

CURRICULUM VITAE
BRUCE D. SPENCER

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EDUCATION

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| Ph.D. | Yale University, 1979, Statistics |
| M. Phil. | Yale University, 1975, Statistics |
| M.S. | Florida State University, 1974, Statistics |
| B.S. | Cornell University, 1973, Biometry |

PROFESSIONAL EXPERIENCE

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|----------------|--|
| 1980 – present | Northwestern University. Professor (1992 – present), Associate Professor (1985 – 92), Assistant Professor (1980 – 85) <ul style="list-style-type: none">• Department of Statistics, Weinberg College of Arts and Sciences (founding member 1986 – present; chair 1988 – 2001, 2007 – 2010)• Department of Human Development and Social Policy, School of Education and Social Policy (member 1980 – 1989, by courtesy 1989 – present)• Institute for Policy Research (Faculty Fellow, 1984 – 1985, 2000 – present; executive committee, 2012 – 2020) |
| 1987 – present | Spencer Statistics, Inc. President |
| 1982 – 1994 | NORC (National Opinion Research Center) at the University of Chicago. Senior Research Statistician (1992 – 1994), Director of Methodology Research Center (1985 – 1992), Sampling Statistician (1982 – 1985) |
| 1984 | Department of Statistics and Center for Economic Policy Research, Stanford University. Visiting Assistant Professor |
| 1978 – 1980 | National Academy of Sciences. Senior Staff Officer and Study Director, Committee on National Statistics |
| 1976 – 1977 | National Bureau of Economic Research. Research Assistant to Richard Ruggles, Measurement of Social and Economic Performance, Project on Wholesale Price Index |

PROFESSIONAL ACTIVITIES

Selected Advisory Committees and Boards

CDC & BJS Sponsored Expert Panel on Methodological Enhancements to the National Intimate Partner and Sexual Violence Survey (NISVS) (2015 - 2017)

American Statistical Association Forensic Science Ad Hoc Advisory Committee (2012 - 2017)

National Academy of Sciences Panel on Measuring Rape and Sexual Assault in BJS Household Surveys (2011-2013)

American Statistical Association Committee on Law and Justice Statistics (2009 -2013)

National Academy of Sciences Panel to Review the Programs of the Bureau of Justice Statistics (2006-2009)

National Institute of Statistical Sciences, Expert Task for Reporting of Effect Sizes from NCES Surveys (2006-2007)

National Academy of Sciences Panel on Bureau of Transportation Statistics International Trade Traffic Study (2003-2004)

National Academy of Sciences Panel on Formula Allocations (2001-2002)

Bureau of Census, Census Committee on Statistical Policy and Sampling and Estimation Steering Committee (1996-1999)

Steering Committee, Third International Mathematics and Science Study (1991-1997)

National Academy of Sciences Mathematical Sciences Assessment Panel (1991-1993)

American Statistical Association Committee on Energy Statistics (1990-1992)

American Statistical Association JES Management Committee (1989-1995)

Institute of Mathematical Statistics Outreach Committee (1989-1991)

American Statistical Association Section on Survey Research, Executive Committee (Publications Officer) (1989-1991)

American Statistical Association Journal of Educational Statistics Management Committee (1989-1991)

National Research Council Panel on Statistical Issues in AIDS Research (1988-1989)

National Research Council/Institute of Medicine Ad Hoc Advisory Panel on Substance Abuse (1988)

American Statistical Association Technical Panel on the Census Undercount (1982-1983)

Bureau of Census, Steering Committee for Conference on Census Undercount (1979-1980)

Awards

SPAIG Award (Statistical Partnerships Among Academe, Industry, and Government), American Statistical Association (2017)

International Statistical Institute, elected member (2015)

Northwestern University, Associated Student Government Faculty Honor Roll (2011-16)

National Institute of Statistical Sciences, Senior Fellow (summer 1997)

American Statistical Association, Fellow (1992)

AT&T Research Fellowship (1992-93)

Journal of the American Statistical Association Invited Applications Paper (1988)

Palmer O. Johnson Memorial Award from the American Educational Research Association (1983)

Memberships in Professional Organizations

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| American Statistical Association | International Association of Survey Statisticians |
| Institute of Mathematical Statistics | International Statistical Institute |
| International Association for Official Statistics | Population Association of America |

PUBLICATIONS

Articles

- A1. Sampson, Allan and Spencer, Bruce (1976) Sufficiency, Minimal Sufficiency, and the Lack Thereof, *The American Statistician* **30** 34-35; corrigenda, *The American Statistician* **31** 54.
- A2. Kitagawa, Evelyn M. and Spencer, Bruce D. (1981) On Estimating Population and Income for Local Areas, *Statistical Reporter* **81** 377-381.
- A3. Spencer, Bruce D. and Wiley, David E. (1981) The Sense and Nonsense of School Effectiveness, *Journal of Policy Analysis and Management* **1** 43-52.
- A4. Spencer, Bruce D. (1982). A Note on Statistical Defensibility, *The American Statistician* **36** 208-209 (with comments and rejoinder, 209-216).
- A5. Spencer, Bruce D. (1982). Feasibility of Benefit-Cost Analysis of Data Programs, *Evaluation Review* **6** 649-672.
- A6. Spencer, Bruce D. (1982). Concerning Dubious Estimates of the Effects of Census Undercount Adjustment of Federal Aid to Cities, *Urban Affairs Quarterly* **18** 145-148.
- A7. Spencer, Bruce D. (1982). Technical Issues in Allocation Formula Design, *Public Administration Review* **42** 524-529.
- A8. Spencer, Bruce D. (1983). On Interpreting Test Scores as Social Indicators: Statistical Considerations, *Journal of Educational Measurement* **20** 317-334.
- A9. Spencer, Bruce D. (1983). Test Scores as Social Statistics: Comparing Distributions, *Journal of Educational Statistics* **8** 249-270.
- A10. Martin, Margaret E., Frankel, Martin R., Goldman, Noreen, Horvitz, Daniel G., Kadane, Joseph B., Kalton, Graham, Preston, Samuel H., Spencer, Bruce D., Stoto, Michael A. and Wilson, Franklin D. (1984). Report of the ASA Technical Panel on the Census Undercount, *The American Statistician* **38** 252 - 256.
- A11. Alho, Juha M. and Spencer, Bruce D. (1985). Uncertain Population Forecasting, *Journal of the American Statistical Association* **80** 306-314.
- A12. Spencer, Bruce D. (1985). Avoiding Bias in Estimates of the Effect of Data Error on Allocations of Public Funds, *Evaluation Review* **9** 511-518.
- A13. Spencer, Bruce D. (1985). Optimal Data Quality, *Journal of the American Statistical Association* **80** 564-573.
- A14. Spencer, Bruce D. (1985). Statistical Aspects of Equitable Apportionment, *Journal of the American Statistical Association* **80** 815-822.

