

## CURRICULUM VITAE

Name: **RAYMOND J. CARROLL**  
Address: Department of Statistics  
Texas A&M University  
College Station, TX 77843-3143  
(979) 845-3141 (Office); (979) 845-3144 (Fax)  
carroll@stat.tamu.edu  
<http://stat.tamu.edu/~carroll>

**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 (Summa cum laude)

### EXPERIENCE:

July 1987-on: Distinguished Professor of Statistics, Nutrition and Toxicology (Head of Statistics Department, 1987-90), Texas A&M University.  
July 1998-December 2000: Professor 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, West Germany.

### HONORS:

Bradley Lecturer, University of Georgia, 2006.  
Buehler-Martin Lecturer, University of Minnesota, 2005.  
Rustagi Lecturer, Ohio State University, 2005.  
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 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".

**HONORS: (continued)**

- Chair, NIH Study section on Biostatistics, 2002-2004.
- IMS Special Invited Paper, 2000.
- Myra Samuels Lecturer, Purdue University, 1999.
- Snedecor Award from COPSS for best paper in Biometry, 1997.
- JASA Applications Editor's Invited Paper, 1997, 2003.
- 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 President's 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.

**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 & Inference* (1992-98).
- co-editor, Oxford Statistical Science Series, 2000-present.
- co-Editor (with J. Copas, D. Hand & 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), Applications Section (1992-1995), *Annals of Statistics* (1983-1988), *Chemometrics & Intelligent Laboratory Systems* (1986-92), *Journal of Environmental Statistics* (1992-), *Statistica Sinica* (1993-) and *Statistics* (1987-).

**RESEARCH GRANTS AND SPECIAL CONSULTING PROJECTS**

- National Cancer Institute (CA-57030), support for basic research, 1992-present (P.I.).
- National Cancer Institute (CA-90301), support for training program in Biostatistics, Bioinformatics and the Biology of nutrition and Cancer, 2001-present (P.I.).
- National Institute of Environmental Health Sciences, P.I. for Biostatistics and Epidemiology Research Core, Center for Environmental and Rural Health, 1997-present.
- 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-present.
- 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, 1976-1991.
- Consultant, Los Alamos National Laboratory, 1993-2000.
- Consultant, Finnegan, Henderson Attorneys, Washington D.C., 1991-92.
- Consultant, Beckton-Dickenson Research Center, 1985-1988.
- 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.
- Consultant, Covington and Burling Attorneys, Washington, D.C., 1983-1987.
- Consultant, Agent Orange Research and Education Office, Veterans Administration, 1982.
- Consultant, Environmental Protection Agency 1982-1984.
- 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.

**BOOKS**

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

**PUBLICATIONS**

- [1] Johnson, N. L., Wegman, E. J. & 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. & 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. & 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. & 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. & 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. & 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. & Carroll, R. J. (1980). Trimmed least squares estimation in the linear model. *Journal of the American Statistical Association*, 77, 828-838.
- [20] Holt, R. N. & 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. & Ruppert, D. (1981). On robust tests for heteroscedasticity. *Annals of Statistics*, 9, 206-210.
- [23] Carroll, R. J. & 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. & 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. & Ruppert, D. (1982). Robust estimation in heteroscedastic linear models. *Annals of Statistics*, 10, 429-441.
- [28] Carroll, R. J. & 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. & 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. & 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. & 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. & 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. & 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. & 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. & Carroll, R. J. (1984). Monte-Carlo optimization by stochastic approximation, with application to harvesting of Atlantic menhaden. *Biometrics*, 40, 353-546.
- [41] Carroll, R. J. & 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. & Abbott, R. D. (1984). On errors-in-variables for binary regression models. *Biometrika*, 71, 19-26.
- [43] Abbott, R. D. & Carroll, R. J. (1984). Interpreting multiple logistic regression coefficients in prospective observational studies. *American Journal of Epidemiology*, 119, 830-836.
- [44] Carroll, R. J. & Ruppert, D. (1984). Discussions of Hinkley and Runger's paper "The Analysis of Transformed Data." *Journal of the American Statistical Association*, 79, 312-313.

