

## CURRICULUM VITAE

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**DATE OF BIRTH** April 21, 1949

## EDUCATION

Ph.D., Purdue University, 1974. Major Advisor: S. S. Gupta  
B.A., University of Texas at Austin, 1971

## EXPERIENCE

July 1987-on: Distinguished Professor (since 1997) of Statistics, Nutrition and Toxicology (Head of Statistics Department, 1987-90), Texas A&M University.  
Jill and Stuart A. Harlin '83 Chair in Statistics, 2013-present (partially funded)  
June 2010-present: Director, Texas A&M Institute for Applied Mathematics and Computational Science (Deputy Director 2008-2010).  
March 2007-August 2010: Director, Texas A&M Center for Statistical Bioinformatics  
July 1998-December 2000: Fairhill Professor of Biostatistics and Epidemiology, University of Pennsylvania.  
July 1974-August 1987: Assistant, Associate and Full Professor, University of North Carolina.  
November 1980-August 1982, July 1990-July 1991, February 1997-August 1997: Visiting Scientist, National Institutes of Health (Guest Researcher, N.C.I., July 1991-present).  
May-August 1987, February-May 1991, May-July 2000, May-July 2002, May-July 2005: Visiting Professor, Australian National University.  
July 1984-December 1984: Visiting Professor, University of Wisconsin.  
May 1980-November 1980: Visiting Professor, Institute for Applied Mathematics, University of Heidelberg, Germany.

## HONORS

Fields Institute Distinguished Statistical Science Lecture, Toronto, 2017  
Gottfried E. Noether Senior Scholar Award, American Statistical Association, 2014  
Elected Fellow, American Association for the Advancement of Science, 2014.  
Honorary doctorate, Institut de Statistique, Universite Catholique de Louvain, 2012.  
Chair, American Statistical Association Section on Nonparametric Statistics, 2012.  
MERIT Award, National Cancer Institute, 2005-2015.  
Journal of Nonparametric Statistics Best Paper Award, 2010.

**HONORS (continued)**

- National Institutes of Health Award of Merit for research on dietary assessment, 2008 and 2012.
- International Biometric Society *Best Paper in Biometrics by an IBS Member* for 2008.
- Distinguished Achievement Award in Research, Texas A&M University Association of Former Students, 2004.
- Teaching Award, College of Science, Texas A&M University, 2003.
- Jerome Sacks Award for Cross-Disciplinary Research (from the National Institute of Statistical Sciences), 2003.
- Mitchell Prize for Bayesian Statistics, 2003 (from the International Society for Bayesian Analysis).
- Fisher Award and Lecture, Committee of Presidents of Statistical Societies (COPSS), 2002. Given annually for “scholarship in statistical science and for highly significant impact of statistical methods on scientific investigations”.
- Founding Chair, NIH Study section on Biostatistics (BMRD), 2002-2004.
- IMS Special Invited Paper, 2000.
- Snedecor Award from COPSS for best paper in Biometry, 1997.
- JASA Applications Editor’s Invited Paper, 1997, 2003, 2009.
- Alexander von Humboldt Senior Research Award, 1996.
- Outstanding Achievement Award for Promoting Diversity, Texas A&M University, 1996.
- Outstanding Presentation Award, Society of Toxicology Annual Meeting, Risk Assessment Specialty Section, 1995.
- President’s Invited Address, 1995 ENAR Spring Meeting.
- Bernard Greenberg Lecturer, University of North Carolina at Chapel Hill, 1994.
- Distinguished Alumnus, Purdue University, 1994.
- Don Owen Award, 1994.
- Distinguished Achievement Award in Research, Texas A&M University Association of Former Students, 1994.
- Distinguished Lecturer in Statistics, Australian Graduate School of Management, 1991.
- Ordinary Member, International Statistical Institute, elected 1991.
- COPSS Presidents’ Award (IMS, ASA, ENAR, WNAR, CSS), 1988. Given annually by the major North American statistical societies to a statistician under the age of 40 for outstanding achievements in research.
- Wilcoxon Prize, American Society for Quality Control, 1986.
- Fellow, Institute of Mathematical Statistics, elected 1984.
- Fellow, American Statistical Association, elected 1982.
- Sigma Xi, Purdue University Chapter, elected 1975.
- Phi Beta Kappa, University of Texas at Austin, elected 1971.

**NAMED LECTURES**

- Inaugural Peter Hall Memorial Lecture, University of Melbourne, 2018
- Tom Bratcher Memorial Lecture, Baylor University, 2018
- Fields Institute Distinguished Statistical Science Lecture, Toronto, 2017

**NAMED LECTURES (continued)**

Palmetto Lectures, University of South Carolina, 2017.  
 Inaugural Al-Kindi Distinguished Statistics Lectures, KAUST, 2016.  
 David Sprott Distinguished Speaker, University of Waterloo, 2015.  
 Gentry Lectures, Wake Forest University, 2011.  
 Oderoff Lecture, University of Rochester, 2010.  
 Mitchell Lectures, University of Glasgow, 2009.  
 University of Florida Challis Lectures, 2006.  
 Centers for Disease Control (CDC) Statistical Science Awards Lecture, 2006.  
 Sobel Lecturer, University of California at Santa Barbara, 2006.  
 Bohrer Lecturer, University of Illinois, 2006.  
 Bradley Lecturer, University of Georgia, 2006.  
 Buehler-Martin Lecturer, University of Minnesota, 2005.  
 Rustagi Lecturer, Ohio State University, 2005.  
 Myra Samuels Lecturer, Purdue University, 1999.  
 Distinguished Lecturer in Statistics, Australian Graduate School of Management, 1991.

**EDITORIAL RESPONSIBILITIES**

Editor, *Biometrics* (1997-2001).  
 Editor, *Journal of the American Statistical Association*, Theory and Methods Section (1988-1990).  
 Coordinating Editor, *Journal of Statistical Planning and Inference* (1992-98).  
 Associate editor, Canadian Journal of Statistics, 2016-2018.  
 co-Editor (with J. Copas, D. Hand and R. L. Smith), *Royal Statistical Society Lecture Note Series* (1995-99).  
 Associate Editor, *Journal of the American Statistical Association*, Theory and Methods Section, (1979-1987, 2005-present), Applications Section (1992-1995), *Annals of Statistics* (1983-1988), *Chemometrics and Intelligent Laboratory Systems* (1986-92), *Journal of Environmental Statistics* (1992-), *Statistica Sinica* (1993-1998 and 2010-present) and *Statistics* (1987-2000).

**RESEARCH GRANTS AND SPECIAL CONSULTING PROJECTS**

National Cancer Institute (U01-CA057030), support for basic research, *Measurement Error, Nutrition and Breast/Colon Cancer*, 1992-present (P.I.). Funded 2005-2015 via a MERIT Award. Currently with 2 supplements for postdoctoral scholars, Carmen Tekwe (U01-CA057030-29S2) and Roger Zoh (U01-CA057030-29S1).  
 National Cancer Institute (T32-CA090301), support for a training program in *Biostatistics, Bioinformatics and the Biology of Nutrition and Cancer*, 2001-present (P.I.).  
 King Abdullah University of Science and Technology (KAUST, P.I.): support for the funding of the Texas A&M University Institute of Applied Mathematics and Computational Science, 2008-2014.  
 National Science Foundation, co-investigator on *Bayesian Data Mining Approaches for Biological Threat Detection* (B. Mallick, P.I.), funded through 2012.  
 National Institute of General Medical Sciences (GM-077490), P.I. on a subcontract from the University of Alabama at Birmingham, *Genome-wide Structured Association Testing and Regional Admixture Mapping*, 2006-2011.

**RESEARCH GRANTS AND SPECIAL CONSULTING PROJECTS (Continued)**

- National Institute of Environmental Health Sciences, P.I. for Biostatistics and Epidemiology Research Core, Center for Environmental and Rural Health, 1997-2007.
- Consultant, STATA Corporation SBIR grant for development of programs for haplotype-based gene-environment interaction case-control studies, 2007-2012.
- Panel member, National Cancer Institute Review Group Subcommittee G - Education, 2007-2010 and Subcommittee F, 2017-present.
- Panel member, NIH State of the Science Conference on Multivitamin/Mineral Supplements and Chronic Disease Prevention, May 2006.
- National Cancer Institute (CA-61067), support for developing computer software in measurement error models, 1993-97 (P.I.).
- Consultant, STATA Corporation SBIR grant for development of measurement error analysis programs.
- Consultant, Eli Lilly Research Laboratories, 1998-2004.
- EPA contract to develop computer programs for toxicological risk assessment, 1993-96.
- National Institute of Statistical Sciences, support for toxicology research, 1992-1998.
- Texas Natural Resources Conservation Commission, 1994-1995.
- National Institute of General Medical Sciences, support for basic research, 1989-1992.
- Air Force Office of Scientific Research, support for basic research, 1975-1990.
- Consultant, Los Alamos National Laboratory, 1993-2000.
- Consultant, Finnegan, Henderson Attorneys, Washington D.C., 1991-92.
- Member, National Academy of Science Panel on the Effects of Youth Employment Programs, 1983-1986.
- Consultant, National Bureau of Standards, 1984-1987.
- Consultant, Framingham Heart Study, Diagnostic Assessment by Noninvasive Procedures, 1983.
- Advisor, Ad Hoc Committee on Biobehavioral Approaches to Control of Hypertension. National Heart, Lung and Blood Institute, 1982.
- Member, Policy Advisory Board, the PDA Study (Patency of the Ductus Arteriosus), a clinical trial funded by the National Heart, Lung and Blood Institute involving prematurely born infants, 1980-1981.
- Statistical Advisor for the clinical trial IPPB (Intermittent Positive Pressure Breathing) involving lung function and funded by the National Heart, Lung and Blood Institute, 1980-1982.
- North Carolina State Department of Fisheries, contract grants for prediction of shrimp harvest, 1977-78; models for menhaden harvest and migration patterns, 1980-1982.
- Centers for Disease Control (Atlanta), special consultant to the SENIC Project to study the control of nosocomial infection, 1978-1980.

**PROFESSIONAL BIOGRAPHIES**

- Davidian, M., Lin, X., Morris, J. S. and Stefanski, L. A. (2014). *The Work of Raymond J. Carroll: The Impact and Influence of a Statistician*. Springer, New York. ISBN: ISBN 978-3-319-05800-9, 978-3-319-05801-6 (eBook).

**BOOKS**

- Carroll, R. J. and Ruppert, D. (1988). *Transformation and Weighting in Regression*. Chapman and Hall, London.
- Carroll, R. J., Ruppert, D. and Stefanski, L. A. (1995). *Measurement Error in Nonlinear Models*. Chapman & Hall, London.
- Ruppert, D., Wand, M. P. and Carroll, R. J. (2003). *Semiparametric Regression*. Cambridge University Press.
- Carroll, R. J., Ruppert, D., Stefanski, L. A. and Crainiceanu, C. M. (2006). *Measurement Error in Nonlinear Models: A Modern Perspective*, Second Edition. Chapman and Hall CRC Press.

**BOOKS** (continued)

Liang, F., Liu, C. and Carroll, R. J. (2010). *Advanced Markov Chain Monte Carlo: Learning from Past Samples*. Wiley, New York. ISBN: 978-0-470-74826-8.

**PUBLICATIONS**

- [1] Johnson, N. L., Wegman, E. J. and Carroll, R. J. (1975). Report on a research study to determine the effects of class openness and the effects of kindergarten experience on selected student measures. Submitted as a public document to the North Carolina State Board of Education.
- [2] Carroll, R. J. (1975). Density estimation at unknown points and tail orderings. *Communications in Statistics*, 4, 565-574.
- [3] Carroll, R. J., Gupta, S. S. and Huang, D. Y. (1975). Selection procedures for the t-best populations. *Communications in Statistics*, 4, 987-1008.
- [4] Carroll, R. J. (1976). On sequential density estimation. *Zeitschrift für Wahrscheinlichkeitstheorie und verwandte Gebiete*, 36, 137-151.
- [5] Wegman, E. J. and Carroll, R. J. (1976). Final Report: General description of the sample for the North Carolina assessment of educational progress of ninth grade students. Submitted as a public document to the North Carolina State Department of Public Instruction.
- [6] Carroll, R. J. and Gupta, S. S. (1977). On the probabilities of rankings of k populations with applications. *Journal of Statistical Computation and Simulation*, 5, 145-157.
- [7] Hawkins, D., Carroll, R. J. and Wegman, E. J. (1977). Final Report: The 1976-77 North Carolina assessment of educational progress of third grade students. Submitted as a public document to the North Carolina State Department of Public Instruction.
- [8] Carroll, R. J. (1977). On the asymptotic normality of stopping times based on robust estimates. *Sankhya, Series A*, 355-377.
- [9] Wegman, E. J. and Carroll, R. J. (1977). A Monte-Carlo study of robust estimators of location. *Communications in Statistics*, 6, 795-812.
- [10] Carroll, R. J. (1977). A comparison of two approaches to fixed-width confidence interval estimators. *Journal of the American Statistical Association*, 72, 901-907.
- [11] Carroll, R. J. (1977). On the uniformity of sequential procedures. *Annals of Statistics*, 5, 1039-1046.
- [12] Carroll, R. J. (1978). On almost sure expansion for M-estimates. *Annals of Statistics*, 6, 314-318.
- [13] Carroll, R. J. (1978). Sequential confidence intervals for the mean of a subpopulation of a finite population. *Journal of the American Statistical Association*, 73, 408-413.
- [14] Carroll, R. J. (1978). On the asymptotic distribution of multivariate M-estimates. *Journal of Multivariate Analysis*, 8, 361-371.
- [15] Carroll, R. J. (1979). On sequential elimination procedures. *Sankhya, Series B*, 41, 226-238.
- [16] Carroll, R. J. (1979). Estimating variances of robust estimators when the errors are asymmetric. *Journal of the American Statistical Association*, 74, 674-679.
- [17] Carroll, R. J. (1979). On sequential estimation of the largest normal mean. *Sankhya, Series A*, 40, 294-302.
- [18] Carroll, R. J. (1980). A robust method for testing transformations to achieve approximate normality. *Journal of the Royal Statistical Society, Series B*, 42, 71-78.

- [19] Ruppert D. and Carroll, R. J. (1980). Trimmed least squares estimation in the linear model. *Journal of the American Statistical Association*, 75, 828-838.
- [20] Holt, R. N. and Carroll, R. J. (1980). Classification of commercial bank loans through policy capturing. *Accounting, Organizations and Society*, 5, 285-296.
- [21] Carroll, R. J. (1980). Robust methods for factorial designs with outliers. *Applied Statistics*, 29, 246-251.
- [22] Carroll, R. J. and Ruppert, D. (1981). On robust tests for heteroscedasticity. *Annals of Statistics*, 9, 206-210.
- [23] Carroll, R. J. and Ruppert, D. (1981). Prediction and the power transformation family. *Biometrika*, 68, 609-616.
- [24] Haley, R. W., Carroll, R. J. et al. (1981). The joint associations of multiple risk factors with the occurrence of nosocomial infections. *American Journal of Medicine*, 70, 960-790.
- [25] Briles, D. G. and Carroll, R. J. (1981). A simple method for estimating the number of different antibodies by examining the repeat frequencies of the sequences of isoelectric focusing patterns. *Molecular Immunology*, 18, 29-38.
- [26] Carroll, R. J. (1982). Two examples of transformations when there are possible outliers. *Applied Statistics*, 31, 149-152.
- [27] Carroll, R. J. and Ruppert, D. (1982). Robust estimation in heteroscedastic linear models. *Annals of Statistics*, 10, 429-441.
- [28] Carroll, R. J. and Ruppert, D. (1982). A comparison between maximum likelihood and generalized least squares in a heteroscedastic linear model. *Journal of the American Statistical Association*, 77, 878-882.
- [29] Carroll, R. J. (1982). Robust estimation in certain heteroscedastic linear models when there are many parameters. *Journal of Statistical Planning and Inference*, 7, 1-12.
- [30] Carroll, R. J. (1982). Adapting for heteroscedasticity in linear models. *Annals of Statistics*, 10, 1224-1233.
- [31] Carroll, R. J. (1982). Power transformations when the choice of power is restricted to a finite set. *Journal of the American Statistical Association*, 77, 908-915.
- [32] Carroll, R. J., Ruppert, D. and Holt, R. N. (1982). Some aspects of estimation in heteroscedastic linear models. *Statistical Decision Theory and Related Topics III*, Volume I. Editors, S. S. Gupta and J. O. Berger. Academic Press, New York.
- [33] Carroll, R. J. and Gallo, P. P. (1982). Some aspects of robustness in functional errors-in-variables regression models. *Communications in Statistics, Series A*, 11, 2573-2585.
- [34] Carroll, R. J. and Ruppert, D. (1982). Weak convergence of bounded influence regression estimates with applications to repeated significance tests in clinical trials. *Journal of Statistical Planning and Inference*, 7, 117-129.
- [35] Carroll, R. J. (1983). Tests for regression parameters in power transformation models. *Scandinavian Journal of Statistics*, 9, 217-222.
- [36] Carroll, R. J. (1983). Discussion of Huber's paper "Minimax aspects of bounded influence regression." *Journal of the American Statistical Association*, 78, 78-79.
- [37] Holt, R. N., Scarpello, V. and Carroll, R. J. (1983). Towards understanding the contents of the "Black Box" for predicting complex decision making outcomes. *Decision Sciences*, 14, 1253-1269.
- [38] Carroll, R. J. and Ruppert, D. (1983). Robust estimation in random coefficient regression models. *Contributions to Statistics: Essays in Honour of Norman L. Johnson*, P. K. Sen, ed., North Holland.
- [39] Oberpriller, J. O., Ferans, V. J. and Carroll, R. J. (1983). Changes in DNA content, number of nuclei and cellular dimensions of young rat atrial myocytes in response to left coronary artery ligation. *Journal*

