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Curriculum Vitae

Wenbin Lu, Ph.D.
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Education

May, 2003	Columbia University, New York, NY	Ph.D. in Statistics
	Dissertation: Semiparametric Cure Models and Related Topics.	
	Advisor: Professor Zhiliang Ying	
May, 2001	Columbia University, New York, NY	M.A. in Statistics
July, 1999	Peking University, Beijing, China	B.S. in Statistics

Positions and Employment

2015 - present	Professor	Department of Statistics, North Carolina State University
2009 - 2015	Associate Professor	Department of Statistics, North Carolina State University
2003 - 2009	Assistant Professor	Department of Statistics, North Carolina State University
2007 - 2008	Faculty Fellow	SAMSI, Research Triangle Park, NC.

Other Experience and Professional Memberships

2001 - Present	Member, American Statistical Association (ASA)
2006 - Present	Member, Institute of Mathematical Statistics (IMS)
2003 - Present	Member, International Chinese Statistical Association (ICSA)
2015 - Present	Elected Member, International Statistical Institute (ISI)

Honors and Awards

2017	ASA Fellow
2016 – 2017	Cavell Brownie Mentoring Award, Department of Statistics, NCSU
2012 – 2014	UNC Center for AIDS Research (CFAR) Developmental Award
2008	Best Contributed Paper Award, Winemiller Conference On Survival Analysis
2004 – 2005	Faculty Research and Professional Development Award, NCSU
1999 – 2003	Faculty Fellowship, Columbia University
1999	Outstanding Undergraduate Award, Peking University

Research Interests

1. Statistical methods in clinical trials and personalized medicine
2. Survival analysis
3. Longitudinal data analysis
4. Variable selection and high dimensional data analysis
5. Semiparametric/Nonparametric methods and inference
6. Statistical genetics

Publications, Papers and Technical Reports

Refereed Journal Publications for Statistical Methodology:

1. **Lu, W.** and Ying, Z. (2004). On semiparametric transformation cure models. *Biometrika*, **91**, 331-343.
2. **Lu, W.** (2005). Marginal regression of multivariate event times based on linear transformation models. *Lifetime Data Analysis*, **11**, 389-404.
3. **Lu, W.** and Liang, Y. (2006). Empirical likelihood inference for linear transformation models. *Journal of Multivariate Analysis*, **97**, 1586-1599.
4. **Lu, W.** and Tsiatis, A. A. (2006). Semiparametric transformation models for case-cohort Study. *Biometrika*, **93**, 207-214.
5. Liu, M., **Lu, W.** and Shao, Y. (2006). Interval mapping of quantitative trait loci for time-to-event data with the proportional hazards mixture cure model. *Biometrics*, **62**, 1053-1061.
6. Liu, M., **Lu, W.** and Shao, Y. (2006). Mixture cure model with an application to interval mapping of quantitative trait loci. *Lifetime Data Analysis*, **12**, 421-440.
7. Zhang, H. H. and **Lu, W.** (2007). Adaptive-LASSO for Cox's proportional hazards model. *Biometrika*, **94**, 1-13.
8. **Lu, W.** (2007). Tests of independence for censored bivariate failure time data. *Lifetime Data Analysis*, **13**, 75-90.
9. **Lu, W.** and Zhang, H. H. (2007). Variable selection for proportional odds model. *Statistics in Medicine*, **26**, 3771-3781.
10. **Lu, W.** and Liang, Y. (2008). Analysis of competing risks data with missing cause of failure under additive hazards model. *Statistica Sinica*, **19**, 219-234.
11. **Lu, W.** (2008). Nonparametric maximum likelihood estimation in the proportional hazards cure model. *Annals of the Institute of Statistical Mathematics*, **60**, 545-574.
12. **Lu, W.** and Peng, L. (2008). Semiparametric analysis of mixture regression models with competing risks data. *Lifetime Data Analysis*, **14**, 231-252.
13. Liu, M., **Lu, W.** and Shao, Y. (2008). A Monte Carlo approach for change-point detection in the Cox proportional hazards model. *Statistics in Medicine*, **27**, 3894-3909.
14. Li, L. and **Lu, W.** (2008). Sufficient dimension reduction with missing predictors. *Journal of*

the American Statistical Association, **103**, 822-831.

