CURRICULUM VITAE JIANWEN CAI

Business Address:

Department of Biostatistics, CB # 7420 The University of North Carolina at Chapel Hill Chapel Hill, NC 27599-7420 TEL: (919) 966-7788 FAX: (919) 966-3804 Email: cai@bios.unc.edu

Education:

1992 - Ph.D. (Biostatistics), University of Washington, Seattle, Washington. 1989 - M.S. (Biostatistics), University of Washington, Seattle, Washington. 1985 - B.S. (Mathematics), Shandong University, Jinan, P. R. China.

Positions:

Teaching Assistant:	Department of Biostatistics, University of Washington,	1988 - 1990.
Research Assistant:	Cardiovascular Health Study, University of Washington,	1988 - 1990.
	Fred Hutchinson Cancer Research Center,	1990 - 1992.
Research Associate:	Fred Hutchinson Cancer Research Center,	1992 - 1992.
Assistant Professor:	Department of Biostatistics,	
	University of North Carolina at Chapel Hill,	1992 - 1999.
Associate Professor:	Department of Biostatistics,	
	University of North Carolina at Chapel Hill,	1999 - 2004.
Professor:	Department of Biostatistics,	
	University of North Carolina at Chapel Hill,	2004 - present.
Interim Chair:	Department of Biostatistics,	
	University of North Carolina at Chapel Hill,	2006.
Associate Chair:	Department of Biostatistics,	
	University of North Carolina at Chapel Hill,	2006-present.

Professional Societies:

American Statistical Association (ASA) International Biometric Society (ENAR) Institute of Mathematical Statistics (IMS) International Chinese Statistical Association (ICSA)

Research Interests:

Survival Analysis and Regression Models, Design and Analysis of Clinical Trials, Analysis of Correlated Responses, Cancer Biology, Cardiovascular Disease Research, Obesity Research, Epidemiological Models.

Awards/Honors:

UNC School of Public Health McGavran Award for Excellence in Teaching, 2004. American Statistical Association Fellow, 2005 Institute of Mathematical Statistics Fellow, 2009

Professional Service:

Associate Editor:	Biometrics: 2000-2010. Lifetime Data Analysis: 2002 Statistics in Biosciences: 2009
Board Member:	ENAR Regional Advisory Board, 1996-1998. ENAR Regional Committee (RECOM), 2007-2009.
Treasurer/Secretary	ASA Biometrics Section, 2007-2008
Member:	ENAR Student Travel Award Committee, 2001, 2005-2008. ASA Committee on International Relations, 2007-2009.
General Methodology Chair:	2006 Joint Statistical Meetings Program Committee, JSM.
Organizer for:	Invited Session in 2004 Joint Statistical Meetings Invited Session in 2004 ICSA Applied Symposium Invited Session in 2005 ENAR meeting Invited Session in 2009 ICSA Applied Symposium
Referee for:	Annals of Statistics Biometrics Biometrika Biostatistics Communication in Statistics Computational Statistics and Data Analysis Controlled Clinical Trials Epidemiology

	International Journal of Epidemiology Journal of American Statistical Association Journal of Biopharmaceutical Statistics Journal of Multivariate Analysis Journal of Nonparametric Statistics Journal of Royal Statistical Society, Series B Journal of Statistical Computation and Simulation Journal of Statistical Planning and Inference Lifetime Data Analysis Nonlinearity in Biology, Toxicology and Medicine Psychological Methods Scandinavian Journal of Statistics Statistics in Biopharmaceutical Research Statistics in Medicine Statistical Sinica
Reviewer for:	National Science Foundation, 1998, 2002, 2004
Member:	 NIH Statistics Study Section, October 1998 NIH MBRS Review Panel, October 2002 NIH MBRS Review Panel, February 2004 NIH Epidemiology of Cancer (EPIC) Study Section, March and October 2006, October 2007, October 2008 Protocol Review Committee (PRC) for the NIH Heart Failure Network DSMB for the HT Cervix trial

Courses Taught:

Bios 107: "Matrix Theory in Biostatistics", Summer, 1993 and 1994.
Bios 180: "Introductory Survival Analysis", Fall, 1993-1995; Spring 1997-2004.
Bios 762 (262): "Advance Linear Models I", Fall, 2005-2008.
Bios 342: "Practice in Statistical Consulting", Fall, 1994; Spring and Fall, 1996; Fall 2000, 2002.
Bios 390: "Research in Biostatistics", Spring, 1994; Spring and Fall, 1997-2008.

Principal Investigator on Grants:

- 5 R01 HL-57444, NIH, Competing renewal for R01 HL-57444, 2007-2011, total cost \$865,637.
- 2 R01 HL-57444, NIH, Competing renewal for R29 HL-57444, 2002-2007, total cost \$429,728.
- 1 R01 HL-69720, NIH, Semi-parametric Methods for Multivariate Survival Data, 2001-2006, total cost \$1,164,000.

- 1 R29 HL-57444, NIH, Statistical Problems in Multivariate Survival Analysis, 1997-2001, total cost \$496,725.
- UNC Research Council Award, Statistical Methods for Analyzing Recurrent Events Data, 2000 2002, \$4,000.
- UNC Junior Faculty Development Award, Statistical Methods for Analyzing Censored Multivariate Survival Data, 1994, \$3,000.
- UNC Research Council Award, Estimating Equations for Correlated Failure Time Data, 1993 1995, \$1,500.