- A15 Spencer, Bruce D. (1987). Comment on 'Census Undercount Adjustment and the Quality of Geographic Population Distributions' by Allen L. Schirm and Samuel H. Preston, *Journal of the American Statistical Association* **82** 984-986.
- A16 Mulry, Mary H. and Spencer, Bruce D. (1988). Total Error in the Dual System Estimator: The 1986 Census of Central Los Angeles County, *Survey Methodology* **14** 241-263.
<https://www150.statcan.gc.ca/n1/en/pub/12-001-x/1988002/article/14589-eng.pdf?st=TamdiP3I>
- A17 Alho, Juha M. and Spencer, Bruce D. (1990). Effects of Targets and Aggregation on the Propagation of Error in Mortality Forecasts, *Mathematical Population Studies* **2** 209-227.
- A18 Alho, Juha M. and Spencer, Bruce D. (1990). Error Models for Official Mortality Forecasts, *Journal of the American Statistical Association* **85** 609-616.
- A19 Spencer, Bruce D. and Moses, Lincoln E. (1990). Needed Data Expenditure for an Ambiguous Decision Problem, *Journal of the American Statistical Association* **85** 1099-1104.
- A20 Spencer, Bruce D. and Foran, Wendene (1991). Sampling Probabilities for Aggregations, with Applications to NELS:88 and Other Educational Longitudinal Surveys, *Journal of Educational Statistics* **16** 21-34.
- A21 Mulry, Mary H. and Spencer, Bruce D. (1988). Total Error in PES Estimates of Population: The Dress Rehearsal Census of 1988, *Journal of the American Statistical Association*, **86**: 839-854 (with discussion and rejoinder 854-863).
- A22 Alho, Juha M. and Spencer, Bruce D. (1991). A Population Forecast as a Database: Implementing the Stochastic Propagation of Error, *Journal of Official Statistics* **7** 295-310.
- A23 Spencer, Bruce D. and Fisher, Stephen (1992) On Comparing Distributions of Poverty Gaps, *Sankhyā, Series B*, **54** 114-126.
- A24 Mulry, Mary H. and Spencer, Bruce D. (1993). Accuracy of the 1990 Census and Undercount Adjustments, *Journal of the American Statistical Association* **88** 1080-1091.
- A25 Springer, G.F., Desai, P.R., Tegtmeyer, H., Spencer, B.D., and Scanlon, E.F. (1993). Pancarcinoma T/Tn Antigen Detects Human Carcinoma Long before Biopsy does and Its Vaccine Prevents Breast-Carcinoma Recurrence, *Annals of The New York Academy of Sciences* **690** 355-357.
- A26 Spencer, Bruce D. (1994). Sensitivity of Benefit-Cost Analysis of Data Programs to Monotone Misspecification, *Journal of Statistical Planning and Inference* **39** 19-31.
- A27 Mulry, Mary H. and Spencer, Bruce D. (1994). Evaluating Accuracy of Population Statistics for Small Areas, *Statistics in Transition*, December.
- A28 Springer, G.F., Desai, P.R., Spencer, B.D., and Scanlon, E.F. (1993). T/Tn Antigen Vaccine Is Safe and Highly Effective in Preventing Recurrence of Advanced Breast Carcinoma, *International Journal of Oncology* **5** 372-373, #C-1.
- A29 Springer, G. F., Desai, P. R., Spencer, B.D., Tegtmeyer, H., Carlstedt, S. C. and Scanlon, E. F. (1995) . T/Tn Antigen Vaccine Is Effective and Safe in Preventing Recurrence of Advanced Breast Carcinoma, *Cancer Detection and Prevention* **19** 374-380.
- A30 Alho, Juha M. and Spencer, Bruce D. (1997). The Practical Specification of the Expected Error of

- Population Forecasts, *Journal of Official Statistics* **13** 203-226.
- A31 Sampson, Allan R. with Spencer, Bruce (1999) A Conversation with I. Richard Savage, *Statistical Science* **14** 126-148.
- A32 Anderson, Margo., Daponte, Beth Osborne, Fienberg, Stephen E., Kadane, Joseph B., Spencer, Bruce D. and Steffey, Duane L. (2000). Sampling-Based Adjustment of the 2000 Census B A Balanced Perspective, *Jurimetrics* **40** 341-356.
- A33 Spencer, Bruce D. (2000). An Approximate Design Effect for Unequal Weighting When Measurements May Correlate with Selection Probabilities, *Survey Methodology* **26** 137-138. <https://www150.statcan.gc.ca/n1/en/pub/12-001-x/2000002/article/5533-eng.pdf?st=MbCgqEnW>
- A34 Spencer, Bruce D. (2007). Estimating the Accuracy of Jury Verdicts, *Journal of Empirical Legal Studies* **4** 305-329. DOI: 10.1111/j.1740-1461.2007.00090.x <http://onlinelibrary.wiley.com/doi/10.1111/j.1740-1461.2007.00090.x/abstract>
- A35 Spencer, Bruce D. (2012). When Do Latent Class Models Overstate Accuracy for Diagnostic and Other Classifiers in the Absence of a Gold Standard? *Biometrics* **68** 559-566. DOI: 10.1111/j.1541-0420.2011.01694.x <http://onlinelibrary.wiley.com/doi/10.1111/j.1541-0420.2011.01694.x/abstract>
- A36 Stein, Seth, Spencer, Bruce D., and Brooks, Edward M. (2015) Bayes and BOGSAT: Issues in When and How to Revise Earthquake Hazard Maps. *Seismological Research Letters* **86**, 6-10. DOI: 10.1785/0220140215. <http://srl.geoscienceworld.org/content/86/1/6.full>
- A37 Zhang, Yaonan, Kolaczyk, Eric D., and Spencer, Bruce D. (2015) Estimating Network Degree Distributions under Sampling: An Inverse Problem, with Applications to Monitoring Social Media Networks. *The Annals of Applied Statistics* **9** 166-199. DOI: 10.1214/14-AOAS800. <http://dx.doi.org/10.1214/14-AOAS800> or <http://arxiv.org/abs/1305.4977>
- A38 Stein, Seth, Spencer, Bruce D. and Brooks, Edward M. (2015). Metrics for Assessing Earthquake Hazard Map Performance. *Bulletin of Seismological Research of America* **105** 2160-2173. <http://bssa.geoscienceworld.org/content/ssabull/105/4/2160.full.pdf>
- A39 Scholtens, Denise and Spencer, Bruce D. (2015). Node Sampling for Protein Complex Estimation in Bait-Prey Graphs. *Statistical Applications in Genetics and Molecular Biology* **14** 391-411.
- A40 Brooks, Edward M., Stein, Seth, and Spencer, Bruce D. (2016). Comparing the Performance of Japan's Earthquake Hazard Maps to Uniform and Randomized Maps. *Seismological Research Letters* **87** 1-13. doi:10.1785/0220150100 <http://srl.geoscienceworld.org/content/gssrl/87/1/90.full.pdf>
- A41 Spencer, Bruce D., May, Julian, Kenyon, Steven, and Seeskin, Zachary (2017). Cost-Benefit Analysis for a Quinquennial Census: The 2016 Population Census of South Africa. *Journal of Official Statistics* **33**(1) 249-274. doi.org/10.1515/jos-2017-0013
- A42 Brooks, Edward, Stein, Seth, and Spencer, Bruce D. (2017). Investigating the effects of smoothing on the performance of earthquake hazard maps. *International Journal of Earthquake and Impact Engineering* **2**(2) 121-134. doi.org/10.1504/ijeie.2017.100100093