15. **Lu, W.** and Li, L. (2008). Boosting method for nonlinear transformation models with censored survival data. *Biostatistics*, **9**, 658-667.
16. Liang, Y., **Lu, W.** and Ying, Z. (2009). Joint modeling and analysis longitudinal data with informative observation times. *Biometrics*, **65**, 377-384.
17. **Lu, W.** (2009). Efficiency comparison between mean and log-rank tests with recurrent event time data. *Science in China Series A: Mathematics*, **52**, 1169-1180.
18. Liu, M., **Lu, W.** and Tseng, C.-H. (2010). Cox regression in nested case-control studies with auxiliary covariates. *Biometrics*, **66**, 374-381.
19. **Lu, W.** (2010). Efficient estimation for accelerated failure time model with a cure fraction. *Statistica Sinica*, **20**, 661-674.
20. Tzeng, J.-Y.*, **Lu, W.***, Farmen, M. W., Liu, Y. and Sullivan, P. F. (2010). Haplotype-based pharmacogenetic analysis for longitudinal quantitative traits in the presence of dropout. *Journal of Biopharmaceutical Statistics*, special issue on "Statistical Genomics in Clinical Trials", **20(2)**, 334-350. (*equal contribution)
21. **Lu, W.** and Zhang, H. H. (2010). On estimation of partially linear transformation models. *Journal of the American Statistical Association*, **105**, 683-691.
22. Shows, J. H., **Lu, W.** and Zhang, H. H. (2010). Sparse estimation and inference for censored median regression. *Journal of Statistical Planning and Inference*, **140**, 1903-1917.
23. Zhang, H. H., **Lu, W.** and Wang, H. (2010). On sparse estimation for semiparametric linear transformation models, *Journal of Multivariate Analysis*, **101**, 1594-1606.
24. Liu, M., **Lu, W.**, Shore, R. E. and Zeleniuch-Jacquotte, A. (2010). Cox regression model with time-varying coefficients in nested case-control studies. *Biostatistics*, **11**, 693-704.
25. **Lu, W.** and Li, L. (2011). Sufficient dimension reduction for censored regressions. *Biometrics*, **67**, 513-523..
26. Pang, L., **Lu, W.** and Wang, H. J. (2012). Variance estimation in censored quantile regression via induced smoothing. *Computational Statistics and Data Analysis*, **56**, 785-796.
27. **Lu, W.** and Liu, M. (2012). On estimation of linear transformation models with nested case-control sampling. *Lifetime Data Analysis*, **18**, 80-93.
28. Liu, M. and **Lu, W.** (2012). A semiparametric marginalized model for longitudinal data with informative dropout. *Journal of Probability and Statistics*, Article ID 734341.
29. Ahn, M., Zhang, H .H. and **Lu, W.** (2012). Moment-based method for random effects selection in linear mixed models. *Statistica Sinica*, **22**, 1539-1562.
30. Yan, S., Zhang, D., **Lu, W.**, Grifo, J. and Liu, M. (2012). A seminonparametric approach to joint modeling of a primary binary outcome and longitudinal data measured at discrete informative times. *Statistics in Biosciences*, **4**, 213-234.
31. **Lu, W.**, Goldberg, Y. and Fine, J. (2012). On the robustness of the adaptive lasso to model misspecification. *Biometrika*, **99**, 717-731.
32. Wang, S., Zhang, J. and **Lu, W.** (2012). Sample size calculation for the proportional hazards cure model. *Statistics in Medicine*, **31**, 3959-3971.
33. Cai, N., **Lu, W.** and Zhang, H. H. (2012). Time-varying latent effect model for longitudinal data

with informative observation times. *Biometrics*, **68**, 1093-1102.