Co-Investigator/Statistician on Grants:

- 1 ULI RR025747-01, National Center for Research Resources, UNC Clinical Translation Science Award-Biostatistics Core (A. Pisano, P.I.), 2008-2013.
- Lance Armstrong Foundation, Quality of Life Among African-American Head and Neck Cancer Survivors (A. Olshan, P.I.), 2007-2010.
- 5 R21 CA125735-02, National Cancer Institute, Development of a tool to measure food availability in the home (J. Stevens, P.I.), 2006-2009.
- 5 R01 HD050981-03, National Institute of Child Health, Primary Care and Communities Tackling Obesity in Kids (A. Ammerman, P.I.), 2005-2010.
- 5 U48 DP000059-05, Centers for Disease Control, UNC Center for Health Promotion and Disease Prevention-Biostatistical Support Unit (A. Ammerman, P.I.), 2004-2009.
- 5 R01 DP000102-03, National Center for Chronic Disease Prevention and Health Promotion, Interventions to Control Obesity in Community Colleges, (L. Linnan, P.I.), 2004-2008.
- 5U48 DP0000059-05, National Center for Chronic Disease Prevention and Health Promotion, Increasing CRC Screening in Urban African American Communities via Churches, (M. Campbell, P.I.), 2006-2009.
- 1 R21 HL089422-01, NIH, Environmental Determinants of Sleep Disturbance: Role of Ambient Air Pollution (J.C. Chen, P.I.), 2007-2009.
- R03 AG022062-01, NIH, Obesity, diet and functional health in African-Americans (J. Stevens, P.I.), 2003-2005.
- PA-03-015, NIH, Weight Loss and CVD Risk Factors (J. Stevens, P.I.), 2004-2006.
- 3 P30 DK 056350-05S2, NIH/NIDDK, Obesity in Asians (J. Stevens, P.I.), 2004-2011.
- R03 AG022353-01, NIH, Obesity in early and middle adulthood and retirement (J. Stevens, P.I.), 2003-2006.

- R01 DE-13807, NIH, Endodontic Inflammation and Cardiovascular Outcomes (D. Caplan, P.I.), 2001-2003.
- SIP 9, CDC, Fitness, Fatness and Mortality (J. Stevens, P.I.), 2000-2003.
- American Heart Association, Fat Patterning and Intima-Media Thickness Change (J. Stevens, P.I.), 2000-2001.
- N01 HV-59224, NIH, International Component for the Collaborative Studies Coordinating Center (C.E. Davis, P.I.), 1996-2001.
- HL-07773, Statistical Aspects of CVD Clinical Trials (C.E. Davis, P.I.), 1995-2000.
- Electric Power Research Institute, Study on Electric Utility Workers (D. Savitz, P.I.), 1999.
- R01 DK-50776, NIH, The Impact of Age on Optimal Body Weight (J. Stevens, P.I.), 1995-1999.
- Laboratories Fournier, The Diabetes and Atherosclerosis Intervention Study (C.E. Davis, P.I.), 1993-1996.
- HC-55015, NIH, Atherosclerosis Risk in Communities (L.E. Chambless, P.I.), 1992-1996.

Student Advisory/Co-Advisory:

Doctoral:

• Sangwook Kang (Ph.D): "Statistical Methods for Case-Control and Case-Cohort Studies with Possibly Correlated Failure Time Data", Department of Biostatistics, 2004 – 2007.

First Job: tenure track Assistant Professor in the Department of Epidemiology and Biostatistics at the University of Georgia.

 Guosheng Yin (Ph.D): "Quantile Inference, Regression and Additive Hazards Models in Multivariate Survival Analysis", Department of Biostatistics, 2001 – 2003.
 2003 ENAR Student Travel Award winner.

2002 R.L. Anderson Student Travel Award winner.

First Job: tenure track Assistant Professor in the Department of Biostatistics at the MD Anderson Cancer Center, Houston, TX.

• Lan Kong (Ph.D): "Analysis of Failure Time Data from Case-Cohort Studies with Semiparametric Transformation Models", Department of Biostatistics, 2000 – 2003. (co-advisor with Dr. P.K. Sen)

First Job: tenure track Assistant Professor in the Department of Biostatistics at the University of Pittsburgh.

• Doug Schaubel (Ph.D): "Semiparametric Rate and Hazard Regression Methods for Sequentially Ordered Multivariate Failure Time Data", Department of Biostatistics, 2000 – 2002.

2003 School of Public Health's Bernard G. Greenberg Award winner
2003 Biostatistics Barry H. Margolin Award for Excellence in Doctoral Research winner
2002 ENAR Student Travel Award winner.
2002 ASA (Health Policy Statistical Section) Student Paper Competition winner.
First Job: tenure track Assistant Professor in the Department of Biostatistics at the

University of Michigan.

- Jane Monaco (DrPH): "Bootstrap Analysis of Multivariate Failure-Time Data", Department of Biostatistics, 2000 2003. (co-advisor with Dr. J. Grizzle)
 First Job: Clinical Assistant Professor in the Department of Biostatistics at the University of North Carolina at Chapel Hill.
- Rosalie C. Dominik (DrPH): "Statistical Methods for Emergency Contraception", Department of Biostatistics, 1997 2000. (co-advisor with Dr. H. Zhou).
 2001 School of Public Health's Bernard G. Greenberg Award winner;
 2001 Biostatistics Barry H. Margolin Award for Excellence in Doctoral Research winner

First Job: Director of Biostatistics at Family Health International, Research Triangle Park, NC.

- Dina M. Schreinemachers (DrPH): "Multistat Survival Analysis", Department of Biostatistics, 1996 – 1998. (co-advisor with Dr. C.E. Davis).
 First Job: Health Scientist at US EPA, Research Triangle Park, NC.
- Wendy F. Greene (Ph.D): "Measurement Error in Multivariate Survival Analysis", Department of Biostatistics, 1998 – 2000.
 2001 ENAR Student Travel Award winner. First Job: Senior Biostatistician at Rho, Inc, Chapel Hill, NC.
- Ming Zhong (Ph.D): "Correcting Measurement Error in Cox Proportional Hazard Model", Department of Biostatistics, 1994 2000. (co-advisor with Dr. P.K. Sen).
 1996 ENAR Student Travel Award winner.
 First Job: Senior Statistician at ALZA Corp, Mountain View, CA.
- Limin X. Clegg (Ph.D): "Marginal Approach to Multivariate Failure Time Data with Generalized Dependence Structure", Department of Biostatistics, 1995 1997. (co-advisor with Dr. P.K. Sen).

