011

Member, Survey Costs Task Force on the Current Population Survey, Census Bureau, 2010

Co-organizer University of Maryland Statistics Day, April, 2004

Member, National Academy of Sciences panel to evaluate research and development statistics at the National Science Foundation, 2003-2004

Member, National Academy of Sciences panel to evaluate sample design and estimation strategy for group quarter's data in the American Community Survey, 2010-2012

Invited reviewer, 2003 ACS Voluntary/Mandatory Analysis Review, Census Bureau, 2011

Book reviewer for John Wiley & Sons, Springer-Verlag.

Grant reviewer for National Science Foundation, National Security Agency, Marsden Fund

Adjunct Professor, Johns Hopkins University 1995-2002
Adjunct Professor, University of Maryland 1998-2001
Research Professor, University of Maryland 2001-present

Member of Washington Statistical Society Fellows Committee, 1994-1995

Representative-at-large, Washington Statistical Society, 1991-1993, chairman of Jacobs Memorial Award Committee

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Books and book chapters:

1. Suzer-Gurtekin, Z.T., Valliant, R., Heeringa, S.G., de Leeuw, E.D., Villar, A. (2016). Mixed-Mode Surveys: An Overview of Design, Estimation and Adjustment Methods and Empirical Applications, Chapter 23 in Wiley collection, *Advances in Comparative Survey Methodology*.
2. Valliant, R., Dever, J., and Kreuter, F. (2013). *Practical Tools for Designing and Weighting Survey Samples*, New York: Springer.
3. Valliant, R., Dever, J., and Kreuter, F. (2017). *Practical Tools for Designing and Weighting Survey Samples*, 2nd edition, New York: Springer (to be published).

4. Valliant, R., and Dever, J.A. (2017). *Survey Weights: A Step-by-step Guide to Calculation.* College Station TX: Stata Press (to be published).
5. Lee, S., Wagner, J., Heeringa, S. and Valliant, R. (2013). Recent Developments of Sampling Hard-to-Reach Populations: An Assessment. Chapter in *Hard-to-Survey Populations*, New York: Cambridge University Press.
6. Valliant, R. (2010), "Model-based Prediction of Finite Population Totals," chapter 23 in *Handbook of Statistics No. 29*, *Sample Surveys: Methods and Inference*, Amsterdam: Elsevier.
7. Lee, S., and Valliant, R. (2008), "Post-Survey Weighting Methods Using Propensity Scores: A Review," chapter 8 in *Advances in Telephone Survey Methodology*, John Wiley.
8. Hofferth, S.L., Welk, G., Treuth, M., Randolph, S., Curtin, S., and Valliant, R. (2008), "Validation of a Diary Measure of Children's Activities," Chapter 3 in *Sociological Methodology 2008*, 133-154.
9. Valliant, R. Dorfman, A., and Royall, R.M. (2000), *Finite Population Sampling and Inference: A Prediction Approach*. New York: John Wiley.
10. Dorfman, Alan H., and Valliant, R. (1998), "Superpopulation Models in Survey Sampling," in *Encyclopedia of Biostatistics*, New York: John Wiley.
11. Gentle, J., S. Narula, and Valliant, R. (1997), "Multicriteria Optimization in Sampling Design," in *Statistics of Quality: Dedicated to Don Owen*, eds. S. Ghosh, W. Schucany, and T. Smith, New York: Marcel Dekker, 411-425.
12. Leaver, S., and Valliant, R. (1995), "Statistical Problems in Estimating the U.S. Consumer Price Index," Chapter 28 in *Business Survey Methods*, eds. B.G. Cox, et al., New York: John Wiley, 543-566.
13. Hansen, M.H., Valliant, R., and Tomasino, R. (1983), "Treatment of Missing Data in an Office Equipment Survey", *Incomplete Data in Sample Surveys*, Vol. I, Part II, New York: Academic Press, 209-235.

Publications in Refereed Journals:

1. Elliott, M.R. and Valliant, R. (2017). Inference for Non-probability Samples, *Statistical Science*, **31**, to be published.
2. Dever, J.A., and Valliant, R. (2016). General Regression Estimation Adjusted for Undercoverage and Estimated Control Totals, *Journal of Survey Statistics and Methodology*, **4**, 289-318.
3. Valliant, R., Dever, J., and Kreuter, F. (2015). PracTools: Computations for Design of Finite Population Samples, *The R Journal*, **7**, 163-176.
4. Valliant, R., Dever, J.A., Kreuter, F. (2015). "Effects of Cluster Sizes on Variance Components in Two-Stage Sampling", *Journal of Official Statistics*, **31**, 763–782.
5. Henry, K.A., and Valliant, R. (2015). "A Design Effect Measure for Calibration Weightings in Cluster Samples", *Survey Methodology*, 315-331.
6. Li, Jianzhu, and Valliant, R. (2015). "Linear Regression Diagnostics for Clustered Survey Data", *Journal of Official Statistics*, **31,** 61-75.

7. Wagner, J., Valliant, R., Hubbard, F., and Jiang, L. (2014). Level-of-Effort Paradata and Nonresponse Adjustment Models for a National Face-to-Face Survey, *Journal of Survey Statistics and Methodology*, **2**, 410-432.

8. Valliant, R., Hubbard, F., Lee, S., Chang, W. (2014). "Efficient Use of Commercial Lists in Household Sampling", *Journal of Survey Statistics and Methodology*, **2**, 182-209.

9. Gambacorta, R., Iannario, M. and Valliant, R. (2014). "Design-Based Inference In A Mixture Model For Ordinal Variables For A Two Stage Stratified Design", *Australian and New Zealand Journal of Statistics*, 56, 125-143.

10. Valliant, R. (2013). Invited comment on "Report of the AAPOR Task Force on Non-Probability Sampling". *Journal of Survey Statistics and Methodology*, **1**, 105-111.

11. Liao, D, and Valliant, R. (2012), "Condition Indexes and Variance Decompositions for Diagnosing Collinearity in Linear Model Analysis of Survey Data," *Survey Methodology*, **38**, 189-202.

12. Liao, D, and Valliant, R. (2012), "Variance Inflation Factors in the Analysis of Complex Survey Data," *Survey Methodology*, **38**, 53-62.