- [45] Carroll, R. J. & 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 & A. C. Tamhane, eds., Marcel Dekker, New York.
- [46] Oberpriller, J. O., Ferrans, V. J. & 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. & Ruppert, D. (1985). Transformations: a robust analysis. *Technometrics*, 27, 1-12.
- [48] Reish, R. L., Deriso, R. B., Ruppert, D. & 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. & Carroll, R. J. (1985). Covariate measurement error in logistic regression. *Annals of Statistics*, 13, 1335-1351.
- [50] Carroll, R. J. & 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. & 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. & 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. & 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. & 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. & 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. & 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. & Ruppert, D. (1986). Some new methods for weighted regression when there are possible outliers. *Technometrics* 28, 219-230.
- [59] Carroll, R. J. & 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. & 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. & 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. & Ruppert, D. (1987). M-estimation for discrete data: Asymptotic distribution theory and implications. *Annals of Statistics*, 15, 657-669.
- [63] Carroll, R. J. & 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. & Spiegelman, C. H. (1987). Error modeling and confidence interval estimation for inductively coupled plasma calibration curves. *Analytical Chemistry* 59, 1639-1643.

- [65] Davidian, M. & Carroll, R. J. (1987). Variance function estimation. *Journal of the American Statistical Association*, 82, 1079-1092.
- [66] Stefanski, L. A. & 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. & 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. & 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. & 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. & Spiegelman, C. H. (1988). A new, easy to use multiple calibration curve procedure. *Technometrics*, 30, 137-142.
- [72] Street, J. O., Ruppert, D. & 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. & Smith, W. (1988). Variance functions and the minimum detectable concentration in assays. *Biometrika*, 75, 549-556.
- [74] Carroll, R. J., Wu, C. F. J. & Ruppert, D. (1988). The effect of estimating weights in linear regression. *Journal of the American Statistical Association*, 83, 1045-1054.
- [75] Carroll, R. J. & Ruppert, D. (1988). Discussion of Box's paper. *Technometrics*, 30, 30-31.
- [76] Carroll, R. J. & Härdle, W. (1988). Symmetrized nearest neighbor estimates. *Letters in Statistics and Probability*, 7, 315-318.
- [77] Carroll, R. J. & 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. & Lipman, D. J. (1989). Weights for data related by a tree. *Journal of Molecular Biology*, 207, 647-651.
- [79] Carroll, R. J. & Härdle, W. (1989). Second order effects in semiparametric weighted least squares regression. *Statistics*, 20, 179-186.
- [80] Hall, P. & 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. & 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. & Carroll, R. J. (1989). A transformation/weighting model for estimating Michaelis-Menten parameters. *Biometrics*, 45, 637-656.
- [84] Rowe, D. E., Carroll, R. J. & 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. & 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. & Welsh, A. H. (1989). A note on asymmetry and robustness in linear regression. *The American Statistician*, 42, 285-287.
  - [88] Carroll, R. J. & Hall, P. (1990). Nonparametric estimation of optimal performance criteria in quality engineering. *Annals of Statistics*, 18, 281-302.
  - [89] Stefanski, L. A. & 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. & Carroll, R. J. (1990). Deconvoluting kernel density estimators. *Statistics*, 21, 165-184.
  - [91] Härdle, W. & 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. & 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. & Carroll, R. J. (1990). Structural logistic regression measurement error models. *Proceedings of the Conference on Measurement Error Models*, P. J. Brown & W. A. Fuller, editors.
  - [94] Carroll, R. J. & Stefanski, L. A. (1990) Approximate quaslikelihood estimation in models with surrogate predictors. *Journal of the American Statistical Association*, 85, 652-663.
  - [95] Carroll, R. J. (1990). Review of *Nonlinear regression, 1functional relations and robust methods* by H. Bunke & O. Bunke, editors. *Biometrics*, 46, 877-878.
  - [96] Stefanski, L. A. & Carroll, R. J. (1991). Deconvolution based score tests in measurement error models. *Annals of Statistics*, 19, 249-259.
  - [97] Carroll, R. J. & Ruppert, D. (1991). Prediction intervals and quantile estimation in nonlinear regression with transformation and/or weighting. *Technometrics*, 33, 197-210.
  - [98] Carroll, R. J. & 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. & Carroll, R. J. (1991). Response to "Generalized linear models for enzyme-kinetic data". *Biometrics*, 47, 1610-1612.
  - [100] Freedman, L. S., Carroll, R. J. & Wax, Y. (1991). Estimating the relationship between dietary intake obtained from a food frequency questionnaire and true average intake. *American Journal of Epidemiology*, 134, 510-520.
  - [101] Hsing, T. & Carroll, R. J. (1992). Asymptotic properties of sliced inverse regression. *Annals of Statistics*, 20, 1040-1061.
  - [102] Carroll, R. J., van Rooij, A. & 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 & G. Tutz, editors. Springer-Verlag, New York.
  - [104] Simpson, D. G., Ruppert, D. & 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. & 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. & 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. & 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. & Lubin, J. H. (1993). Case-control studies with errors in predictors. *Journal of the American Statistical Association*, 88, 177-191.
- [109] Sepanski, J. H. & Carroll, R. J. (1993). Semiparametric quasilielihood and variance function estimation in measurement error models. *Journal of Econometrics*, 58, 226-253.
- [110] Carroll, R. J. & 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. & 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. & Ruppert, D. (1993). Robust linear regression in replicated measurement error models. *Statistics and Probability Letters*, 16, 169-175.
- [113] Wang, C. Y. & Carroll, R. J. (1993). On robust estimation in logistic case-control studies. *Biometrika*, 80, 237-241.
- [114] Wang, C. Y. & 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. & Ruppert, D. (1994). Fitting heteroscedastic regression models. *Journal of the American Statistical Association*, 89, 100-116.
- [117] Carroll, R. J., Hall, P. G. & 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. & Gail, M. H. (1994). The partial questionnaire design for case-control studies. *Statistics in Medicine*, 13, 623-634.
- [119] Carroll, R. J. & Stefanski, L. A. (1994). Meta-analysis, measurement error and corrections for attenuation. *Statistics in Medicine*, 13, 1265-1282.
- [120] Sepanski, J. H., Knickerbocker, R. & Carroll, R. J. (1994). A semiparametric correction for attenuation. *Journal of the American Statistical Association*, 89, 1366-1373.
- [121] Wang, C. Y. & 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. & 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. & Wang, S. (1995). Asymptotics for prospective analysis of stratified logistic case-control studies. *Journal of the American Statistical Association*, 90, 157-169.
- [124] Carroll, R. J. & 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., & 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. & 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. & Hee, G. (1995). Analysis of tomato root initiation using a mixture normal distribution. *Biometrics*, 51, 1461-1468.
- [128] Wang, N., Carroll, R. J. & Liang, K. Y. (1996). Quasilikelihood and variance functions in measurement error models with replicates. *Biometrics*, 52, 401-411.
- [129] Carroll, R. J., Lombard, F., Küchenhoff, H. & 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. & 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. & 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. & Pee, D. (1996). On design considerations and randomization-based inference for community intervention trials. *Statistics in Medicine*, 15, 1069-1092.