1998 Biostatistics Barry H. Margolin Award for Excellence in Doctoral Research winner 1998 ENAR Student Travel Award winner.

First job: Mathematical Statistician at National Cancer Institute of NIH.

- Leila Amorim (DrPH): "Estimating Time-Varying Treatment Effect for Recurrent Childhood Diseases", Department of Biostatistics, 2003 2006. (co-advisor with Dr. D. Zeng)
- Xiaoyan Wang (PhD): Department of Biostatistics, 2004 present. (co-advisor with Dr. H. Zhou)
- Shankar Viswanathan (DrPH): Department of Biostatistics, 2005 present.
- Jaeun Choi (Ph.D) Department of Biostatistics, 2006 present. (co-advisor with Dr. D. Zeng)
- Yuanshan Wu (Ph.D) Department of Statistics, Wuhan University, China, and Department of Biostatistics, University of North Carolina at Chapel Hill, (co-advisor with Dr. Yanyan Liu from Wuhan University), 2008 – present.

Master:

- Xiaojun Wang (MS): "Mortality for Construction Workers in North Carolina", Department of Biostatistics, 1997.
- Hongyan Zhang (MS): "Comparison of Statistical Methods for Analyzing Stratified Case-Cohort Data with Binary Response through Simulation Studies", Department of Biostatistics, 1997.
- Dominic Moore (MPH): "Comparison of Statistical Methods for Analyzing Survival Data with Missing Covariate", Department of Biostatistics, 1997 – 1998.
- Michelle Pritchard (MS): "Small Sample Properties for the Kaplan-Meier Estimator for Correlated Failure Time Data", Department of Biostatistics, 1998 1999.
- Brian Neelon (MS): "A Bootstrap Variance Estimator for Marginal Failure Time Models", Department of Biostatistics, 1998 – 1999.
- Xiang Qin (MS): "Rate Ratio Estimation Using Parametric Proportional Hazards Model in Case-Cohort Design", Department of Biostatistics, 1998 1999.
- Hong Liu (MS): "Small Sample Properties for Logrank Test for Correlated Failure Time Data", Department of Biostatistics, 1999 2000.
- Yan Fang (MS): "Does Excluding the First Few Years of Death Eliminate the U-shaped Relationship Between BMI and Mortality?", Department of Biostatistics, 1999 2000.
- Yawei Zhang (MS): "Comparison of Proportional Hazards and Poisson Models Using Simulated Data", Department of Biostatistics, 2001.

- Hongjian Li (MS): "General Linear Mixed Model for Correlated Failure Time Data", Department of Biostatistics, 2002.
- Hyunsook Chin (MS): "Analysis of Recurrent Relapses for Patients with ANCA-associated Vasculitis", Department of Biostatistics, 2004.
- Junyuan Xiong (MS): "Comparison of Estimates for Probability, Relative Risk, and Risk Difference Based on Logistic, Poisson, Log-binomial and Binomial Models", Department of Biostatistics, 2005 - 2006.
- Zhaowei Hua (MS): "Comparison of Cure Rate Models", Department of Biostatistics, 2006 2007.
- Che-Chin Lie (MS): "Differentiating Tumor Malignancy using Vessel Attributes: a Case Study with Brain Image Data", Department of Biostatistics, 2008. (co-advisor with Dr. D. Zeng)
- Naomi Brownstein (MS), Department of Biostatistics, 2009-present.

Dissertation Committees:

BIOS Doctoral:

- Ralph A. DeMasi (Ph.D): "Analogues of Proportional Hazards Models for Multivariate Failure Time Data with Generalized Competing Risks", Department of Biostatistics, 1993 – 1994.
- Sergio R. Munoz (Ph.D): "Group Sequential Methods for Clustered Survival Data in Clinical Trials: a Proposed Analytic Method", Department of Biostatistics, 1993 – 1994.
- Chin-Hua Wang (Ph.D): "Time Dependent Covariates for Survival Analysis", Department of Biostatistics, 1994 1995.
- Hany Zayed (Ph.D): "Robustness of Rank Correlations", Department of Biostatistics, 1994 – 1996.
- Hsiao-Chuan Tien (Ph.D): "Association Patterns in Bivariate Survival Models with Interval Censoring", Department of Biostatistics, 1997 1998.
- Karen L. Kesler (Ph.D): "Robust Methods for Multivariate Failure Time Models in the Presence of Nonproportional Hazards and Informative Cluster Size", Department of Biostatistics, 1998 – 2000.
- James Edward MacDougall (Ph.D): "Nonparametric Rank-based Analysis of Longitudinal Data", Department of Biostatistics, 1999.

- Michael Pennell (Ph.D): "Improved methods for Bayesian multiple event time analysis", Department of Biostatistics, 2003 2006.
- Yueh-Yun Chi (Ph.D): "Methods for Jointly Modeling Longitudinal and Survival Outcomes", Department of Biostatistics, 2004 – 2005.
- Qingxia Chen (Ph.D): "Theory and Inference for Parametric and Semiparametric Methods in Missing Data Problems", Department of Biostatistics, 2004 2005.
- Eunhee Kim (Ph.D). Department of Biostatistics, 2006 present.
- Yimei Li (Ph.D). Department of Biostatistics, 2008 present.
- Bingqing Zhou (Ph.D). Department of Biostatistics, 2008 present.
- Kathy Lipshutz (DrPH): "Evaluating Methods Analyzing Data with Multiple Events in Clinical Trials", Department of Biostatistics, 1993 1994.
- Hsing-Yi Chang (DrPH): "Detecting Overdispersion with Censored Data", Department of Biostatistics, 1994 1996.
- Steve Wisseh (DrPH): "Statistical Inference from Recurrent Event Data with Completeor-Truncated History", Department of Biostatistics, 1998 – 2000.
- Cicely Mitchel (DrPH). Department of Biostatistics, 2009 present.