13. Gambacorta, R., Iannario, M., and Valliant, R. (2012). "Design-based inference in CUB models", *Quaderni di Statistica*, Vol. 2.

14. Li, J., and Valliant, R. (2011). "Detecting Groups of Influential Observations in Linear Regression Using Survey Data—Adapting the Forward Search Method," *Pakistan Journal of Statistics*, Festschrift for Ken Brewer, **27**, 507-528.

15. Li, J., and Valliant, R. (2011). "Linear Regression Diagnostics for Unclustered Survey Data," *Journal of Official Statistics*, **27**, 99-119.

16. Schmidt, C., Alte, D., Völzke1, H., Sauer, S., Friedrich, N., and Valliant, R. (2011). "Partial misspecification of survey design features sufficed to severely bias population estimates of lifestyle and clinical variables in a regional multistage survey," *Journal of Clinical Epidemiology*, 64, 416-423.

17. Valliant, R., and Dever, J. (2011), "Estimating Propensity Adjustments for Volunteer Web Surveys," *Sociological Methods and Research*, 40, 105-137.

18. Valliant, R., and Rust, K.F. (2010), "Degrees of Freedom Approximations and Rules of Thumb," *Journal of Official Statistics*, 26, 585-602.

19. Valliant, R., Tourangeau, R, and Lent, J. (2010), "The Role of the Joint Program in Survey Methodology in Training Federal Statisticians," *Journal of Official Statistics*, 26, 427-442.

20. Dever, J., and Valliant, R. (2010), "A Comparison of Variance Estimators for Poststratification to Estimated Control Totals," *Survey Methodology*, 36, 45-56.

21. Li, J. and Valliant, R. (2009), "Survey Weighted Hat Matrix and Leverages," *Survey Methodology*, 35, 15-24.

22. Henry, K., and Valliant, R. (2009), "Comparing Sampling and Estimation Strategies in Establishment Populations," *Survey Research Methods*, 3, 27-44.

23. Lee, S. and Valliant, R. (2009). "Estimation for volunteer panel web surveys using propensity score adjustment and calibration adjustment." *Sociological Methods & Research*. 37(3): 319-343.

24. Valliant, R., Brick, J.M., and Dever, J. (2008), "Weight Adjustments for the Grouped Jackknife Variance Estimator," *Journal of Official Statistics*, 24, 469-488.

25. Dever, J., Rafferty, A., and Valliant, R. (2008), "Internet Surveys: Can Statistical Adjustments Eliminate Coverage Bias?" *Survey Research Methods*, 2, 47-60.

26. Kim, J., Li, J., and Valliant, R. (2007), "Cell Collapsing in Poststratification", *Survey Methodology*, 33, 139-150.

27. Copeland, K., and Valliant, R. (2007), "Imputing for Late Reporting in the Current Employment Statistics Survey", *Journal of Official Statistics*, 23, 69-90.

28. Kreuter, F. and Valliant, R. (2007), "A Survey on Survey Statistics: What is done and can be done in Stata" *Stata Journal*, 7, 1-21.

29. Lee, S. and Valliant, R. (2005), "Economic Characteristics of Internet and Non–Internet Users and Implications for Web–based Surveys" (2005) with Sunghee Lee, *Webuse & Society*, 1, 34-51.

30. Brick, J.M., Jones, M.E., Kalton, G., and Valliant, R. (2005), "A Simulation Study of Three Methods of Variance Estimation with Hot Deck Imputation." *Survey Methodology*, 31, 151-160.

31. Winglee, M., Valliant, R., and Scheuren, F. (2005), "A Case Study of Record Linkage." *Survey Methodology*, 31, 3-14.

32. Valliant, R. (2004), "The Effect of Multiple Weight Adjustments on Variance Estimation," *Journal of Official Statistics*, 20, 1-18.

33. Valliant, R. (2002), "Variance Estimation for the General Regression Estimator," *Survey Methodology*, 28, 103-114.

34. Winglee, M.J., Valliant, R., Brick, M., and Machlin, S. (2000), "Probability Matching of Medical Events," in *Journal of Economic and Social Measurement*, 26, 129-140.

35. Dorfman, A.H., and Valliant, R. (2000), "Stratification by Size Revisited," *Journal of Official Statistics*, 16, 139-154.

36. Ernst, L., Valliant, R., and Casady, R. (2000), "Permanent and Collocated Random Number Sampling and the Coverage of Births and Deaths," *Journal of Official Statistics*, 16, 211-228.

37. Valliant, R. and Gentle, J.E. (1997), "An Application of Mathematical Programming to Sample Allocation," *Computational Statistics and Data Analysis*, 25, 337-360.

38. Valliant, R. (1996), "Limitations of Balanced Half-Sampling," *Journal of Official Statistics*, 12, 225-240.

39. Jayasuriya, B., and Valliant, R (1996), "An Application of Restricted Regression Estimation to Post-Stratification in a Household Survey," *Survey Methodology*, 22, 127-137.

40. Valliant, R. (1996), Invited discussion of "Resampling Methods in Sample Surveys" by J. Shao, *Statistics*, 27, 247-251.

41. Valliant, R (1993), "Post-Stratification and Conditional Variance Estimation," *Journal of the American Statistical Association*, 88, 89-96.

42. Dippo, C., Tucker, C., and Valliant, R (1993), "Survey Methods Research at the Bureau of Labor Statistics," *Journal of Official Statistics,* **9**, 121-135.

43. "Conditional Properties of Post-stratified Estimators under Normal Theory," (1993), with R. Casady, *Survey Methodology*, **19**, 183-192.

44. "Smoothing Variance Estimates for Price Indexes Over Time," (1992), *Journal of Official Statistics,* **8**, 433-444.

45. "Variance Estimation for Price Indexes from a Two-Stage Sample with Rotating Panels," (1991), *Journal of Business and Economic Statistics*, **9**, 409-422.

46. "Comparisons of Variance Estimators in Stratified Random and Systematic Sampling" (1990), *Journal of Official Statistics,* **6**, 115-132.

47. "A Class of Multiplicative Estimators of Laspeyres Price Indexes" with Stephen M. Miller (1989), *Journal of Business and Economic Statistics*, **7**, 387-394.

48. "Estimation of Laspeyres Price Indexes Using the Prediction Approach for Finite Population Sampling" (1988), *Journal of Business and Economic Statistics*, **6**, 189-196.