- A43 Stein, Seth, Brooks, Edward, Spencer, Bruce, Vanneste, Kris, Camelbeeck, Thierry, and Vlemingckx, Bart (2017). Assessing How Well Earthquake Hazard Maps Work: Insights from Weather and Baseball. *EARTH* earthmagazine.org/article/assessing-how-well-earthquake-hazard-maps-work-insights-weather-and-baseball
- A44 Stein, Seth, Salditch, Leah, Brooks, Edward, Spencer, Bruce, and Campbell, Michael (2017). Is the Coast Toast? Exploring Cascadia Earthquake Probabilities. *GSA Today*, online at geosociety.org/gsatoday/groundwork/G350GW/GSATG350GW.pdf
- A45 Brooks, Edward M., Stein, Seth, Spencer, Bruce D., Salditch, Leah, Petersen, Mark D., and McNamara, Daniel E. (2017). Assessing Earthquake Hazard Map Performance for Natural and Induced Seismicity in the Central and Eastern United States. *Seismological Research Letters*, **89**(1) 118-126. DOI: <https://doi.org/10.1785/O220170124>
- A46 Salditch, Leah, Hough, Susan E., Stein, Seth, Spencer, Bruce D., Brooks, Edward M., Neely, James S., and Lucas, Madeleine C. (2018) The 1952 Kern County, California Earthquake: A Case Study of Issues in the Analysis of Historical Intensity Data for Estimation of Source Parameters. *Physics of the Earth and Planetary Interiors* **283** 140-151. <https://doi.org/10.1016/j.pepi.2018.08.007>
- A47 Weinberg, Daniel H., Abowd, John M., Belli, Robert F., Cressie, Noel, Folch, David C., Holan, Scott H., Levenstein, Margaret C., Olson, Kristen M., Reiter, Jerome P., Shapiro, Matthew D., Smyth, Jolene, Soh, Leen-Kiat, Spencer, Bruce D., Spielman, Seth E., Vilhuber, Lars, Wikle, Christopher K. (2018). Effects of a Government-Academic Partnership: Has the NSF-Census Bureau Research Network Helped Improve the U.S. Statistical System? *Journal of Survey Statistics and Methodology* **7** 589-614. <https://doi.org/10.1093/jssam/smy023>
- A48 Brooks, Edward M., Neely, James, Stein, Seth, Spencer, Bruce D., and Salditch, Leah (2019). Assessments of the Performance of the 2017 One-Year Seismic Hazard Forecast for the Central and Eastern United States Via Simulated Earthquake Shaking Data, *Seismological Research Letters* **90**(3) 1155-1167. <https://doi.org/10.1785/O220190007>
- A49 Salditch, Leah, Stein, Seth, Neely, James, Spencer, Bruce D., Brooks, Edward M., Agnond, Amotz, and Liu, Mian (2020) Earthquake Supercycles and Long-Term Fault Memory. *Tectonophysics* **774**, 5 January 2020, 228289. <https://doi.org/10.1016/j.tecto.2019.228289>
- A50 Neely, James S., Stein, Seth, and Spencer, Bruce D. (2020). Large Uncertainties in Earthquake Stress-Drop Estimates and Their Tectonic Consequences, *Seismological Research Letters* (2020) **91**(4) 2320–232. [doi/10.1785/O220200004](https://doi.org/10.1785/O220200004)
- A51 Rösler, Boris, Stein, Seth, and Spencer, Bruce D. (2021) Uncertainties in Seismic Moment Tensors Inferred from Differences Between Global Catalogs, *Seismological Research Letters* (2021) accepted for publication

Books, as author or editor

- B1 Spencer, Bruce D. (1980). *Benefit-Cost Analysis of Data Used to Allocate Funds*. New York: Springer.
- B2 Spencer, Bruce D. (ed.) (1997) *Statistics and Public Policy*. Oxford: Oxford University Press.

- B3 Alho, Juha M. and Spencer, Bruce D. (2005). *Statistical Demography and Forecasting*. New York: Springer.

Books, as contributing author

- B4 National Research Council (1980). *Estimating Population and Income of Small Areas*. Panel on Small-Area Estimates of Population and Income. Committee on National Statistics, Assembly of Behavioral and Social Sciences. Washington, D.C.: The National Academy Press. (as Study Director)
- B5 National Research Council (2001) *Choosing the Right Formula: Initial Report*. Panel on Formula Allocations. Thomas B. Jabine, Thomas A. Louis, and Allen L. Schirm, Editors. Committee on National Statistics. Washington, DC: National Academy Press. (as Panel member)
- B6 National Research Council (2003). *Statistical Issues in Allocating Funds by Formula*. Panel on Formula Allocations. Thomas A. Louis, Thomas B. Jabine, and Marisa A. Gerstein, Editors. Committee on National Statistics, Division of Behavioral and Social Sciences and Education. Washington, DC: The National Academies Press. (as Panel member)
- B7 National Research Council. (2005). *Measuring International Trade on U.S. Highways*. Panel on Bureau of Transportation Statistics International Trade Traffic. J.L. Horowitz and T. Plewes, Editors. Committee on National Statistics. Division of Behavioral and Social Sciences and Education. Washington, DC: The National Academies Press. (as Panel member)
- B8 National Research Council (2008). *Surveying Victims: Options for Conducting the National Crime Victimization Survey*. Panel to Review the Programs of the Bureau of Justice Statistics. Robert M. Groves and Daniel L. Cork, eds. Committee on National Statistics and Committee on Law and Justice, Division of Behavioral and Social Sciences and Education. Washington, DC: The National Academies Press. (as Panel member)
- B9 National Research Council. (2009). *Ensuring the Quality, Credibility, and Relevance of U.S. Justice Statistics*. Panel to Review the Programs of the Bureau of Justice Statistics. Robert M. Groves and Daniel L. Cork, eds. Committee on National Statistics and Committee on Law and Justice, Division of Behavioral and Social Sciences and Education. Washington, DC: The National Academies Press. (as Panel member)
- B10 National Research Council. (2014). *Estimating the Incidence of Rape and Sexual Assault*. Panel on Measuring Rape and Sexual Assault in Bureau of Justice Statistics Household Surveys, C. Kruttschnitt, W.D. Kalsbeek, and C.C. House, Editors. Committee on National Statistics, Division of Behavioral and Social Sciences and Education. Washington, DC: The National Academies Press. (as Panel member)

Chapters and Encyclopedia Articles

- C1. Spencer, Bruce D. (1980). Models for Error in Postcensal Population Estimates. Pp. 217-228 in National Research Council (1980). *Estimating Population and Income of Small Areas*. Panel on Small-Area Estimates of Population and Income. Committee on National Statistics, Assembly of Behavioral and Social Sciences. Washington, D.C.: The National Academy Press.
- C2. Spencer, Bruce D. (1980). A Note on the Use of Postcensal Population Estimates in Employment and Unemployment Measures. Pp. 215-216 in National Research Council (1980). *Estimating*