34. Kim, J. P., **Lu, W.**, Sit, T. and Ying, Z. (2013). A unified approach to semiparametric transformation models under general biased sampling schemes. *Journal of the American Statistical Association*, **108**, 217-227.
35. **Lu, W.**, Zhang, H. H. and Zeng, D. (2013). Variable selection for optimal treatment decision. *Statistical Methods in Medical Research*, **22**, 493-504.
36. Kim, S., Cai, J. and **Lu, W.** (2013). More efficient estimators for case-cohort studies. *Biometrika*, **100**, 695-708.
37. Liu, B., **Lu, W.** and Zhang, J. (2013). Kernel smoothed profile likelihood estimation in the accelerated failure time frailty model for clustered survival data. *Biometrika*, **100**, 741-755.
38. Liu, M., **Lu, W.**, Krogh, V., Hallmans, G., Clendenen, T. V. and Zeleniuch-Jacquotte, A. (2013). Estimation and selection of complex effects in pooled nested case-control studies with heterogeneity. *Biostatistics*, **14**, 682-694.
39. Shang, S., Liu, M., Zeleniuch-Jacquotte, A., Clendenen, T. V., Krogh, V., Hallmans, G. and **Lu, W.** (2013). Partially linear single index Cox regression model in nested case-control studies. *Computational Statistics and Data Analysis*, **67**, 199-212.
40. Cai, C., Wang, S., **Lu, W.** and Zhang, J. (2014). NPHMC: An R-package for estimating sample size of proportional hazards mixture cure model. *Computer Methods and Programs in Biomedicine*, **113**, 290-300.
41. Wang, S., Zhang, J. and **Lu, W.** (2014). Sample size calculation for the proportional hazards model with a time-dependent covariate. *Computational Statistics and Data Analysis*, **74**, 217-227.
42. Liu, B., **Lu, W.** and Zhang, J. (2014). Accelerated intensity frailty model for recurrent events data. *Biometrics*, **70**, 579-587.
43. Tzeng, J.-Y.*, **Lu, W.*** and Hsu, F.-C. (2014). Gene-level pharmacogenetic analysis on survival outcomes by gene-trait similarity regression. *Annals of Applied Statistics*, **8**, 1232-1255. (*equal contribution)
44. Geng, Y., **Lu, W.** and Zhang, H. H. (2014). A model free machine learning method for risk classification and survival probability prediction. *STAT*, **3**, 337-350.
45. **Lu, W.**, Liu, M. and Chen, Y.-H. (2014). Testing goodness-of-fit for the proportional hazards model based on nested case-control data. *Biometrics*, **70**, 845-851.
46. Song, R., **Lu, W.**, Ma, S. and Jeng, J. X. (2014). Censored rank independence screening for high-dimensional survival data. *Biometrika*, **101**, 799-814.
47. Guo, Z., **Lu, W.** and Li, L. (2015). Forward stagewise shrinkage and addition for high dimensional censored regression. *Statistics in Biosciences*, **7**, 225-244.
48. Pang, L., **Lu, W.** and Wang, J. H. (2015). Local Buckley-James estimator for the heteroscedastic accelerated failure time model. *Statistica Sinica*, **25**, 863-877.
49. Guo, Z., Li, L., **Lu, W.** and Li, B. (2015). Groupwise dimension reduction via envelope method. *Journal of the American Statistical Association*, **110**, 1515-1527.
50. Geng, Y., **Lu, W.** and Zhang, H. H. (2015). On optimal treatment regimes selection for mean survival time. *Statistics in Medicine*, **34**, 1169-1184.