49. "Generalized Variance Functions in Stratified Two-stage Sampling" (1987), *Journal of the American Statistical Association,* **82**, 499-508.

50. "Conditional Properties of Some Estimators in Stratified Sampling" (1987), *Journal of the American Statistical Association,* **82**, 509-519.

51. "Some Prediction Properties of Balanced Half-sample Variance Estimators" (1987), *Journal of the Royal Statistical Society B,* **49**, 68-81.

52. "Mean Squared Error Estimation in Finite Populations under Nonlinear Models" (1986), *Communication in Statistics—Theory and Methods,* **15**, 1975-1993.

53. "Nonlinear Prediction Theory and Estimation of Proportions in a Finite Population" (1985), *Journal of the American Statistical Association,* **80**, 631-641.

54. "Comparison of Markov and Semi-Markov Models in a Personnel Forecasting Application" with George T. Milkovich (1977), *Decision Sciences*, **8**, 465-477.

Publications in Conference Proceedings, Workshops, and Invited Presentations:

1. Dever, J.A., and Valliant, R. (2014), "Estimation with Nonprobability Surveys and the Question of External Validity", *Proceedings of Statistics Canada Symposium 2014*.

2. Valliant, R. (2014), "Uses of Models in Survey Design and Estimation," invited lecture at the Symposium on Sampling in honor of Alan Ross, sponsored by Johns Hopkins Department of Biostatistics.

3. Valliant, R. (2014), "Surveys, Weights, and Synthetic Populations," invited seminar at Virginia Tech.

4. Valliant, R. (2013), "Effects on Sample Design of Varying Unit Sizes in Three-stage Sampling," invited presentation at 2013 Graybill Conference, Colorado State University.

5. Henry, K.A., and Valliant, R. (2013), "A Design Effect Measure for Calibration Weights in Single-Stage Samples," *Proceedings of the Section on Survey Research Methods*, American Statistical Association, to appear.

6. Jiang, C., Lepkowski, J.M., Valliant, R., and Wagner, J. (2013). Line Sampling Macro for Multistage Sampling. *Proceedings of the SAS® Global Forum 2013 Conference*.

7. Valliant, R. (2012). "Analyses of the Efficiency of Sampling Procedures used in 2010-11 HRS Screening." report presented to CNSTAT Expert Meeting on the Health and Retirement Study.

8. Suzer-Gurtekin, Tuba, Heeringa, S., and Valliant, R. (2012). "Investigating the Bias of Alternative Statistical Inference Methods in Sequential Mixed-Mode Surveys." *Proceedings of the Section on Survey Research Methods*, American Statistical Association, to appear.

9. Lee, Sunghee, Suzer-Gurtekin, Tuba, Wagner, James (2012). "Exploring Error Properties of Respondent-Driven Sampling." *Proceedings of the Section on Survey Research Methods*, American Statistical Association, to appear.

10. Valliant, R. (2012). "Group Quarters and the ACS: Sampling and Weighting Issues." Paper presented at the 2012 *Joint Statistical Meetings*, San Diego CA.

11. Dever, J. and Valliant, R. (2012). "Implications of Ignoring the Uncertainty in Control Totals for Generalized Regression Estimators." *Proceedings of the Section on Survey Research Methods*, American Statistical Association.

12. Henry, K. and Valliant, R. (2012). "Comparing Alternative Weight Adjustment Methods." *Proceedings of the Section on Survey Research Methods*, American Statistical Association, to appear.

13. Henry, K. and Valliant, R. (2012). "Methods for Adjusting Survey Weights When Estimating a Total." *Proceedings of the Federal Committee on Statistical Methodology Research Conference*, Washington DC.

14. Liao, D, and Valliant, R. (2012), "Condition Indexes and Variance Decompositions for Diagnosing Collinearity in Linear Model Analysis of Survey Data," *Proceedings of the Federal Committee on Statistical Methodology Research Conference.*

15. Kennel, T.L., and Valliant, R. (2010). "Logistic Generalized Regression (LGREG) Estimator in Cluster Samples," *Proceedings of the Section on Survey Research Methods,* Washington DC: American Statistical Association, 4756-4770.

16. Valliant, R. (2010). "Linear Regression Diagnostics for Survey Data," *Proceedings of the Statistical Society of Canada*, Quebec City, Quebec. Available at http://www.ssc.ca/survey/SMSProceedings_e.html.

17. Dever, J., and Valliant, R. (2009). "Estimated-Control Post-Stratified Variance Estimators for Proportions," *Proceedings of the Section on Survey Research Methods*, American Statistical Association, 4104-4116.

18. Liao, Dan, and Valliant, R. (2009). "Collinearity Diagnostics for Complex Survey Data," *Proceedings of the Section on Survey Research Methods*, American Statistical Association.

19. Henry, K., Testa, V., and Valliant, R. (2009), "Estimating the Variance of Between-Year Change in Domain-level Totals." *Proceedings of the Section on Survey Research Methods,* Washington DC: American Statistical Association, 2641-2654.

20. Henry, K., Testa, V., and Valliant, R. (2008), "Variance Estimation for an Estimator of Between-Year Change in Totals from Two Stratified Bernoulli Samples." *Proceedings of*

the Section on Survey Research Methods, Washington DC: American Statistical Association.

21. Valliant, R. (2007), "An Overview of the Pros and Cons of Linearization versus Replication in Establishment Surveys," *Proceedings of the Third International Conference on Establishment Surveys*, Montreal CA, 929-940.

22. Dever, J., and Valliant, R. (2007), "A Comparison of Variances for Poststratification to Estimated Control Totals," *Proceedings of the Section on Survey Research Methods*, Washington DC: American Statistical Association, 3465-3472.

23. "Weighting Telephone Samples Using Propensity Scores" (2006) with Sunghee Lee, invited paper in *Telephone Survey Methods Conference II.*

24. "Comparing Strategies to Estimate a Measure of Heteroscedasticity" (2006), with K. Henry, *Proceedings of the Section on Survey Research Methods,* Washington DC: American Statistical Association, 3118-3125.

25. "A Comparison of Model-Based and Model-Assisted Estimators under Ignorable and Non-Ignorable Nonresponse" (2006), with J. Dever, *Proceedings of the Section on Survey Research Methods,* Washington DC: American Statistical Association, 2938-2945.