BIOS Master:

- Judith Bebchuk (MS): "The Effect of Income on Post-CABG Mortality in the United States and Manitoba", Department of Biostatistics, 1994.
- Kathryn L. Andersen (MS): "Application of Ordinal Logistic Regression to Assess the Relationship Between Physical Abuse and Patterns of Substance Use Before and During Pregnancy", Department of Biostatistics, 1995.
- Hsi-wen Liao (MS): "A Simulation Study of Estimators in Stratified Proportional Hazards Models", Department of Biostatistics, 1997.
- Xiaoping Yang (MS): "Comparison of Different Methods for Generating Correlated Binary Variates", Department of Biostatistics, 2000.

Non-BIOS:

- Kelly R. Evenson (Ph.D), Department of Epidemiology, 1997 1999.
- Youfa Wang (Ph.D), Department of Nutrition, 1998 2001.
- Shuanglin You (Ph.D), Department of Health Policy and Administration, 1998 2002.

- Stacy Geisler (Ph.D), Department of Epidemiology, 1999 2001.
- Susan Hogan (Ph.D), Department of Epidemiology, 1999 2001.
- Denise Houston (Ph.D), Department of Nutrition, 2001 2004.
- Tao Huang (Ph.D), Department of Statistics, 2002 2004.
- Sherry Farr (Ph.D), Department of Epidemiology, 2003 2004.
- Yan Zhong (Ph.D), Department of Epidemiology, 2004 2006.
- Katrina F. Trivers (Ph.D), Department of Epidemiology, 2004 2006.
- Eva Katz (Ph.D), Department of Nutrition, 2007 present.
- May May Leung (Ph.D), Department of Nutrition, 2008 present.
- Alison Gastafsun (Ph.D), Department of Nutrition, 2008 present.
- Lisa Lowenstein (Ph.D), Department of Nutrition, 2008 present.
- Rongling Li (MS), Department of Epidemiology, 1994.

PEER REVIEWED PUBLICATIONS:

- 1. Prentice, R.L. and **Cai**, **J**.(1992): "Covariance and survivor function estimation using censored multivariate failure time data", *Biometrika*, 79,3, pp. 495-512.
- Pepe, M. and Cai, J.(1993): "Some graphical displays and marginal regression analysis for recurrent failure times and time dependent covariates", *Journal of the American Statistical Association*, 88,423,pp. 811-820.
- 3. Cai, J. and Prentice, R.L.(1995): "Estimating equations for hazard ratio parameters based on correlated failure time data", *Biometrika*, 82,1, pp. 151-164.
- Robinson, J.G., Folsom, A.R., Nabulsi, A.A., Watson, R., Brancati, F.L. and Cai, J. (1996): "Can postmenopausal hormone replacement improve plasma lipids in women with diabetes?", *Diabetes Care*, 19, 5, pp. 480-485.
- Liao, D., Cai, J., Brancati, F.L., Crow R., Barnes, R.W., Tyroler, H.A. and Heiss, G. (1995): "Association of vagal tone with serum insulin, glucose and diabetes mellitus the ARIC study", *Diabetes Research and Clinical Practice*, 30, pp. 211-221.
- Li, R., Cai, J., Tegeler, C., Sorlie, P., Metcalf, P.A., Heiss, G. (1996): "Reproducibility of extracranial carotid atherosclerotic lesions assessed by B-mode ultrasound: the atherosclerosis risk in communities study", Ultrasound in Medicine and Biology, 22, 7, pp. 791-799.

- Liao, D., Cai, J., Barnes, R.W., Tyroler, H.A., Rautaharju, P., Holme, I., Heiss, G. (1996): "Association of cardiac autonomic function and the development of hypertension the ARIC study", American Journal of Hypertension, 9, pp. 1147-1156.
- Liao, D., Cooper, L., Cai, J., Toole, J.F., Bryan, N.R., Hutchinson, R.G. and Tyroler, H.A. (1996): "Presence and severity of cerebral white matter lesions and hypertension, its treatment and its control - the ARIC study", Stroke, 27, pp. 2262-2270.
- Cai, J., Zhou, H., and Davis, C.E. (1997): "Estimating the mean hazard ratio parameter for multivariate survival data with random clusters", *Statistics in Medicine*, 16, pp. 2009-2020.
- Qaqish, B., Zhou, H., and Cai, J (1997): "On the case-control sampling of clustered data", Biometrika, 84, pp. 983-986.
- Liao, D., Cai, J., Rosamond, W. D., Barnes, R. W., Hutchinson, R. G., Whitsel, E. A., Rautaharju, P., Heiss, G. (1997): "Cardiac autonomic function and incident coronary heart disease: a population based case-cohort study - the ARIC study", American Journal of Epidemiology, 145, 8, pp. 696-706.
- Liao, D., Cooper, L., Cai, J., Toole, J.F., Bryan, N.R., Burke, G., Shahar, E., Nieto, J., Mosley, T., Heiss, G. (1997): "The Prevalence and severity of white matter lesions, their relationship with age, ethnicity, gender, and cardiovascular disease risk factors: the ARIC study", Neuroepidemiology, 16, pp. 149-162.
- Cai, J. and Prentice, R.L. (1997): "Regression estimation using multivariate failure time data and a common baseline hazard function model", *Lifetime Data Analysis*, 3, pp. 197-213.
- Stevens, J., Tyroler, H.A., Cai, J., Paton, C.C., Folsom, A.R., Tell, G.S., Schreiner, P.J., and Chambless, L.E. (1998): "Body weight change and carotid artery wall thickness", American Journal of Epidemiology, 147, pp. 563-573.
- Stevens, J., Cai, J., Pamuk, E.R., Williamson, D.F., Thun, M.J., Wood, J.L. (1998): "The Effect of age on the association between body-mass index and mortality", New England Journal of Medicine, 338, pp. 1-7.
- Howard, G., Wagenknecht, L.E., Cai, J., Cooper, L., Kraut, M.A. and Toole, J.F. (1998): "Cigarette smoking and other risk factors for silent cerebral infarctions in the general population", Stroke, 29, pp. 913-917.
- Liao, D., Sloan, R.P., Cascio, W.E., Folsom, A., Liese, A.D., Evans, G.W., Cai, J., and Sharrett, A.R. (1998): "Multiple metabolic syndrome is associated with lower heart rate variability — the ARIC study", *Diabetes Care*, 21, pp. 2116-2122.
- 18. Cai, J., Sen, P. K. and Zhou, H. (1999): "A random effects model for multivariate failure time data from multicenter clinical trials", *Biometrics*, 55, pp. 182-189.