- of Molecular and Cellular Cardiology*, 14, 31-42.
- [40] Ruppert, D., Reish, R. L., Deriso, R. B. and Carroll, R. J. (1984). Monte-Carlo optimization by stochastic approximation, with application to harvesting of Atlantic menhaden. *Biometrics*, 40, 535-545.
  - [41] Carroll, R. J. and Ruppert, D. (1984). Power transformations when fitting theoretical models to data. *Journal of the American Statistical Association*, 79, 321-328.
  - [42] Carroll, R. J., Spiegelman, C., Lan, K. K., Bailey, K. T. and Abbott, R. D. (1984). On errors-in-variables for binary regression models. *Biometrika*, 71, 19-26.
  - [43] Abbott, R. D. and Carroll, R. J. (1984). Interpreting multiple logistic regression coefficients in prospective observational studies. *American Journal of Epidemiology*, 119, 830-836.
  - [44] Carroll, R. J. and Ruppert, D. (1984). Discussions of Hinkley and Runger's paper "The Analysis of Transformed Data." *JASA*, 79, 312-313.
  - [45] Carroll, R. J. and Gallo, P. P. (1984). Comparisons between maximum likelihood and method of moments in a linear errors-in-variables regression model. *Design of Experiments: Ranking and Selection*, T. J Santner and A. C. Tamhane, eds., Marcel Dekker, New York.
  - [46] Oberpriller, J. O., Ferrans, V. J. and Carroll, R. J. (1984). DNA synthesis in rat atrial myocytes as a response to left ventricular infarction. *Journal of Molecular and Cellular Cardiology*, 16, 1119-1126.
  - [47] Carroll, R. J. and Ruppert, D. (1985). Transformations: a robust analysis. *Technometrics*, 27, 1-12.
  - [48] Reish, R. L., Deriso, R. B., Ruppert, D. and Carroll, R. J. (1985). An investigation of the population dynamics of Atlantic menhaden (*Brevoortia tyrannus*). *Canadian Journal of Fisheries and Aquatic Sciences*, 42, 147-157.
  - [49] Stefanski, L. A. and Carroll, R. J. (1985). Covariate measurement error in logistic regression. *Annals of Statistics*, 13, 1335-1351.
  - [50] Carroll, R. J. and Lombard, F. (1985). A note on N-estimators for the binomial distribution. *Journal of the American Statistical Association*, 80, 423-426.
  - [51] Carroll, R. J. and Schneider, H. (1985). A note on Levene's test for heteroscedasticity. *Statistics and Probability Letters*, 3, 191-194.
  - [52] Ruppert, D., Reish, R. L., Deriso, R. B. and Carroll, R. J. (1985). A stochastic model for managing the Atlantic menhaden fishery and assessing managerial risks. *Canadian Journal of Fisheries and Aquatic Sciences*, 42, 1371-1379.
  - [53] Carroll, R. J., Gallo, P. P. and Gleser, L. J. (1985). Comparison of least squares and errors-in-variables regression, with special reference to randomized analysis of covariance. *Journal of the American Statistical Association*, 80, 929-932.
  - [54] Hollister, R. M., Carroll, R. J. and the Panel on Youth Employment (1985). *Youth Employment and Training Programs: The YEPDA Years*. National Academy of Sciences Press, Washington, D.C.
  - [55] Ruppert, D. and Carroll, R. J. (1985). Data transformations in regression analysis with applications to stock recruitment relationships. In *Resource Management: Lecture Notes in Biomathematics* 61, M. Mangel editor, Springer Verlag, New York.
  - [56] Abbott, R. D. and Carroll, R. J. (1986). Conditional regression models for transient state survival analysis. *American Journal of Epidemiology*, 121, 278-735.
  - [57] Stefanski, L. A., Carroll, R. J. and Ruppert, D. (1986). Optimally bounded score functions for generalized linear models, with applications to logistic regression. *Biometrika*, 73, 413-425.
  - [58] Giltinan, D. M., Carroll, R. J. and Ruppert, D. (1986). Some new methods for weighted regression when there are possible outliers. *Technometrics*, 28, 219-230.

- [59] Carroll, R. J. and Spiegelman, C. H. (1986). The effect of small measurement error on precision instrument calibration. *Journal of Quality Technology*, 18, 170-173.
- [60] Carroll, R. J. and Ruppert, D. (1986). Discussion of Wu's paper "Jackknife, bootstrap and other resampling plans". *Annals of Statistics* 14, 1298-1301.
- [61] Gleser, L. J., Carroll, R. J. and Gallo, P. P. (1987). The limiting distribution of least squares in an errors-in-variables linear regression model. *Annals of Statistics*, 15, 220-233.
- [62] Simpson, G. D., Carroll, R. J. and Ruppert, D. (1987). M-estimation for discrete data: Asymptotic distribution theory and implications. *Annals of Statistics*, 15, 657-669.
- [63] Carroll, R. J. and Ruppert, D. (1987). Diagnostics and robustness for the transform-both-sides approach to nonlinear regression. *Technometrics*, 29, 287-299.
- [64] Watters, R. L., Carroll, R. J. and Spiegelman, C. H. (1987). Error modeling and confidence interval estimation for inductively coupled plasma calibration curves. *Analytical Chemistry* 59, 1639-1643.
- [65] Davidian, M. and Carroll, R. J. (1987). Variance function estimation. *Journal of the American Statistical Association*, 82, 1079-1092.
- [66] Stefanski, L. A. and Carroll, R. J. (1987). Conditional scores and optimal scores in generalized linear measurement error models. *Biometrika*, 74, 703-716.
- [67] Carroll, R. J. (1988). The effects of variance function estimation on prediction and calibration: an example. *Statistical Decision Theory and Related Topics IV, Volume 2*, ed. S. S. Gupta and J. O. Berger. Springer-Verlag, New York.
- [68] Carroll, R. J. and Cline, D. B. H. (1988). An asymptotic theory for weighted least squares with weights estimated by replication. *Biometrika*, 75, 35-43.
- [69] Wu, M. C. and Carroll, R. J. (1988). Estimation and comparison of changes in the presence of informative right censoring by modeling the censoring process. *Biometrics*, 44, 175-188.
- [70] Davidian, M. and Carroll, R. J. (1988). A note on extended quaslikelihood estimation. *Journal of the Royal Statistical Society, Series B*, 50, 74-82.
- [71] Carroll, R. J., Sacks, J. and Spiegelman, C. H. (1988). A new, easy to use multiple calibration curve procedure. *Technometrics*, 30, 137-142.
- [72] Street, J. O., Ruppert, D. and Carroll, R. J. (1988). A note on computing robust regression estimates via iteratively reweighted least squares. *American Statistician*, 42, 152-154.
- [73] Davidian, M., Carroll, R. J. and Smith, W. (1988). Variance functions and the minimum detectable concentration in assays. *Biometrika*, 75, 549-556.
- [74] Carroll, R. J., Wu, C. F. J. and Ruppert, D. (1988). The effect of estimating weights in linear regression. *Journal of the American Statistical Association*, 83, 1045-1054.
- [75] Carroll, R. J. and Ruppert, D. (1988). Discussion of Box's paper. *Technometrics*, 30, 30-31.
- [76] Carroll, R. J. and Härdle, W. (1988). Symmetrized nearest neighbor estimates. *Letters in Statistics and Probability*, 7, 315-318.
- [77] Carroll, R. J. and Hall, P. (1988). Optimal rates of convergence for deconvolving a density. *Journal of the American Statistical Association*, 83, 1184-1186.
- [78] Altschul, S. F., Carroll, R. J. and Lipman, D. J. (1989). Weights for data related by a tree. *Journal of Molecular Biology*, 207, 647-651.
- [79] Carroll, R. J. and Härdle, W. (1989). Second order effects in semiparametric weighted least squares regression. *Statistics*, 20, 179-186.



- [80] Hall, P. and Carroll, R. J. (1989). Variance function estimation in regression: the effect of estimating the mean. *Journal of the Royal Statistical Society, Series B*, 51, 3-14.
- [81] Carroll, R. J. (1989). Covariance analysis in generalized linear measurement error models. *Statistics in Medicine*, 8, 1075-1093.
- [82] Künsch, H. R., Stefanski, L. A. and Carroll, R. J. (1989). Conditionally unbiased bounded influence estimation in general regression models, with applications to generalized linear models. *Journal of the American Statistical Association*, 84, 460-466.
- [83] Ruppert, D., Cressie, N. and Carroll, R. J. (1989). A transformation/weighting model for estimating Michaelis-Menten parameters. *Biometrics*, 45, 637-656.
- [84] Rowe, D. E., Carroll, R. J. and Day, C. L. (1989). Long term recurrence rates in previously untreated (primary) basal cell carcinoma: implications for patient followup. *The Journal of Dermatologic Surgery and Oncology*, 15, 315-327.
- [85] Rowe, D. E., Carroll, R. J. and Day, C. L. (1989). Mohs surgery is the treatment of choice for recurrent (previously treated) basal cell carcinoma. *The Journal of Dermatologic Surgery and Oncology*, 15, 424-431.
- [86] Carroll, R. J. (1989). Redescending M-estimates. In *Encyclopedia of Statistical Sciences*, S. Kotz and N. L. Johnson, editors.
- [87] Carroll, R. J. and Welsh, A. H. (1989). A note on asymmetry and robustness in linear regression. *The American Statistician*, 42, 285-287.
- [88] Carroll, R. J. and Hall, P. (1990). Nonparametric estimation of optimal performance criteria in quality engineering. *Annals of Statistics*, 18, 281-302.
- [89] Stefanski, L. A. and Carroll, R. J. (1990). Score tests in generalized linear measurement error models. *Journal of the Royal Statistical Society, Series B*, 52, 345-359.
- [90] Stefanski, L. A. and Carroll, R. J. (1990). Deconvoluting kernel density estimators. *Statistics*, 21, 165-184.
- [91] Härdle, W. and Carroll, R. J. (1990). Biased crossvalidation for a kernel regression estimator and its derivatives. *Österreichische Zeitschrift für Statistik und Informatik*, 20, 53-64.
- [92] Yin, Y. and Carroll, R. J. (1990). A simple robust diagnostic for heteroscedasticity based on the Spearman rank correlation. *Letters in Statistics and Probability*, 10, 69-76.
- [93] Stefanski, L. A. and Carroll, R. J. (1990). Structural logistic regression measurement error models. *Proceedings of the Conference on Measurement Error Models*, P. J. Brown and W. A. Fuller, editors.
- [94] Carroll, R. J. and Stefanski, L. A. (1990). Approximate quasilielihood estimation in models with surrogate predictors. *Journal of the American Statistical Association*, 85, 652-663.
- [95] Carroll, R. J. (1990). Review of *Nonlinear regression, functional relations and robust methods* by H. Bunke and O. Bunke, editors. *Biometrics*, 46, 877-878.
- [96] Stefanski, L. A. and Carroll, R. J. (1991). Deconvolution based score tests in measurement error models. *Annals of Statistics*, 19, 249-259.
- [97] Carroll, R. J. and Ruppert, D. (1991). Prediction intervals and quantile estimation in nonlinear regression with transformation and/or weighting. *Technometrics*, 33, 197-210.
- [98] Carroll, R. J. and Wand, M. P. (1991). Semiparametric estimation in logistic measurement error models. *Journal of the Royal Statistical Society, Series B*, 53, 573-585.
- [99] Ruppert, D., Cressie, N. and Carroll, R. J. (1991). Response to "Generalized linear models for enzyme-kinetic data". *Biometrics*, 47, 1610-1612.

- [100] Freedman, L. S., Carroll, R. J. and Wax, Y. (1991). Estimating the relationship between dietary intake obtained from a food frequency questionnaire and true average intake. *American Journal of Epidemiology*, 134, 310-320.
- [101] Hsing, T. and Carroll, R. J. (1992). Asymptotic properties of sliced inverse regression. *Annals of Statistics*, 20, 1040-1061.
- [102] Carroll, R. J., van Rooij, A. and Ruymgaart, F. (1992). Theoretical aspects of ill-posed problems in statistics. *Acta Applicandae Mathematicae*, 24, 113-140.
- [103] Carroll, R. J. (1992). Approaches to estimation with errors in predictors. In *Advances in GLIM and Statistical Modeling*, Lecture Notes in Statistics #78, L. Fahrmeir, B. Francis, R. Gilchrist and G. Tutz, editors. Springer-Verlag, New York.
- [104] Simpson, D. G., Ruppert, D. and Carroll, R. J. (1992). One-step GM-estimates and stability of inferences in linear regression *Journal of the American Statistical Association*, 87, 439-450.
- [105] Carroll, R. J. and Li, K. C. (1992). Errors in variables for nonlinear regression: dimension reduction and data visualization. *Journal of the American Statistical Association*, 87, 1040-1050.
- [106] Carroll, R. J. and Spiegelman, C. H. (1992). Diagnostics for nonlinearity and heteroscedasticity in errors in variables regression. *Technometrics*, 34, 186-196.
- [107] Rosenberg, P. S., Gail, M. H. and Carroll, R. J. (1992). Projecting AIDS incidence in the presence of therapeutic effects using backcalculation and a health care access model. *Statistics in Medicine*, 11, 1633-1655.
- [108] Carroll, R. J., Gail, M. H. and Lubin, J. H. (1993). Case-control studies with errors in covariates. *Journal of the American Statistical Association*, 88, 185-199.
- [109] Sepanski, J. H. and Carroll, R. J. (1993). Semiparametric quasilielihood and variance function estimation in measurement error models. *Journal of Econometrics*, 58, 226-253.
- [110] Carroll, R. J. and Pederson, S. (1993). On robustness in the logistic regression model. *Journal of the Royal Statistical Society, Series B*, 55, 693-706.
- [111] Carroll, R. J. and Hall, P. G. (1993). Semiparametric comparison of regression curves via normal likelihoods. *Australian Journal of Statistics*, 34, 471-487.
- [112] Carroll, R. J., Eltinge, J. L. and Ruppert, D. (1993). Robust linear regression in replicated measurement error models. *Statistics and Probability Letters*, 16, 169-175.
- [113] Wang, C. Y. and Carroll, R. J. (1993). On robust estimation in logistic case-control studies. *Biometrika*, 80, 237-241.
- [114] Wang, C. Y. and Carroll, R. J. (1993). Robust estimation in case-control studies with errors in predictors. *Statistical Decision Theory and Related Topics*, V, J. O. Berger and S. S. Gupta, editors.
- [115] Carroll, R. J. (1993). Comment on double-blind reviews. *Statistical Science*, 5, 323.
- [116] Welsh, A. H., Carroll, R. J. and Ruppert, D. (1994). Fitting heteroscedastic regression models. *Journal of the American Statistical Association*, 89, 100-116.
- [117] Carroll, R. J., Hall, P. G. and Ruppert, D. (1994). Estimation of lag in misregistration problems for averaged signals. *Journal of the American Statistical Association*, 89, 219-229.
- [118] Wacholder, S., Carroll, R. J., Pee, D. Y. and Gail, M. H. (1994). The partial questionnaire design for case-control studies. *Statistics in Medicine*, 13, 623-634.
- [119] Carroll, R. J. and Stefanski, L. A. (1994). Meta-analysis, measurement error and corrections for attenuation. *Statistics in Medicine*, 13, 1265-1282.
- [120] Sepanski, J. H., Knickerbocker, R. and Carroll, R. J. (1994). A semiparametric correction for attenuation. *Journal of the American Statistical Association*, 89, 1366-1373.

- [121] Wang, C. Y. and Carroll, R. J. (1995). Robust estimation in case-control studies with weights depending on the response. *Journal of Statistical Planning & Inference*, 331-340.
- [122] Landin, R., Carroll, R. J. and Freedman, L. S. (1995). Adjusting for time trends when estimating the relationship between dietary intake obtained from a food frequency questionnaire and true average intake. *Biometrics*, 51, 169-181.
- [123] Carroll, R. J., Wang, C. Y. and Wang, S. (1995). Prospective analysis of logistic case-control studies. *Journal of the American Statistical Association*, 90, 157-169.
- [124] Carroll, R. J. and Li, K. C. (1995). Binary regressors in dimension reduction models: a new look at treatment comparisons. *Statistica Sinica*, 5, 667-688.
- [125] Carroll, R. J., Knickerbocker, R. K., and Wang, C. Y. (1995). Dimension reduction in semiparametric measurement error models. *Annals of Statistics*, 23, 161-181.
- [126] Kim, M. Y., Pasternack, B. S., Carroll, R. J., Koenig, K. L. and Toniolo, P. G. (1995). Estimating the reliability of an exposure variable in the presence of confounders. *Statistics in Medicine*, 14, 1437-1446.
- [127] Gutierrez, R. G., Carroll, R. J., Wang, N., Taylor, B. and Hee, G. (1995). Analysis of tomato root initiation using a mixture normal distribution. *Biometrics*, 51, 1461-1468.
- [128] Wang, N., Carroll, R. J. and Liang, K. Y. (1996). Quasilikelihood estimation in measurement error models with correlated replicates. *Biometrics*, 52, 401-411.
- [129] Carroll, R. J., Lombard, F., Küchenhoff, H. and Stefanski, L. A. (1996). Asymptotics for the SIMEX estimator in structural measurement error models. *Journal of the American Statistical Association*, 91, 242-250.
- [130] Roeder, K., Carroll, R. J. and Lindsay, B. G. (1996). A nonparametric mixture approach to case-control studies with errors in covariables. *Journal of the American Statistical Association*, 91, 722-732.
- [131] Carroll, R. J., Freedman, L. and Hartman, A. (1996). The use of semiquantitative food frequency questionnaires to estimate the distribution of usual intake. *American Journal of Epidemiology*, 143, 392-404.
- [132] Gail, M. H., Mark, S., Carroll, R. J., Green, S. B. and Pee, D. (1996). On design considerations and randomization-based inference for community intervention trials. *Statistics in Medicine*, 15, 1069-1092.
- [133] Carroll, R. J. and Ruppert, D. (1996). The use and misuse of orthogonal regression estimation in linear errors-in-variables models. *American Statistician*, 50, 1-6.
- [134] Carroll, R. J. (1996). Review of *Measurement, Regression and Calibration* by P. J. Brown. *Statistics in Medicine*.
- [135] Simpson, D. G., Guth, D., Zhou, H. and Carroll, R. J. (1996). Interval censoring and marginal analysis in ordinal regression. *Journal of Agricultural, Biological and Environmental Statistics*, 1, 354-376.
- [136] Carroll, R. J. (1997). Discussion of Professor Despond's paper "Optimal estimating functions, quasi-likelihood and statistical modeling. *Journal of Statistical Planning & Inference*, 60, 104-106.
- [137] Carroll, R. J., Chen, R., Li, T. H., Newton, H. J., Schmiediche, H., Wang, N. and George, E. I. (1997) (with discussion). Modeling ozone exposure in Harris County, Texas. *Journal of the American Statistical Association*, 92, 392-413.
- [138] Wang, C. Y., Wang, S. and Carroll, R. J. (1997). Estimation in choice-based sampling with measurement error and bootstrap analysis. *Journal of Econometrics*, 77, 65-86.
- [139] Küchenhoff, H. and Carroll, R. J. (1997). Segmented regression with errors in predictors. *Statistics in Medicine*, 16, 169-188.
- [140] Carroll, R. J., Fan, J., Gijbels, I. and Wand, M. P. (1997). Generalized partially linear single-index models. *Journal of the American Statistical Association*, 92, 477-489.