51. Chen, X., **Lu, W.** and Liu, M. (2015). Identification of homogeneous and heterogeneous variables in pooled cohort studies. *Biometrics*, **71**, 397-403.
52. Marceau, R., **Lu, W.**, Holloway, S., Sale, M. M., Worrall, B. B., Williams, S. R., Hsu, F.-C. and Tzeng, J.-Y. (2015). A fast multiple-kernel method with applications to detect gene-environment interaction. *Genetic Epidemiology*, **39**, 456-468.
53. Xiao, W., **Lu, W.** and Zhang, H. H. (2016). Joint structure selection and estimation in the time-varying coefficient Cox Model. *Statistica Sinica*, **26**, 547-567.
54. Fan, A., **Lu, W.** and Song, R. (2016). Sequential advantage selection for optimal treatment regimes, *Annals of Applied Statistics*, **10**, 32-53.
55. Goldberg, Y., **Lu, W.** and Fine, J. (2016). Oracle estimation of parametric transformation models, *Electronical Journal of Statistics*, **10**, 90-120.
56. Shi, C., Song, R. and **Lu, W.** (2016). Robust learning for optimal treatment decision with NP-dimensionality. *Electronical Journal of Statistics*, **10**, 2894-2921.
57. Jeng, X. J., Daye, Z. J., **Lu, W.** and Tzeng, J.-Y. (2016). Rare variants association analysis in large-scale sequencing studies at the single locus level. *PLOS Computational Biology*, **12(6)**: e1004993.
58. Fan, A. Song, R. and **Lu, W.** (2017). Change-plane analysis for subgroup detection and sample size calculation. *Journal of the American Statistical Association*, **112**, 769-778.
59. Jiang, R., **Lu, W.**, Song, R. and Davidian, M. (2017). On estimation of optimal treatment regimes for maximizing t-Year survival probabilities. *Journal of the Royal Statistical Society, Series B*, **79**, 1165-1185.
60. Kang, S., **Lu, W.** and Liu, M. (2017). Efficient estimation for accelerated failure time model under case-cohort and nested case-control sampling. *Biometrics*, **73**, 114-123.
61. Bai, X., Tsiatis, A. A., **Lu, W.** and Song, R. (2017). Optimal treatment regimes for survival endpoints using a locally-efficient doubly-robust estimator from a classification perspective. *Lifetime Data Analysis*, **23**, 585-604.
62. Fan, C., **Lu, W.**, Song, R. and Zhou, Y. (2017). Concordance-assisted learning for estimating optimal individualized treatment regimes. *Journal of the Royal Statistical Society, Series B*, **79**, 1565-1582.
63. Zhou, J. Zhang, J. and **Lu, W.** (2017). An EM algorithm for fitting the generalized odds-rate model to interval censored data. *Statistics in Medicine*, **36**, 1157-1171.
64. Song, R., Luo, S., Zeng, D., Zhang, H. H., **Lu, W.** and Li, Z. (2017). Semiparametric Single-Index Model for Estimating Optimal Individualized Treatment Strategy. *Electronical Journal of Statistics*, **11**, 364-384.
65. Shi, C., Song, R. and **Lu, W.** (2017). Discussion of "Random projection ensemble classification". *Journal of the Royal Statistical Society, Series B*, **79**, 959-1035.
66. Jiang, R., **Lu, W.**, Song, R., Hudgens, M. G. and Naprvavnik, S. (2017). Doubly robust estimation of optimal treatment regimes for survival data – with application to an HIV/AIDS study. *Annals of Applied Statistics*, **11**, 1763-1786.
67. Kang, S., **Lu, W.** and Song, R. (2017). Subgroup detection and sample size calculation with proportional hazards regression for survival data. *Statistics in Medicine*, **36**, 4646-4659.

68. Shi, C., Fan, A., Song, R. and **Lu, W.** (2018). High-dimensional A-learning for optimal dynamic treatment regimes. *Annals of Statistics*, **46**, 925-957.
69. Kang, S., **Lu, W.** and Zhang, J. (2018). On estimation of the optimal treatment regime with the additive hazards model. *Statistica Sinica*, **28**, 1539-1560.
70. Zhou, J., Zhang, J. and **Lu, W.** (2018). Computationally efficient estimation for the generalized odds rate mixture cure model with interval censored data, *Journal of Computational and Graphical Statistics*, **27**, 48-58.
71. Chen, S., **Lu, W.** and Zhao, H. (2018). An improved survival estimator for censored medical costs with a kernel approach. *Communications in Statistics - Theory and Methods*, **47**, 5702-5716.
72. Liang, S., **Lu, W.**, Song, R. and Wang, L. (2018). Sparse concordance-assisted learning for optimal treatment decision. *Journal of Machine Learning Research*, **18**, 1-26.
73. Jeng, J. X., **Lu, W.** and Peng, H. (2018). High-dimensional inference for personalized treatment decision. *Electronical Journal of Statistics*, **12**, 2074-2089.
74. Liang, S., **Lu, W.** and Song, R. (2018). Deep advantage learning for optima dynamic treatment regime. *Statistical Theory and Related Fields*, **2**, 80-88.
75. Shi, C., Song, R., **Lu, W.** and Fu, B. (2018). Maximin-projection learning for optimal treatment Decision with heterogeneous treatment effects. *Journal of the Royal Statistical Society, Series B*, **80**, 681-702.
76. Shi, C., **Lu, W.** and Song, R. (2018). A massive data framework for M-estimators with cubic-rate. *Journal of the American Statistical Association*, **113**, 1698-1709.
77. West, R. M., **Lu, W.**, Rotroff, D. M., Kuenemann, M., Chang, S.-M., Wu, M. C., Wagner, M. J., Buse, J. B., Motsinger-Reif, A., Fourches, D. and Tzeng, J.-Y. (2018). Identifying individual risk rare variants using protein structure-guided local tests. *PLOS Computational Biology*, **15(2)**: e1006722.
78. Hu, L., **Lu, W.**, Zhou, J. and Zhou, H. (2019+). MM algorithms for variance component estimation and selection in logistic linear mixed model. *Statistica Sinica*, in press.
79. Shi, C., **Lu, W.** and Song, R. (2019). On testing conditional qualitative treatment effects. *Annals of Statistics*, **47**, 2348-2377.
80. Shi, C., **Lu, W.** and Song, R. (2019). Determining the Number of Latent Factors in Statistical Multi-Relational Learning. *Journal of Machine Learning Research*, **20(23)**, 1-38.
81. Xiao, W., Zhang, H. H. and **Lu, W.** (2019+). Robust regression for optimal individualized treatment rules. *Statistics in Medicine*, in press.
82. Su, L, **Lu, W.** and Song, R. (2019+). Modeling and estimation of optimal treatment decision with interference. *Stat*, in press.
83. Yu, L., **Lu, W.** and Huang, D. (2019+). Modeling and Estimation of Contagion-based Social Network Dependence with Time-to-Event Data. *Statistica Sinica*, in press.
84. Zhou, J., Zhang, J., Mclain, A. C., **Lu, W.**, Sui, X. and Hardin, J. W. (2019+). A varying-coefficient generalized odds rate model with time-varying exposure: an application to fitness and CVD mortality. *Biometrics*, in press.
85. Shi, C., **Lu, W.** and Song, R. (2019+). A sparse random projection-based test for overall