- 19. Cai, J. (1999): "Some asymptotic results for hypothesis testing in multivariate failure time data", Journal of Statistical Inference and Planning, 75, pp. 211-221.
- Cai, J. (1999): "Hypothesis testing of hazard ratio parameters in marginal models for multivariate failure time data", *Lifetime Data Analysis*, 5, pp. 39-53.
- Leserman, J., Jackson, E.D., Petitto, J.M., Golden, R.N., Silva, S.G., Perkins, D.O., Cai, J., Folds, J.D., and Evans, D.L. (1999): "Progression to AIDS: the effect of stress, depressive symptoms, and social support", *Psychosomatic Medicine*, 61, pp. 397-406.
- Evenson, K.R., Rosamond, W.D., Cai, J., Toole, J.F., Hutchinson, R.G., Shahar, E. and Folsom, A.R. (1999): "Physical activity and ischemic stroke risk: the atheroscle-rosis risk in communities study", *Stroke*, 30, pp. 1333-1339.
- Stevens, J, Cai, J., Juhaeri, Thun, M, Williamson, D, and Wood, J (1999): "Consequences of the use of different measures of effect to determine the impact of age on the association between BMI and mortality", American Journal of Epidemiology, 150, pp. 399-407.
- 24. * Clegg, L.X., Cai, J. and Sen, P.K. (1999): "A marginal mixed baseline hazards model for multivariate failure time data", *Biometrics*, 55, pp. 805-812.
- Bryan, R.N., Cai, J., Burke, G., Hutchinson, R.G., Liao, D., Toole, J.F., Dagher, A., and Cooper, L. (1999): "Prevalence and anatomic characteristics of infarct-like lesions on MR images of middle-aged adults: the atherosclerosis risk in communities study", *American Journal of Neuroradiology*, 20, pp. 1273-1280.
- van Wijngaarden, E., Savitz, D. A., Kleckner, R.C., Mihlan, G., Nylander-French, L.A., Dufort, V., Cai, J., Loomis, D. and Kromhout, H. (1999): "Refinements in magnetic field exposure assignment for a case-cohort study of electrical utility workers", *The Annals of Occupational Hygiene*, 43, pp. 485-492.
- Hubbard, L.D., Brothers, R.J., King, W.N., Clegg, L.X., Klein, R, Cooper, L.S., Sharrett, A.R., Davis, M.D. and Cai, J. (1999): Methods for evaluation of retinal microvascular abnormalities associated with hypertension/sclerosis in the atherosclerosis risk in communities study", Ophthalmology, 106, pp. 2269-2280.
- 28. * Clegg, L.X., Cai, J., Sen, P.K. and Kupper, L.L. (2000): "Misspecification of marginal hazard models in multivariate failure time data", Sankhya, B, 62, pp. 25-42.
- van Wijngaarden, E., Savitz, D. A., Loomis, D. and Cai, J. (2000): "Exposure to electromagnetic fields and suicide among electric utility workers: a nested case-control study", Occupational and Environmental Medicine, 57, pp. 258-263.
- Stevens, J., Cai, J., Juhaeri, Thun, M., Williamson, D., and Wood, J. (2000): "An evaluation of the WHO and the NHANES II standards for overweight using mortality", *Journal of the American Diabetic Association*, 100, pp. 825-827.

- 31. Savitz, D.A., Cai, J., van Wijngaarden, E., Loomis, D., Mihlan, G., Dufort, V., Kleckner, R.C., Nylander-French, L.A., Kromhout, H. and Zhou, H (2000): "Case-cohort analysis of brain cancer and leukemia in electric utility workers using a refined magnetic field job-exposure matrix", American Journal of Industrial Medicine, 38, pp. 417-25.
- 32. van Wijngaarden, E., Savitz, D. A., Loomis, D. and Cai, J. (2000): "Exposure to electromagnetic fields and suicide among electric utility workers: a nested case-control study", Western Journal Medicine, 173, pp. 94-100.
- 33. Stevens, J., Juhaeri, Cai, J., Thun, M. (2000): "The impact of smoking and preexisting illness on the relationship between body-mass index and mortality", Nutrition Research, 20 (9), pp. 1259-1277.
- Cai, J. and Shen, Y. (2000): "Permutation tests for comparing marginal survival functions with clustered failure time data", *Statistics in Medicine*, 19, pp. 2963-2973.
- 35. Stevens, J., Juhaeri, and Cai, J. (2001): "Changes in body mass index prior to baseline among participants who are ill or who die during the early years of follow-up", American Journal of Epidemiology, 153, pp. 946-953.
- 36. Shen, Y. and Cai, J. (2001): "Maximum of the weighted Kaplan-Meier tests with application to cancer prevention and screening trials", *Biometrics*, 57, pp. 837-843.
- 37. * Dominik, R., Zhou, H., and **Cai**, J. (2001): "A statistical model for the evaluation of barrier contraceptive efficacy", *Statistics in Medicine*, 20, pp. 3279-3294.
- Cai, J., Qaqish, B. and Zhou, H (2001): "Marginal analysis for cluster-based casecontrol studies", Sankhya, B, 63(3), pp. 326-337.
- 39. Stevens, J., Juhaeri, Cai, J., and Jones, D.W. (2002): "The effect of decision rules on the choice of a body mass index cutoff for obesity: examples from African American women", American Journal of Clinical Nutrition, 75, pp. 986-992.
- Evenson, K.R., Rosamond, W.D., Cai, J., Diez-Roux, A.V., and Brancati, F.L. (2002): "Influence of retirement on leisure-time physical activity: the atherosclerosis risk in communities study", American Journal of Epidemiology, 155(8), pp. 692-699.
- 41. Zhou, H., Chen, J., and **Cai**, J. (2002): "Random effect logistic regression analysis with auxiliary covariates", *Biometrics*, 58, pp. 352-360.
- 42. Stevens, J., Cai, J., Evenson, K.R., and Thomas, R. (2002): "Fitness and fatness as predictors of mortality from all causes and from cardiovascular disease in men and women in the lipids research clinics study", American Journal of Epidemiology, 156, pp. 832-841.