- [141] Carroll, R. J. and Stefanski, L. A. (1997). Asymptotic theory for the SIMEX estimator in measurement error models. In *Advances in Statistical Decision Theory and Methodology*, editors N. Balakrishnan and S. Panchapekasan. Birkholder, Berlin.
- [142] Eckert, R. S., Carroll, R. J. and Wang, N. (1997). Transformations to additivity in measurement error models. *Biometrics*, 53, 262-272.
- [143] Carroll, R. J., Pee, D., Freedman, L. S. and Brown, C. C. (1997). Design of calibration studies when selection is at random. *American Journal of Clinical Nutrition*, 65, 1187-1189.
- [144] Carroll, R. J., Iturria, S. J. and Gutierrez, R. G. (1997). Estimating covariance matrices using estimating functions in nonparametric and semiparametric regression. *Estimating Functions*, editors: V. Godambe and I. Basawa, pages 399-404.
- [145] Carroll, R. J. (1997). Measurement Error in Epidemiologic Studies. *Encyclopedia of Biostatistics*. Wiley, New York.
- [146] Xie, M., Simpson, D. G. and Carroll, R. J. (1997). Scaled link functions heterogeneous ordinal response data. In *Modeling Longitudinal and Spatially Correlated Data*, T. Gregoire, editor. Springer Verlag, New York.
- [147] Carroll, R. J., Lin, X. and Wang, N. (1997). Generalized linear mixed measurement error models. In *Modeling Longitudinal and Spatially Correlated Data*, T. Gregoire, editor. Springer Verlag, New York.
- [148] Guth, D. J., Carroll, R. J., Simpson, D. G. and Zhou, H. (1997). Categorical regression analysis of acute inhalation exposure to tetrachloroethylene. *Risk Analysis*, 17, 321-332. .
- [149] Borkowf, C., Gail, M. H., Carroll, R. J. and Gill, R. D. (1997). Analyzing bivariate continuous data that have been grouped into categories defined by sample quantiles of the marginal distribution. *Biometrics*, 53, 690-699.
- [150] Carroll, R. J., Freedman, L. S. and Pee, D. (1997). Design aspects of calibration studies in nutrition, with analysis of missing data in linear measurement error models. *Biometrics*, 53, 1440-1451.
- [151] Carroll, R. J. (1997). Surprising effects of measurement error on aggregate data estimators. *Biometrika*, 84, 231-234.
- [152] Carroll, R. J., Ruppert, D. and Welsh, A. (1998). Local estimating equations. *Journal of the American Statistical Association*, 93, 214-227.
- [153] Carroll, R. J., Freedman, L. S., Kipnis, V. and Li, L. (1998). A new class of measurement error models, with applications to estimating the distribution of usual intake. *Canadian Journal of Statistics*, 26, 467-477.
- [154] Wang, N., Lin, X., Gutierrez, R. G. and Carroll, R. J. (1998). Bias analysis and SIMEX approach in generalized linear mixed measurement error models. *Journal of the American Statistical Association*, 93, 249-261.
- [155] Kauermann, G., Müller, M. and Carroll, R. J. (1998). The efficiency of bias-corrected estimators for nonparametric kernel estimation based on local estimating equations. *Letters in Probability and Statistics*, 37, 41-47.
- [156] Carroll, R. J. and Galindo, C. D. (1998). Measurement error, biases and the validation of complex models. *Environmental Health Perspectives*, 106 (Supplement 6), 1535-1539.
- [157] Gail, M. H., Pee, D., Benichou, J. and Carroll, R. J. (1998). Designing studies to estimate the penetrance of an identified autosomal dominant mutation. *Genetic Epidemiology*, 16, 15-39.
- [158] Wang, C.Y., Wang, S., Gutierrez, R. and Carroll, R. J. (1998). Local linear regression for generalized linear models with missing data. *Annals of Statistics*, 26, 1028-1050.
- [159] Carroll, R. J., Freedman, L. S. and Kipnis, V. (1998). Measurement error and dietary intake. In

- Mathematical Models in Experimental Nutrition*, A. J. Clifford and H. G. Müller, editors, pages 139-146.
- [160] Carroll, R. J., Maca, J. D. and Ruppert, D. (1998). Nonparametric regression splines for generalized linear measurement error models. In *Econometrics in Theory and Practice: Festschrift in The Honour of Hans Schneeweiss*. Physica Verlag, pages 23-30.
  - [161] Carroll, R. J., Roeder, K. and Wasserman, L. (1999). Flexible parametric measurement error models. *Biometrics*, 55, 44-54.
  - [162] Potischman, N., Carroll, R. J., Iturria, S., Mittl, B., Curtin, J., Thompson, F. and Brinton, L. (1999). Comparison of the 60- and 100-item NCI-Block questionnaires with validation data. *Nutrition and Cancer*, 34, 70-75.
  - [163] Carroll, R. J., Ruppert, D. and Stefanski, L. A. (1999). Comment on the paper by Rousseeuw and Hubert. *Journal of the American Statistical Association*, 94, 410-411.
  - [164] Schafer, D. W., Stefanski, L. A. and Carroll, R. J. (1999). Consideration of measurement errors in the international radiation study of cervical cancer. In *Uncertainties in Radiation Dosimetry and Their Impact on Dose Response Analysis*, E. Ron and F. O. Hoffman, editors. National Cancer Institute Press.
  - [165] Carroll, R. J. (1999). Risk assessment with subjectively derived doses. In *Uncertainties in Radiation Dosimetry and Their Impact on Dose Response Analysis*, E. Ron and F. O. Hoffman, editors. National Cancer Institute Press.
  - [166] Wang, S. and Carroll, R. J. (1999). High-order asymptotics for retrospective sampling problems. *Biometrika*, 84, 881-897.
  - [167] Carroll, R. J., Maca, J. D. and Ruppert, D. (1999). Nonparametric regression with errors in covariates. *Biometrika*, 86, 541-554.
  - [168] Kipnis, V., Carroll, R. J., Freedman, L. S. and Li, L. (1999). A new dietary measurement error model and its application to the estimation of relative risk: application to four validation studies. *American Journal of Epidemiology*, 150, 642-651.
  - [169] Iturria, S., Carroll, R. J. and Firth, D. (1999). Polynomial regression and estimating functions in the presence of multiplicative measurement error. *Journal of the Royal Statistical Society, Series B*, 61, 547-562.
  - [170] Lin, X. and Carroll, R. J. (1999). SIMEX variance component tests in generalized linear mixed measurement error models. *Biometrics*, 55, 613-619.
  - [171] Liang, H., Härdle, W. and Carroll, R. J. (1999). Estimation in a semiparametric partially linear errors-in-variables model. *Annals of Statistics*, 27, 1519-1535.
  - [172] Hong, M. Y., Chapkin, R. S., Wild, C. P., Morris, J. S., Wang, N., Carroll, R. J., Turner, N. D. and Lupton, J. R. (1999). Relationship between DNA adduct levels, repair enzyme and apoptosis as a function of DNA methylation by Azoxymethane. *Cell Growth and Differentiation*, 10, 749-758.
  - [173] Gail, M. H., Pee, D., Carroll, R. J. and Wacholder, S. W. (1999). Kin-cohort designs for gene characterization. *Journal of the National Cancer Institute*, 26, 55-60.
  - [174] Xie, M., Simpson, D.G., and Carroll, R.J. (2000). Random effects in interval-censored ordinal regression: latent structure and Bayesian approach. *Biometrics*, 56, 376-383.
  - [175] Ruppert, D. and Carroll, R. J. (2000). Spatially adaptive penalties for spline fitting. *Australia and New Zealand Journal of Statistics*, 42, 205-223.
  - [176] Ruckstuhl, A., Welsh, A. H. and Carroll, R. J. (2000). Nonparametric function estimation of the relationship between two repeatedly measured variables. *Statistica Sinica*, 10, 51-71.
  - [177] Lin, X. and Carroll, R. J. (2000). Nonparametric function estimation for clustered data when the predictor is measured without/with error. *Journal of the American Statistical Association*, 95, 520-534.

- [178] Carroll, R. J., Gail, M. H., Pee, D. and Benichou, J. (2000). Score tests for familial correlation in genotyped proband designs. *Genetic Epidemiology*, 18, 293-306.
- [179] Satten, G. A. and Carroll, R. J. (2000). Conditional and unconditional categorical regression models with missing covariates. *Biometrics*, 56, 384-400.
- [180] Mick, R., Crowley, J. J. and Carroll, R. J. (2000). Phase II clinical trial design for noncytotoxic anticancer agents for which time to disease progression is the primary endpoint. *Controlled Clinical Trials*, 21, 343-359.
- [181] Gail, M. H., Pfeiffer, R., van Houwelingen, H. C. and Carroll, R. J. (2000). On meta-analytic assessment of surrogate outcomes. *Biostatistics*, 1, 231-246.
- [182] Davidson, L. A., Brown, R. E., Chang, W-C. L., Lupton, J. R., Morris, J. S., Wang, N., Carroll, R. J., Turner, N. D. and Chapkin, R. S. (2000). Morphodensitometric analysis of protein kinase C  $\beta_{II}$  expression in the rat colon: modulation by diet and relation to in situ cell proliferation and apoptosis. *Carcinogenesis*, 21(8), 1513-1519.
- [183] Hong, M. Y., Lupton, J. R., Morris, J. S., Wang, N., Carroll, R. J., Davidson, L. A., Elder, R. H. and Chapkin, R. S. (2000). Dietary fish oil reduces O<sup>6</sup>-methylguanine DNA adduct levels in the rat colon in part by increasing apoptosis during tumor initiation. *Cancer Epidemiology, Biomarkers and Prevention*, 9, 819-826.
- [184] Spiegelman, D., Carroll, R. J. and Kipnis, V. (2001). Efficient regression calibration for logistic regression in main study/internal validation study designs with an imperfect reference instrument. *Statistics in Medicine*, 20, 139-160.
- [185] Galindo, C. D., Kauermann, G., Liang, H. and Carroll, R. J. (2001). Bootstrap confidence intervals for local likelihood, local estimating equations and varying coefficient models. *Statistica Sinica*, 11, 121-134.
- [186] Lin, X. and Carroll, R. J. (2001). Discussion of the paper by Lin and Ying. *Journal of the American Statistical Association*, 96, 114-116.
- [187] Gail, M. H., Pee, D. and Carroll, R. J. (2001). Effects of violations of assumptions on likelihood methods for estimating the penetrance of an autosomal dominant mutation from kin-cohort studies. *Journal of Statistical Planning & Inference*, 96, 121-129.
- [188] Morris, J. S., Wang, N., Lupton, J. R., Chapkin, R. S., Turner, N. D. Hong, M. Y. and Carroll, R. J. (2001). Understanding the relationship between carcinogen-induced DNA adduct levels in distal and proximal parts of the colon. In *Mathematical Models in Experimental Nutrition*, R. Boston, editor.
- [189] Carroll, R. J. (2001). Review times in Statistics: tilting at windmills? *Biometrics*, 57, 1-6.
- [190] McShane, L., Midthune, D. N., Dorgan, J. F., Freedman, L. S. and Carroll, R. J. (2001). Covariate measurement error adjustment for matched case-control studies. *Biometrics*, 57, 62-73.
- [191] Strauss, W. J., Carroll, R. J., Bortnick, S. M., Menkedick, J. R. and Schulz, B. D. (2001). Combining datasets to predict the effects of regulation of environmental lead exposure in housing stock. *Biometrics*, 57, 203-210.
- [192] Morris, J. S., Wang, N., Lupton, J. R., Chapkin, R. S., Turner, N. D. Hong, M. Y. and Carroll, R. J. (2001). Parametric and nonparametric methods for understanding the relationship between carcinogen-induced DNA adduct levels in distal and proximal regions of the colon. *Journal of the American Statistical Association*, 96, 816-826.
- [193] Lin, X. and Carroll, R. J. (2001). Semiparametric regression for clustered data using generalized estimating equations. *Journal of the American Statistical Association*, 96, 1045-1056.
- [194] Lin, X. and Carroll, R. J. (2001). Semiparametric regression for clustered data with a nonparametric cluster-level component. *Biometrika*, 88, 1179-1185.
- [195] Kipnis V., Midthune D., Freedman L.S., Bingham S., Schatzkin A., Subar A. and Carroll R.J. (2001).

- Empirical evidence of correlated biases in dietary assessment instruments and its implications. *American Journal of Epidemiology*, 153, 394-403.
- [196] Jiang, W., Kipnis, V., Midthune, D. and Carroll, R. J. (2001). Parameterization and inference for nonparametric regression problems, with applications to dietary intake instruments. *Journal of the Royal Statistical Society, Series B*, 63, 583-591.
  - [197] Hong, M. Y., Chapkin, R. S., Morris, J. S., Wang, N., Carroll, R. J., Turner, N. D., Chang, W. C. L., Davidson, L. A., and Lupton, J. R. (2001). Anatomical site-specific response to DNA damage is related to later tumor development in the rat AOM colon carcinogenesis model. *Carcinogenesis*, 22, 1831-1835.
  - [198] Schafer, D. W., Lubin, J. H., Ron, E., Stovall, M. and Carroll, R. J. (2001). Thyroid Cancer following scalp irradiation: a reanalysis accounting for uncertainty in dosimetry. *Biometrics*, 57, 689-697.
  - [199] Kauermann, G. and Carroll, R. J. (2001). A note on the efficiency of sandwich covariance matrix estimation. *Journal of the American Statistical Association*, 96, 1387-1396.
  - [200] Welsh, A. H., Lin, X. and Carroll, R. J. (2002). Marginal longitudinal nonparametric regression: locality and efficiency of spline and kernel methods *Journal of the American Statistical Association*, 97, 482-493.
  - [201] Carroll, R. J., Härdle, W. and Mammen, E. (2002). Estimation in an additive model when components are linked parametrically. *Econometric Theory*, 18, 886-912.
  - [202] Berry, S. A., Carroll, R. J. and Ruppert, D. (2002). Bayesian smoothing and regression splines for measurement error problems. *Journal of the American Statistical Association*, 97, 160-169.
  - [203] Mallick, B., Hoffman, F. O. and Carroll, R. J. (2002). Semiparametric regression modeling with mixtures of Berkson and classical error, with application to fallout from the Nevada Test Site. *Biometrics*, 58, 13-20.
  - [204] Sarkar, S., Watts, S., Ohashi, Y. and Carroll, R. J. (2001). Bridging data between two ethnic populations: a new application of matched case control methodology. *Drug Information Journal*.
  - [205] Berry, S. A., Carroll, R. J. and Ruppert, D. (2002). Bayesian smoothing for measurement error problems. In *Total Least Squares and Errors-in-Variables Modeling: Analysis, Algorithms and Applications*, editors S. van Huffel and P. Lemmerling. Kluwer Academic Publishers.
  - [206] Morris, J. S., Wang, N., Lupton, J. R., Chapkin, R. S., Turner, N. D. Hong, M. Y. and Carroll, R. J. (2002). A Bayesian analysis of colonic crypt structure and coordinated response incorporating missing crypts. *Biostatistics*, 3, 529-546.
  - [207] Kim, I., Cohen, N. D. and Carroll, R. J. (2002). A method for graphical representation of effect heterogeneity by a matched covariate in matched case-control studies exemplified using data from a study of colic in horses. *American Journal of Epidemiology*, 156, 463-470.
  - [208] Chapkin, R. S., Carroll, R. J., Apanaosovich, T. A. and McMurray, D. M. (2002). Dietary  $\omega$ -3 PUFA affect TcR-mediated activation of purified murine T cells and accessory cell function in co-cultures. *Clinical and Experimental Immunology*, 130, 12-18.
  - [209] Nguyen, D., Arpat, A. B., Wang, N. and Carroll, R. J. (2002). DNA microarray experiments: biological and technological issues. *Biometrics*, 58, 701-717.
  - [210] Potischman, N., Coates, R. J., Swanson, C. A., Carroll, R. J., Daling, J. R., Brogan, D. R., Gammon, M. D., Midthune, D., Curtin, J. and Brinton, L. A. (2002). Increased risk of early stage breast cancer related to consumption of sweet foods among women less than age 45. *Cancer Causes and Control*, 13, 937-46.
  - [211] Hong, M. Y., Chapkin, R. S., Barhoumi, R., Burghardt, R. C., Turner, N. D., Henderson, C. E., Sanders, L. M., Fan, Y. Y., Davidson, L. A., Murphy, M. E., Spinka, C. M., Carroll, R. J. and Lupton, J. R. (2002). Fish oil increases mitochondrial phospholipid unsaturation, upregulating reactive oxygen species and apoptosis in rat colonocytes. *Carcinogenesis*, 23, 1919-1925.