26. "Influence Analysis in Linear Regression with Sampling Weights" (2006), with J. Li, *Proceedings of the Section on Survey Research Methods,* Washington DC: American Statistical Association, 3330-3337.

27. "Cell Collapsing Strategies Based on Collapsing Adjustment Factors" (2006), with Jay J. Kim and Wenxing Zha. *Proceedings of the Section on Survey Research Methods,* Washington DC: American Statistical Association, 3237-3244.

28. "A Simulation Study of Cell Collapsing in Poststratification" (2005), with Jay J. Kim, Linda Tompkins, and Jianzhu Li, *Proceedings of the Section on Survey Research Methods,* Washington DC: American Statistical Association.

29. "Variance Estimation for Volunteer Panel Web Surveys Using Propensity Score Adjustment and Calibration Adjustment" (2005) with S. Lee, *Proceedings of the Section on Survey Research Methods,* Washington DC: American Statistical Association.

30. "Implementing New Statistical Techniques", *Proceedings of Statistics Canada Symposium 2003*, Ottawa.

31. "A Simulation Study of Two Methods of Variance Estimation with Hot Deck Imputation" (2003) with Michael E. Jones, J. Michael Brick, Graham Kalton, *Proceedings of the Section on Survey Research Methods,* Washington DC: American Statistical Association.

32. "WesVar: Software for Complex Survey Data Analysis" (2003) with H. Choudhry, *Proceedings of Statistics Canada Symposium 2002*. Ottawa.

33. "Assessing disclosure protection for a SOI public use file" (2001) with Marianne Winglee and Jay Clark. *ASA Proceedings of the Joint Statistical Meetings*, Washington DC: American Statistical Association, 3737-3742.

34. "Uses of Models in the Estimation of Price Indexes: A Review" (1999), *Proceedings of the Section on Survey Research Methods,* Washington DC: American Statistical Association, 94-102.

35. "Probability Matching of Medical Events" (1998) with Marianne Winglee, J. Michael Brick, Carmen Vincent, Amy Lavis, and Steven Machlin, in *Proceedings of the Section on Survey Research Methods,* Washington DC: American Statistical Association, 668-673.

36. "The Hájek Estimator Revisited," (1997) with Alan H. Dorfman, *Proceedings of the Section on Survey Methods Research*, Washington DC: American Statistical Association, 760-765.

37. "Stratification by Size Revisited," (1997) with Alan H. Dorfman, *Proceedings of the Section on Survey Methods Research*, Washington DC: American Statistical Association, 766-771.

38. Invited discussion (1997) of "A Ridge-Shrinkage Method for Range-Restricted Weight Calibration in Survey Sampling," by J.N.K. Rao and A.C. Singh, "Calibration Estimation in the 1991 and 1996 Canadian Censuses," by M. Bankier, A.-M. Houle, and M. Luc, and "Variable Selection for Regression Estimation in the Presence of Nonresponse," by P.L.D. Nascimento Silva and C.J. Skinner, *Proceedings of the Section on Survey Research Methods 1997,* Washington DC: American Statistical Association, 83-85.

39. "Plot Interpretation and Information Webs—A Time Series Example from the Bureau of Labor Statistics" (1996) with Daniel Carr and Daniel Rope, in *Statistical Computing and Graphics Newsletter*, September.

40. "An Application Of Mathematical Programming to Sample Allocation," (1994) with James E. Gentle, *Proceedings of the Section on Survey Research Methods,* Washington DC: American Statistical Association, 683-688.

41. "Quantile Variance Estimators in Complex Surveys," (1993), with A. Dorfman, *Proceedings of the Section on Survey Research Methods,* Washington DC: American Statistical Association, 866-871.

42. "Longitudinal Smoothing of Price Index Variances," (1992), *Symposium 92: Design and Analysis of Longitudinal Surveys,* Ottawa: Statistics Canada, 113-120.

43. Invited discussion of "Sample Surveys 1975-1990; An Age of Reconciliation?" by T.M.F. Smith (1992), *Proceedings of the Section on Survey Research Methods,* Washington DC: American Statistical Association, 54-56.

44. Invited discussion of "Preparing Large Survey Samples for Empirical Analysis" by S. Lutz, R. Mittlehammer, and V. McCracken, and "Model-based Estimates that are Robust to Outliers" by H. Lee (1991), *Proceedings of the 1991 Annual Research Conference*, Bureau of the Census, 203-208.

45. "Price Index Estimation from Panel Survey Data" (1989), *Bulletin of the International Statistical Institute,* **53**, Book 2, 445-461.

46. "Laspeyres Price Index Estimation under an Autoregressive Model" (1987), *Proceedings of the Section on Survey Research Methods,* Washington DC: American Statistical Association, 73-82.

47. "Estimation of Proportions in a Finite Population (1984), *Proceedings of the Section on Survey Research Methods,* Washington DC: American Statistical Association, 164-169.

48. "The Novice with a Statistical Package - Performance without Competence" with Ivor Francis (1975), *Proceedings of Computer Science and Statistics: Eighth Annual Symposium on the Interface,* UCLA, 110-114.

Papers in Process or under Review

Lee, S., Suzer-Gurtekin, T., Wagner, J., and Valliant, R., "Exploring of Nonresponse and Measurement Error in a Study Using Respondent Driven Sampling: Focus on Recruitment Process and Network Size Reports", submitted.

Valliant, R., Dever, J.A., Kreuter, F. "Effects of Varying Unit Sizes in Three-stage Sampling."

Teaching Experience

Semester courses

"Practical Tools for Sample Design and Weighting," Joint Program for Survey Methodology, University of Maryland and University of Michigan, 2013, 2014, 2015

"Case Studies in Weighting and Estimation," Joint Program for Survey Methodology, University of Maryland and University of Michigan, 2007, 2008, 2010.

"Statistical Methods I & II", Joint Program for Survey Methodology, University of Maryland and University of Michigan, 2006-2007, 2008-2009.

"Applied Sampling", Joint Program for Survey Methodology, University of Maryland and University of Michigan, Summer 2004, 2008.

"Prediction Approach to Finite Population Sampling", Joint Program for Survey Methodology, University of Maryland, 2003, 2005, 2009, 2011.