qualitative Treatment Effects. *Journal of the American Statistical Association*, in press.

86. Su, L., **Lu, W.**, Song, R. and Huang, D. (2019+). Testing and estimation of social network dependence with time to event data. *Journal of the American Statistical Association*, in press.
87. Zhou, J. Zhang, J., **Lu, W.** and Li, X. (2019+). On restricted optimal treatment regime estimation for competing risks data. *Biostatistics*, accepted.

Collaborative Work:

1. Cai, Y., Chow, M.-Y., **Lu, W.** and Li, L. (2009). Statistical feature selection from massive data in distribution fault diagnosis. *The IEEE Transactions on Power Systems*, **25**, 642-648.
2. Cai, Y., Chow, M.-Y., **Lu, W.** and Li, L. (2010). Evaluation of distribution fault diagnosis algorithms using ROC curves. *The Proceedings of 2010 IEEE Power Systems Engineering General Meeting*, 25-29 July, Minneapolis, MN.
3. Sui, X., Zhang, J., Lee, D.-C., Church, T., **Lu, W.**, Liu, J. and Blair, S. (2012). Physical activity/fitness peaks during perimenopause and BMI change patterns are not associated with baseline activity/fitness in women: a longitudinal study with a median 7-year follow-up. *British Journal of Sports Medicine*, **47**, 77-83.

Technical Reports:

1. Zhang, H. H. and **Lu, W.** (2006). Variable selection via penalized likelihood with adaptive penalty. Technical report 2594, Department of Statistics, NCSU.
2. Nelson, E. C., **Lu, W.** and Ghosh, S. K. (2009). A Bayesian semiparametric accelerated failure time cure model for censored data.
3. **Lu, W.** and Liu, M. (2009). Efficient estimation for the accelerated failure time model with interval censored data.

Professional Activities

- Nominated as a candidate for 2015 Chair-Elect of ASA Section on Statistical Computing
- Selected Program Chair for 2019 ICSA Applied Statistics Symposium, Raleigh, NC
- ICSA Board of Directors, 2013-2015
- Associate Editor, *Statistica Sinica*, 2014 - present
- Associate Editor, statblog, 2013 - present
- Associate Editor, *Biometrics*, July 2012 - present
- Associate Editor, *Biostatistics*, July 2010 - present
- Associate Editor, *Journal of Statistical Theory and Practice*, Jan 2010 - present
- Guest Editor, Special Issue on Joint Models and Their Applications (2012), Journal of Probability and Statistics
- Organize and chair invited & topic-contributed sessions for JSM, ENAR, and ICSA Applied Statistics Symposium
- Proposals: NIH review - Clinical Hematology
  NIH review - Selected Topics in Transfusion Medicine