- [212] Rathouz, P. J., Satten, G. A. and Carroll, R. J. (2002). Semiparametric inference in matched case-control studies with missing covariate data. *Biometrika*, 89, 905-916.
- [213] Liang, H., Wu, H. and Carroll, R. J. (2003). The relationship between virologic and immunologic responses in AIDS clinical research using mixed-effects varying-coefficient semiparametric models with measurement error. *Biostatistics*, 4, 297-312.
- [214] Kipnis, V., Subar, A. F., Midthune, D., Freedman, L. S., Ballard-Barbash, R., Troiano, R. Bingham, S., Schoeller, D. A., Schatzkin, A. and Carroll, R. J. (2003). The structure of dietary measurement error: results of the OPEN biomarker study. *American Journal of Epidemiology*, 158, 14-21. PMID: 12835281.
- [215] Linton, O. B., Mammen, E., Lin, X. and Carroll, R. J. (2004). Correlation and marginal longitudinal kernel nonparametric regression. In *Proceedings of the Second Seattle Symposium in Biostatistics: Analysis of Correlated Data*, Eds. D. Y. Lin and P. J. Heagerty, pp. 23-33, New York: Springer.
- [216] Morris, J. S., Vannucci, M., Brown, P. J. and Carroll, R. J. (2003). Wavelet-based nonparametric modeling of hierarchical functions in colon carcinogenesis. *Journal of the American Statistical Association*, 98, 573-597 (Editor's Invited Paper for 2003).
- [217] Mallinckrodt, C. H., Sanger, T. M., Dube, S., Debrota, D. J., Molenberghs, G., Carroll, R. J., Potter, W. M. and Tollefson, G. D. (2003). Assessing and interpreting treatment effects in longitudinal clinical trials with missing data. *Biological Psychiatry*, 53, 754-760.
- [218] Mallinckrodt, C. H., Clark, W. S., Carroll, R. J. and Molenberghs, G. (2003). Assessing response profiles from incomplete longitudinal clinical trial data under regulatory considerations. *Journal of Biopharmaceutical Statistics*, 13, 179-190.
- [219] Kipnis, V., Midthune, D., Freedman, L. S., Bingham, S., Day, N. E., Riboli, E. and Carroll, R. J. (2003). Bias in dietary-report instruments and its implications for nutritional epidemiology. *Public Health Nutrition*, 5, 915-923.
- [220] Carroll, R. J. (2003). Variances are not always nuisance parameters: The 2002 R. A. Fisher Lecture. *Biometrics*, 59, 211-220.
- [221] Schatzkin, A., Kipnis, V., Subar, A. F., Midthune, D., Carroll, R. J., Bingham, S., Schoeller, D. A., Troiano, R. and Freedman, L. S. (2003). A comparison of a food frequency questionnaire with a 24-hour recall for use in an epidemiological cohort study: results from the biomarker-based OPEN study. *International Journal of Epidemiology*, 32, 1054-1062.
- [222] Bancroft, L. K., Lupton, J. R., Taddeo, S. S., Davidson, L. A., Murphy, M. E., Carroll, R. J. and Chapkin, R. S. (2003). Dietary fish oil reduces oxidating DNA damage in rat colonocytes. *Free Radical Biology and Medicine*, 35, 149-159.
- [223] Johnson, C. D., Tadesse, M., Carroll, R. J., Dougherty, E. R. and Ramos, K. S. (2003). Genomic profiles and predictive biological networks in oxidant-induced atherogenesis. *Physiological Genomics*, 13, 263-275.
- [224] Apanasovich, T. V., Sheather, S., Lupton, J. R., Popovic, N., Turner, N. D., Chapkin, R. S. and Carroll, R. J. (2003). Testing for spatial correlation in nonstationary binary data with application to aberrant crypt foci in colon carcinogenesis. *Biometrics*, 59, 752-761.
- [225] Kim, I., Carroll, R. J. and Cohen, N. D. (2003). Semiparametric regression splines in matched case-control studies. *Biometrics*, 59, 1160-1169.
- [226] Hong, M. Y., Chapkin, R. S., Davidson, L. A., Turner, N. D., Morris, J. S., Carroll, R. J. and Lupton, J. R. (2003). Fish oil enhances targeted apoptosis during colon tumor initiation in part by down regulating BCL-2. *Nutrition and Cancer*, 46, 44-51.
- [227] Xiao, Z., Linton, O. B., Carroll, R. J. and Mammen, E. (2003). More efficient kernel estimation in nonparametric regression with autocorrelated errors. *Journal of the American Statistical Association*,



- 98, 980-992.
- [228] Carroll, R. J. and Hall, P. (2004). Low-order approximations in deconvolution and regression with errors in variables. *Journal of the Royal Statistical Society, Series B*, 66, 31-46.
  - [229] Lin, X., Wang, N., Welsh, A. H. and Carroll, R. J. (2004). Equivalent kernels of smoothing splines in nonparametric regression for longitudinal/clustering data. *Biometrika*, 91, 177-194.
  - [230] Freedman, L. S., Feinberg, V., Kipnis, V., Midthune, D. and Carroll, R. J. (2004). A new method for dealing with measurement error in explanatory variables of regression models. *Biometrics*, 60, 171-181.
  - [231] Nguyen, D., Wang, N. and Carroll, R. J. (2004). Missing value estimation for cancer microarray gene expression data. *Journal of Data Science*, 2, 347-370.
  - [232] Braga-Neto, U., Hashimoto, R., Dougherty, E. R., Nguyen, D. V. and Carroll, R. J. (2004). Is crossvalidation better than resubstitution for ranking genes? *Bioinformatics*, 20, 243-258.
  - [233] Lubin, J. H., Schafer, D. W., Ron, E., Stovall, M. & Carroll, R. J. (2004). A reanalysis of thyroid neoplasms in the Israeli tinea capitis study accounting for dose uncertainties. *Radiation Research*, 161, 359-368.
  - [234] Hu, Z., Wang, N. and Carroll, R. J. (2004). Profile-kernel versus backfitting in the partially linear model for longitudinal/clustering data. *Biometrika*, 91, 251-262.
  - [235] Carroll, R. J., Hall, P., Apanasovich, T. V. and Lin, X. (2004). Histospline method in nonparametric regression models with application to clustered/longitudinal data. *Statistica Sinica*, 14, 633-658.
  - [236] Balagurnathan, Y., Wang, N., Dougherty, E. R., Nguyen, D., Chen, Y., Bittner, M. L. and Carroll, R. J. (2004). Noise factor analysis for cDNA microarrays. *Journal of Biomedical Optics*, 9, 663-678.
  - [237] Molenberghs, G., Thijs, H., Jansen, I., Beunckens, C., Kenward, M. G., Mallinckrodt, C. and Carroll, R. J. (2004). Analyzing incomplete longitudinal clinical trial data. *Biostatistics*, 5, 445-464.
  - [238] Liang, H., Wang, S., Robins, J. and Carroll, R. J. (2004). Estimation in partially linear models with missing covariates. *Journal of the American Statistical Association*, 99, 357-367.
  - [239] Freedman, L. S., Midthune, D., Carroll, R. J., Krebs-Smith, S., Subar, A., Troiano, R. P., Dodd, K., Schatzkin, A., Ferrari, P. and Kipnis, V. (2004). Adjustments to improve the estimation of usual dietary intake distributions in the population. *Journal of Nutrition*, 134, 1836-1843.
  - [240] Carroll, R. J., Ruppert, D., Tosteson, T. D., Crainiceanu, C. and Karagas, M. R. (2004). Nonlinear and nonparametric regression and instrumental variables. *Journal of the American Statistical Association*, 99, 736-750.
  - [241] Mallinckrodt, C. H., Kaiser, C. J., Watkin, J. G., Molenberghs, G. and Carroll, R. J. (2004). The effect of correlation structure on treatment contrasts estimated from incomplete clinical trial data with likelihood-based repeated measures compared with last observation carried forward ANOVA. *Clinical Trials*, 1, 477-489.
  - [242] Davidson, L. A., Nguyen, D. V., Hokanson, R. M., Callaway, E. S., Isett, R. B., Turner, N. D., Dougherty, E. R., Lupton, J. R., Carroll, R. J. and Chapkin, R. S. (2004). Chemopreventive n-3 polyunsaturated fatty acids reprogram genetic signatures during colon cancer initiation and progression in the rat. *Cancer Research*, 64, 6797-6804.
  - [243] Sanders, L. M., Henderson, C., Hong, M. H., Wang, N., Spinka, C. M., Carroll, R. J., Turner, N. D., Chapkin, R. S. and Lupton, J. R. (2004). An increase in reactive oxygen species by dietary fish oil coupled with the attenuation of antioxidant defenses by dietary pectin enhances rat colonocyte apoptosis. *Journal of Nutrition*, 134, 3233-3238.
  - [244] Durban, M., Harelezk, J., Wand, M. P. and Carroll, R. J. (2005). Simple fitting of subject-specific curves for longitudinal data. *Statistics in Medicine*, 24, 1153-1167.

- [245] Fu, W., Dougherty, E. R., Mallick, B. K. and Carroll, R. J. (2005). How many samples are needed to build a classifier: a general sequential approach. *Bioinformatics*, 21, 63-70.
- [246] Wang, N., Carroll, R. J. and Lin, X. (2005). Efficient semiparametric marginal estimation for longitudinal/clustered data. *Journal of the American Statistical Association*, 100, 147-157.
- [247] Baladandayuthapani, V., Mallick, B. K. and Carroll, R. J. (2005). Spatially adaptive Bayesian regression splines. *Journal of Computational and Graphical Statistics*, 14, 378-394.
- [248] Chatterjee, N., Kalaylioglu, Z. and Carroll, R. J. (2005). A new paradigm of conditional-likelihoods for exploiting gene-environment independence in family based case-control studies. *Genetic Epidemiology*, 28, 138-156.
- [249] Sinha, S., Mukherjee, B., Ghosh, M., Mallick, B. K. and Carroll, R. J. (2005). Semiparametric Bayesian analysis of matched case-control studies with missing exposure. *Journal of the American Statistical Association*, 100, 591-601.
- [250] Chatterjee, N. and Carroll, R. J. (2005). Semiparametric maximum likelihood estimation in case-control studies of gene-environment interactions. *Biometrika*, 92, 399-418.
- [251] Fu, W., Haynes, T., Kohli, R., Carroll, R. J., Meininger, C. J. and Wu, G. (2005). L-Arginine is a novel anti-obesity nutrient for Zucker diabetic fatty rats. *Journal of Nutrition*, 135, 714-721.
- [252] Fu, W., Carroll, R. J. and Wang, S. (2005). Estimating misclassification error with small samples via bootstrap crossvalidation. *Bioinformatics*, 21, 1979-1986.
- [253] Leyk, M., Nguyen, D. V., Attoor, S. N., Dougherty, E. R., Turner, N. D., Bancroft, L. K., Chapkin, R. S., Lupton, J. R. and Carroll, R. J. (2005). Comparing automatic and manual image processing in FLARE assay analysis for colon carcinogenesis. *Statistical Applications in Genetics and Molecular Biology*, 4 (electronic).
- [254] Hong, M. Y., Turner, N., Chapkin, R., Carroll, R. J. and Lupton, J. R. (2005). Differential response to oxidative DNA damage may explain aspects of the cancer susceptibility between small and large intestine. *Experimental Biology and Medicine*, 230, 464-471.
- [255] Spinka, C., Carroll, R. J. and Chatterjee, N. (2005). Analysis of case-control studies of genetic and environmental factors with missing genetic information and haplotype-phase ambiguity. *Genetic Epidemiology*, 29, 108-127.
- [256] Hong, M. Y., Bancroft, L. K., Turner, N. D., Davidson, L. A., Murphy, M. E., Carroll, R. J., Chapkin, R. S. and Lupton, J. R. (2005). Fish oil reduces oxidative DNA damage by enhancing apoptosis in rat colon. *Nutrition and Cancer*, 52, 166-175.
- [257] Carroll, R. J. (2005). Comment on the paper *Statistical Issues Arising in the Womens Health Initiative*. *Biometrics*, 61, 911.
- [258] Sherman, M., Apanasovich, T. V. and Carroll, R. J. (2006). On estimation in binary autologistic spatial models. *Journal of Statistical Computation and Simulation*, 76, 167-179.
- [259] Carroll, R. J., Midthune, D., Freedman, L. S. and Kipnis, V. (2006). Seemingly unrelated measurement error models, with application to nutritional epidemiology. *Biometrics*, 62, 75-84.
- [260] Cantwell, M. M., Millen, A. E., Carroll, R. J., Mittl, B. L., Hermansen, S., Brinton, L. A. and Postichman, N. (2006). Does a debriefing session with a nutritionist improve dietary assessment using food diaries? *Journal of Nutrition*, 136, 440-445.
- [261] Mallinckrodt, C. H., Detke, M. J., Kaiser, C. J., Watkin, J. G., Mohlenberghs, G. and Carroll, R. J. (2006). Comparing onset of antidepressant action using a repeated measures approach and a traditional assessment. *Statistics in Medicine*, 25, 2384-2397.
- [262] Chatterjee, N., Chen, J., Spinka, C. and Carroll, R. J. (2006). Comment on the paper *Likelihood based inference on haplotype effects in genetic association studies* by D Y Lin and D Zeng. *Journal of the*

- American Statistical Association*, 101, 108-110.
- [263] Lin, X. and Carroll, R. J. (2006). Semiparametric estimation in general repeated measures problems. *Journal of the Royal Statistical Society, Series B*, 68, 68-88.
  - [264] Morris, J. S. and Carroll, R. J. (2006). Wavelet-based functional mixed models. *Journal of the Royal Statistical Society, Series B*, 68, 179-199.
  - [265] Carroll, R. J. and Ruppert, D. (2006). Comment on "Conditional Growth Charts" by Wei and He. *Annals of Statistics*, 34, 2098-2104.
  - [266] Fu, W., Hi, J., Spenser, T., Carroll, R. J. and Wu, G. (2006). Statistical models in assessing fold change of gene expression in Real-Time RT-PCR Experiments. *Computational Biology and Chemistry*, 30, 21-26.
  - [267] Sun, N., Carroll, R. J. and Zhao, H. (2006). Bayesian error analysis model (BEAM) for reconstructing transcriptional regulatory networks. *Proceedings of the National Academy of Sciences*, 103, 7988-7993.
  - [268] Baladandayuthapani, V., Holmes, C. C., Mallick, B. K. and Carroll, R. J. (2006). Modeling nonlinear gene interactions using Bayesian MARS. *Bayesian Inference for Gene Expression and Proteomics*, editors K. Do, P. Mueller and M. Vannucci M. Cambridge University Press.
  - [269] Freedman, L. S., Potischman, N., Kipnis, V., Midthune, D., Schatzkin, A., Thompson, F., Troiano, R., Prentice, R., Patterson, R., Carroll, R. J. and Subar, A. (2006). A comparison of two dietary instruments for evaluating the fat - breast cancer relationship. *International Journal of Epidemiology*, 35, 1011 - 1021.
  - [270] Tooze, J. A., Midthune, D., Dodd, K. W., Freedman, L. S., Krebs-Smith, S. M., Subar, A. F., Guenther, P. M., Carroll, R. J. and Kipnis, V. (2006). A new statistical method for estimating the usual intake of episodically-consumed foods with application to their distribution. *Journal of the American Dietetic Association*, 106, 1575-1587.
  - [271] Lyon, J. L., Alder, S. C., Stone, M. B., Scholl, A., Reading, J. C. Holubkov, R., Sheng, X. White, G. L., Hegmann, K. T., Anspaugh, L., Hoffman, F. O., Simon, S. L., Thomas, B., Carroll, R. J. and Meikle, A. W. (2006). Thyroid disease associated with exposure to the Nevada Test Site radiation: a reevaluation based on corrected dosimetry and examination data. *Epidemiology*, 17, 604-614.
  - [272] Ma, Y. and Carroll, R. J. (2006). Locally efficient estimators for semiparametric models with measurement error. *Journal of the American Statistical Association*, 101, 1465-1474.
  - [273] Hoffman, F. O., Ruttenber, J., Greenland, S. and Carroll, R. J. (2006). Radiation exposure and thyroid cancer: Letter to the editor. *Journal of the American Medical Association*, 296, 513.
  - [274] Ruppert, D. and Carroll, R. J. (2007). Comments on "Does the Effect of Micronutrient Supplementation on Neonatal Survival Vary with Respect to the Percentiles of the Birth Weight Distribution?" by Francesca Dominici, Scott L. Zeger, Giovanni Parmigiani, Joanne Katz, and Parul Christian. *Bayesian Analysis*, 2, 37-42.
  - [275] Liang, H., Wang, S. and Carroll, R. J. (2007). Partially linear models with missing response variables and error-prone covariates. *Biometrika*, 94, 185-198.
  - [276] Hoffman, F. O., Ruttenber, A. J., Apostoaei, A. I., Carroll, R. J. and Greenland, S. (2007). The Hanford Thyroid Disease Study: an alternative view of the findings. *Health Physics*, 92, 99-111.
  - [277] Thiebaut, A., Freedman, L. S., Kipnis, V. and Carroll, R. J. (2007). Is it necessary to correct for measurement error in nutritional epidemiology? *Annals of Internal Medicine*, 146, 65-68.
  - [278] Van Keilegom, I. and Carroll, R. J. (2007). Backfitting versus profiling in general criterion functions. *Statistica Sinica*, 17, 797-816.
  - [279] Liang, F., Liu, C. and Carroll, R. J. (2007). Stochastic approximation in Monte Carlo computation. *Journal of the American Statistical Association*, 102, 305-320.

- [280] Claeskens, G. and Carroll, R. J. (2007). Post-model selection inference in semiparametric models. *Biometrika*, 94, 249-265.
- [281] Maity, A., Ma, Y. and Carroll, R. J. (2007). Efficient estimation of population-level summaries in general semiparametric regression models with missing response. *Journal of the American Statistical Association*, 102, 123-139.
- [282] Crainiceanu, C., Carroll, R. J. and Ruppert, D. (2007). Spatially adaptive Bayesian P-splines with heteroscedastic errors. *Journal of Computational and Graphical Statistics*, 16, 265-288.
- [283] Maity, A., Apanasovich, T. V. and Carroll, R. J. (2007). Estimation of population-level summaries in general semiparametric repeated measures regression models. In *Beyond Parametrics in Interdisciplinary Research, Festschrift to P.K. Sen*, editors N. Balakrishnan, E. Pena and M. J. Silvapulle. IMS Lecture Notes-Monograph Series, Hayward, California.
- [284] Li, Y., Wang, N., Hong, M., Turner, N. D., Lupton, J. R. and Carroll, R. J. (2007). Nonparametric estimation of correlation functions in longitudinal and spatial data, with application to colon carcinogenesis experiments. *Annals of Statistics*, 35, 1608-1643.
- [285] Li, Y., Guolo, A., Hoffman, F. O. and Carroll, R. J. (2007). Shared uncertainty in measurement error problems, with application to Nevada Test Site Fallout data. *Biometrics*, 63, 1226-1236.
- [286] Thompson, F. E., Kipnis, V., Midthune, D., Carroll, R. J., Freedman, L. S., Subar, A. F., Mouw, T., Leitzmann, M. and Schatzkin, A. (2007). Performance of a food frequency questionnaire in the National Institutes of Health-AARP Diet and Health Study. *Public Health Nutrition*, 11, 183-195.
- [287] Tadesse, M., He, Q., Johnson, C. D., Carroll, R. J. and Ramos, K. S. (2007). Comparison of high-density short-oligonucleotide microarray platforms. *Current Bioinformatics*, 2: 203-213.
- [288] Carroll, R. J. and Maity, A. (2007). Discussion of the paper *Nonparametric inference with generalized likelihood ratio tests* by Jianqing Fan and Jiancheng Jiang. *TEST*, 16, 456-458.
- [289] Baladandayuthapani, V., Hong, M. Y., Mallick, B. K., Lupton, J. R., Turner, N. D. and Carroll, R. J. (2008). Bayesian hierarchical spatially correlated functional data analysis with application to colon carcinogenesis. *Biometrics*, 64, 64-73.
- [290] Midthune, D., Kipnis, V., Freedman, L. S. and Carroll, R. J. (2008). Binary regression in truncated samples, with application to comparing dietary instruments in a large prospective study. *Biometrics*, 64, 289-298.
- [291] Chen, Y.-H., Carroll, R. J. and Chatterjee, N. (2008). Retrospective analysis of haplotype-based case-control studies under a flexible model for gene-environment association. *Biostatistics*, 9, 81-99.
- [292] Pfeiffer, R. M., Carroll, R. J., Wheeler, B., Whitby, D. and Mbulaiteye, S. (2008). Combining assays for estimating prevalence of human herpesvirus 8 infection using multivariate mixture models. *Biostatistics*, 9, 137-151.
- [293] Carroll, R. J. and Wang, Y. (2008). Nonparametric variance estimation in the analysis of microarray data: a measurement error approach. *Biometrika*, 95, 437-449.
- [294] Apanasovich, T. V., Ruppert, D., Lupton, J. R., Popovic, N., Turner, N. D., Chapkin, R. S. and Carroll, R. J. (2008). Semiparametric longitudinal-spatial binary regression, with application to colon carcinogenesis. *Biometrics*, 64, 490-500.
- [295] Yanetz, R., Kipnis, V., Carroll, R. J., Dodd, K. W., Subar, A. F., Schatzkin, A. and Freedman, L. S. (2008). Using biomarker data to adjust estimates of the distribution of usual intakes for misreporting: application to energy intake in the US population. *Journal of the American Dietetic Association*, 108, 455-464.
- [296] Lobach, I., Carroll, R. J., Spinka, C., Gail, M. H. and Chatterjee, N. (2008). Haplotype-based regression analysis and inference of case-control studies with unphased genotypes and measurement errors in environmental exposures. *Biometrics*, 64, 673-684.