"Sampling Theory," Joint Program for Survey Methodology, University of Maryland, Summer 2003, 2005, 2006, Spring 2016.

"Inference from Complex Surveys," Joint Program for Survey Methodology, University of Maryland, Spring 1998-2006 (with K. Rust), 2008, 2010-2012, 2014 (with Robert Fay)

"Topics in Sampling" Joint Program for Survey Methodology, University of Maryland, 2002, 2003 (with M. Brick), 2012, 2014 (with K. Rust).

"Finite Population Prediction Theory", readings course for Ph.D. student, Joint Program for Survey Methodology, University of Maryland, Spring 2002.

Ph.D. seminar, Joint Program for Survey Methodology, University of Maryland, Spring-Fall 2002, Spring 2003, Spring 2011.

Short courses/Webinars

"Practical Tools for Designing and Weighting Survey Samples" (with Jill Dever)
2014, 2015 Joint Program for Survey Methodology short course series
2014 Food and Drug Administration
2013 59th World Statistics Congress, Hong Kong

"Non-probability Sampling for Finite Population Inference" (with Jill Dever)—webinar for the American Association for Public Opinion Research, 2016

"Variance Estimation in Complex Sample Surveys"—webinar for the American Statistical Association, 2014

"Model-based and Model-assisted Estimation in Surveys"—presented at 2014 International Methodology Symposium sponsored by Statistics Canada

"Weighting Survey Samples, July 22, 2014, at European Congress of Methodology held at Utrecht University, The Netherlands

"Introduction to Survey Estimation"—a short course for the Joint Program for Survey Methodology, 2000-2010 (with David Morganstein)

"Creating and Updating Price Indexes: Theory and Practice"— a short course for the Joint Program for Survey Methodology, 2000-2004, 2006, 2008, 2010, 2013, 2016 (with Dennis Fixler)

"Establishment Surveys"—a short course for the Joint Program for Survey Methodology, 2005, 2008, 2010 (with Philip Kott)

"Model-based Survey Sampling: Theory and Practice"— a short course for the Joint Program for Survey Methodology, 2003, and at the Joint Statistical Meetings, American Statistical Association 2009 (with Alan Dorfman)

"Introduction to Sample Surveys," Johns Hopkins University, Spring quarter 1995.

"Model-based Sample Design and Estimation Procedures"—a short course for the Washington Statistical Society, 1989 (with Robert Casady).

Teaching assistantships

Graduate teaching assistantship, Johns Hopkins University, 1981-83.

Graduate teaching assistantship, Cornell University, 1974-75.

Ph.D. Students:

Tuba Suzer Gurtekin, 2013: "Statistical Error Models for Multi-Mode Survey Estimators"

Timothy Kennel, 2013: "Using Generalized Linear Models in Survey Estimation"

Jeffrey Gonzalez, 2012: "The Use of Responsive Split Questionnaires in a Panel Survey"

Kimberly A. Henry, 2011: "Weight Adjustment Methods and Their Impact on Sample-Based Inference"

Dan Liao, 2010: "Collinearity Diagnostics for Complex Survey Data"

Jill A. Dever, 2008: "Sampling Weight Calibration with Estimated Control Totals"

Jianzhu Li, 2007: "Regression Diagnostics for Complex Survey Data: Identification of Influential Observations"

Sunghee Lee, 2004: "Statistical Estimation Methods in Volunteer Panel Web Surveys

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Presentations/Seminars:

Invited talk "Inference with Non-probability Samples", at Ross-Royall Symposium on Population Inference, Feb. 26, 2016.

Invited talk for Washington Statistical Society conference on Non-probability Samples, Sep. 9, 2015.

"Variance Estimation for Complex Surveys". Webinar presented for Survey Research Methods section, American Statistical Association, 2014.

"Surveys, Weights, and Synthetic Populations". Virginia Tech seminar, 2014.

"Uses of Models in Survey Design and Estimation". Census Bureau Distinguished Lecture. Also presented at Washington Statistical Society, National Center for Health Statistics, and Westat (2012)

"Effects of Collinear Predictors in Linear Models Fitted with Survey Data", seminar for Michigan Program in Survey Methodology, College Park MD, 2012.

"Regression Diagnostics for Complex Survey Data", Stata Users' Conference. Washington DC, 2009.

"Estimating Propensity Adjustments for Volunteer Web Surveys," Institut für Arbeitsmarkt und Berufsforschung der Bundesagentur für Arbeit, Nürnberg Germany, 2009.

"Survey Sample Coordination", 3-day Summer School co-arranged by Örebro University and Statistics Sweden, in Örebro Sweden, 2007.

Invited discussant of Roderick J.A. Little JPSM Distinguished Lecture, Spring 2007. Title of Little talk: "Wait! Should We Use the Survey Weights to Weight?

"Weight Adjustments for the Grouped Jackknife Variance Estimator", Washington Statistical Society seminar, 2006.

"Cell Collapsing in Poststratification", Washington Statistical Society seminar (with Jay J. Kim, National Center for Health Statistics), 2005.

"An Application of models in audit sampling", Seminar at the Dept. of Mathematics, University of Maryland, 2005.

"Variance Estimation with Hot Deck Imputation: A Simulation Study of Three Methods", seminar at the Institute for Social Research, University of Michigan, 2005.

"Statistical Quality in the NSF Data Collections" with Barbara A. Bailar, Joint Statistical Meetings, Toronto, Section on Government Statistics, 2004.

"Balanced Sampling and Model-based Estimation", seminar at the Bureau of the Census, 2004.

"The Effect of Multiple Weight Adjustments on Variance Estimation", Seminar at Joint Program for Survey Methodology, 2003.

Discussion of papers on multiphase sampling at 2003 Joint Statistical Meetings, San Francisco, including "Jackknife Variance Estimation for Two-Phase Sampling in the National Resources Inventory" by J. Opsomer, W.A. Fuller, X. Li; "Efficient Replication Variance Estimation for Two-phase Sampling" by R.R. Sitter, J.-K. Kim; "Variance Estimation for the Special Studies of the National Assessment for Educational Progress (NAEP)" by H. Lee, J.-K. Kim, S. Dohrmann; and "Applications of Nonparametric Hierarchical Models to Surveys with Clustered Outcome" by H. Zheng, R.J.A. Little.