- 43. Geisler, S.A., Olshan, A.F., Weissler, M.C., Cai, J., Funkhouser, W.K., Smith, J., and Vick, K. (2002): "p16 and p53 protein expression as prognostic indicators of survival and disease recurrence from head and neck cancer", *Clinical Cancer Research*, 8, pp. 3445-3453.
- 44. Stevens, J., Juhaeri, Cai, J., and Evans, G.W. (2002): "Impact of body mass index on changes in common carotid artery wall thickness", Obesity Research, 10, pp. 1000-1007.
- 45. Evenson, K.R., Stevens, J., Cai, J., Thomas, R., and Thomas, O. (2003): "The effect of cardiorespiratory fitness and obesity on cancer mortality in women and men", Medicine and Science in Sports and Exercise, 35(2), pp. 270-277.
- 46. Juhaeri, Stevens, J., Chambless, L.E., Nieto, F. J., Jones, D., Schreiner, P., Arnett, D., and Cai, J. (2003): "Associations of weight loss and changes in fat distribution with the remission of hypertension in a bi-ethnic cohort: the atherosclerosis risk in communities study", Preventive Medicine, 36, pp. 330-339.
- Evenson, K.R., Rosamond, W.D., Cai, J., Pereira, M. A., and Ainsworth, B.E. (2003): "Occupational physical activity in the atherosclerosis risk in communities study", Annals of Epidemiology, 13, pp. 351-357.
- 48. Shen, Y. and Cai, J. (2003): "Sample size re-estimation for clinical trials with censored survival data", Journal of the American Statistical Association, 98, 462, pp. 418-426.
- 49. * Yin, G., **Cai**, J., and Kim, J. (2003): "Quantile inferences with multivariate failure time data", *Biometrical Journal*, 45, 5, pp. 602-617.
- 50. Kim, J. and Cai, J. (2003): "Independence test for bivariate censored data under univariate censorship", Journal of the Korean Statistical Society, 32, 2, pp. 163-174.
- 51. Cai, J. and Kim, J. (2003): "Nonparametric quantile estimation with correlated failure time data", Lifetime Data Analysis, 9, pp. 357-371.
- Chen, J., Cai, J., and Zhou, H. (2004): "Two-step estimation for a generalized linear mixed model with auxiliary covariates", *Statistica Sinica*, 14, pp. 361-374.
- 53. Cai, J. and Schaubel, D.E. (2004): "Marginal means/rates models for multiple type recurrent event data", *Lifetime Data Analysis*, 10, pp. 121-138.
- 54. * Schaubel, D.E. and Cai, J. (2004): "Regression methods for gap time hazard functions for sequentially ordered multivariate failure time data", *Biometrika*, 91, pp. 291-303.
- 55. * Kong, L., **Cai**, J., and Sen, P.K. (2004): "Weighted estimating equations for semiparametric transformation models with censored data from a case-cohort design", *Biometrika*, 91, pp. 305-319.

- 56. * Schaubel, D.E. and Cai, J. (2004): "Non-parametric estimation of gap time survival functions for ordered multivariate failure time data", *Statistics in Medicine*, 23, pp. 1885-1900.
- 57. Cai, J., Tyroler, H.A., Pajak, A., Li, Y., Shestov, A., Davis, C.E., Rywik, S., Li, Y. and Deev, A. (2004): "Total cholesterol and mortality in China, Poland, Russia and the US", Annals of Epidemiology, 14, pp. 399-408.
- Evenson, K.R., Stevens, J., Thomas, R., and Cai, J. (2004): "Effect of cardiorespiratory fitness on mortality among hypertensive and normotensive women and men", *Epidemiology*, 15, pp. 565-572.
- 59. * Greene, W.F. and **Cai**, **J**. (2004): "Measurement error in covariates in the marginal hazards model for multivariate failure time data", *Biometrics*, 60, pp. 987-996.
- Cai, J. and Zeng, D. (2004): "Sample size/power calculation for case-cohort studies", Biometrics, 60, pp. 1015-1024.
- * Yin, G. and Cai, J. (2004): "Additive hazards model with multivariate failure time data", *Biometrika*, 91, pp. 801-818.
- Farr, S., Savitz, D., Cooper, B., and Cai, J. (2004): "Pesticide use and menstrual cycle characteristics among premenopausal women in the Agricultural Health Study", *American Journal of Epidemiology*, 160, pp. 1194-1204.
- 63. Houston, D.K., Stevens, J., Cai, J., and Haines, P.S. (2005): "Dairy, fruit, and vegetable intakes and functional limitations and disability in a biracial cohort: the Atherosclerosis Risk in Communities Study", American Journal of Clinical Nutrition, 81, 515-22.
- 64. * Yin, G. and Cai, J. (2005): "Quantile regression models with multivariate failure time data", *Biometrics*, 61, 151-161.
- Caplan, D., Cai, J., Yin, G., and White, B.A. (2005): "Root canal filled versus non-root canal filled teeth: a retrospective comparison of survival times", *Journal of Public Health Dentistry*, 65, 90-6.
- 66. Zeng, D. and Cai, J. (2005): "Simultaneous modeling of survival and longitudinal data with an application to repeated quality of life measures", *Lifetime Data Analysis*, 11, 151-74.
- 67. Truesdale, K.P., Stevens, J., and **Cai**, **J**. (2005): "The effect of weight history on glucose and lipids: the Atherosclerosis Risk in Communities study", *American Journal of Epidemiology*, 161, 1133-43.
- 68. Cai, J., Fan, J., Li, R., and Zhou, H. (2005): "Variable selection for multivariate failure time data", *Biometrika*, 92, 303-316.