- [297] Vanamala<sup>1</sup>, J., Glagolenko, A., Yang, P., Carroll, R. J., Murphy, M. E., Newman, R. A., Ford, J. R., Braby, L. A., Chapkin, R. S., Turner, N. D. and Lupton, J. R. (2008). Dietary fish oil and pectin enhance colonocyte apoptosis in part through suppression of PPAR /PGE<sub>2</sub> and elevation of PGE<sub>3</sub>. *Carcinogenesis*, 29, 790-796.
- [298] Zhou, L., Huang, J. Z. and Carroll, R. J. (2008). Joint modeling of paired sparse functional data using principal components. *Biometrika*, 95, 601-619.
- [299] Xie, M., Simpson, D. G. and Carroll, R. J. (2008). Semiparametric analysis of heterogeneous data using varying scale generalized linear models. *Journal of the American Statistical Association*, 103, 650-660.
- [300] Carroll, R. J., Delaigle, A. and Hall, P. (2008). Nonparametric regression estimation from data contaminated by a mixture of Berkson and classical errors. *Journal of the Royal Statistical Society, Series B*, 69, 859-878.
- [301] Henderson, D. J., Carroll, R. J. and Li, Q. (2008). Nonparametric estimation and testing of fixed effects panel data models. *Journal of Econometrics*, 144, 257-275.
- [302] Freedman, L. S., Midthune, D., Carroll, R. J. and Kipnis, V. (2008). A comparison of regression calibration, moment reconstruction and imputation for adjusting for covariate measurement error in regression. *Statistics in Medicine*, 27, 5195-5216.
- [303] Senturk, D., Nguyen, D. and Carroll, R. J. (2008). Covariate-adjusted linear mixed effects model with an application to longitudinal data. *Journal of Nonparametric Statistics*, 20, 459-481.
- [304] Ferrari, P., Carroll, R. J., Gustafson, P. and Riboli, E. (2008). A Bayesian multi-level model for estimating the diet/disease relationship in a multicenter study with exposure measured with error: The EPIC study. *Statistics in Medicine*, 27, 6037-6054.
- [305] Warren, C. A., Paulhill, P. J., Davidson, L. A., Lupton, J. R., Taddeo, S. S., Hong, M. Y., Carroll, R. J., Chapkin, R. S. and Turner, N. D. (2009). Quercetin may suppress rat aberrant crypt foci formation by suppressing inflammatory mediators that influence proliferation and apoptosis. *Journal of Nutrition*, 139, 101-105.
- [306] Maity, A., Carroll, R. J., Mammen, E. and Chatterjee, N. (2009). Testing in semiparametric models with interaction, with applications to gene-environment interactions. *Journal of the Royal Statistical Society, Series B*, 71, 75-96.
- [307] Senturk, D., Nguyen, D., Tassone, F., Hagerman, R., J., Carroll, R. J. and Hagerman, P. J. (2009). Covariate adjusted correlation analysis with application to FMR1 premutation female carrier data. *Biometrics*, 65, 781-792.
- [308] Carroll, R. J., Delaigle, A. and Hall, P. (2009). Nonparametric prediction in measurement error models. *Journal of the American Statistical Association*, 104, 993-1014. (Editor's Invited Paper for 2009).
- [309] Wang, Y., Ma, Y. and Carroll, R. J. (2009). Variance estimation in the analysis of microarray data. *Journal of the Royal Statistical Society, Series B*, 71, 425-445.
- [310] Lin, X. and Carroll, R. J. (2009). Nonparametric and semiparametric regression methods: Introduction and overview. In *Longitudinal Data Analysis*, editors G. Fitzmaurice, M. Davidian, G. Verbeke and G. Molenberghs, CRC Press.
- [311] Lin, X. and Carroll, R. J. (2009). Nonparametric and semiparametric regression methods for longitudinal data. In *Longitudinal Data Analysis*, editors G. Fitzmaurice, M. Davidian, G. Verbeke and G. Molenberghs, CRC Press.
- [312] Chen, Y.-H., Chatterjee, N. and Carroll, R. J. (2009). Shrinkage estimators for robust and efficient inference in haplotype-based case-control studies. *Journal of the American Statistical Association*, 104, 220-233.
- [313] Delaigle, A., Fan, J. and Carroll, R. J. (2009). Design-adaptive local polynomial estimator for the errors-in-variables problem. *Journal of the American Statistical Association*, 104, 348-359.

- [314] Carroll, R. J., Maity, A., Mammen, E. and Yu, K. (2009). Nonparametric additive regression for repeatedly measured data. *Biometrika*, 96, 383-398.
- [315] Apanasovich, T. V., Carroll, R. J. and Maity, A. (2009). SIMEX and standard error estimation in semiparametric measurement error models. *Electronic Journal of Statistics*, 3, 318-348.
- [316] Kipnis, V., Midthune, D., Buckman, D. W., Dodd, K. W., Guenther, P. M., Krebs-Smith, S. M., Subar, A. F., Tooze, J. A., Carroll, R. J. and Freedman, L. S. (2009). Modeling data with excess zeros and measurement error: application to evaluating relationships between episodically consumed foods and health outcomes. *Biometrics*, 65, 1003-1010.
- [317] Wei, Y. and Carroll, R. J. (2009). Quantile regression with measurement error. *Journal of the American Statistical Association*, 104, 1129-1143.
- [318] Carroll, R. J., Maity, A., Mammen, E. and Yu, K. (2009). Efficient semiparametric marginal estimation for the partially linear additive model for longitudinal/clustering data. *Statistics in Biosciences*, 1, 10-31.
- [319] Turner, N. D., Paulhill, K. J., Warren, C. A., Carroll, R. J., Wang, N., Davidson, L. A., Chapkin, R. S. and Lupton, J. R. (2009). Quercetin suppresses early colon carcinogenesis partly through inhibition of inflammatory mediators. *Acta Horticulturae*, 841, 237-241.
- [320] Ruppert, D., Wand, M. P. and Carroll, R. J. (2009). Semiparametric regression during 2003-2008. *Electronic Journal of Statistics*, 3, 1193-1256.
- [321] Chatterjee, N., Chen, Y.-H., Luo, S. and Carroll, R. J. (2009). Analysis of case-control association studies: SNPs, Imputation and Haplotypes. *Statistical Science*, 24, 489-502.
- [322] Chen, X., Hu, Y. and Carroll, R. J. (2010). Identification and inference in nonlinear models using two samples with nonclassical measurement errors. *Journal of Nonparametric Statistics*, 22, 379-399. Rejoinder to discussion pages 419-423.
- [323] Martinez, J. G., Huang, J. Z., Burghardt, R. C., Barhoumi, R. and Carroll, R. J. (2010). Use of multiple singular value decompositions to analyze complex intracellular calcium ion signals. *Annals of Applied Statistics*, 3, 1467-1492.
- [324] Sinha, S., Mallick, B. K., Kipnis, V. and Carroll, R. J. (2010). Semiparametric Bayesian analysis of nutritional epidemiology data in the presence of measurement error. *Biometrics*, 66, 444-454.
- [325] Sun, Y., Carroll, R. J. and Li, D. (2009). Semiparametric estimation of fixed effects panel data varying coefficient models. *Nonparametric Econometric Methods*, editors Q. Li and J. Racine, Emerald Group Publishing.
- [326] Wang, S., Qian, L. and Carroll, R. J. (2010). Generalized empirical likelihood methods for analyzing longitudinal data. *Biometrika*, 97, 79-93.
- [327] Martinez, J. G., Liang, F. and Carroll, R. J. (2010). Functional principal component selection via Stochastic Approximation Monte Carlo (SAMC). *Canadian Journal of Statistics*, 38, 256-270.
- [328] Zhou, L., Huang, J., Martinez, J. G., Maity, A., Baladandayuthapani, V. and Carroll, R. J. (2010). Reduced rank mixed effects models for spatially correlated hierarchical functional data. *Journal of the American Statistical Association*, 105, 390-400.
- [329] Staicu, A.-M., Crainiceanu, C. M. and Carroll, R. J. (2010). Fast methods for spatially correlated multilevel functional data. *Biostatistics*, 11, 177-194.
- [330] Al-Kadiri, M., Carroll, R. J. and Wand, M. P. (2010). Marginal longitudinal semiparametric regression via penalized splines. *Statistics and Probability Letters*, 80, 1242-1252.
- [331] Fu, W., Stromberg, A. J., Viele, K., Carroll, R. J. and Wu, G. (2010). Statistics and bioinformatics in nutritional sciences: analysis of complex data in the era of systems biology. *Journal of Nutritional Biochemistry*, 21, 561-572.
- [332] Dhavala, S., Datta, S., Mallick, B. K., Carroll, R. J., Khare, S., Lawhon, S. D. and Adams, L. G. (2010).

- Bayesian modeling of MPSS data: gene expression analysis of bovine salmonella infection. *Journal of the American Statistical Association*, 105, 956-967. PMID: PMC3002112
- [333] Martinez, J. G., Carroll, R. J., Mueller, S., Sampson, J. N. and Chatterjee, N. (2010). A note on the effect on power of score tests via dimension reduction by penalized regression under the null. *International Journal of Biostatistics*, Vol. 6 : Issue 1, Article 12. DOI: 10.2202/1557-4679.1231.
- [334] Li, Y., Wang, N. and Carroll, R. J. (2010). Generalized functional linear models with semiparametric single-index interactions. *Journal of the American Statistical Association*, 105, 621-633.
- [335] Chen, Y. A., Almeida, J. S., Richards, A. J., Müller, P., Carroll, R. J. and Rohrer, B. (2010). A nonparametric approach to detect nonlinear correlation in gene expression. *Journal of Computational and Graphical Statistics*, 19, 552-568. doi:10.1198/jcgs.2010.08160.
- [336] Leonardi, T., Vanamala, J. Taddeo, S. S., Davidson, L. A., Murphy, M. E., Patil, B. S., Wang, N., Carroll, R. J., Chapkin, R. S., Lupton, J. R. and Turner, N. D. (2010). Apigenin and naringenin suppress colon carcinogenesis through the aberrant crypt stage in azoxymethane-treated rats. *Experimental Biology and Medicine*, 235, 710-717.
- [337] Lobach, I., Fan, R. and Carroll, R. J. (2010). Genotype-based association mapping of complex diseases: gene-environment interactions with multiple genetic markers and measurement error in environmental exposures. *Genetic Epidemiology*, 34, 792-802.
- [338] Sturino, J. M., Zorych, I., Mallick, B., Chang, Y.-Y., Carroll, R. J. and Bliznuyk, N. (2010). Statistical methods for comparative phenomics using high-throughput phenotype microarrays. *International Journal of Biostatistics*, 6, Issue 1, Article 29, DOI: 10.2202/1557-4679.1227, Available at: <http://www.bepress.com/ijb/vol6/iss1/29>.
- [339] Martinez, J. G., Huang, J. Z. and Carroll, R. J. (2010). A note on using multiple singular value decompositions to cluster complex intracellular calcium ion signals. In *Statistical Modelling and Regression Structures: Festschrift in Honour of Ludwig Fahrmeir*. T. Kneib and G. Tutz, editors. Physica-Verlag.
- [340] Tooze, J. A., Kipnis, V., Buckman, D. W., Carroll, R. J., Freedman, L. S., Guenther, P. M., Krebs-Smith, S. M., Subar, A. F. and Dodd, K. W. (2010). A mixed-effects model approach for estimating the distribution of usual intake of nutrients: the NCI method. *Statistics in Medicine*, 29, 2857-2868.
- [341] Kukush, A., Shklyar, S., Masiuk, S., Likhtarov, I., Kovgan, L., Carroll, R. J. and Bouville, A. (2011). Methods for estimation of radiation risk in epidemiological studies accounting for classical and Berkson errors in doses. *International Journal of Biostatistics*, Volume 7, Issue 1, Article 15. DOI: 10.2202/1557-4679.1281. Available at: <http://www.degruyter.com/view/j/ijb.2011.7.issue-1/issue-files/ijb.2011.7.issue-1.xml> / PMC3058406/
- [342] Zhang, S. Midthune, D., Pérez, A., Buckman, D. W., Kipnis, V., Freedman, L. S., Dodd, K. W., Krebs-Smith, S. M. and Carroll, R. J. (2011). Fitting a bivariate measurement error model for episodically consumed dietary components. *International Journal of Biostatistics*, Volume 7, Issue 1, Article 1, DOI: 10.2202/1557-4679.1267. Available at: <http://www.bepress.com/ijb/vol7/iss1/1/> / PMC3406506/
- [343] Carroll, R. J., Hart, J. D. and Ma, Y. (2011). Local and omnibus tests in classical measurement error models. *Journal of the Royal Statistical Society, Series B*, 73, 81-98./PMC3058406/
- [344] Calderon, C. P., Martinez, J. G., Carroll, R. J. and Sorensen, D. C. (2011). P-splines using derivative information. *Multiscale Modeling and Simulation*, 8, 1562-1580. /PMC3117255/
- [345] Lobach, I., Mallick, B. K. and Carroll, R. J. (2011). Semiparametric Bayesian analysis of gene-environment interactions with error in measurement of environmental covariates and missing genetic data. *Statistics and its Interface*, 4, 305-315./PMC3178196/
- [346] Carroll, R. J., Delaigle, A. and Hall, P. (2011). Testing and estimating shape-constrained nonparametric density and regression in the presence of measurement error. *Journal of the American Statistical Association*, 106, 191-202./PMC3115552/

- [347] Wei, J., Carroll, R. J. and Maity, A. (2011). Testing for constant nonparametric effects in general semiparametric regression models with interactions. *Statistics and Probability Letters*, 81, 717-723./PMC3124863/
- [348] Zhang, S., Midthune, D., Guenther, P. M., Krebs-Smith, S. M., Kipnis, V., Dodd, K. W., Buckman, D. W., Tooze, J. A., Freedman, L. S. and Carroll, R. J. (2011). A new multivariate measurement error model with zero-inflated dietary data, and its application to dietary assessment. *Annals of Applied Statistics*, 5, 1456-1487./PMC3145332/
- [349] Divers, J., Redden, D. T., Carroll, R. J. and Allison, D. B. (2011). How to estimate measurement error variance associated with ancestry proportion estimates. *Statistics and its Interface*, 4, 327-337./PMC3786624/
- [350] Midthune, D., Schatzkin, A., Subar, A. F., Thompson, F. E., Freedman, L. S., Carroll, R. J., Shumakovich, M. A. and Kipnis, V. (2011). Validating a food frequency questionnaire for intake of episodically consumed foods: application to the National Institutes of Health-AARP Diet and Health Study. *Public Health Nutrition*, 14, 1212-1221. <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3190597/>
- [351] Wang, L., Liu, X., Liang, H. and Carroll, R. J. (2011). Generalized additive partial linear models—polynomial spline smoothing estimation and variable selection procedures. *Annals of Statistics*, 39, 1827-1851./PMC3520497/
- [352] Freedman, L. S., Midthune, D., Carroll, R. J., Tasevska, N., Schatzkin, A., Mares, J., Tinker, L., Potischman, N. and Kipnis, V. (2011). Using regression calibration equations that combine self-reported intake and biomarker measures to obtain unbiased estimates and more powerful tests of dietary associations. *American Journal of Epidemiology*, 174, 1238-1245./PMC3224252/
- [353] Ma, Y., Hart, J. D. and Carroll, R. J. (2011). Density estimation in several populations with uncertain population membership. *Journal of the American Statistical Association*, 106, 1180-1192. PMC3285389
- [354] Xun, X., Mallick, B. K., Carroll, R. J. and Kuchment, P. (2011). A Bayesian approach to detection of small low emission sources. *Inverse Problems*, 27, doi:10.1088/0266-5611/27/11/115009.PMC/3281426/
- [355] Martinez, J. G., Carroll, R. J., Müller, S., Sampson, J. N. and Chatterjee, N. (2011). Empirical performance of crossvalidation with oracle methods in a genomics context. *American Statistician*, 65, 223-228./PMC3281424/
- [356] Wei, J., Carroll, R. J., Harden, K. K. and Wu, G. (2012). Comparisons of treatment means when factors do not interact in two-factor studies. *Amino Acids*, 42, 2031-2035./PMC3199378/
- [357] Collier, B. A., Groce, J. E., Morrison, M. L., Newnam, J. C., Campomizzi, A.J., Farrell, S. J., Mathewson, H. A., Snelgrove, R. T., Carroll, R. J. and Wilkins, R. N. (2012). Predicting patch occupancy in fragmented landscapes at the rangewide scale for endangered species: an example of an American warbler. *Diversity and Distributions*, 18, 158-167. <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3298116/>
- [358] Park, J.-H., Gail, M. H., Weinberg, C., Carroll, R. J., Chung, C., Wang, Z., Chanock, S., Fraumeni, J. F and Chatterjee, N. (2012). Distribution of allele frequencies, effect-sizes and their interrelationships for common susceptibility variants. *Proceedings of the National Academy of Sciences*, 108, 18026-18031./PMC3207674/
- [359] Ma, S., Yang, L. and Carroll, R. J. (2012). A simultaneous confidence band for sparse longitudinal regression. *Statistica Sinica*, 22, 95-122./PMC3583240/
- [360] Prez, A., Zhang, S., Kipnis, V., Freedman, L. S. and Carroll, R. J. (2012). Intake\_epis\_food(): An R function for fitting a bivariate measurement error model to estimate usual and energy intake for episodically consumed foods. *Journal of Statistical Software*, 46, Code Snippet 3../PMC3403723/
- [361] Yi, G. Y. Y., Ma, Y and Carroll, R. J. (2012). A robust, functional generalized method of moments approach for longitudinal studies with missing responses and covariate measurement error. *Biometrika*, 99, 151-165. NIHMDID: 359689.