NIH review - Member Conflict Special Emphasis Panel
NIH review - BMRD
NSA Mathematics & Science Grant Proposal
Austrian Science Fund (FWF)
Concerted Research Actions (CRA)
Hong Kong - Research Grants Council
U.S.-Israel Binational Science Foundation

- Journal review service: review for Annals of the Institute of Statistical Mathematics (AISM), Biometrics, Biometrika, Biostatistics, BMC Medical Research Methodology, Computational Statistics and Data Analysis (CSDA), Communications in Statistics – Theory & Methods (CSTM), International Journal of Statistics (IJS), Journal of American Statistical Association (JASA), Journal of Applied Statistics (JAS), Journal of Computational and Graphical Statistics (JCGS), Journal of Multivariate Analysis (JMA), Journal of Royal Statistical Society, series B (JRSSB), Journal of Statistical Planning and Inference (JSPI), Journal of Statistical Software, Lifetime Data Analysis (LDA), Scandinavian Journal of Statistics (SJS), Statistical Applications in Genetics and Molecular Biology**,** Statistics in Medicine (SIM), Statistica Sinica, Statistics and Its Inference (SII), …

Research Support

Completed:

1. NCSU Faculty Research and Professional Development Award Grant, total: $4,000
   Grant number: 350656, 03/01/04 - 02/28/05
   Title: “Models, Methodologies and Related Theory for Analyzing Survival Data with Long-term Survivors.”
   Role: PI

2. National Science Foundation (NSF) Standard Grant, $49,828
   Grant number: DMS-0504269, 07/01/05 - 12/31/08
   Title: “Semiparametric Models, Methodologies and Related Theory for Analysis of Censored Survival Data."
   Role: PI

3. National Institute of Health (NIH) Research Grant, $64,945
   Grant number: 1 RO3 CA-150077-01, 07/01/10 - 6/30/13
   Title: “Sample Size Method and Software Development in Survival Trial with a Cure Rate."
   Role: subcontract PI (from University of South Carolina, PI, Dr. Jiajia Zhang)

4. National Institute of Health (NIH) Research Grant, $36,311
   Grant number: 1 RO3 CA-153083-01, 08/01/10 - 7/31/13
   Title: “Time-Variant Effects of Cancer Risk Factors in Nested Case-Control Studies."

Role: subcontract PI (from New York University, PI, Dr. Mengling Liu)

5. National Institute of Health (NIH) Research Grant, $2,621,938
   Grant number: 1 RO1 CA-051962-20, 08/01/10 - 7/31/12
   Title: “Statistical Analysis of Complex Data in Cancer."
   Role: Co-investigator (PI, Dr. Anastasios Tsiatis)

6. UNC Center for AIDS Research (CFAR) Developmental Award, $20,000
   08/01/12 - 12/31/14
   Title: “Statistical Learning Methods for Optimal Treatment Selection in HIV/AIDS Studies."
   Role: PI

7. National Institute of Health (NIH) Research Grant, $60,494
   Grant number: 1 R21 CA-169739, 07/01/13 - 3/31/15
   Title: “Integration and Evaluation of Pooled Cancer Studies with Heterogeneity."
   Role: subcontract PI (from New York University, PI, Dr. Mengling Liu)

8. National Institute of Health (NIH) Research Grant, $794,946
   Grant number: 1 RO1 CA-140632, 04/01/10 - 2/28/16
   Title: “Flexible Statistical Methods for Complex Survival Data in Biomedical Studies."
   Role: PI

Current:

1. National Institute of Health (NIH) Research Grant,
   Grant number: 5 PO1 CA-142538, 04/01/15 - 3/31/20
   Title: “Statistical Methods for Cancer Clinical Trials."
   Role: Co-investigator (PI, Dr. Michael Kosorok)

Travel Support

1. NSF travel support, JSM 8th New Researchers Conference, August 2005, Minneapolis.
2. NIH travel support, ENAR Junior Faculty Workshop, March 2004, Pittsburgh.