- Population and Income of Small Areas*. Panel on Small-Area Estimates of Population and Income. Committee on National Statistics, Assembly of Behavioral and Social Sciences. Washington, D.C.: The National Academy Press.
- C3. Pursell, Donald E. and Spencer, Bruce D. (1980). Postcensal Per Capita Income Estimation Methods of the Census Bureau: Summary. Pp. 188-193 in National Research Council (1980). *Estimating Population and Income of Small Areas*. Panel on Small-Area Estimates of Population and Income. Committee on National Statistics, Assembly of Behavioral and Social Sciences. Washington, D.C.: The National Academy Press.
- C4. Spencer, Bruce D. (1980). Revenue Sharing Allocations and the Effects of Data Errors. Pp. 205-214 in National Research Council (1980). *Estimating Population and Income of Small Areas*. Panel on Small-Area Estimates of Population and Income. Committee on National Statistics, Assembly of Behavioral and Social Sciences. Washington, D.C.: The National Academy Press.
- C5. Spencer, Bruce D. (1980). Effects of Biases in Census Estimates on Evaluation of Postcensal Estimates. Pp. 232-236 in National Research Council (1980). *Estimating Population and Income of Small Areas*. Panel on Small-Area Estimates of Population and Income. Committee on National Statistics, Assembly of Behavioral and Social Sciences. Washington, D.C.: The National Academy Press.
- C6. Spencer, Bruce D. and Lee, Che-Fu (1980). Postcensal Population Estimation Methods of the U.S. Bureau of the Census. Pp. 131-187 in National Research Council (1980). *Estimating Population and Income of Small Areas*. Panel on Small-Area Estimates of Population and Income. Committee on National Statistics, Assembly of Behavioral and Social Sciences. Washington, D.C.: The National Academy Press.
- C7. Spencer, Bruce D. (1980). The Role of Judgement in Postcensal Estimation. Pp. 194-199 in National Research Council (1980). *Estimating Population and Income of Small Areas*. Panel on Small-Area Estimates of Population and Income. Committee on National Statistics, Assembly of Behavioral and Social Sciences. Washington, D.C.: The National Academy Press.
- C8. Lapham, Robert J. and Spencer, Bruce D. (1982). Small-Area Analysis. Pp. 607-614 in J.A. Ross, editor, *International Encyclopedia of Population*, New York: The Free Press.
- C9. Spencer, Bruce D. (1986). Toward Conducting Benefit-Cost Analyses of Data Programs. Pp. 38-59 in R. W. Pearson and R. F. Boruch (eds.) *Survey Research Designs: Towards a Better Understanding of Their Costs and Benefits*. New York: Springer-Verlag.
- C10. Aaron, Joan, Billard, Lynn, Brookmeyer, Ron, Menken, Jane, Moses, Lincoln, Spencer, Bruce, Stoto, Michael, and Turner, Charles (1989). Monitoring the Epidemic. Chapter 1 (pp. 31- 72) in Turner, Charles, Miller, Heather, and Moses, L. (Eds.) *AIDS, Sexual Behavior, and Intravenous Drug Use: Report of the Committee on AIDS Research and the Behavioral, Social, and Statistical Sciences*. National Academy of Sciences. Washington, D.C.: National Academy Press.
- C11. Spencer, Bruce D. (1989). On the Accuracy of Current Estimates of the Numbers of Intravenous Drug Users. Pp. 429 - 446 of: Turner, Charles, Miller, Heather, and Moses, L. (Eds.) *AIDS, Sexual Behavior, and Intravenous Drug Use: Report of the Committee on AIDS Research and the Behavioral, Social, and Statistical Sciences*. National Academy of Sciences. Washington, D.C.: National Academy Press.

- C12 Spencer, Bruce D. (1991). A Critique of Sampling in the 1990 Trial State Assessment. Pp. 1-18 in *Assessing Student Achievement in the States: Background Studies*. Studies for the Evaluation of the NAEP Trial State Assessment Commissioned for the National Academy of Education Panel Report on the 1990 Trial. Stanford: National Academy of Education.
- C13 Spencer, Bruce D. (1991). Eligibility/Exclusion Issues in the 1990 Trial State Assessment. Pp. 19-49 in *Assessing Student Achievement in the States: Background Studies*. Studies for the Evaluation of the NAEP Trial State Assessment Commissioned for the National Academy of Education Panel Report on the 1990 Trial. Stanford: National Academy of Education.
- C14 Spencer, Bruce D. (1992). A Study of Eligibility Exclusions and Sampling: 1992 Trial State Assessment. Pp. 1-68 in *The Trial State Assessment: Prospects and Realities: Background Studies*. Studies of the National Academy of Education Panel on the Evaluation of the NAEP Trial State Assessment: 1992 Trial State Assessment. Stanford: National Academy of Education.
- C15 Hollander, Myles, Sampson, Allan, Sethuraman, Jayaram and Spencer, Bruce D. (2005). I. Richard Savage, *International Encyclopedia of Statistical Sciences*, 2nd ed. Wiley: New York, vol. 11, 7440-7443.
- C16 Stein, Seth, Liu, Mian, Spencer, Bruce D., and Brooks, Edward M. (2016). Promise and Paradox: Why Improved Knowledge of Plate Tectonics Has Not Yielded Correspondingly Better Earthquake Hazard Maps. Pp. 123-148 in João C. Duarte and Wouter P. Schellart (eds.), *Plate Boundaries and Natural Hazards, Geophysical Monograph 219, First Edition*. Hoboken NJ: Wiley/AGU.
- C17 Stein, Seth, Brooks, Edward M., Spencer, Bruce D., and Liu, Mian (2018) Should All of Nepal Be Treated as Having the Same Earthquake Hazard? Pp. 27 – 44 in J. H. Kruhl, R. Adhikari, U. E. Dorka (Eds.) *Living Under the Threat of Earthquakes: Short and Long-term Management of Earthquake Risks and Damage Prevention in Nepal*. Springer.
DOI: doi.org/10.1007/978-3-319-68044-6

Conference Proceedings

- D1 Spencer, Bruce D. (1980). Implications of Equity and Accuracy for Undercount Adjustment: A Decision- Theoretic Approach. Pp. 204-216 in U.S. Bureau of the Census. *Conference on Census Undercount: Proceedings of the 1980 Conference*. Washington, D.C.: U.S. Department of Commerce.
- D2 Spencer, Bruce D. (1981). Issues of Accuracy and Equity in Adjusting for Census Undercount. *Proceedings of the American Statistical Association, Social Statistics Section*. Washington, D.C.: American Statistical Association.
- D3 Spencer, Bruce D. (1982). Feasibility of Benefit-Cost Analysis of Public Data. *Proceedings of the American Statistical Association, Social Statistics Section*. Washington, D.C.: American Statistical Association.
- D4 Spencer, Bruce D. (1982). Distribution of Federal Benefits According to Statistical Formulas: Discussion of Paper. *Proceedings of the American Statistical Association, Social Statistics Section*. Washington, D.C.: American Statistical Association.
- D5 Spencer, Bruce D. (1984). Toward Conducting Benefit-Cost Analyses of Data Programs. Pp. 46-51 in *Proceedings of the American Statistical Association, Social Statistics Section*. Washington, D.C.:

- American Statistical Association.
- D6 Spencer, Bruce D. (1984). Simplifying Complex Samples with the Bootstrap. Pp. 484-488 in *Proceedings of the American Statistical Association, Survey Research Section*. Washington, D.C.: American Statistical Association.
- D7 Spencer, Bruce D. (1985). Test Score Decline: What and How Well Does It Measure? Pp. 57-64 in *Proceedings of the American Statistical Association, Social Statistics Section*. Washington, D.C.: American Statistical Association. Washington, D.C.: American Statistical Association.
- D8 Spencer, Bruce D. (1986). Conceptual Issues in Measuring Improvement in Population Estimates. Pp. 393-407 in *Second Annual Research Conference*. Washington, D.C.: U.S. Bureau of the Census.
- D9 Spencer, Bruce D. (1986). Sampling Problems in Merging a Cross Sectional and a Longitudinal Program. Pp. 117-140 in George H. Brown and Elizabeth M. Faupel (editors) *The National Assessment of Educational Progress and the Longitudinal Studies Program; Together or Apart?* Report of a Planning Conference, December 11, 1986. Washington, D.C.: Center for Education Statistics.
- D10 Mulry, Mary H. and Spencer, Bruce D. (1988). Total Error of Dual-System Estimates of Population Size, in *Fourth Annual Research Conference* Washington, D.C.: U.S. Bureau of the Census.
- D11 Mulry, Mary H. and Spencer, Bruce D. (1988). Total Assessing Total Error in Dual System Estimate. Pp. 535-540 in *Proceedings of the American Statistical Association, Survey Research Section*. Washington, D.C.: American Statistical Association.
- D12 Mulry, Mary H. and Spencer, Bruce D. (1990). Total Error in Post Enumeration Survey (PES) Estimates of Population: The Dress Rehearsal Census of 1988. Pp. 326-361 (with discussion 362-366) in *1990 Annual Research Conference* Washington, D.C.: U.S. Bureau of the Census.
- D13 Cohen, Theodora and Spencer, Bruce D. (1991) Shrinkage Weights for Unequal Probability Samples. *Proceedings of the American Statistical Association, Survey Research Section*. Washington, D.C.: American Statistical Association.
- D14 Mulry, Mary H. and Spencer, Bruce D. (1992). Accuracy of 1990 Census Undercount Estimates for the Postcensal Estimates. Pp. 160-165 in *Proceedings of the American Statistical Association, Survey Research Section*. Washington, D.C.: American Statistical Association.
- D15 Mulry, Mary H. and Spencer, Bruce D. (1992). Accuracy of Undercount Estimates for the 1990 Census. Pp. 3-17 in *1992 Annual Research Conference Proceedings*. Washington, D.C.: U.S. Bureau of the Census.
- D16 Mulry, Mary H. and Spencer, Bruce D. (1993). Evaluating Accuracy of Population Estimates for Small Areas. Pp. 27-36 in *Small Area Statistics and Survey Designs* Volume II: Contributed papers and panel discussion. Warsaw: Central Statistical Office.
- D17 Spencer, Bruce D. (1993) Discussion of Germain-Julien and Fay-Thompson. , Pp. 92-95 in *1993 Annual Research Conference Proceedings*. Washington, D.C.: U.S. Bureau of the Census.
- D18 Qian, Jiahe and Spencer, Bruce D. (1994). Optimally Weighted Means in Stratified Sampling. Pp. 863-866 in *Proceedings of the American Statistical Association, Survey Research Section*. Washington, D.C.: American Statistical Association.

- D19 Battaglia, Michael P., Malec, Donald J., Spencer, Bruce D., Hoaglin, David C., and Sedransk, Joseph (1995). Adjusting for Noncoverage of Nontelephone Households in the National Immunization Survey. Pp. 678-689 in *Proceedings of the American Statistical Association, Survey Research Section*. Washington, D.C.: American Statistical Association.
- D20 Mulry, Mary M., ZuWallack, Randal S., and Spencer, Bruce D. (2003). Loss Function Analysis for A.C.E. Revision II Estimates of Census 2000 Coverage Error. Pp. 2966-2971 in *Proceedings of the American Statistical Association, Survey Research Section*. Washington, D.C.: American Statistical Association.
- D21 Mulry, Mary H., Schindler, Eric, Mule, T., Nguyen, Nganha, and Spencer, Bruce D. (2005). Investigation of Extreme Estimates of Census Coverage Error for Small Areas. Pp. 3414-3421 in *Proceedings of the Survey Research Methods Section*, Washington, D.C.: American Statistical Association.
- D22 Spencer, Bruce D. (2007). Verdict on Verdicts: Statistical Measurement of the Accuracy of Jury Verdicts. Pp. 2089-2099 in *Proceedings of the American Statistical Association*, [CD-ROM], Alexandria, VA: American Statistical Association.
- D23 Mulry, Mary H., Spencer, Bruce D., Mule, T., and Nguyen, Nganha (2005). Direct Estimates as a Diagnostic for Dual System Estimators Based on Logistic Regression. Pp. 1751-1758 in *Proceedings of the Survey Research Methods Section*, [CD-ROM], Alexandria, VA: American Statistical Association.
- D24 Mulry, Mary H. and Spencer, Bruce D. (2010). Developing an Error Structure in Components of Census Coverage Error. Pp. 4068-4082 in *Proceedings of the Survey Research Methods Section*, Alexandria, VA: American Statistical Association.
- D25 Mulry, Mary H. and Spencer, Bruce D. (2011). Designing Estimators of Nonsampling Errors in Estimates of Components of Census Coverage Error. Pp. 5309-5323 in *Proceedings of the Survey Research Methods Section*, Alexandria, VA: American Statistical Association.
- D26 Kalsbeek, W., Spencer, B., and House, C. (2013). The Relative Statistical and Operational Plausibility of Multiple-Frame Sampling for Rare Population Subgroups. Pp. 2954-2966 in *Proceedings of the Survey Research Methods Section*. Alexandria VA: American Statistical Association.
- D27 Seeskin, Zachary H. and Spencer, Bruce D. (2015). Effects of Census Accuracy on Apportionment of Congress and Allocations of Federal Funds. Pp. 3061-3075 in *JSM Proceedings, Government Statistics Section*. Alexandria, VA: American Statistical Association.

Selected Statistical Contract Reports

- E1 Frankel, Martin R., McWilliams, Harold A., and Spencer, Bruce D. (1983). *NLSY79 Technical Sampling Report*. Columbus, OH: NLS User Services.
- E2 Sprachman, Susan, Burich, Mary C., Rosenbach, Margo, Cromwell, Jerry, Spencer, Bruce, and Frankel, Martin (1985). *Physicians' Practice Costs and Income Survey, Final Methodological Report*. HCFA Contract No. 500-83-0025. Chicago: NORC, University of Chicago.

- E3 Bock, R. Darrell and Spencer, Bruce (1985). On Statistical Standards of the Second International Mathematics Study. Paper commissioned by the Committee on National Statistics, National Academy of Sciences, Washington, D.C.
- E4 Spencer, Bruce D., Sebring, Penny, and Campbell, Barbara (1987). *The National Longitudinal Study of the High School Class of 1972 (NLS-72) Fifth Follow-up (1986) Sample Design Report*. Washington, DC: U.S. Department of Education, Office of Educational Research and Improvement, Center for Educational Statistics.
- E5 Spencer, Bruce D., Sebring, Penny, and Campbell, Barbara (1987). *High School and Beyond Third Follow-Up (1986) Sample Design Report*; prepared for the Center for Education Statistics under contract 300-84-0169 with the U.S. Department of Education. Chicago: National Opinion Research Center (NORC), University of Chicago.
- E6 Spencer, Bruce, Frankel, Martin, Ingels, Steven, Rasinski, Kenneth, and Tourangeau, Roger (1990). *Base Year Sample Design Report, National Education Longitudinal Study of 1988*. Washington, DC: National Center for Education Statistics.
- E7 Burghardt, John, Ensor, Todd, Hutchinson, Gayle, Weiss, Charlene, and Spencer, Bruce D. (1993). *The School Nutrition Dietary Assessment Study: Data Collection and Sampling*. Princeton: Mathematical Policy Research.
- E8 Haberman, Shelby J., Jiang, Wenxin, and Spencer, Bruce D. (1998). *Activity 7: Develop Methodology for Evaluating Model-Based Estimates of the Population Size for States*. Final Report under contract 50-YABC-2-66023 for the Bureau of the Census. Chicago: National Opinion Research Center.
- E9 Spencer, Bruce D. (2000). *Total Error Model for Census 2000: How Components of Error Can Be Estimated from the Bureau's Planned Evaluation Studies. Final Report*. May 11, 2000; rev. March 20, 2002. Prepared by Abt Associates Inc. and Spencer Statistics, Inc. for the Bureau of the Census. Contract Number 50-YABC-7-66020. Cambridge, MA: Abt, Associates.
- E10 Mulry, Mary H. and Spencer, Bruce, D. (2001) *Accuracy and Coverage Evaluation: Overview of Total Error Modeling and Loss Function Analysis*. DSSD Census 2000 Procedures and Operations Memorandum Series B-19. Washington, DC: U.S. Census Bureau.
- E11 Haberman, Shelby J., and Spencer, Bruce D. (2001). *Estimation of Inconsistent Poststratification in the 2000 A. C. E.* Report for the Bureau of the Census. December 17, 2001. Cambridge, MA: Abt, Associates.
- E12 Datta, A. Rupa, Yan, Ting, Evans, Doug, Pedlow, Steven, Spencer, Bruce, and Bautista, Rene (2012). *Final Report. 2010 Census Integrated Communications Program Evaluation (CICPE)*. March 13, 2012. Bethesda, MD: NORC, University of Chicago. Available as 2010 Census Planning Memoranda Series, No. 167, From Arnold Jackson, Subject: 2010 Census Integrated Communications Program (ICP) Evaluation Report.
- E13 Spencer, Bruce D. (2013). *A Cost-Benefit Analysis for the 2016 Population Census of South Africa*. Prepared under contract for Statistics, South Africa. January 31, 2013. Evanston, IL: Spencer Statistics, Inc.