- [362] Bliznyuk, N., Carroll, R. J., Genton, M. and Wang, Y. (2012). Variogram estimation in the presence of trend. *Statistics and its Interface*, 5, 159-168./PMC3378336/
- [363] Wei, Y., Ma, Y. and Carroll, R. J. (2012). Multiple imputation in quantile regression. *Biometrika*, 99, 423-438. <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC4059083/>
- [364] Carroll, R. J., Midthune, D., Subar, A. F., Shumakovich, M., Freedman, L. S., Thompson, F. E. and Kipnis, V. (2012). Taking advantage of the strengths of two different dietary assessment instruments to improve intake estimates for nutritional epidemiology. *American Journal of Epidemiology*, 175, 340-347./PMC3271815/
- [365] Cho, Y. Kim, H., Turner, N. D., Mann, J. C., Wei, J., Taddeo, S. S., Davidson, L. A., Wang, N., Vannucci, M., Carroll, R. J., Chapkin, R. S. and Lupton, J. R. (2012). A chemoprotective fish oil and pectin-containing diet temporally alters gene expression profiles in exfoliated rat colonocytes throughout oncogenesis. *The Journal of Nutrition*, 141, 1029-1035. PMCID: PMC3095137.
- [366] Kipnis, V., Midthune, D., Freedman, L. S. and Carroll, R. J. (2012). Regression calibration with more instruments than mismeasured variables. *Statistics in Medicine*, 31, 2713-2732./PMC3640838/
- [367] Carroll, R. J., Delaigle, A. and Hall, P. (2012). Deconvolution when classifying noisy data involving transformations. *Journal of the American Statistical Association*, 106, 1166-1177./PMC3630802/
- [368] Tekwe, C. D., Dabney, A. R. and Carroll, R. J. (2012). Application of survival analysis methodology to the quantitative analysis of LC-MS proteomics data. *Bioinformatics*, 28, 1998-2003. PMC3400956/
- [369] Gautam, R., Kulow, M., Döpfer, D., Kaspar, C., Gonzales, T., Pertzborn, K., Carroll, R. J., Grant, B. and Ivanek, R. (2012). The strain-specific dynamics of Escherichia coli O157: H7 fecal shedding in cattle post inoculation. *Journal of Biological Dynamics*, 6, 1052-1066. PMC3983691
- [370] Cai, T., Lin, X. and Carroll, R. J. (2012). Identifying genetic marker sets associated with phenotypes via an efficient adaptive score test. *Biostatistics*, 13, 776-790./PMC3440238/
- [371] Wei, J., Carroll, R. J., Müller, U., Van Keilegom, I. and Chatterjee, N. (2013). Locally efficient estimation for homoscedastic regression in the secondary analysis of case-control data. *Journal of the Royal Statistical Society, Series B*, 75, 185-206. <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3639015>
- [372] Tooze, J. A., Troiano, R. P., Carroll, R. J., Moshfegh, A. L. and Freedman, L. S. (2013). A measurement error model for physical activity level as measured by a questionnaire with application to the NHANES 1999-2006 questionnaire. *American Journal of Epidemiology*, 177, 1199-1208. PMC3664335
- [373] Cho, Y., Turner, N. D., Davidson, L. A., Chapkin, R. S., Carroll, R. J. and Lupton, J. R. (2013). A chemoprotective fish oil/pectin diet enhances apoptosis via Bcl-2 methylation in rat azoxymethane induced carcinomas. *Experimental Biology and Medicine*, 237, 1387-1393. PMC3999967/
- [374] Chen, Y.-H., Chatterjee, N. and Carroll, R. J. (2013). Using shared genetic controls in studies of gene-environment interactions. *Biometrika*, 100, 319-338. PMC4547803.
- [375] Jennings, E. M., Morris, J. S., Carroll, R. J., Ganiraju, M. C. and Baladandayuthapani V. (2013). Bayesian methods for expression-based integration of various types of genomics data. *EURASIP Journal on Bioinformatics and Systems Biology*, 2013.13, <http://bsb.eurasipjournals.com/content/2013/1/13>. PMC3849593.
- [376] Xun, X., Cao, J., Mallick, B. K., Maity, A. and Carroll, R. J. (2013). Parameter estimation of partial differential equation models. *Journal of the American Statistical Association*, 108, 1009-1020. PMC3867159.
- [377] Carroll, R. J., Delaigle, A. and Hall, P. (2013). Unexpected properties of bandwidth choice when smoothing discrete data for constructing a functional data classifier. *Annals of Statistics*, 41, 2739-2767. PMC4191932/
- [378] Sampson, J. N., Chatterjee, N., Carroll, R. J. and Mueller, S. (2013). Controlling the local false discovery rate in the Adaptive Lasso. *Biostatistics*, 14, 653-666./PMC3769997/

- [379] Gazioglu, S., Wei, J., Jennings, E. M. and Carroll, R. J. (2013). A note on penalized regression spline estimation in the secondary analysis of case-control data. *Statistics in Biosciences*, 5, 250-260./PMC3975606
- [380] Li, Y., Wang, N. and Carroll, R. J. (2013). Selecting the number of principal components in functional data. *Journal of the American Statistical Association*, 108, 1284-1294. PMC3872138/
- [381] Garcia, T. P., Müller, S., Carroll, R. J., Dunn, T. N., Thomas, A. P., Adams, S. H., Pillai, S. D. and Walzem, R. S. (2013). Structured variable selection with q-values. *Biostatistics*, 14, 695-707. PMC3841382.
- [382] Tekwe, C. D., Lei, J., Yao, K., Li, X., Rezaei, R., Dahanakaya, S., Carroll, R. J., Meininger, C., Bazer, F. and Wu, G. (2013). Oral administration of interferon  $\tau$  reduces adiposity in Zucker diabetic fatty rats. *Biofactors*, 39, 552-559. PMC3786024/
- [383] Serban, N., Staicu, A.-M. and Carroll, R. J. (2014). Multilevel cross-dependent binary longitudinal data. *Biometrics*, 69, 903-913. PMC3865135
- [384] Carroll, R. J. (2014). Estimating the distribution of dietary consumption patterns. *Statistical Science*, 29, 2-8. PMC4189114/
- [385] Assaad, H., Yao, K., Tekwe, C. D., Feng, S., Bazer, F. W., Zhou, L., Carroll, R. J., Meininger, C. J. and Wu, G. (2014). Analysis of energy expenditure in diet-induced obese rats. *Frontiers in Bioscience*, 19, 967-985./PMC4048864/
- [386] Martinez, J. G., Bohn, K. M., Carroll, R. J. and Morris, J. S. (2014). A study of Mexican Free-Tailed Bat chirp syllables: Bayesian functional mixed models for nonstationary acoustic time series. *Journal of the American Statistical Association*, 108, 514-526. PMC3755785
- [387] Ward, R. and Carroll, R. J. (2014). Testing Hardy-Weinberg equilibrium with a simple root-mean-square statistic. *Biostatistics*, 15, 74-86. PMID23975799.
- [388] Garcia, T. P., Müller, S., Carroll, R. J., and Walzem, R. L. (2014). Identification of important regressor groups, subgroups, and individuals via regularization methods: application to gut microbial data. *Bioinformatics*, 30, 831-837. PMC3957069
- [389] Tekwe, C. D., Carter, R. L., Cullings, H. M. and Carroll, R. J. (2014). Multiple indicators, multiple causes measurement error models. *Statistics in Medicine*, 33, 4469-4481. PMC4184955/
- [390] Assaad, H. I., Zhou, L., Carroll, R. J. and Wu, G. (2014). Rapid publication-ready MS-Word tables for one-way ANOVA. *Amino Acids*, 3, 474, <http://www.springerplus.com/content/3/1/474SpringerPlus>, 10.1186/2193-1801-3-474. PMC4153873/
- [391] Guenther, P. M., Kirkpatrick, S. L., Reedy, J., Krebs-Smith, S. M., Buckman, D. W., Dodd, K. W., Casavale, K. O. and Carroll, R. J. (2014). Healthy Eating Index-2010 is a valid and reliable measure of diet quality according to the 2010 Dietary Guidelines for Americans. *Journal of Nutrition*, 144, 399-407. PMC3927552
- [392] Cho, Y., Turner, N. D., Davidson, L. A., Chapkin, R. S., Carroll, R. J. and Lupton, J. R. (2014). Colon cancer cell apoptosis is induced by combined exposure to the n-3 fatty acid docosahexaenoic acid and butyrate through promoter methylation. *Experimental Biology and Medicine*, 239, 302-310. PMC3999970/
- [393] Sarkar, A., Mallick, B. K., Staudenmayer, J., Pati, D. and Carroll, R. J. (2014). Bayesian semiparametric density deconvolution in the presence of conditionally heteroscedastic measurement errors. *Journal of Computational and Graphical Statistics*, 25, 1101-1125. PMC4219602/
- [394] Sarkar, A., Mallick, B. K. and Carroll, R. J. (2014). Bayesian semiparametric regression in the presence of conditionally heteroscedastic measurement and regression errors. *Biometrics*, 70, 823-834./PMID24965117/
- [395] Little, M. P., Kukush, A. G., Masiuk, S. V., Shklyar, S. V., Carroll, R. J., Lubin, J. H., Kwon,

- D., Brenner, A. V., Tronko, M. D., Mabuchi, K., Bogdanova, T. I., Hatch, M., Zablotska, L. B., Tereschenko, V. P., Ostroumova, E., Bouville, A. C., Drozdovitch, V., Chepurny, M. I., Kovgan, L. N., Simon, S. L., Shpak, V. M. and Likhtarev, I. A. (2014). Impact of uncertainties in exposure assessment on thyroid cancer risk among Ukrainian children and adolescents exposed from the Chernobyl accident. *PLoS ONE*, 9, e85723. PMC3906013.
- [396] Qi, X., Luo, R., Carroll, R. J. and Zhao, H. (2015). Sparse regression by projection and sparse discriminant analysis. *Journal of Computational and Graphical Statistics*, 24, 416-438. PMC4560121
- [397] Lian, H., Liang, H. and Carroll, R. J. (2015). Variance function partially linear single-index models. *Journal of the Royal Statistical Society, Series B*, 77, 171-194. PMC4310508.
- [398] Yi, G. Y., Ma, Y., Spiegelman, D. and Carroll, R. J. (2015). Functional and structural methods with mixed measurement error and misclassification in covariates. *Journal of the American Statistical Association*, 109, 681-696. PMC4504707
- [399] Li, H., Staudenmayer, J. and Carroll, R. J. (2015). Hierarchical functional data with mixed continuous and binary measurements. *Biometrics*, 70, 802-811./PMID25134936/
- [400] Zhang, X., Cao, J. and Carroll, R. J. (2015). On the selection of ordinary differential equation models with application to predator-prey dynamical models. *Biometrics*, 71, 131-138./PMID25287611/
- [401] Gregory, K. B., Carroll, R. J., Baladandayuthapani, V. and Lahiri, S. N. (2015). A two-sample test for equality of means in high dimension. *Journal of the American Statistical Association*, 110, 837-849. PMC4533933
- [402] Staicu, A. M., Lahiri, S. N. and Carroll, R. J. (2015) Significance tests for functional data with complex dependence structure. *Journal of Statistical Planning and Inference*, 156, 1-13. PMC4443904.
- [403] Wang, Y., Wang, S. and Carroll, R. J. (2015). The direct integral method for confidence intervals for the ratio of two location parameters. *Biometrics*, 71, 704-713. PMC4575252.
- [404] Zhang, X., Zou, G. and Carroll, R. J. (2015). Model averaging based on Kullback-Leibler distance. *Statistica Sinica*, 25, 1583-1598. PMC5066877.
- [405] Assaad, H. I., Hou, Y., Zhou, L., Carroll, R. J., and Wu, G. (2015). Rapid publication-ready MS-Word tables for two-way ANOVA. *SpringerPlus*, 4, 1-9./PMC4305362/
- [406] Li, H., Keadle, S. K., Staudenmayer, J., Assaad, H., Huang, J. Z. and Carroll, R. J. (2015). Methods to assess an exercise intervention trial based on 3-level functional data. *Biostatistics*, 16, 754-771. PMID25987650, PMC4570580
- [407] Ma, S., Carroll, R. J., Liang, H. and Xu, S. (2015). Estimation and inference in generalized additive coefficient models for nonlinear interactions with high-dimensional covariates. *Annals of Statistics*, 43, 2102-2131. PMC4578655
- [408] Freedman, L. S., Midthune, D., Dodd, K., Carroll, R. J. and Kipnis, V. (2015). A statistical model for measurement error that incorporates variation over time in the target measure, with application to nutritional epidemiology. *Statistics in Medicine*, 34, 3590-3605. NIHMS707141, PMID: 26173857. PMCID PMC4626274.
- [409] Hong, M., Turner, N. D., Murphy, M. E., Carroll, R. J., Chapkin, R. S. and Lupton, J. L. (2015). In vivo regulation of colonic cell proliferation, differentiation, apoptosis and P27Kip1 by dietary fish oil and butyrate in rats. *Cancer Prevention Research*, 8, 1076-1083. PMC4633322
- [410] Freedman, L. S., Midthune, D., Carroll, R. J., Commins, J. M., Arab, L., Baer, D. J., Moler, J. E., Moshfegh, A. J., Neuhauser, M. L., Prentice, R. L. and Rhodes, D. (2015). Application of a new statistical model for measurement error to the evaluation of dietary self-report instruments. *Epidemiology*, 26, 925-933. PMID: 26360372, NIHMSID 789907, PMC4898197
- [411] Tooze, J. T., Freedman, L. S., Carroll, R. J., Midthune, D. and Kipnis, V. (2015). The impact of stratification by implausible reporting status on estimates of diet-health relationships. *Biometrical*

- Journal*, doi: 10.1002/bimj.201500201. PMID is 27550787.
- [413] Ma, Y. and Carroll, R. J. (2016). Semiparametric estimation in the secondary analysis of case-control studies. *Journal of the Royal Statistical Society, Series B*, 78, 127-151. PMC4731052.
  - [413] Bhadra, A. and Carroll, R. J. (2016). Exact sampling of the unobserved covariates in Bayesian spline models for measurement error problems. *Statistics and Computing*, 26, 827-840. PMC4941830
  - [414] Huque, M. H., Bondell, H., Carroll, R. J. and Ryan, L. (2016). Spatial regression with covariate measurement error: a semi-parametric approach. *Biometrics*, 72, 678-686. PMC4956600
  - [415] Chatterjee, N., Chen, Y.-H., Maas, P. and Carroll, R. J. (2016). Constrained maximum likelihood estimation for model calibration using summary-level information from external big data sources. *Journal of the American Statistical Association*, 111, 107-117. PMC4994914
  - [416] de la Cruz, R., Meza, C., Arribas-Gil, A. and Carroll, R. J. (2016). Bayesian regression analysis of data with random effects covariates from nonlinear longitudinal measurements. *Journal of Multivariate Analysis*, 143, 94-106. PMC4890722
  - [417] Midthune, D., Carroll, R. J., Freedman, L. S. and Kipnis, V. (2016). Measurement error models with interactions. *Biostatistics*, 17, 277-290. PMC4834948 PMID 26530858
  - [418] Kipnis, V., Freedman, L. S., Carroll, R. J. and Midthune, D. (2016). A bivariate measurement error model for semicontinuous and continuous variables: application to nutritional epidemiology. *Biometrics*, 72, 106-115. PMC4775438
  - [419] Alexeeff, S. E., Carroll, R. J. and Coull, B. (2016). Spatial measurement error and correction by spatial SIMEX in linear regression models when using predicted air pollution exposures. *Biostatistics*, 17, 377-389. PMID 26621845
  - [420] Masiuk, S., Shklyar, S., Kukush, A., Carroll, R. J., Kovgan, L. and Likhtarov, I. A. (2016). Estimation of radiation risk in presence of classical additive and Berkson multiplicative errors in exposure doses. *Biostatistics*, 17, 422-436. PMID: 26795191, PMC4915607
  - [421] Sampson, J. N., Matthews, C. E., Freedman, L. S., Carroll, R. J. and Kipnis, V. (2016). Methods to assess measurement error in questionnaires of sedentary behavior. *Journal of Applied Statistics*, 43, 1706-1721. PMC4915393
  - [422] Gail, M. H., Wu, Jincao, Wang, M., Yaune, S.-S., Cook, N. R., Eliassend, A. H., McCullough, M. L., Yu, K., Zeleniuch-Jacquotte, A., Smith-Warner, S., Ziegler, R. G. and Carroll, R. J. (2016). Calibration and seasonal adjustment for matched case-control studies of Vitamin D and cancer. *Statistics in Medicine*, 35, 2133-2148. PMC4853926
  - [423] Zoh, R., Mallick, B. K., Ivanov, I., Baladandayuthapani, V., Manyam, G., Chapkin, R., Lampe, J. W. and Carroll, R. J. (2016). PCAN: probabilistic correlation analysis of two non-normal data sets. *Biometrics*, 72, 1358-1368. PMC5045754
  - [424] Li, H., Keadle, S., Kipnis, V. and Carroll, R. J. (2016). Longitudinal functional additive model with continuous proportional outcomes for physical activity data. *STAT*, 5, 242-250. NIHMSID 825619
  - [425] Huque, M. H., Carroll, R. J., Christiani, D. C. and Ryan, L. M. (2016). Exposure enriched case-control (EECC) design for the assessment of gene-environment interaction. *Genetic Epidemiology*, 40, 570-578. PMC5069109
  - [426] Keogh, R. H., Carroll, R. J., Tooze, J., Kirkpatrick, S. I. and Freedman, L. S. (2016). Statistical issues related to dietary intake as the response variable in intervention trials. *Statistics in Medicine*, 35, 4493-4508. NIHMSID 791223, PMID 27324170
  - [427] Potgieter, C. J., Wei, R., Kipnis, V., Freedman, L. S. and Carroll, R. J. (2016). Moment reconstruction and moment-adjusted imputation when exposure is generated by a complex, nonlinear random effects modeling process. *Biometrics*, 72, 1369-1377. NIHMSID 794866