- Geisler, S.A., Olshan, A.F., Cai, J., Weissler, M., Smith, J., and Bell, D. (2005): "Glutathione s-transferase polymorphisms and survival from head and neck caner", *Head & Neck*, 27, 232-242.
- 70. * Schaubel, D.E. and **Cai**, **J**. (2005): "Semiparametric methods for clustered recurrent event data", *Lifetime Data Analysis*, 11, 405-425.
- Hogan, S.L., Falk, R.J., Chin, H., Cai, J., Jennette, C.E., Jennette, J.C., and Nachman, P.H. (2005): "Predictors of Relapse and Treatment Resistance in ANCA Small Vessel Vasculitis", Annals of Internal Medicine, 143, 621-631.
- 72. * Monaco, J.H., **Cai**, **J.**, and Grizzle, J. (2005): "Bootstrap analysis of multivariate failure time data", *Statistics in Medicine*, 24, 3387-3400.
- 73. Houston, D., Stevens, J., and Cai, J. (2005): "Abdominal fat distribution and functional limitations and disability in a biracial cohort: the ARIC Study", International Journal of Obesity, 29, 1457-1463.
- Zeng, D. and Cai, J. (2005): "Asymptotic results for maximum likelihood estimators in joint analysis of repeated measurements and survival time", Annals of Statistics, 33, 2132-2163.
- 75. * Schaubel, D.E. and **Cai**, **J**. (2005): "Analysis of clustered recurrent event data with application to hospitalization rates among renal failure patients", *Biostatistics*, 6, 404-419.
- Houston, D.K., Stevens, J., Cai, J., and Morey, M.C. (2005): "Role of weight history and functional limitations and disability in late adulthood: the ARIC study", Obesity Research, 13:1793-1802.
- * Farr, S.L., Cai, J., Savitz, D.A., Sandler, D.P., Hoppin, J.A., Cooper, G.S. (2006):
 "Pesticide exposure and timing of menopause: an analysis of the Agricultural Health Study", American Journal of Epidemiology, 163, 731-742.
- Stevens, J, Truesdale, K.P., McClain, J.E., and Cai, J. (2006): "The definition of weight maintenance", International Journal of Obesity, 30, 391-399.
- Zeng, D., Cai, J., and Shen, Y. (2006): "Semiparametric additive risks model for interval-censored data", *Statistica Sinica*, 16, 287-302.
- * Kong, L., Cai, J., and Sen, P.K. (2006): "Asymptotic results for fitting semiparametric transformation models to failure time data from case-cohort studies", *Statistica Sinica*, 16, 135-151.
- * Schaubel, D.E. and Cai, J. (2006): "Rate/mean regression for multiple-sequence recurrent events data with missing event category", *Scandinavian Journal of Statistics*, 33, 191-207.

- 82. Truesdale, K.P., Stevens, J., Lewis, C.E., Schreiner, P.J., Loria, C.M., and Cai, J. (2006): "Changes in risk factors for cardiovascular disease by baseline weight status in young adults who maintain or gain weight over 15-years: the CARDIA study", *International Journal of Obesity*, 30(9):1397-1407.
- 83. * Schaubel, D.E. and Cai, J. (2006): "Multiple imputation methods for recurrent event data with missing event category", *Canadian Journal of Statistics*, 34: 677-692.
- Caplan, D.J., Chasen, J.B., Krall, E.A., Cai, J., Kang, S., Garcia, R.I., Offenbacher, S. and Beck, J.D. (2006): "Lesions of endodontic origin and risk of coronary heart disease", Journal of Dentistal Research, 85: 996-1000.
- 85. Schaubel, D.E., Zeng, D., and **Cai**, J. (2006): "A semiparametric additive rates model for recurrent event data", *Lifetime Data Analysis*, 12: 389-406.
- Hogan, S.L., Vupputuri, S., Guo, X., Cai, J., Colindres, R.E., Heiss, G. and Coresh, J. (2007): "Association of cigarette smoking with albuminuria in the United States: the third national health and nutrition examination survey", *Renal Failure*, 29: 133-142.
- 87. Cai, J., Fan, J., Jiang, J. and Zhou, H. (2007): "Partially linear hazard regression for multivariate survival data" Journal of American Statistical Association, 102: 538-551.
- Trivers K.F., Gammon M.D., Abrahamson P.E., Lund M.J., Flagg E.W., Kaufman J.S., Moorman P.G., Cai J., Olshan A.F., Porter P.L., Brinton L.A., Eley J.W., Coates R.J. (2007): "Association between reproductive factors and breast cancer survival in younger women", *Breast Cancer Res Treat*, 103(1): 93-102.
- Trivers K.F., Gammon M.D., Abrahamson P.E., Lund M.J., Flagg E.W., Moorman P.G., Kaufman J.S., Cai J., Porter P.L., Brinton L.A., Eley J.W., Coates R.J. (2007): "Oral Contraceptives and Survival in Breast Cancer Patients Aged 20 to 54 Years", *Cancer Epidemiology, Biomarkers & Prevention*, 16: 1822-1827.
- Cai, J., Fan, J., Zhou, H. and Zhou, Y. (2007): "Marginal hazard models with varyingcoefficients for multivariate failure time data", Annals of Statistics, 35: 324-354.
- Truesdale, K., June, S., and Cai, J. (2007): "Nine-year changes in cardiovascular disease risk factors with weight maintenance in the ARIC cohort", American Journal of Epidemiology, 165(8): 890-900.
- 92. Cai, J. and Zeng, D. (2007): "Power Calculation for Case-Cohort Studies with Nonrare Events", *Biometrics*, 63: 1288 - 1295.
- Cai, J., Fan, J., Jiang, J. and Zhou, H. (2008): "Partially Linear Hazard Regression with Varying Coefficients for Multivariate Survival Data", *Journal of Royal Statistical Society*, B, 70: 141-158.