- E14 May, Julian, Dinbabo, Mulugeta, Tamri, Jacqueline, Wright, Gemma, Seeskin, Zachary, and Spencer, Bruce D. (2013). *Cost Benefit Analysis of South Africa's Population Census*. Final Report, 21 May 2013. Delivered to Statistics, South Africa, Johannesburg, S.A.

MANUSCRIPTS NOT YET PUBLISHED

- F1 Zachary H. Seeskin and Bruce D. Spencer (2015). Effects of Census Accuracy on Apportionment of Congress and Allocations of Federal Funds. Institute for Policy Research Working Paper WP-15-05. Evanston, IL: Northwestern University.
<http://www.ipr.northwestern.edu/publications/papers/2015/ipr-wp-15-05.html>
- F2 Zachary H. Seeskin and Bruce D. Spencer (2018). Balancing 2020 Census Cost and Accuracy: Consequences for Congressional Apportionment and Fund Allocations. Institute for Policy Research Working Paper WP-18-10. Evanston, IL: Northwestern University.
<http://www.ipr.northwestern.edu/publications/papers/2018/wp-18-10.html>
- F3 Minhui Zheng and Bruce D. Spencer (2018). Estimating Shortest Path Length Distributions via Random Walk Sampling. <http://arxiv.org/abs/1806.01757>

PRESENTATIONS

- Benefit-Cost Analysis of the Census, Kennedy School of Government, Harvard University, 1978.
- Benefit-Cost Analysis of the Census, Graduate School of Business, University of Chicago, 1978.
- Benefit-Cost Analysis of Data Used to Allocate Funds, U.S. Library of Congress, 1979.
- Benefit-Cost Analysis of Data, Energy Information Administration, U.S. Department of Energy, 1979.
- Benefit-Cost Analysis of Data Used to Allocate Funds, Research Conference on Public Policy and Management, Chicago, 1979
- Implications of Equity and Accuracy for Undercount Adjustment: A Decision-Theoretic Approach, U.S. Bureau of the Census Conference on Census Undercount: Proceedings of the 1980 Conference, Arlington, 1980.
- An Evaluation of Postcensal Population Estimation Methods for Substate Areas, Annual Meeting of the Population Association of America, Denver, 1980.
- Benefit-Cost Analysis of Data Used to Allocate Funds, Department of Statistics, University of Chicago, 1980.
- Small-Area Estimates of Population and Income, Demography workshop, University of Chicago, 1981.
- Issues of Accuracy and Equity in Adjusting for Census Undercount, Annual Meetings of the American Statistical Association, Houston, 1981.
- Benefit-Cost Analysis of Data Programs, Numerical Data Advisory Board, National Research Council, 1982.
- Feasibility of Benefit-Cost Analysis of Public Data, Annual Meetings of the American Statistical Association, Social Statistics Section, Washington, D.C., 1982.
- Distribution of Federal Benefits According to Statistical Formulas: Discussion of Paper, Annual Meetings of the American Statistical Association, Washington, D.C., 1982.
- Models for Data Use: Implications for Managers, American Statistical Association, Chicago Chapter, 1983.

- Test Scores as Social Statistics, Stanford-Berkeley Quantitative Methods Seminar, University of California, Berkeley, 1984.
- Uncertain Population Forecasting, Biostatistics Workshop, Stanford University, 1984.
- Benefit-Cost Analysis of Data Programs, Statistics Department, Stanford University, 1984.
- Confidence Intervals for Population Forecasts, Morrison Research Seminar (Demography), Stanford University, 1984.
- Toward Conducting Benefit-Cost Analyses of Data Programs, Annual Meetings of the American Statistical Association, Philadelphia 1984.
- Simplifying Complex Samples with the Bootstrap Annual Meetings of the American Statistical Association, Philadelphia, 1984.
- Benefit-Cost Approaches to Designing Longitudinal Studies, Social Science Research Council, Washington, D.C. 1984.
- Ordinal Measurement and Social Statistics, Annual Meeting of the American Educational Research Association/National Council on Measurement in Education, Chicago 1985.
- Test Score Decline: What and How Well Does It Measure? Annual Meetings of the American Statistical Association, Las Vegas, 1985.
- Conceptual Issues in Measuring Improvement in Population Estimates, U.S. Bureau of the Census, Second Annual Research Conference, 1986.
- Benefit-Cost Analysis of Data Programs, Statistics Canada, Ottawa, 1986.
- Sampling Problems in Merging a Cross Sectional and a Longitudinal Program, Planning Conference on the National Assessment of Educational Progress and the Longitudinal Studies Program, Center for Education Statistics, U.S. Department of Education, 1986.
- On Benefit-Cost Analysis of Data Programs, International Symposium on Methodological Aspects of Empirical Sociological Research, Institute for Sociology, U.S.S.R. Academy of Sciences, Moscow, U.S.S.R., October 1988.
- On the Accuracy of Estimates of Numbers of Intravenous Drug Users in the United States, National Opinion Research Center, December 1988.
- Estimation of Sampling Probabilities for Tenth Grade Schools in NELS:88, National Center for Education Statistics, June 1989.
- Use of Expert Opinion in Mortality Forecasting, Panel on Active Life Expectancy, University of Chicago Medical School, July 1989.
- Total Error in Dual Systems Estimates of Population, University of Chicago Statistics Department, April 1990.
- Error in True Values, International Conference on Measurement Errors in Surveys, Tucson, Arizona, November 11-14, 1990.
- Total Error in PES Estimates of Population, *Journal of the American Statistical Association* Invited Applications Paper, annual meetings of American Statistical Association, Atlanta, August 1991.
- Total Error in Dual Systems Estimates of Population, Northeastern Illinois Chapter of the American Statistical Association, November 1991.
- Decision Theory and Statistical Agencies, Chicago Chapter of the American Statistical Association,

February 1992.

Choice of Loss Function, Committee on Adjustment of Postcensal Estimates (CAPE), Meeting of Experts, U.S. Bureau of the Census, July 1992.

Eligibility Exclusions and Sampling Issues, National Academy of Education, Panel on the Evaluation of the NAEP Trial State Assessment Project, Chicago, May 1992.

Total Error of the 1990 Undercount Adjustments, Sampling Workshop, Department of Statistics, University of Chicago, April 1992.

Discussion of "The Social Context of Individual Behavior" by James S. Coleman, Frontiers of Social Measurement Symposium, NORC, Chicago, March 1992.