- [428] Ma, S., Ma, Y., Wang, Y., Kravitz, E. S. and Carroll, R. J. (2017). A semiparametric single-index risk score across populations. *Journal of the American Statistical Association*, 112, 1648-1662. NIHMS878200, PMC5839692
- [429] Liu, J., Ma, Y., Zhu, L. and Carroll, R. J. (2017) Estimation and inference of error-prone covariate effect in the presence of confounding variables. *Electronic Journal of Statistics*, 11, 480-501. PMC5626476
- [430] Keadle, S., Sampson, J., Li, H., Lyden, K., Matthews, C. E. and Carroll, R. J. (2017). An evaluation of accelerometer-derived metrics to assess daily behavioral patterns. *Medicine & Science in Sports & Exercise*, 49, 54-63. PMC5176102
- [431] Zhang, X., Wang, H., Ma, Y. and Carroll, R. J. (2017). Linear model selection when covariates contain errors. *Journal of the American Statistical Association*, 112, 1553-1561. PMC5798903
- [432] Cook, S. J., Blas, B., Carroll, R. J. and Sinha, S. (2017). Two wrongs make a right: addressing underreporting in binary data from multiple sources. *Political Analysis*, 25, 223-240. The journal has an impact factor of 6.098, and it has the largest impact factor of all political science journals. PMC5667662
- [433] Bertrand, A., Legrand, C., Carroll, R. J., de Meester, C. and Van Keilegom, I. (2017). Inference in a survival cure model with mismeasured covariates using a SIMEX approach. *Biometrika*, 104, 31-50. PMC5693403
- [434] Pfeiffer, R. M., Redd, A. and Carroll, R. J. (2017). On the impact of model selection on predictor identification and parameter inference. *Computational Statistics*, 32, 667-690. PMC5480098
- [435] Cao, J., Zhang, X. and Carroll, R. J. (2017). Estimating varying coefficients for partial differential equation models. *Biometrics*, 73, 949-959. NIHMS839343
- [436] Hong, C., Ning, Y., Wang, S., Wu, H., Carroll, R. J. and Chen, Y. (2017). PLEMT: A novel pseudolikelihood based EM test for homogeneity in generalized exponential tilt mixture models. *Journal of the American Statistical Association*, 112, 1393-1404. PMC5798902
- [437] Lee, D., Carroll, R. J. and Sinha, S. (2017). Frequentist standard errors of Bayes estimators. *Computational Statistics*, 32, 867-888. PMC5608466
- [438] Ritchie, L., Taddeo, S., Weeks, B., Carroll, R. J., Dykes, L. R. and Turnet, N. D. (2017). Impact of novel sorghum bran diets on DSS-induced colitis. *Nutrients*, 9, 330.
- [439] Ma, S., Lian, H., Liang, H. and Carroll, R. J. (2017). SiAM: A hybrid of single index models and additive models. *Electronic Journal of Statistics*, 11, 2397-2423. PMC5669139
- [440] Gao, X. and Carroll, R. J. (2017). Data integration with high dimensionality. *Biometrika*, 104, 251-272. PMC5532816
- [441] Stalder, O., Asher, A., Liang, L., Carroll, R. J., Ma, Y. and Chatterjee, N. (2017). Semiparametric analysis of complex polygenic gene-environment interactions in case-control studies. *Biometrika*, 104, 801-812. PMC5793684
- [442] Li, H., Zhang, Y., Carroll, R. J., Keadle, S. K., Sampson, J. N. and Matthews, C. E. (2017). A joint modeling and estimation method for multivariate longitudinal data with mixed types of responses to analyze physical activity data generated by accelerometers. *Statistics in Medicine*, 36, 4028-4040. PMC5656438
- [443] Tekwe, C., Zoh, R., Bazer, F., Wu, G., and Carroll, R. J. (2018). Functional multiple indicators, multiple causes measurement error models. *Biometrics*, to appear. PMC5677589
- [444] Sarkar, A., Pati, D., Chakraborty, A., Mallick, B. K. and Carroll, R. J. (2018). Bayesian semiparametric multivariate density deconvolution. *Journal of the American Statistical Association*, 113, 401-416. PMC6075844
- [445] Kim, J. S., Staicu, A.-M., Maity, A., Carroll, R. J. and Ruppert, D. (2018). Additive function-on-

- function regression. *Journal of Computational and Graphical Statistics*, 27, 234-244. PMC5956967
- [446] Su, Y., Reedy, J. and Carroll, R. J. (2018). Clustering in general measurement error models. *Statistical Sinica*, to appear. NIHMSID 891005
- [447] Matthews, C. E., Keadle, S. K., Moore, S. C., Schoeller, D. S., Carroll, R. J., Troiano, R. P. and Sampson, J. N. (2018). Measurement of active and sedentary behavior in context of large epidemiologic studies. *Medicine & Science in Sports & Exercise*, 50, 266-276. PMID: 28930863, PMC5768470
- [448] Carroll, R. J. (2018). Measurement error and case-control studies. Chapter 12 in *Handbook of Statistical Methods for Case-Control Studies*, edited by N. Breslow, O. Borgan, N. Chatterjee, M. H. Gail, A. Scott and C. J. Wild. CRC Press.
- [449] Zoh, R. S., Sarkar, A., Carroll, R. J. and Mallick, B. K. (2018). A powerful Bayesian test for equality of means in high dimensions. *Journal of the American Statistical Association*, 113, 1733-1741. PMC6364997
- [450] Li, H., Staudenmayer, J., Wang, T., Keadle, S. K. and Carroll, R. J. (2018). Three-part joint modeling methods for complex functional data mixed with zero-and-one inflated proportions and zero inflated outcomes with skewness. *Statistics in Medicine*, 37, 611-626. PMC5772010
- [451] Sun, R., Carroll, R. J., Christiani, D. and Lin, X. (2018). Testing for gene-environment interaction under exposure misspecification. *Biometrics*, 74, 653-662. PMC5943197
- [452] Liang, L., Ma, Y., Wei, Y. and Carroll, R. J. (2018). Semiparametric efficient estimation in quantile regression of secondary analysis. *Journal of the Royal Statistical Society, Series B*, to appear. PMC6191046
- [453] Liang, L., Ma, Y. and Carroll, R. J. (2018). A semiparametric efficient estimator in case-control studies for gene-environment independent models. *Journal of Multivariate Analysis*, 173, 38-50. PMC6824552
- [454] Liang, L., Carroll, R. J. and Ma, Y. (2018). Dimension reduction and estimation in the secondary analysis of case-control studies. *Electronic Journal of Statistics*, 12, 1782-1821. PMC6086603
- [455] Blas Achic, B. G., Wang, T., Su, Y., Kipnis, V., Dodd K. and Carroll, R. J. (2018). Categorizing a continuous predictor subject to measurement error. *Electronic Journal of Statistics*, 12, 4032-4056. NIHMSID 1028741, PMID: 31231451, PMCID: PMC6588013.
- [456] Bailey, R., Dodd, K. W., Gahche, J. J., Swyer, J. T., Cowan, A. E., Jun, S., Eicher-Miller, H., Guenther, P. M., Bhadra, A., Thomas, P. R., Potischman, N., Carroll, R. J. and Tooze, J. M. (2019). Best practices for dietary supplement assessment and estimation of total usual nutrient intakes in population-level research and monitoring. *Journal of Nutrition*, 149, 181-197. PMC6374152
- [457] Cao, J., Soiporn, K., Carroll, R. J. and Ruppert, D. (2019). Modeling and prediction of multiple correlated functional outcomes. *Journal of Agricultural, Biological and Environmental Statistics*, 24, 112-129. PMC6447061
- [458] Ma, S., Zhu, L., Zhang, Z., Tsai, C.-L. and Carroll, R. J. (2018). A robust and efficient approach to causal inference based on sparse sufficient dimension reduction. *Annals of Statistics*, 47, 1505-1535. PMC6588012, PMID 31231143
- [459] Lee, U., Garcia, T. P., Carroll, R. J., Gilbreath, K. R. and Wu, G. (2019). Analysis of repeated measures data in nutrition research. in *Frontiers In Bioscience ( Landmark edition)*, 24, 1378-1390. PubMed 31136985, PMC6556387
- [460] Siddique, J., Daniels, M., Carroll, R. J., Ragunathan, T., Stuart, E. and Freedman, L. S. (2020). Measurement error correction and sensitivity analysis in longitudinal dietary intervention studies using an external validation study. *Biometrics*, to appear. PMID: 30724332. <https://www.ncbi.nlm.nih.gov/pubmed/30724332>
- [461] Gray, C. M., Carroll, R. J., Lentjes, M. A. H. and Keogh, R. H. (2020). Correcting for measurement error in fractional polynomial models using Bayesian modelling and regression calibration, with an application to alcohol and mortality. *Biometrical Journal*, to 61, 558-573. <https://doi.org/10.1002/bimj.201700279>

NIHMSID 1019808, PMC6511281

- [462] Zhang, X., Ma, Y. and Carroll, R. J. (2020). MALMEM: model averaging in linear measurement error models. *Journal of the Royal Statistical Society, Series B*, to appear. NIHMSIS 1033602.
- [463] Keadle, S. K., Kravitz, E., Matthews, C. E., Tseng, M. and Carroll, R. J. (2019). Development and testing of an integrated score for physical behaviors. *Medicine & Science in Sports & Exercise*, 51, 1759-1776. NIHMSID 1522111, PMID 30817711, PMCID:PMC6629509
- [464] Xu, Y., Kim, I. and Carroll, R. J. (2019). A hybrid omnibus test for generalized semiparametric single-index models with high dimensional covariate sets. *Biometrics*, 75, 757-767. NIHMSID 1019508, PMC6736718, PMID 30859553
- [465] Tekwe, C. D., Zoh, R. S., Yang, M., Carroll, R. J., Honvoh, R. J., Allison, D. B., Benden, M. and Xue, L. (2019). Instrumental variable approach to estimating the scalar-on-function regression model with measurement error with application to energy expenditure assessment in childhood obesity. *Statistics in Medicine*, 38, 37643781. NIHMS 1032039, PubMed 31222793, PMC6684443
- [466] Zhang, Y., Li, H., Keadle, S. K., Matthews, C. E. and Carroll, R. J. (2020). A review of statistical analyses on physical activity data collected from accelerometers. *Statistics in Bioscience*, to appear. <https://doi.org/10.1007/s12561-019-09250-6>, NIHMSID 1039865.
- [467] Maity, Arnab K., Carroll, R. J. and Mallick, B. K. (2020). Integration of survival and binary data for variable selection and prediction: a Bayesian approach. *Journal of the Royal Statistical Association, Series C*, to appear. NIHMSID 1045566.
- [468] Kravitz, E. S. and Carroll, R. J. (2020). Reevaluating composite scores: adaptive lasso variable selection for nonlinear models. *STAT*, to appear.
- [469] Yoon, G., Carroll, R. J. and Gaynanova, I. (2020). Sparse semiparametric canonical correlation analysis for data of mixed type. *Biometrika*, to appear.

**SELECTED PENDING MANUSCRIPTS**

- [1] Zhang, X. Zou, G., Liang, H. and Carroll, R. J. (2014). Oracle model averaging estimation for sparse high-dimensional data.
- [2] Tidemann-Miller, B. A., Staicu, A.-M., Reich, B. and Carroll, R. J. (2014). Joint modeling of paired spatially correlated multilevel functional data.
- [3] Singh, T., Wang, S. and Carroll, R. J. (2016). Efficient small area estimation when covariates are measured with error using simulation Extrapolation.
- [4] Chakraborty, A., Neykov, M., Carroll, R. J. and Cai, T. (2017). Surrogate aided unsupervised recovery of sparse signals in single index models for binary outcomes.
- [5] Matthews, C. E., Keadle, S. K., Moore, S. C., Schoeller, D. S., Carroll, R. J., Troiani, R. P. and Sampson, J. N. (2018). Measurement of active & sedentary behavior in context of large epidemiologic studies.
- [6] Seidel, D. V., Taddeo, S. S., Azcarate-Peril, M. A., Carroll, R. J. and Turner, N. D. (2018). Dried plums protect against chemically-induced colon carcinogenesis in Sprague Dawley rats.
- [7] Midthune, D., Kipnis, D. A., Freedman, L. S., Bowles, H. R., McClain, J.J., Dodd, K. W., Carroll, R. J. and Kipnis, V. (2020). Models for longitudinal data with random covariates and measurement error, with application to physical activity and sleep.



**Ph.D. STUDENTS AND CURRENT EMPLOYMENT**

- [1] Gordon Johnston (1979). Smooth nonparametric regression analysis. Senior statistician, SAS Institute.
- [2] Paul Gallo (1981). Convergence results for errors in variables models. Senior Statistician, Novartis.
- [3] David Giltinan (1983). Bounded influence estimation in heteroscedastic linear models. Retired, previously Senior Statistician, Genentech.
- [4] Leonard A. Stefanski (1983). Estimation for binary regression models. Professor and Head, North Carolina State University (past editor of the *Journal of the American Statistical Association*).
- [5] Douglas Simpson (1985). Robust estimation for discrete data. Professor, University of Illinois (also department head).
- [6] Marie Davidian (December, 1986). Variance function estimation in regression. Professor, North Carolina State University (also past editor, *Biometrics*, and past President of the American Statistical Association).
- [7] Ernestine Kettl (May, 1987). Applications of the transform-both-sides regression model. Statistician, Shell Global Solutions (US) Inc.
- [8] Yin Yin (March, 1988). Edgeworth expansions and hypothesis tests in heteroscedastic regression models. Glaxo Pharmaceuticals.
- [9] Lie-Ju Hwang (May, 1990). Empirical Bayes methods in assays, with applications to variance function estimation. Statistician, Pfizer, Inc.
- [10] J. H. Sepanski (July, 1991). Semiparametric estimation in measurement error models. Professor, Department of Mathematics, Central Michigan University.
- [11] R. Landin (July, 1992). Topics in measurement error models with applications to repeated measures and nutrition data. Senior Statistician, Ignyta, Inc.
- [12] C. Y. Wang (August, 1993). Analysis of case-control studies. Full Member, Fred Hutchinson Cancer Research Center.
- [13] R. Knickerbocker (December, 1993). Dimension reduction and measurement error models. Senior Director, Genzyme Inc.
- [14] R. Gutierrez (July, 1995). Semiparametric, dimension reduction and missing data. SAS Institute.
- [15] S. Eckert (July, 1995). Deconvolution aspects of measurement error models. Senior Director, Genzyme Corporation.
- [16] J. Maca (July, 1997). Nonparametric regression and measurement error. Senior Statistician, Quintiles.
- [17] C. Galindo (July, 1998). Nonparametric regression. Google.
- [18] S. Iturria (July, 1998). Bayesian model averaging with application to cladistics analysis in genetics. Senior Statistician, Eli Lilly and Company.
- [19] J. S. Morris (July, 2000). Statistical models for colon cancer cell mechanisms. Professor, M. D. Anderson Cancer Research Center.
- [20] Hua Liang (March, 2001). Semiparametric statistical methods and computation. Professor, George Washington University.

**Ph.D. STUDENTS AND CURRENT EMPLOYMENT (Continued)**

- [21] Inyoung Kim (May, 2002). Effect modification in matched case-control studies. Associate Professor, Virginia Tech University.
- [22] Chan Hee Jo (December, 2002). Bayesian semiparametric logistic regression. Associate Professor, Scott and White Medical School.
- [23] Tanya Apanasovich (June, 2004). Longitudinal and spatial methods in the analysis of Aberrant Crypt Foci in colon carcinogenesis. Associate Professor, George Washington University.
- [24] Gosia Leyk-Williams (June, 2004). Bayesian methods in the analysis of DNA damage using the FLARE assay for colon carcinogenesis. Senior Statistician, Eli Lilly.
- [25] Christine Spinka (June, 2004). Gene-environment interactions in genetic epidemiology. Missouri Department of Health and Senior Services.
- [26] Veerabhadran Baladandayuthapani (June, 2005). Bayesian methods in Bioinformatics. Professor, University of Michigan.
- [27] Iryna Lobach (June, 2006). Seemingly unrelated measurement error models with application to nutritional epidemiology and colon carcinogenesis. Assistant Professor, University of California San Francisco Medical School.
- [28] Yehua Li (June, 2006). Functional data analysis in biology. Professor, UC-Riverside.
- [29] Bo Li (August, 2006). Spatial statistics. Professor and Head, University of Illinois.
- [30] Lian Liu (August, 2007). Semiparametric measurement error models. Principal Statistician, GlaxoSmithKline, Shanghai.
- [31] Arnab Maity (August, 2008). Semiparametric methods for repeated measures data. Associate Professor, North Carolina State University.
- [32] Seokho Lee (May, 2009). Functional data analysis. Hankuk University of Foreign Studies, Korea.
- [33] Andrew Redd (August, 2010). Computational methods in functional data analysis. Assistant Professor, University of Utah Medical Center.
- [34] Jiawei Wei (May, 2010). Gene-environment case-control studies. Senior statistician, Novartis, Inc., Shanghai.
- [35] Saijuan Zhang (December, 2010). Bayesian analysis in multivariate measurement error models of nutritional surveillance. Senior statistician, Merck.
- [36] Trijya Singh (May, 2011). Measurement error and small area estimation. Associate Professor, Le Moyne College.
- [37] Xiaolei Xun (May, 2012). Inverse problems. Assistant Professor, Fudan University.
- [38] Abhra Sarkar (May 2014). Bayesian analysis of high dimensional data. Assistant Professor, University of Texas at Austin.
- [39] Rubin Wei (May 2014). Highly nonlinear measurement error models in nutritional epidemiology, Senior Research Scientist, Eli Lilly.
- [40] Yanqing Wang (May 2014). Measurement error problems in nutritional epidemiology. Postdoc, Fred Hutchinson Cancer Research Center.
- [41] Shahina Rahman (May 2015). Secondary analysis of case-control data. Postdoc, Texas A&M University (mentor, V. Johnson).

**Ph.D. STUDENTS AND CURRENT EMPLOYMENT (Continued)**

- [42] Elizabeth Jennings Guffey (May 2015). Integromics. Assistant Professor, U. S. Naval Academy.
- [43] Liang Liang (May 2016). Semiparametric methods for gene-environment interaction studies. Postdoc, Harvard School of Public Health.
- [44] Alex Asher (June 2018). Semiparametric analysis of gene-environment case-control studies. Senior Statistician, STATA Inc.
- [45] Tianying Wang (August 2018). Measurement error and high dimensional analysis. Postdoc, Columbia University Department of Biostatistics.
- [46] Eli S. Kravitz (August 2018). Physical activity and health using sample splitting techniques. Senior Statistician, Eli Lilly.