- [133] Carroll, R. J. & 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. & 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. & 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. & Carroll, R. J. (1997). Estimation in choice-based sampling with measurement error and bootstrap analysis. *Journal of Econometrics*, 77, 65-86.
- [139] Küchenhoff, H. & Carroll, R. J. (1997). Segmented regression with errors in predictors. *Statistics in Medicine*, 169-188.
- [140] Carroll, R. J., Fan, J., Gijbels, I. & Wand, M. P. (1997). Generalized Partially Linear Single-Index Models. *Journal of the American Statistical Association*, 92, 477-489.
- [141] Carroll, R. J. & 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. Panchapekesan. Birkholder, Berlin.
- [142] Eckert, R. S., Carroll, R. J. & Wang, N. (1997). Transformations to additivity in measurement error models. *Biometrics*, 53, 262-272.
- [143] Carroll, R. J., Pee, D., Freedman, L. S. & 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. & 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. *Encyclopaedia of Biostatistics*.
- [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. & 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. & 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. & 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. & 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 an aggregate data estimation. *Biometrika*, 84, 231-234.
- [152] Carroll, R. J., Ruppert, D. & Welsh, A. (1998). Local estimating equations. *Journal of the American Statistical Association*, 93, 214-227.
- [153] Carroll, R. J., Freedman, L. S., Kipnis, V. & 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. & Carroll, R. J. (1998). Generalized linear mixed measurement error models. *Journal of the American Statistical Association*, 93, 249-261.
- [155] Kauermann, G., Müller, M. & Carroll, R. J. (1998). The efficiency of bias-corrected estimators for non-parametric kernel estimation based on local estimating equations. *Letters in Probability and Statistics*, 37, 41-47.
- [156] Carroll, R. J. & 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. & 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. & 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. & 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. & 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. & 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. & 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. & 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. & 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. & Carroll, R. J. (1999). High-order asymptotics for retrospective sampling problems. *Biometrika*, 84, 881-897.
- [167] Carroll, R. J., Maca, J. D. & 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. & Firth, D. (1999). Multiplicative measurement error estimation: estimating equations. *Journal of the Royal Statistical Society, Series B*, 61, 547-562.
- [170] Lin, X. & Carroll, R. J. (1999). SIMEX variance component tests in generalized linear mixed measurement error models. *Biometrics*, 55, 613-619.
- [171] Liang, H., Härdle, W. & Carroll, R. J. (1999). Large sample theory 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. & Lupton, J. R. (1999). Relationship between DNA adduct levels, repair enzyme and apoptosis as a function of DNA methylation by Azoxy methane. *Cell Growth and Differentiation*, 10, 749-758.
- [173] Gail, M. H., Pee, D., Carroll, R. J. & 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. & 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. & Carroll, R. J. (2000). Nonparametric function estimation of the relationship between two repeatedly measured variables. *Statistica Sinica*, 10, 51-71.
- [177] Lin, X. & 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. & Benichou, J. (2000). Score tests for familial correlation in genotyped proband designs. *Genetic Epidemiology*, 18, 293-306.
- [179] Satten, G. A. & Carroll, R. J. (2000). Conditional and unconditional categorical regression models with missing covariates. *Biometrics*, 56, 384-400.
- [180] Mick, R., Crowley, J. J. & 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. & 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. & 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. & 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. & 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. & Carroll, R. J. (2001). Bootstrap confidence intervals for local likelihood, local estimating equations and varying coefficient models. *Statistica Sinica*, 11, 121-134.
- [186] X. Lin & R. J. Carroll (2001). Discussion of the paper by Lin and Ying. *Journal of the American Statistical Association*, 96, 114-116.
- [187] Gail, M. H., Pee, D. & 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. & 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. & 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. & 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. & 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. & 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. & 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. & 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. & 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., & 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. & Carroll, R. J. (2001). Thyroid cancer following scalp irradiation: a reanalysis accounting for uncertainty in dosimetry. *Biometrics*, 57, 689-697.
- [199] Kauermann, G. & Carroll, R. J. (2001). The Sandwich variance estimator: efficiency properties and coverage probability of confidence intervals. *Journal of the American Statistical Association*, 96, 1387-1396.
- [200] Welsh, A. H., Lin, X. & 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. & 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. & 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. & 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. & 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. & 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. & 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. & 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. & 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. & 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. & 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. & 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. & Carroll, R. J. (2002). Semiparametric inference in matched case-control studies with missing covariate data. *Biometrika*, 89, 905-916.
- [213] Liang, H., Wu, H. & 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. & Carroll, R. J. (2003). The structure of dietary measurement error: results of the OPEN biomarker study. *American Journal of Epidemiology*, 158, 14-21.
- [215] Linton, O. B., Mammen, E., Lin, X. & Carroll, R. J. (2003). Accounting for correlation in marginal longitudinal nonparametric regression. *Second Seattle Symposium on Biostatistics*, editor D. Lin.
- [216] Morris, J. S., Vannucci, M., Brown, P. J. & 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., Debrot, D. J., Molenberghs, G., Carroll, R. J., Potter, W. M. & 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. & 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. & Chapkin, R. S. (2003). Dietary fish oil reduces oxidating DNA damage in rat colonocytes. *Free Radical Biology & Medicine*, 35, 149-159.
- [223] Johnson, C. D., Tadesse, M., Carroll, R. J., Dougherty, E. R. & 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. & 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. & 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. & Mammen, E. (2004). More efficient kernel estimation in nonparametric regression with autocorrelated errors. *Journal of the American Statistical Association*, 98, 980-992.
- [228] Carroll, R. J. & 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. & Carroll, R. J. (2004). Equivalent kernels of smoothing splines in nonparametric regression for longitudinal/clustered data. *Biometrika*, 91, 177-194.
- [230] Freedman, L. S., Feinberg, V., Kipnis, V., Midthune, D. & 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. & 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. & 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. & Carroll, R. J. (2004). Profile-kernel versus backfitting in the partially linear model for longitudinal/clustered data. *Biometrika*, 91, 251-262.