"Variance Estimation for the General Regression Estimator", Seminar at George Mason University, 2001.

"Uses of Models in the Estimation of Price Indexes", Seminar at Joint Program for Survey Methodology, 2000.

Discussant of "Variance Estimation for the Consumer Price Index" by S. Jacobson, Washington Statistical Society, 1999.

"Stratification by Size Revisited," Seminar at Statistics Sweden, Stockholm, 1997.

"An Application of Mathematical Programming to Sample Allocation," Seminar for the Washington Statistical Society, 1997.

"Variance Estimation for Business Surveys," U.S. Department of Agriculture Graduate School, 1995.

"Establishment Surveys," lecture presented for the Joint Program in Survey Methodology, University of Maryland, 1994.

"Statistical Problems in Estimating the U.S. Consumer Price Index," presented at International Conference on Establishment Surveys, 1993, Buffalo, New York.

"Post-stratification" - seminar for the Washington Statistical Society, 1992; also presented at George Mason University, 1993.

"Longitudinal Smoothing of Price Index Variances," presented at Statistics Canada Symposium, 1992.

Discussion of paper on foundations of sampling at 1992 American Statistical Association meetings.

Discussion of papers on outlier analysis at 1991 Annual Research Conference sponsored by U.S. Bureau of the Census.

"Price Index Estimation from Panel Surveys" - presented at the 1989 meetings of the International Statistical Institute.

"Model-based Sampling" - seminar presented to a class in "Advanced Topics in Survey Sampling" at the U.S. Department of Agriculture Graduate School, 1989.

"Comparisons of Variance Estimators in Systematic and Random Sampling" - seminar for the U.S. Bureau of the Census, 1988.

"Price Index Estimation under an Autoregressive Model" - seminar for the Washington Statistical Society, 1987.

"Generalized Variance Functions in Sample Surveys" - seminars for the Washington Statistical Society, 1986, and Johns Hopkins University, Dept. of Biostatistics, 1988.

Presentations at the annual meetings of the American Statistical Association, 1984, 1986-1988, 1990-92, 1994, 1995, 1997, 1999, 2002, 2004.

Project Experience:

University of Michigan 2003-present

Health and Retirement Study—consultation on weighting cohort samples and design of screening sample for cohorts recruited in 2004, 2010-2011; analyses of screening results from the 2010-2011 samples. Design of sample allocation for the Late Baby Boomer cohort recruited in 2016.

Kuwait National Nutrition Survey—advised Kuwaiti Institute for Scientific Research on computation of weights and their use in statistical analysis in the 2008-2009 health and nutrition examination survey. Computed nonresponse adjustments and raking adjustments to population counts for their multistage household survey.

Estimated Control Calibration—Dr. Valliant and his Ph.D. students developed variance estimators that account for control values that are themselves estimates from other samples. Linearization and jackknife variance estimators were formulated for poststratified and general regression estimators. This work is being performed with grant funding from the National Science Foundation.

Estimation using Internet Panels of Volunteers—He and his Ph.D. students evaluated the use of calibration estimators to make population inferences from non-probability samples.

Arbitron—statistical analyst on a variety of issues related to radio rating, including combining estimates from different surveys to reduce sampling error of estimates; modeling the relationship of estimates from personal people meters and paper diaries; identification of unreliable diary reports using regression and classification trees.

State of Maryland—statistical consultant on analyses of survey data on adult and youth smoking behaviors. These surveys monitor Maryland's progress in reducing the use of tobacco products using the 2006 Maryland Adult and Youth Tobacco Surveys.

Internal Revenue Service—derived theory for estimating the variance of annual change in IRS samples of tax returns, accounting for births, deaths, and overlap of sample units between years due to permanent random number sampling.

Internal Revenue Service—consulted on variance estimation for raking estimators used in the Statistics of Income samples of business tax returns.

Internal Revenue Service—consulted on the use of model-based sampling and estimation by taxpayers in estimating amounts of depreciation to be claimed on business tax returns and on stock basis valuations. He advised IRS on methods for computing confidence intervals on error rates in cases where no sample errors are observed. Dr. Valliant has also conducted a training class for IRS audit staff on model-based estimation.

Robert Wood Johnson Foundation—consulted on estimation in a school survey to measure childhood obesity; derived methods of weighting school districts in a sample where schools were primary units; supervised calculation of weights based on general regression estimators. Redesigned probability proportional to size samples of public and private schools to transition to stratified simple random samples to facilitate rotation over years.

Regression Diagnostics for Survey Data—Dr. Valliant and his Ph.D. students developed diagnostics for linear models estimated from survey data. Topics include outlier identification, residual analysis, leverage measures, and group-wise influence measures. This work is being performed with grant funding from the National Science Foundation.

Model-based Properties of Replication Variance Estimators—Dr. Valliant is investigating how the use of models can improve the implementation of jackknife and balanced repeated replication variance estimators with grant funding from the National Science Foundation.

National Center for Health Statistics—Dr. Valliant consulted with NCHS statisticians on the effects on bias and variance of collapsing cells in raking estimation. He designed and programmed simulation studies in addition to developing theory. He also conducted a training class in the R language for NCHS staff.

Bureau of Transportation Statistics— Dr. Valliant designed alternative RDD and area probability samples of the American Travel Survey. The technical report on alternatives reviewed whether previous designs met target precision goals, calculated sample sizes needed to meet goals, and compared costs of alternatives.

Department of Defense, Office of the Undersecretary—Dr. Valliant designed surveys of military and civilian women to estimate the incidence and prevalence of domestic violence. The sample allocations were controlled to obtain efficient estimates for single and married women, and other domains like the military services.

Army Research Institute—He consulted on the design and analysis of a survey of Army Reserves who were mobilized to serve in Operation Iraqi Freedom.

Center for Excellence in Health Statistics—Dr. Valliant directed the analysis of data from state and national surveys measuring the prevalence of internet usage and its relationship to economic and health characteristics.

Center for Mental Health Studies, Substance Abuse and Mental Health Services Administration—Dr. Valliant evaluated the sample design for the Survey of Mental Health Organizations SMHO), including calculations to determine if precision targets were met and whether a measure of size used for PPS sampling was efficient.

National Center for Education Statistics—Dr. Valliant designed and directed the programming of simulation studies of properties of alternative methods of variance estimation

in the presence of imputed survey data (in collaboration with Westat). Techniques studied were model-assisted, jackknife, and multiple imputation variance estimation.