**POSTDOCTORAL RESEARCHERS AND CURRENT EMPLOYMENT**

- [1] Helmut Küchenhoff, University of Munich
- [2] Andreas Ruckstuhl, Zürich Technical University, Zürich
- [3] Laura Martino, National Center for Agricultural Research, Rome
- [4] Danh V. Nguyen, University of California at Irvine
- [5] Qi Zheng, Texas A&M University, School of Rural Public Health
- [6] Wenjiang Fu, University of Houston
- [7] Kimberley Drews, George Washington University
- [8] Annamaria Guolo, Department of Statistical Science, University of Padova (Padua)
- [9] Lan Zhou, Texas A&M University
- [10] Ana-Maria Staicu, North Carolina State University
- [11] Josue Martinez (deceased), was at M. D. Anderson Cancer Research Center
- [12] Nikolay Bliznyuk, University of Florida
- [13] Cornelis Potgieter, Southern Methodist University
- [14] Anindya Bhadra, Purdue University
- [15] Carmen Tekwe, Indiana University School of Public Health
- [16] Maria Joseph, General Dynamics.
- [17] Haocheng Li, University of Calgary
- [18] Xinyu Zhang, Chinese Academy of Sciences
- [19] Ya Su, University of Kentucky
- [20] Unkyung Lee (current)
- [21] Grace Yoon (current)
- [22] Yabo Niu (current)
- [23] Guorong Dai (current)

**INVITED PRESENTATIONS**

I have presented 418 invited lectures, which include the following since 1990:

|                                                                   |      |
|-------------------------------------------------------------------|------|
| University of New Mexico                                          | 1990 |
| Los Alamos National Laboratory                                    | 1990 |
| University of Waterloo                                            | 1990 |
| Yale University                                                   | 1990 |
| University of Wisconsin                                           | 1990 |
| Cornell Workshop on Function Estimation                           | 1990 |
| Purdue University                                                 | 1990 |
| Montana State University                                          | 1990 |
| Penn State University                                             | 1990 |
| Alaska ASA Chapter                                                | 1990 |
| Conference on Discrete Choice Models, Louvaine le Neuve           | 1990 |
| Australian National University                                    | 1991 |
| LaTrobe University                                                | 1991 |
| University of Tasmania                                            | 1991 |
| Regression Conference, Australian Statistical Association         | 1991 |
| Distinguished Lecturer, Australian Graduate School of Management  | 1991 |
| Statistics Week, University of Miami (Ohio)                       | 1991 |
| University of Alaska, Fairbanks                                   | 1991 |
| Penn State University                                             | 1991 |
| ENAR National Meeting, Atlanta                                    | 1991 |
| North Carolina Chapter, American Statistical Association          | 1991 |
| Bureau of Labor Statistics                                        | 1992 |
| University of Texas at Austin                                     | 1992 |
| National Institute of Occupational Safety and Health              | 1992 |
| ENAR Spring Meeting, Cincinnati                                   | 1992 |
| Swiss Statistics Society Spring Meeting                           | 1992 |
| Eli Lilly Conference on Population Pharmacokinetics               | 1992 |
| Purdue Decision Theory Conference                                 | 1992 |
| GLIM 92, München, Germany                                         | 1992 |
| University of Michigan                                            | 1992 |
| Cornell University                                                | 1992 |
| IMS Special Topics Meeting on Likelihood                          | 1992 |
| Texas A&M Nutrition Faculty                                       | 1992 |
| Harvard School of Public Health                                   | 1993 |
| Emory University                                                  | 1993 |
| Rice University                                                   | 1993 |
| Rand Afrikaans University                                         | 1993 |
| Joint Statistical Meetings, NISS session                          | 1993 |
| Columbia University                                               | 1993 |
| NISS Workshop on Combining Environmental Data                     | 1993 |
| University of Maryland                                            | 1993 |
| University of Pittsburgh                                          | 1993 |
| National Heart, Lung and Blood Institute                          | 1993 |
| IMS Spring Regional meeting (Cleveland)                           | 1994 |
| ASA Annual Meeting (Toronto)                                      | 1994 |
| Greenberg Lectures in Biostatistics, University of North Carolina | 1994 |
| University of Texas at Austin                                     | 1994 |
| National Cancer Institute, Division of Cancer Etiology            | 1994 |
| Second International Conference on Dietary Assessment             | 1995 |
| University of Kentucky                                            | 1995 |

**INVITED PRESENTATIONS (Continued)**

|                                                                       |      |
|-----------------------------------------------------------------------|------|
| Incomplete Data Conference, Freiburg (Germany)                        | 1995 |
| Oberwolfach Conference on Incomplete Data                             | 1995 |
| Georgia Tech University                                               | 1995 |
| Atlanta ASA Chapter                                                   | 1995 |
| Third Great Lakes Statistics Symposium                                | 1995 |
| Rutgers University                                                    | 1995 |
| Johns Hopkins University                                              | 1995 |
| Nuffield College, Oxford                                              | 1995 |
| University of Oxford                                                  | 1995 |
| ENAR President's Address                                              | 1995 |
| Multiple Decision Theory Conference, Purdue University                | 1995 |
| University of Pennsylvania Medical School                             | 1995 |
| LaTrobe University                                                    | 1995 |
| Oberwolfach Conference on Mathematical Statistics                     | 1996 |
| ENAR Spring Meeting                                                   | 1996 |
| ASA Annual Meeting                                                    | 1996 |
| Brown University                                                      | 1996 |
| University of California at Davis                                     | 1996 |
| University of Georgia Conference on Estimating Functions              | 1996 |
| Harvard School of Public Health                                       | 1996 |
| ASA Annual Meeting, Chicago                                           | 1996 |
| Statistics in Science, Halifax                                        | 1996 |
| Conference on Longitudinally and Spatially Correlated Data, Nantucket | 1996 |
| Memorial Sloan-Kettering Cancer Institute                             | 1996 |
| EPA Conference on Validating Lead Exposure Models                     | 1996 |
| Humboldt Universität zu Berlin                                        | 1997 |
| University of Munich                                                  | 1997 |
| University of Pennsylvania                                            | 1997 |
| University of Michigan                                                | 1997 |
| Temple University                                                     | 1997 |
| ENAR Spring Meeting                                                   | 1997 |
| IMS Annual Meeting                                                    | 1997 |
| University of Illinois                                                | 1997 |
| IMS New Researcher's Conference                                       | 1997 |
| Mathematical Models in Experimental Nutrition VI                      | 1997 |
| 49 <sup>th</sup> Clemson-Georgia Joint Colloquium                     | 1997 |
| IMA Conference on Environmental Statistics                            | 1997 |
| NCI Conference on Radon and Exposure Assessment                       | 1997 |
| ASA Annual Meeting                                                    | 1998 |
| University of Heidelberg                                              | 1998 |
| NCI Division of Cancer Epidemiology and Genetics                      | 1998 |
| University of Massachusetts                                           | 1998 |
| University of New Mexico                                              | 1998 |
| Los Alamos National Laboratory                                        | 1998 |
| Conference of Texas Statisticians                                     | 1998 |
| Taipei International Statistical Symposium                            | 1998 |
| CLAPEM IV, Cordoba, Argentina                                         | 1998 |
| ENAR Spring Meeting                                                   | 1999 |
| ASA-IMS Annual Meeting                                                | 1999 |
| Munich Workshop on Semiparametric Modeling                            | 1999 |
| Humboldt University in Berlin                                         | 1999 |

## INVITED PRESENTATIONS (Continued)

|                                                    |      |
|----------------------------------------------------|------|
| Purdue University                                  | 1999 |
| University of Missouri                             | 2000 |
| ENAR Spring Meeting                                | 2000 |
| ASA Radiation Conference                           | 2000 |
| ASA-IMS Annual Meeting (IMS Special Invited Paper) | 2000 |
| Workshop on Mathematical Modeling in Nutrition     | 2000 |
| Munich Workshop on Measurement Error Models        | 2000 |
| Australian National University                     | 2000 |
| Oberwolfach Conference on Complex Data Structures  | 2000 |
| University of Freiburg                             | 2000 |
| Yale University                                    | 2000 |
| Eli Lilly and Company                              | 2000 |
| Latrobe University (Melbourne)                     | 2000 |
| ENAR, Charlotte (2 talks)                          | 2001 |
| JSM, Atlanta (2 talks)                             | 2001 |
| University of Dortmund                             | 2001 |
| University of Heidelberg                           | 2001 |
| Wayne Fuller Conference, Iowa State University     | 2001 |
| St. Jude's Children's Hospital                     | 2001 |
| University of Wisconsin                            | 2002 |
| ENAR Spring Meeting                                | 2002 |
| Australian National University                     | 2002 |
| Australian Statistical Society Annual Conference   | 2002 |
| Joint Statistical Meetings                         | 2002 |
| Fisher Lecture, Joint Statistical Meetings         | 2002 |
| AMS Conference on Longitudinal Data                | 2002 |
| University of Auckland Biostatistics Workshop      | 2002 |
| University of Auckland Statistics Department       | 2002 |
| Florida State University                           | 2003 |
| University of Munich                               | 2003 |
| Columbia University                                | 2003 |
| University of Bielefeld                            | 2003 |
| Joint Statistical Meetings                         | 2003 |
| Statistical Society of Canada                      | 2003 |
| Catholic University of Louvain, Belgium            | 2003 |
| Cornell University                                 | 2003 |
| Temple-Merck Conference                            | 2003 |
| Indian Statistical Institute                       | 2003 |
| North Carolina State University                    | 2004 |
| ENAR                                               | 2004 |
| Ohio State University                              | 2004 |
| IMS Calcutta Conference                            | 2004 |
| Lehmann Conference, Rice University                | 2004 |
| International Biometric Congress                   | 2004 |
| University of Minnesota                            | 2004 |
| Distinguished Lecture Series, Texas A&M University | 2004 |
| University of Pennsylvania                         | 2004 |
| Johns Hopkins University                           | 2004 |
| Australian National University                     | 2004 |
| Eli Lilly and Company                              | 2004 |
| Ohio State University, MBI                         | 2004 |

**INVITED PRESENTATIONS (Continued)**

|                                                                       |      |
|-----------------------------------------------------------------------|------|
| ENAR                                                                  | 2005 |
| University of Minnesota (Buehler-Martin Distinguished Lecture Series) | 2005 |
| University of Florida Longitudinal Data Workshop                      | 2005 |
| University of Munich                                                  | 2005 |
| ASA/IMS Annual Meeting                                                | 2005 |
| M. D. Anderson                                                        | 2005 |
| Houston ASA Chapter                                                   | 2005 |
| Purdue University                                                     | 2005 |
| Alastair Scott Conference, University of Auckland                     | 2005 |
| Annual General Meeting, Statistical Society of Australia              | 2005 |
| National University of Singapore                                      | 2005 |
| Ohio State University (Rustagi Lecture)                               | 2005 |
| Columbia University                                                   | 2005 |
| Houston ASA Chapter                                                   | 2005 |
| M.D. Anderson Cancer Center                                           | 2005 |
| University of Munich                                                  | 2005 |
| Medical University of South Carolina                                  | 2005 |
| University of Ulm                                                     | 2005 |
| University of Mannheim                                                | 2005 |
| University of Georgia (Bradley Lecture)                               | 2006 |
| ENAR                                                                  | 2006 |
| Penn State University                                                 | 2006 |
| University of Illinois (Bohrer Lecture)                               | 2006 |
| University of Washington (Biostatistics)                              | 2006 |
| Midwest Biopharmaceutical Statistics Workshop                         | 2006 |
| WNAR                                                                  | 2006 |
| University of Washington (Breslow Conference)                         | 2006 |
| Joint Statistical Meetings                                            | 2006 |
| St. John's University, Newfoundland                                   | 2006 |
| University of Louisville                                              | 2006 |
| University of Alabama at Birmingham Medical School                    | 2006 |
| University of California at Santa Barbara (Sobel Lecture)             | 2006 |
| University of California at San Diego                                 | 2006 |
| University of Mannheim                                                | 2006 |
| University College Cork                                               | 2006 |
| University of Juan Carlos III                                         | 2006 |
| Centers for Disease Control                                           | 2006 |
| University of Florida (Challis Lectures)                              | 2006 |
| National Cancer Institute                                             | 2006 |
| Oberwolfach Conference on Econometrics                                | 2007 |
| University of Bielefeld                                               | 2007 |
| University of Padua                                                   | 2007 |
| University of Melbourne                                               | 2007 |
| Monash University                                                     | 2007 |
| University of South Carolina                                          | 2007 |
| Oberwolfach Conference on Modern Data Analysis                        | 2007 |
| University of Bonn                                                    | 2007 |
| Rutgers University                                                    | 2007 |
| Columbia University (Biostatistics)                                   | 2007 |
| University of North Carolina                                          | 2007 |
| III Cycle Romand de statistique (Switzerland)                         | 2007 |

**INVITED PRESENTATIONS (Continued)**

|                                                                              |      |
|------------------------------------------------------------------------------|------|
| University of Bristol                                                        | 2007 |
| ENAR                                                                         | 2008 |
| Academia Sinica                                                              | 2008 |
| Fu-Jen University                                                            | 2008 |
| Joint Statistical Meetings                                                   | 2008 |
| National University of Singapore                                             | 2008 |
| University of Wollongong                                                     | 2008 |
| National Seoul University                                                    | 2008 |
| Korean Statistical Society                                                   | 2008 |
| Southern Regional Conference on Statistics                                   | 2008 |
| Harvard University                                                           | 2008 |
| Mitchell Lectures, University of Glasgow                                     | 2009 |
| Southern Regional Conference on Statistics                                   | 2009 |
| Joint Statistical Meetings                                                   | 2009 |
| Brown University                                                             | 2009 |
| University of Manitoba                                                       | 2009 |
| Joint Statistical Meetings                                                   | 2009 |
| JASA Editor's Invited Paper                                                  | 2009 |
| Technical University of Lisbon                                               | 2009 |
| Banff Workshop on Longitudinal Data                                          | 2009 |
| Population Health Research, Alberta Health Services                          | 2009 |
| University of Freiburg                                                       | 2009 |
| University at Buffalo                                                        | 2009 |
| Thomas Jefferson Medical School                                              | 2009 |
| University of Rochester, Odoroff Lecture                                     | 2010 |
| Probability and Statistics Day, University of Maryland at Baltimore County   | 2010 |
| Michigan State University                                                    | 2010 |
| ENAR                                                                         | 2010 |
| Joint Statistical Meetings                                                   | 2010 |
| Israeli Statistical Association                                              | 2010 |
| International Chinese Statistical Association Workshop on Applied Statistics | 2010 |
| University of Melbourne                                                      | 2010 |
| SAMSI Workshop on Functional Data Analysis                                   | 2010 |
| Yale University                                                              | 2010 |
| ENAR, Miami                                                                  | 2011 |
| University of Michigan Statistics                                            | 2011 |
| University of Michigan Biostatistics                                         | 2011 |
| Harvard University Biostatistics                                             | 2011 |
| Joint Statistical Meetings                                                   | 2011 |
| University of Galway                                                         | 2011 |
| Portland State University                                                    | 2011 |
| King Abdullah University of Science and Technology (KAUST)                   | 2011 |
| University of Mannheim                                                       | 2011 |
| University of Kiev                                                           | 2011 |
| Institute for Radiation Protection, Kiev                                     | 2011 |
| Ross Prentice 65 <sup>th</sup> Birthday Conference, Seattle                  | 2011 |
| North Carolina State University                                              | 2011 |
| Wake Forest University, Gentry Lectures                                      | 2011 |
| National Cancer Institute Webinar Series on Measurement Error in Nutrition   | 2011 |
| Joint Statistical Meetings, IMS                                              | 2012 |
| Yale University                                                              | 2012 |



**INVITED PRESENTATIONS (Continued)**

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|------------------------------------------------------------------------------------------------|------|
| Second Joint Biostatistics Symposium 2012, Beijing, China                                      | 2012 |
| Institut de Statistique, Université Catholique de Louvain, Belgium                             | 2012 |
| Catholic University of Leuven, Belgium                                                         | 2012 |
| University of Pamplona, Spain                                                                  | 2012 |
| Spanish Statistical Meetings                                                                   | 2012 |
| University of Texas at Austin                                                                  | 2012 |
| Conference in Honor of Peter Hall, UC-Davis                                                    | 2012 |
| Centre de Recherches Mathématiques, Montreal                                                   | 2012 |
| University of Melbourne                                                                        | 2012 |
| NIH Biostatistics Symposium                                                                    | 2012 |
| Joint Statistical Meetings, Montreal                                                           | 2013 |
| University of Saskatchewan                                                                     | 2013 |
| University of Technology, Sydney                                                               | 2013 |
| University of New South Wales                                                                  | 2013 |
| Conference of the International Chinese Statistical Association, Hong Kong                     | 2013 |
| North-West University - University of Potchefstroom                                            | 2013 |
| University of Texas at Houston School of Public Health                                         | 2014 |
| University of Alabama at Birmingham School of Public Health                                    | 2014 |
| Institute of Mathematical Statistics and Australian Statistical Conference, Sydney             | 2014 |
| ENAR                                                                                           | 2014 |
| University of Wisconsin                                                                        | 2014 |
| Rice University                                                                                | 2014 |
| University of Saskatchewan                                                                     | 2014 |
| Florida State University                                                                       | 2014 |
| University of Saskatchewan                                                                     | 2015 |
| University of Waterloo (David Sprott Distinguished Speaker)                                    | 2015 |
| Northern Illinois University                                                                   | 2015 |
| King Abdullah University of Science and Technology (KAUST)                                     | 2016 |
| University of Florida                                                                          | 2016 |
| Swiss Doctoral School of Statistics                                                            | 2016 |
| University of Manitoba Canadian Health Student Research Forum                                  | 2016 |
| Joint Statistical Meetings                                                                     | 2016 |
| University of Chicago                                                                          | 2016 |
| University of Michigan                                                                         | 2016 |
| Banff Conference on Measurement Error and Latent Variable Problems                             | 2016 |
| Palmetto Lectures, University of South Carolina                                                | 2017 |
| Fields Institute Statistical Science Lecture (General)                                         | 2017 |
| Fields Institute Statistical Science Lecture (Technical)                                       | 2017 |
| Institute of Statistics, Biostatistics and Actuarial Science, Université Catholique de Louvain | 2017 |
| Tom Bratcher Memorial Lecture, Baylor University                                               | 2018 |
| University of Chicago, Data Science Conference                                                 | 2018 |
| Joint Statistical Meetings, Vancouver                                                          | 2018 |
| The 5 <sup>th</sup> Institute of Mathematical Statistics Asia Pacific Rim Meeting, Singapore   | 2018 |
| Inaugural Peter Hall Memorial Lecture, University of Melbourne                                 | 2018 |
| Methodology in Measurement Error Conference, National Cancer Institute                         | 2018 |
| Sam Houston State University                                                                   | 2019 |
| Virginia Tech University Distinguished Lecture                                                 | 2019 |