Discussion of papers by Germain-Julien and Fay-Thompson, Annual Research Conference, U.S. Bureau of the Census, Washington, D.C. 1993.

Evaluation of Design and Implementation of Sampling in the 1994 TSA, National Academy of Education, Panel on the Evaluation of the NAEP Trial State Assessment, Washington, D.C., June 1994.

Combining State and National NAEP: Preliminary Thoughts and Plans, National Academy of Education, Panel on the Evaluation of the NAEP Trial State Assessment, Washington, D.C., October 1994.

Combining State and National NAEP, National Academy of Education, Panel on the Evaluation of the NAEP Trial State Assessment, Washington, D.C., September 1995.

Accuracy of Block-Level Estimates of Population, Census 2000 Committee on Statistical Policy, Bureau of the Census, June 1998.

Discussant, National Academy of Sciences workshops on the 2000 Census (October 6-7, 1999 and February 2-3, 2000).

Total Error Modeling for Census 2000, Bureau of the Census, Washington, D.C. February 3, 2000.

Evaluating Statistical Data: Plans for a Northwestern Research Center, Institute for Policy Research, Northwestern University, November 6, 2000.

Census Undercount and Redistricting: Politics and Statistics of the Recent Adjustment Decision, Institute for Policy Research, Northwestern University, April 9, 2001.

Total Survey Error and Randomized Social Experiments, Institute for Policy Research, Northwestern University, March 7, 2005.

Total Error in Surveys, Forecasts, and Randomized Social Experiments: Modeling Approaches, National Institute of Statistical Sciences Workshop on Total Survey Error, Washington, D.C., March 17-18, 2005.

On Assessing the Total Error of Large Scale Demographic Statistics, Including Surveys, Forecasts, and Randomized Social Experiments, Dept. of Statistics, Iowa State University, December 5, 2005.

Statistical Demography with Applications, day-long course presented with Juha M. Alho at the American Statistical Association Meetings, Seattle, August 2006.

Estimation of the Accuracy of Jury Verdicts, Royal Statistical Society, Belfast, September 10-14, 2006.

Verdict on Jury Verdicts, Institute for Policy Research, Northwestern University, January 29, 2007.

Population Association of America, Chair of Session on PAA session on Statistical Applications in Population Research, New York, March 30, 2007.

Discussant for Session on Statistical Modeling Issues in Population Research, and Chair of Session on PAA

- session on Statistical Applications in Population Research, Population Association of America, New York, March 30, 2007.
- Statistical Prediction of Demographic Forecast Accuracy, Statistics Consortium Lecture, University of Maryland, College Park, April 27, 2007.
- Verdict on Jury Verdicts: Statistical Measurement of the Accuracy of Jury Verdicts, Joint Statistical Meetings, Salt Lake City, July 30, 2007.
- On Measuring the Balance between Wrongful Convictions and Wrongful Acquittals in Criminal Trials, Second Conference on Empirical Legal Studies, NYU Law School, November 9-10, 2007.
- Discussant of “Numerical Analysis in Least Squares Regression with an Application to the Abortion-Crime Debate” by William Anderson and Martin Wells, Second Conference on Empirical Legal Studies, NYU Law School, November 9-10, 2007.
- On Measuring the Balance between Wrongful Convictions and Wrongful Acquittals in Criminal Trials, Institute for Policy Research Seminar on Performance Measurement in the Public and Nonprofit Sectors, Northwestern University, December 5, 2007.
- On Statistical Estimation of Accuracy of Verdicts in Criminal Cases, Institute for Mathematical Behavioral Sciences, University of California, Irvine. May 1, 2008.
- On Statistical Estimation of Accuracy of Verdicts in Criminal Cases, 50th Anniversary Celebration of FSU's Statistics Department, Florida State University, Tallahassee.
- Census Costs and Benefits, Meeting of Experts, U.S. Census Bureau, Suitland, MD. November 9, 2009.
- Estimating the Accuracy of Verdicts in Criminal Trials When Truth Is Unknown, Department of Mathematics, Statistics, and Computer Science, University of Illinois at Chicago, April 28, 2010.
- Comments on Sampling and Inference, Statistical and Mathematical Sciences Institute, Program on Complex Networks, Research Triangle Park, NC, August 29-September 1, 2010.
- Sampling Research Areas, Statistical and Mathematical Sciences Institute, Working Group on Modeling and Inference, Program on Complex Networks, Research Triangle Park, NC, October 19, 2010.
- Research on Data Use, or Measuring the Value of Data Requires Knowing How Data Get Used, November 21, 2011. Institute for Policy Research, Northwestern University.
- Census Bureau Data Programs as Statistical Decision Problems, First meeting of NSF-Census Bureau Research Network, U.S. Census Bureau, Washington D.C., December 19, 2011.
- Methods for Analyzing Benefit from 2016 Census for Allocation of Funds: Provincial Equitable Shares. Presentation by videoconference to the Johannesburg meeting of the Population Committee, Statistics Council, Republic of South Africa, February 15, 2013.
- Research on Cost-Benefit Analysis for the 2020 Census, Workshop on Cost-Benefit Analysis and Cost Modeling, U.S. Census Bureau, Washington, D.C., September 13, 2013.
- Should Society Try to Measure the Accuracy of Verdicts in Criminal Trials? A Total Survey Error (TSE) Perspective, VI European Congress of Methodology, University of Utrecht. 23 – 25 July 2014,
- Measuring Benefits from Improving Accuracy of the 2020 Census: Apportionment of the U.S. House of Representatives and Allocation of Federal Funds (with Zachary Seeskin), December 1, 2014. Institute for Policy Research, Northwestern University.

Measuring Benefits from Improving Accuracy of the 2020 Census: Apportionment of the U.S. House of Representatives and Allocation of Federal Funds (with Zachary Seeskin), December 3, 2014. NSF-Census Research Network (NCRN) Virtual Seminar.

The Uses of Federal Statistics in Policy-Laden Contexts, 2014 FCSM Statistical Policy Seminar on Official Statistics in a Changing Society – Making Choices and Balancing Tradeoffs, December 15, 2014. Washington, D.C.

Should Society Try to Measure the Accuracy of Verdicts in Criminal Trials? - A Total Survey Error (TSE) Perspective. Workshop on Quantitative Methods in Education, Health and the Social Sciences (QMEHSS), February 6, 2015, University of Chicago.

Research on Data Use, or Measuring the Value of Data Requires Knowing How Data Get Used. Conference on “Presenting the NSF-Census Research Network”, Session on Uses and Benefits from Government Statistics, May 8, 2015, National Academy of Sciences, Washington, DC.

A 2016 View of 2020 Census Quality, Costs, Benefits. Spring 2016 Meeting of NSF-Census Bureau Research Network (NCRN) at the U.S. Census Bureau, Washington D.C., May 10, 2016.

Implications of Population Forecasting for Seismic Hazard Forecasting (with Seth Stein, Edward M. Brooks, and Leah Salditch), invited paper, session on Verification and Validation of Earthquake Occurrence and Hazard Forecasts, Seismological Society of America Annual Meeting (SSA 2017), Denver, April 20, 2017.

Cost-Benefit Analysis for a Quinquennial Census: The 2016 Population Census of South Africa, May 8, 2017. Institute for Policy Research, Northwestern University.

DIRECTOR OF DISSERTATION COMMITTEE

Juha Alho, Statistics 1983 Ph.D.

Kannikar Pinyakong, Education 1984 Ph.D.