Defense Manpower Data Center—Dr. Valliant has a continuing consultation agreement with DMDC. The topics on which he has written detailed reports include assignment of weights in the Status of Forces Surveys (SOFS), analysis of longitudinal data collected from those surveys, design of rotating panel surveys for SOFS, construction of a leading indicator of retention in the armed forces, and factor analysis using complex survey data.

Westat 1998-2003

Internal Revenue Service Disclosure-Proofing—Dr. Valliant consulted with IRS on the methods used to protect confidentiality of individual taxpayers in the 1996-1999 public-use files. Statistical matching of the universe file with the public-use file was used to assess the risk of disclosure. Alternative methods of subsampling were investigated for creating the 1999 public-use, including balanced sampling for matching higher level population moments.

Internal Revenue Service Longitudinal Panel Study—Senior statistician in charge of the design of a panel study of tax returns used by the Office of Tax Assessment and the Statistics of Income Division to project future tax revenues and to study the effects of tax code changes and changes in the taxpayer population over time.

Internal Revenue Service (IRS) National Compliance Survey Redesign—Dr. Valliant directed this project to redesign the sample for selecting taxpayer returns for in-depth auditing. He designed and supervised the implementation of an evaluation of a previous sampling plan. An updated sample was also designed that required estimation of stratum variance components and development of a nonlinear optimization program to meet multiple IRS estimation goals.

Internal Revenue Service (IRS) Reclassification Study—Dr. Valliant was a senior statistician on this study to analyze the effects on estimates of stratum misclassification in the Statistics of Income Division's Corporate Sample. He derived theoretical bias and mean square-error formulas, accounting for the misclassification mechanism and weight adjustment methods used by IRS, and supervised the empirical evaluation for a set of critical, published statistics.

WesVar Software Development—Dr. Valliant was the chief statistician on the development of this software used to analyze complex survey data. Among the procedures implemented under his supervision have been multinomial logistic regression, plausible value analysis for education test scores, nonresponse adjustments through weighting classes, and enhanced F-test capabilities in linear models.

Commercial Building Energy Consumption Survey—Dr. Valliant was the chief statistician on this project to design a national sample of commercial buildings. He designed a sample of geographic primary sampling units, segments, and buildings within segments. The sample of buildings is multi-phase in which buildings are stratified based on listing information and sampled at rates optimized for different square footage and building use classes.

Pharmaceutical Sales Estimation—Dr. Valliant directed a project to use a sample of pharmacies to estimate numbers of prescriptions filled for specific drugs and number of prescriptions written by individual doctors. General regression and geostatistical estimators were developed to predict sales based on auxiliaries.

Integrated Postsecondary Education Data System (IPEDS) Institutional Prices and Student Financial Aid (IPSFA) Survey—This 1999 survey collected data on certain types of

undergraduate students; amounts they are charged for tuition, fees, and room and board; and average amounts of financial aid received by students. Dr. Valliant was the senior statistician on a project to compute weight adjustments to account for nonresponse.

Environmental Protection Agency Imputation Study—Dr. Valliant designed and implemented a method of imputing farm and livestock data in the 1997 Census of Agriculture. Nonparametric regression was used to predict missing values at the county level.

Defense Manpower Data Center Surveys—Dr. Valliant was the senior statistician on a series of projects to create weights for DMDC surveys, including the 1999 Active Duty Survey (Members and Spouses), the 2000 Reserves Component Survey (Members and Spouses), the 2000 Military Recruiter Survey, and the 2001 Work and Gender Relations Survey. He devised weighting plans, including eligibility adjustments, nonresponse adjustments, and poststratification. He supervised the implementation of stratified jackknife variance estimators.

Medical Expenditure Panel Survey—As a senior statistician on this project for the Agency for Health Care Policy and Research, Dr. Valliant supervised the task of matching reports of medical care events from a household survey with those from a parallel medical provider survey. A probabilistic matching algorithm was used to link events on the two files based on comparisons of common data fields and the assignment of measures of the likelihood that a pair of records constituted a match.

National Assessment of Education Progress (NAEP)—Dr. Valliant was a senior statistician on the 1998 State NAEP weighting task and the 2000 State and National NAEP sampling task under contract to the National Center for Education Statistics. The weighting project involved the assignment of base weights to school and student samples, accounting for special student subsampling procedures, nonresponse adjustments at the school and student levels, and assignment of replicate weights for jackknife variance estimation. State and national school sampling included sample size determination and design of a trial integrated state and national sample.

Evaluating the Use of Technology in Illinois Schools—Dr. Valliant designed and supervised the selection of a sample of public schools for the Illinois State Board of Education to measure the use of PCs, local area networks, the Internet, and other aspects of technology. Principals were surveyed in each school and a second-stage sample of teachers was selected to measure their uses of technology and to identify best practices.

Evaluation of the Transforming Education Through the Arts Challenge—The National Arts Education Consortium and the Getty Education Institute for the Arts fund programs in a number of schools to enhance student learning in the arts. Dr. Valliant designed samples of principals, arts specialists, and arts instructors to evaluate the effectiveness of the arts programs in their schools; to assess the types of professional development being provided to the teachers; and to measure school reform initiatives. He also designed student samples to measure their responses to the arts programs.

Bureau of labor Statistics 1983-1997

Permanent and collocated random number sampling—Designed method of using collocated random numbers to select samples for and control overlap between Current Employment Statistics survey, Occupational Employment Survey, and Occupational Safety and Health survey.

Current Employment Statistics variance estimation—Consulted on methods of replication variance estimation to reflect imputations done for nonrespondents, particularly among units that were certainty sample selections but did not respond.

Consumer Price Index—Conducted a theoretical investigation of the "formula bias" problem in the CPI induced if weights are calculated in such a way that the target population Laspeyres index is improperly estimated. This work supplemented economic study that found that the CPI was a slight overestimate of the desired population index.

General purpose estimation software—Reviewed and wrote report summarizing estimation procedures in all BLS surveys that were candidates for use of general purpose estimation software. Report identified estimation steps common to the surveys and described generalized regression estimation as way of covering all surveys.

