



EXPERTISE

Survey Sampling and Estimation
Sample Design
Statistical Soundness
Multilevel Modeling
Multivariate Statistics
Missing Data Imputation



EDUCATION

PhD, UCLA, Mathematics (Specialty:
Statistics), 1978
MA, UCLA, Mathematics, 1971
BA, UC San Diego, Mathematics
(minor, Economics)
(with honors), 1969



EMPLOYMENT HISTORY

American Institutes for Research
2011–Present
George Mason University (Adjunct)
2007–2011
Independent Statistical Consultant
2006–2011
U.S. Bureau of Transportation Statistics
2000–2006
U.S. National Center for Education
Statistics *1987–2000*
U.S. Bureau of Labor Statistics
1979–1987

Profile Summary

- Over 40 years' experience with all aspects of complex survey design and estimation, including sample design, imputation, variances, sample size and power determination, and weighting.
- Sampling expert for EdSurvey. Assures complex sampling are correctly reflected in procedures (NAEP, TIMSS, PIAAC, and other NCES surveys).
- Sampling expert for NAEP analyses. Assures complex sampling correctly reflected in analyses.
- Accredited Professional Statistician (PStat[®]), American Statistical Association
- Fellow of the American Association for the Advancement of Science, the American Educational Research Association, and the American Statistical Association, Elected Member of the International Statistical Institute.

Selected Professional Experience

American Institutes for Research, Washington, DC (2011–Present)

Responsibilities cover all aspects of complex survey design and estimation, including sample design, imputation, variances, sample size and power determination, and weighting. Sampling expert for EdSurvey, an R-based software system for analyzing education data accounting for the complex survey design and plausible values as in NAEP. Sampling expert for NAEP analyses. Evaluated and recomputed weights for Project Talent, a survey of 377,000 high school students in 1960. Consulted on sample and nonresponse bias analysis for the Program for the International Assessment of Adult Competencies (PIAAC); consulted on sample design for the OECD Teaching and Learning Survey (TALIS); conducted power analyses and consulted for sample design for Department of Education's National Reporting System. Led on sampling for the Health Care Enrollee Experience Survey and for surveys pertaining to transitional kindergarten in California.

Adjunct Professor, Department Statistics, George Mason University, Fairfax VA 22030 (2007–2011)

Taught Survey Sampling in Department of Statistics to master's degree level students and advanced undergraduates. Earlier taught Statistics for Engineering and Science II and Statistical Computer Packages.

U.S. National Center for Education Statistics, Washington, DC (1987–2000)**Mathematical Statistician, National Center for Education Statistics (1987-2000)**

Member of the Statistical Standards Program (formerly called the Statistical Standards and Methodology Division). Responsibilities included technical consulting on survey design, sampling, weighting, imputation, and other methodological issues. Did research on hierarchical linear models (multilevel models), particularly sample size issues and applications to education, and on imputation. Was a liaison to the National Postsecondary Education Cooperative. Was lead mathematical statistician on the National Study of Postsecondary Faculty and the Public Libraries Survey.

Selected Publications**Journal articles**

- Cohen, M. P. (2019). Why not an interval null hypothesis? *Journal of Data Science*, 17(2), 383-390.
- Cohen, M. P. (2012). Discussion of “Calibrated Bayes, an alternative inferential paradigm for official statistics” by Roderick J. Little. *Journal of Official Statistics*, 28, 363–365.
- Cohen, M. P. (2011). Book review of *Applied Latent Class Analysis* edited by Jacques A. Hagenaars and Allan L. McCutcheon. *Journal of Official Statistics*, 27, 139–141.
- Giesbrecht, L., Bose, J., & Cohen, M. P. (2006). Measuring exposure to vehicle crashes. *Chance*, 19, 22–27.
- Cohen, M. P. (2005). Sample size considerations for multilevel surveys. *International Statistical Review*, 73, 279–287.
- Cohen, M. P. (2003). Imputation allowing standard variance formulas. *Journal of Data Science*, 1, 275–292.
- Cohen, M. P. (2002). Implementing Rao-Shao type variance estimation with replicate weights. *Survey Methodology*, 28(1), 97–101.
- Cohen, M. P. (2000). Note on the odds ratio and the probability ratio. *Journal of Educational and Behavioral Statistics*, 25(2), 249–252.
- Cohen, M. P. (2000). Book review of *Bootstrap Methods and Their Application* by A. C. Davison and D. V. Hinkley. *Journal of Official Statistics*, 16(1), 77–79.
- Cohen, M. P. (1998). Determining sample sizes for surveys with data analyzed by hierarchical linear models. *Journal of Official Statistics*, 14(3), 267–275.
- Huang, G. G., Weng, S., Zhang, F., & Cohen, M. P. (1997). Outmigration among rural high school graduates: The effect of academic and vocational programs. *Education Evaluation and Policy Analysis*, 19(4), 360–372.

Book chapters

- Cohen, M. P. (2010). Sample size determination and stratified sampling. In M. Lovric (Ed.), *International encyclopedia of statistical science*. Berlin: Springer.
- Cohen, M. P. (2008). Auxiliary variable, inference, proxy respondent, raking, and unit nonresponse. In Paul J. Lavrakas (Ed.), *Encyclopedia of survey research methods*. (Vol. I and II, pp. 45–46, 333–334, 633, 671–673, 927–928). Thousand Oaks, CA: Sage Publications.

Selected Presentations

- Invited talk, Conference on Bayesian Modeling, Computation, and Applications in Honor of Professor Lynn Kuo, University of Connecticut, Storrs CT, May 2018
- Discussant, Session on Latent Analysis with Surveys in Education Research, American Educational Research Association Annual Meeting, New York City, April 2018
- Discussant, Invited Session on Statistical Inference with Clustered Data in Survey Sampling, Joint Statistical Meetings, Chicago, August 2016
- Discussant, Session on Conducting and Validating Surveys, American Educational Research Association Annual Meeting, Washington DC, April 2016
- Discussant, Session on NAEP's Role in Educational Achievement, American Educational Research Association Annual Meeting, Chicago, April 2015
- Discussant, Session on Measurement Issues in Survey Research, American Educational Research Association Annual Meeting, Chicago, April 2015
- Discussant, Session on Effect Sizes, Sample Sizes, and Power, American Educational Research Association Annual Meeting, Chicago, April 2015

Selected Awards

- Fellow, American Association for the Advancement of Science (AAAS), bestowed in 2015. Fellow, American Educational Research Association, bestowed in 2009. Elected Member, International Statistical Institute, elected in 2006. Fellow, American Statistical Association, bestowed in 2004.
- Cash Awards, National Center for Education Statistics (NCES), 1987, 1989, 1990, 1992, 1993, 1997, 1998, and 1999; Bureau of Transportation Statistics, 2003
- Quality Step Increases, NCES, 1988, 1991, 1994, and 1996
- NCES Peer Recognition Award, Special Recognition, 1990
- NCES Peer Recognition Award, Organizational Distinction, 1992