Theodora Cohen, Statistics 1990 Ph.D.

Jiahe Qian, Statistics 1992 Ph.D.

Haoliang Song, Statistics 2007 Ph.D.

Zachary Seeskin 2016 Ph.D.

Minhui Zheng 2019 Ph.D.

Maksym Vasylykiv (in progress)

Abigail Smith (in progress)

Mena Whalen (co-director, in progress)

SPONSORED PROJECTS AT NORTHWESTERN (1985 - present, as principal or co- investigator)

Conceptual Basis for Quantitative Measures of Improvement in Decennial Census Counts, U.S. Bureau of the Census, JSA 86-1, Direct Costs \$16,194, Total Costs \$23,320, 10/1/85 – 9/30/86.

Combining Estimates of Population, U.S. Bureau of the Census, JSA 87-11, Direct Costs \$28,056, Total Costs \$40,401, 8/1/87 – 7/31/88.

Assessing and Optimizing Combined Estimates of Population, U.S. Bureau of the Census, JSA 88-12, Direct Costs \$35,104, Total Costs \$51,732, 9/1/88 – 10/31/89.

Aptitude Score Distribution Study subcontract from National Opinion Research Center, contract from

U.S. Army Recruiting Command, Direct Costs \$137,636, Total Costs \$197,360 8/89 – 12/91.

Evaluating and Improving Census Estimates of Population, U.S. Bureau of the Census, JSA 89-24, Direct Costs \$32,221, Total Costs \$47,124, 9/29/89 – 9/30/90.

Loss Functions, Total Error, and Cost-Benefit Analysis of 1990 and 2000 Censuses, U.S. Bureau of the Census, JSA 91-32, Direct Costs \$39,240, Total Costs \$58,448, 9/23/91 – 9/30/92.

Uncertainty Intervals for Population and Functional Forecasts, National Institutes of Health, Total Costs \$95,756, 6/1/94 - 5/31/96

Effects of School Nonparticipation in NAEP, National Center for Education Statistics, \$149,360, 6/95-8/96

Relation between Nonparticipation Rate and Bias, National Center for Education Statistics, \$9,990, 10/31/96 - 3/31/97.

Senior Fellowship, National Institute of Statistical Sciences, \$20,000, May 1998 - October 1998.

Implementing Methodology for Modeling Inconsistencies in Poststratification, Subcontract from Abt, Associates, contract from Census Bureau, \$105,589, 8/00 - 9/30/01.

Analysis of PMPE Database, Subcontract from Abt, Associates, contract from Census Bureau, \$33,408, 8/16/01- 8/31/02.

Limits of Empirical Social Science for Policy Analysis, The Searle Fund, \$94,502, 9/1/01 - 8/31/04.

Chicago Regional Data Center, National Science Foundation. \$300,000, 9/1/01 - 8/31/05. (Principal Investigator since August, 2002) Consortium funding 9/01/01 – present.

Modeling Inconsistencies in Poststratification, Subcontract from Abt, Associates, contract from Census Bureau, \$138,762, 8/02-12/31/02.

NCRN-SN: Census Bureau Data Programs as Statistical Decision Problems, National Science Foundation, SES-1129475, \$1.4 million, 10/01/11-12/31/17.

WORKSHOP: Refugee Protection Outside of the International Legal Framework: Expanding Cross-National and Cross-Disciplinary Collaborations, National Science Foundation, SES 1354405 \$33,967, 2/15/2014 – 1/31/2015. (Principal Investigator: Galya Ruffer, Co-Principal Investigator: Bruce D. Spencer)

2015 Census Bureau Dissertation Fellowship: Northwestern University (Department of Statistics), Ph.D. Candidate: Zachary Seeskin, Topic: "The Use of Commercial Data to Adjust Housing Estimates for Survey Nonresponse." \$50,000, 7/1/2015 – 6/30/2016.

NORTHWESTERN UNIVERSITY COMMITTEES AND SERVICE (since 1990)

Weinberg College Appointment Committee, 2012-2015; 2018-2021

Weinberg College ad hoc committees on tenure and promotion (various), 1986-present

Principal Investigator, Chicago Research Data Center, interuniversity consortium, 2002-present

Undergraduate Curriculum Committee, Statistics Dept. (Chair), 2016-present
 Institute for Policy Research, Executive Committee, 2012-2020
 Data Science Initiative, Review Committee, 2016-2020
 Search Committee, Director of Institute for Policy Research (Chair), 2017
 Search Committee, Department of Earth & Planetary Sciences, 2016 –2017
 Search committee, Inst. for Policy Research and Dept. of Statistics joint position, 2014-2017, (chair 2017)
 Steering Committee, One Book One Northwestern, 2016
 Committee on the Program in Mathematical Experience for NU Undergrads (MENU), 1993-2012
 Search Committee, interschool faculty position in demography, 2007-2010
 Search Committee, Institute for Policy Research and School of Education and Social Policy, 2005-2008
 Program Review Council, 2005-2010
 Chair (2008-2010)
 Subcommittee on Office of General Counsel (Chair), 2007-2008
 Subcommittee on Department of African-American Studies (Chair), 2006-2007
 Subcommittee on Technology Transfer (Chair), 2005-2006
 Chair, Department of Statistics, 1988-2001, 2007-2010
 Committee on Athletics and Recreation, 2005-2008
 Committee to Plan for Immersion Experiences for Undergraduates (Office of the Provost), 2005
 Director of Undergraduate Studies, Department of Statistics, 2004-2007
 Committee on Research in the Post 9/11 Environment, Office of V. P. of Research, 2004-2005
 Appeals Board of University Hearing and Appeals System (UHAS), 2004-2007
 Faculty Mentor for Beth Andrews, Department of Statistics, 2003-2008
 Faculty Mentor for Spyros Konstantopoulos, School of Education and Social Policy, 2003-2008
 Search Committee, Institute for Policy Research and Department of Statistics, 2003-05
 Program Review Subcommittee for Jewish Studies Program, 2002-3
 Chair, Graduate Admissions in Statistics, 2001-04
 Change Management Committee (Provost's Office), 2000 - 2005
 University Advisory Committee for Inst. of Health Services Research & Policy Studies, 1998 - 2001
 Committee on Personnel Procedures, College of Arts and Sciences (Chair), 1998-99
 Ad Hoc Faculty Group on New Educational Initiatives (Provost's Office), 1996-98
 Klopsteg Lecture Committee (Chair), 1995-97
 College of Arts and Sciences Dean Search Committee (Chair), 1995-97
 Graduate School Fellowship and Scholarship Committee, 1995-96
 Advisory Committee in the Mathematical Sciences, College of Arts and Sciences, 1991-96
 Faculty Search Committee, Department of Statistics (Chair), 1991-6 (various years)
 Dean's Advisory Committee on Promotion and Tenure Issues, College of Arts and Sciences 1994-95
 College of Arts and Sciences Committee on Promotion and Tenure, 1993-95
 Executive Committee, Survey Research Laboratory, 1990-95
 Graduate School Committee on Statistical Training in the Social Sciences (Chair), 1990-95
 Program Review Subcommittee for Dept. of Electrical Engineering and Computer Science, 1994
 Ad Hoc Advisory Committee to Assist in the Review of the Instruments and Procedures Used by the
 Course and Teacher Evaluation Council, 1991-94
 Search Committee for Dean of School of Education and Social Policy, 1993
 Ad Hoc Committee on Computers and the Undergraduate Student Experience (Chair), 1991-92
 Building Renovation Committee, Department of Statistics (Chair), 1991