General purpose sampling software—Wrote general purpose sample selection software using SAS macro language and SAS/IML for use in BLS. Selection methods included simple random sampling with and without replacement, Poisson sampling, Bernoulli sampling, systematic probability proportional to size sampling, Durbin's method, systematic equal probability sampling all of which could be used with or without stratification.

Employment Cost Index/Employee Benefits Surveys sample allocation—Applied mathematical programming techniques to the problem of joint optimization of the sample allocation to two surveys using the same sample.

Consumer Expenditure Survey calibration estimation—Applied method of calibration estimation with weight constraints to estimation of means and totals of consumer expenditures. The calibration method solves the problem of assigning a single weight to a household while adhering to population control totals for persons. This method was adopted for production estimation in the CE Survey.

Consumer Price Index Housing Survey—Consulted on various parts of the rent and rental equivalence indexes including selection of the segment sample of households, imputation of missing data, and alternative forms of the index estimator.

Current Employment Statistics sample allocation—Compared different methods of optimal sample allocation using mathematical programming algorithms for minimizing a nonlinear objective subject to nonlinear constraints.

Current Population Survey estimation—Consulted on use of adjusted 1990 Census counts for post-strata control totals.

Compensation and Wages surveys quantile estimation—Evaluated alternative methods of estimating variances of sample estimates of wage quantiles, including linearization and balanced repeated replication methods.

Current Population Survey generalized variances—Consultation on methods of variable selection for development of generalized variance functions. Served on CPS redesign committees to develop recommendations on use of Computer Assisted Telephone Interviewing.

International Price Program estimation—Evaluated proposals for combining index estimates from different panels of establishments in the Import and Export price programs. Consulted on plans to produce monthly in addition to quarterly estimates for imports and exports.

Laspeyres Price Index estimation—Developed theory for and empirically studied a new class of estimators of Laspeyres price indexes. Conducted simulation study of estimator performance using data from the CPI as a test population. Consulted on sample reduction options as result of budget cuts. Evaluated alternative methods of housing index estimation.

Producer Price Index sampling and variance estimation—Consulted with PPI staff on establishment sampling and variance estimation methods for a revision of the PPI. Advised on properties of different choices of balanced half-sample variance estimators. Evaluated methods of smoothing index variances over time.

Current Employment Statistics variance estimation—Consulted on alternative random group and jackknife replication variance estimators.

Computer procurement and support—In charge of microcomputer and Unix hardware and software acquisition and maintenance for the Office of Mathematical Statistics in the Bureau of Labor Statistics. Experience includes purchase, installation, and use of 80286, 80386, and 80486, and Pentium PC's, a Sun Unix workstation, memory boards, disk drives, printers, and applications software.

Arthur Young & Company 1980-1981

Customs Effectiveness Measurement Program—Project manager of a project for the U.S. Customs Service to design and test procedures for sampling cargo line items for intensive inspection at the port of Philadelphia. The project produced ship sampling and cargo subsampling procedures and software to be used by Customs inspectors.

Commercial and Family Disputes Study—Project manager and survey statistician on a study for the U.S. Dept. of Justice to examine the changing role of the state courts in adjudicating family and commercial disputes. By examining five state courts and a sample of 6,000 cases during six two-year periods since 1900, changing caseloads and roles of the courts were estimated and related to demographic and economic data.

Benefit Accuracy Study—Statistical analyst on a study for the U.S. Railroad Retirement Board (RRB) to collect and analyze data to evaluate the accuracy of benefit payments to RRB annuitants and to recommend quality control procedures. Designed the plan of analysis and method of coding inaccuracies of eligibility determination.

Survey of Postsecondary Schools—Survey statistician on the design of a national sample of schools for the National Center for Educational Statistics. The project involved the selection of a sample of schools with probabilities proportional to enrollment, selection of a subsample of students within the sample schools, and conduct of a mail survey.

Westat 1975-1980

Nonresidential Building Energy Consumption Feasibility Study—Manager of this for the U.S. Dept. of Energy to test the feasibility of collecting detailed technical data on energy consumption characteristics and environmental systems of commercial buildings. Responsibilities included the design of a four-stage area probability sample, design of samples from utility company customer lists, and development of a pool of data items in conjunction with engineering and architectural consultants.

National Interim Nonresidential Building Energy Consumption Survey—Survey statistician on the design of a national interim survey of nonresidential buildings to collect data on structural, occupancy, and energy consumption characteristics for the U.S. Dept. of Energy. Duties included the statistical analysis of pilot test results prior to the national survey, the design of a four-stage national area probability sample of 5,000 buildings with supplementation from independent lists, and derivation of appropriate estimation procedures.

National Market Research Establishment Survey—Survey statistician and analyst on the design of a national survey of business establishments for the Xerox Corporation. A four-stage national area probability sample was designed and implemented in two consecutive years. The design used extensive field listing of 90,000 establishments and a version of double sampling to obtain an efficient design for the estimation of annual totals and year-to-year changes. Participated in all phases of the design and developed and implemented a hot-deck imputation procedure for missing data and a balanced half-sample procedure for variance estimation.

National Hospital Sample—Manager of a project to redesign a national sample of hospitals to estimate the frequencies of product-related injuries for the U.S. Consumer Products Safety Commission (CPSC). Responsibilities included the compilation of an updated sampling frame, development of a detailed cost function, determination of an optimum sampling plan for hospitals and cases within hospitals, and selection of a sample of 130 hospitals.

Evaluation of CPSC Injury Estimates—Manager of a study to evaluate the CPSC program to make national estimates of product-related injuries based on a sample of hospital emergency rooms. Duties included evaluation of nonsampling errors, reporting biases, data quality in the CPSC program and an independent set of data from the National Health Interview Survey.

Biomedical Price Deflator—Analyst on a project to develop a price index for expenditures for biomedical research and development for the National Institutes of Health. Duties involved the use of secondary data sources on wage and price trends to develop weights and indexes appropriate to biomedical R&D expenditures in the public and private sectors.

Consumer Expenditure Survey—Analyst on a project with the U.S. Bureau of Labor Statistics to develop a continuing survey of consumer expenditures to be used in updating the weights for the Consumer Price Index. Responsibilities included evaluation of alternative estimators of annual totals and change from a rotating sample. The project also evaluated relative merits of collecting household expenditure data by alternative personal interview and diary techniques and resulted in design recommendations for a continuing survey.