- [235] Carroll, R. J., Hall, P., Apanaosovich, T. V. & 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. & Carroll, R. J. (2004). Noise factor analysis for cDNA microarrays. *Biomedical Optics*, to appear.
- [237] Mohlenberghs, G., Thijs, H., Kenward, M. G., Carroll, R. J., Mallinckrodt, C., Jansen, I. and Beunckens, C. (2004). Analyzing incomplete longitudinal clinical trial data. *Biostatistics*, to appear.
- [238] Liang, H., Wang, S., Robins, J. & 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. & Kipnis, V. (2004). Adjustments to improve the estimation of usual dietary intake distributions in the population. *Journal of Nutrition*, to appear.
- [240] Wang, N., Carroll, R. J. & Lin, X. (2004). Efficient semiparametric marginal estimation for longitudinal/clustered data. *Journal of the American Statistical Association*, to appear.
- [241] Carroll, R. J., Ruppert, D., Tosteson, T. D., Crainiceanu, C. & Karagas, M. R. (2004). Nonparametric regression and instrumental variables. *Journal of the American Statistical Association*, 99, 736-750.
- [242] 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.
- [243] Durban, M., Harezek, J., Wand, M. P. & Carroll, R. J. (2005). Simple fitting of subject-specific curves for longitudinal data. *Statistics in Medicine*, to appear.
- [244] Chatterjee, N. & Carroll, R. J. (2005). Semiparametric maximum likelihood estimation in case-control studies of gene-environment interactions. *Biometrika*, to appear.
- [245] Baladandayuthapani, V., Mallick, B. K. & Carroll, R. J. (2005). Spatially adaptive Bayesian regression splines. *Journal of Computational and Graphical Statistics*, to appear.
- [246] 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. & 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.
- [247] Sinha, S., Mukherjee, B., Ghosh, M., Mallick, B. K. & Carroll, R. J. (2005). Bani K. Mallick and Raymond J. Carroll Semiparametric Bayesian analysis of matched case-control studies with missing exposure. *Journal of the American Statistical Association*, to appear.
- [248] Fu, W., Dougherty, E. R., Mallick, B. K. & Carroll, R. J. (2004). How many samples are needed to build a classifier: a general sequential approach. *Bioinformatics*, to appear.
- [249] Sherman, M., Apanasovich, T. V. & Carroll, R. J. (2005). On estimation in binary autologistic spatial models. *Journal of Statistical Computation and Simulation*, to appear.
- [250] 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.
- [251] Chatterjee, N., Kalaylioglu, Z. & Carroll, R. J. (2005). A new paradigm of conditional-likelihoods for exploiting gene-environment independence in family based case-control studies. *Genetic Epidemiology*, to appear.