- Truesdale, K.P., Stevens, J., and Cai, J. (2008): "Effect of 3-Year weight history on blood pressure: The Atherosclerosis Risk in Communities Study", Obesity Research, 16: 1112-1119.
- 95. Stevens, J., Truesdale, K.P., Katz, E., and Cai, J. (2008): "Impact of body mass index on incident hypertension and diabetes in Chinese Asians, American Whites, and American Blacks: The Peoples Republic of China Study and the Atherosclerosis Risk in Communities Study", American Journal of Epidemiology, 167: 1365-1374.
- 96. Zhong, Y., Chasen, J., Yamanaka, R., Garcia, R., Kaye, E.K., Kaufman, J.S., Cai, J., Wilcosky, T., Trope, M., and Caplan, D.J. (2008): "Extension and Density of Root Fillings and Postoperative Apical Radiolucencies in the Veterans Affairs Dental Longitudinal Study", Journal of Endodontics, 34(7): 798-803. PMCID: 2587075. NIHMSID: NIHMS56302
- 97. Song, R., Kosorok, M.R., and Cai, J. (2008): "Robust Covariate-adjusted Log-rank Statistics and Corresponding Sample Size Formula for Recurrent Events Data", *Biometrics*, 64: 741-750. DOI: 10.1111/j.1541-0420.2007.00948.x. NIHMSID #93632.
- 98. * Amorim, L.D.A.F., Cai, J., Zeng, D., and Barreto, M.L (2008): "Regression Splines in the Time-Dependent Coefficient Rates Model for Recurrent Event Data", *Statistics* in Medicine, 27: 5890-5906. DOI: 10.1002/sim.3400. NIHMSID #66722.
- 99. Houston, D.K., Stevens, J., and Cai, J. (2008): "Overweight and Obesity in Young and Middle Age and Early Retirement: the ARIC Study", Obesity, 17: 143-149.
- 100. Han, E, Truesdale, K.M., Taber, D.R., Cai, J., Juhaeri, Stevens, J. (2009): "Impact of overweight and obesity on hospitalization: race and gender differences", *International Journal of Obesity*, 33: 249-256. DOI:10.1038/ijo.2008.193.
- 101. Caplan, D.J., Pankow, J.S., Cai, J., Offenbacher, S., Beck, J.D. (2009): "The relationship between self-reported history of endodontic therapy and coronary heart disease in the Atherosclerosis Risk in Communities Study", Journal of the American Dental Association, 140:1004-1012.
- 102. Kong, L. and Cai, J. (2009): "Case-cohort analysis with accelerated failure time model", *Biometrics*: in press. DOI: 10.1111/j.1541-0420.2008.01055.x. PMID: 18537948.
- 103. * Kang, S. and Cai, J. (2009): "Marginal Hazards Regression for Retrospective Studies within Cohort with Possibly Correlated Failure Time Data", *Biometrics*: in press. DOI: 10.1111/j.1541-0420.2008.01077.x. PMID: 18565164
- 104. Liu, Y., Zhou, H., and Cai, J. (2009): "Estimated Pseudo-Partial-Likelihood Method for Correlated Failure Time Data with Auxiliary Covariates", *Biometrics*: in press. NIHMSID #90113

- 105. * Kang, S. and **Cai**, **J.** (2009): "Marginal hazards model for case-cohort studies with multiple disease outcomes", *Biometrika*: in press.
- 106. Stevens, J., Truesdale, K.P., Wang, C-H., and Cai, J. (2009): "Prevention of Excess Gain", International Journal of Obesity: published online. DOI: 10.1038/ijo.2009.158
 - * student first author

REFEREED BOOK CHAPTERS:

- 1. Prentice, R.L. and **Cai**, **J**.(1992): "Marginal and conditional models for the analysis of multivariate failure time data" (with discussion), Survival Analysis: State of the Art, pp. 393-406, P. Goal and R. Klein, eds.
- Clegg, L.X., Cai, J. and Sen, P.K. (2000): "Modeling multivariate failure time data", Handbook of Statistics, 18,pp. 803-840.
- 3. Cai, J. and Schaubel, D.E. (2004): "Analysis of recurrent event data", Handbook of Statistics, 23, pp. 603-623.
- Cai, J. and Schaubel, D.E. (2007): "Application of the non-proportional rates model to recurrent event data: analysis of risk factors for pre-school asthma", *Quantitative Medical Data Analysis Using Mathematical Tools and Statistical Techniques*, D. Hong and Y. Shyr eds., World Scientific Publications, Singapore: pp. 181-200.
- Cai, J. and Zeng, D. (2009): "Overview of Semiparametric Inferential Methods for Time-to-Event Endpoints", *Design and Analysis of Clinical Trials with Time-to-Event Endpoints, K.E. Peace ed.*, CRC Press, Boca Raton, FL: pp. 93-108.
- 6. Cai, J. and Zeng, D. (2009): "Cox Proportional Hazards Model" in Wiley Encyclopedia of Clinical Trials. Book Chapter: in press