**SELECTED PENDING MANUSCRIPTS**

- [1] Xie, M., Simpson, D. G. & Carroll, R. J. (2003). Adapting for heterogeneity in generalized linear models.
- [2] Apanasovich, T. V., Ruppert, D. & Carroll, R. J. (2004). Semiparametric longitudinal-spatial binary regression, with application to colon carcinogenesis.
- [3] Holmes, C., Baladandayuthapani, V., Carroll, R. J. & Mallick, B. K. (2004). Modeling nonlinear gene interactions using Bayesian MARS.
- [4] Hong, M. Y., Turner, N., Chapkin, R., Carroll, R. J. & Lupton, J. R. (2005). Differential response to oxidative DNA damage may explain aspects of the cancer susceptibility between small and large intestine.
- [5] Pfeiffer, R. M., Carroll, R. J., Wheeler, B., Whitby, D. & Mbulaiteye, S. (2005). Combining assays for estimating prevalence of human herpesvirus 8 infection using multivariate mixture models.
- [6] Spinka, C., Carroll, R. J. & Chatterjee, N. (2004). Semiparametric maximum likelihood estimation in case-control studies of gene-environment interactions, with missing genetic information.
- [7] Freedman, L. S., Midthune, D., Carroll, R. J., Krebs-Smith, S., Subar, A. F., Troiano, R. P., Dodd, K., Schatzkin, A., Ferrari, P. & Kipnis, V. (2005). Towards improving the estimation of usual dietary intake distributions in the population.
- [8] Freedman, L. S., Midthune, D., Subar, A., Carroll, R. J., Schatzkin, A., Potischman, N. and Kipnis, V. (2005). A new method using biomarkers for the validation of dietary questionnaires.

**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. Senior Statistician, Genentech.
- [4] Leonard A. Stefanski (1983). Estimation for binary regression models. Professor, North Carolina State University.
- [5] Douglas Simpson (1985). Robust estimation for discrete data. Professor, University of Illinois.
- [6] Marie Davidian (December, 1986). Variance function estimation in regression. Professor, North Carolina State University (also past editor, *Biometrics*).
- [7] Ernestine Kettl (May, 1987). Applications of the transform-both-sides regression model. Shell Research Corporation.
- [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. Assistant 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, Neurocrine Pharmaceuticals.
- [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). Semiparametrics, dimension reduction and missing data. Director of Statistics, STATA Corporation.
- [15] S. Eckert (July, 1995). Deconvolution aspects of measurement error models. Senior Director, Pfizer Corporation.
- [16] J. Maca (July, 1997). Nonparametric regression and measurement error. Senior Statistician, Novartis.
- [17] C. Galindo (July, 1998). Nonparametric regression. Statistician, Netforce.com.
- [18] S. Iturria (July, 1998). Bayesian model averaging with application to cladistics analysis in genetics. Senior Statistician, Eli Lilly and Company.
- [19] J. Morris (July, 2000). Statistical models for colon cancer cell mechanisms. Assistant Professor, M. D. Anderson Cancer Research Center.
- [20] Hua Liang (March, 2001). Semiparametric statistical methods. Assistant Member, St. Jude's Children's Research Hospital.

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

- [21] Inyoung Kim (May, 2002). Effect modification in matched case-control studies. Assistant Professor, Yonsei University Medical School.
- [22] Chan Hee Jo (December, 2002). Bayesian semiparametric logistic regression. Assistant Professor, University of Arkansas Medical School.
- [23] Tanya Apanasovich (June, 2004). Longitudinal and spatial methods in the analysis of Aberrant Crypt Foci in colon carcinogenesis. Assistant Professor, Cornell 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 & Company.
- [25] Christine Spinka (June, 2004). Gene-environment interactions in genetic epidemiology. Assistant Professor, University of Missouri.
- [26] Veerabhadran Baladandayuthapani (June, 2005). Bayesian methods in Bioinformatics.
- [27] Iryna Lobach (June, 2006). Seemingly unrelated measurement error models with application to nutritional epidemiology and colon carcinogenesis.
- [28] Yehua Li (June, 2006). Functional Data Analysis in Biology.

**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 Davis
- [5] Qi Zheng, Texas A&M University, School of Rural Public Health
- [6] Mahlet Tadesse, University of Pennsylvania Medical School
- [7] Wenjiang Fu, current
- [8] Kimberley Drews, current

**INVITED PRESENTATIONS**

I have presented 270 invited lectures, which include the following:

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

## INVITED PRESENTATIONS (Continued)

Columbia University	1993
NISS Workshop on Combining Environmental Data	1993
University of Maryland	1993
University of Pittsburgh	1993
National Heart, Lung & 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
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
Brown University	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	1996
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
49th Clemson-Georgia Joint Colloquium	1997
IMA Conference on Environmental Statistics	1997
NCI Conference on Radon and Exposure Assessment	1997

## INVITED PRESENTATIONS (Continued)

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
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 & 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. Judes 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

**INVITED PRESENTATIONS (Continued)**

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
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
Australian National University	2005
Ohio State University (Rustagi Lecture)	2005
Columbia University	2005
University of Georgia (Bradley Lecture)	2006