Teaching

Undergraduate Courses:

ST361, Introduction to Statistics for Engineers (Fall 2013)
ST370, Introduction to Probability and Statistics for Engineers (Fall 2003 - 2005, Spring 2004 - 2005, Summer 2007, Section I, Spring 2017)
ST421, Introduction to Mathematical Statistics (Fall 2015, 2016)

Graduate Courses (master level):

ST505, Applied Nonparametric Statistics (Spring 2013, 2015, Fall 2016)

ST521, Statistical Inference I (Fall 2006 - 2009)

ST732, Applied Longitudinal Data Analysis (Spring 2010)

ST745, Analysis of Survival Data (Spring 2006 – 2011, 2016)

Special Topic Courses (Ph.D. level):

ST790/810, Advanced Survival Analysis (Spring 2009, Fall 2012)

Student Advising

Ph.D. Chair or Co-chair:

Completed:

1. Miao Yu, graduated in August 2007 (co-advise with Daowen Zhang)
   Thesis title "Quantitative Trait Loci (QTL) Mapping With Longitudinal Traits"

2. Justin Shows, graduated in May 2009 (co-advise with Hao Helen Zhang)
   Thesis title: "Sparse Estimation and Inference for Censored Median Regression"

3. Elizabeth Nelson, graduated in May 2009 (co-advise with Sujit Ghosh)
   Thesis title: "Variations on the Accelerated Failure Time Model: Mixture Distributions, Cure Rates, and Different Censoring Scenarios"

4. Mihye Ahn, graduated in May 2010 (co-advise with Hao Helen Zhang)
   Thesis title: "Random Effect Selection in Linear Mixed Models"

5. Song Yan, graduated in December 2011 (co-advise with Daowen Zhang)
   Thesis title: "Joint Modeling of Primary Binary Outcome and Longitudinal Covariates Measured at Informative Observation Times"

6. Chuan Tian, graduated in August 2011 (co-advise with Lexin Li)
   Thesis title: "Statistical Methods on Drug Discovery"

7. Zifang Guo, graduated in November 2011 (co-advise with Lexin Li)
   Thesis title: "Variable Selection and Dimension Reduction for High Dimensional Complex Data"

8. Lei Pang, graduated in November 2011(co-advise with Huixia Judy Wang)
   Thesis title: "Semiparametric Estimation and Inference for Censored Regression Models"

9. Na Cai, graduated in June 2011(co-advise with Hao Helen Zhang)
   Thesis title: "Semiparametric Regression Methods for Longitudinal Data with Informative

Observation Times and/or Dropout"

Received the Business and Economic Statistics Section of the American Statistical Association's Student Travel Award at JSM 2010 in Vancouver.

10. Bo Liu, graduated in May 2012
    Thesis title: "Accelerated Failure Time Model for Correlated Survival Data: Efficient Estimation and Inference"

11. Yuan Geng, graduated in May 2013 (co-advise with Hao Helen Zhang)
    Thesis title: "Flexible Statistical Learning Methods for Survival Data: Risk Prediction and Optimal Treatment Decision"

12. Wei Xiao, graduated in May 2014 (co-advise with Hao Helen Zhang)
    Thesis title: "Flexible Methods and Computation for Model Selection and Optimal Treatment Learning"

13. Runchao Jiang, graduated in May 2015 (co-advise with Rui Song)
    Thesis title: "Robust Learning for Optimal Treatment Strategy with Survival Data"
    Received one of the International Biometric Society Eastern North American Region's Distinguished Student Paper Awards for the 2015 ENAR Spring Meeting in Miami.

14. Ailin Fan, graduated in May 2016 (co-advise with Rui Song)
    Thesis title: "New Statistical Methods for Precision Medicine: Variable Selection for Optimal Dynamic Treatment Regimes and Subgroup Detection"
    Won the second place in the Biopharmaceutical Section Student Paper Award Competition at JSM 2016 in Chicago.

15. Suhyun Kang, graduated in May 2017
    Thesis title: "Flexible Estimation and Testing Methods for Survival Data with Applications in Epidemiology and Precision Medicine"

16. Huimin Peng, graduated in May 2017 (co-advise with Jessie Jeng)
    Thesis title: "Selection and Inference for High-Dimensional Regression with Applications in Biomedical Research"

17. Rachel Marceau, graduated in August 2017 (co-advise with Jung-Ying Tzeng)
    Thesis title: "Flexible Kernel Machine Methods for Complex Genomic Data"

18. Liuyi Hu, graduated in May 2018 (co-advise with Hua Zhou)
    Thesis title: "MM Algorithms for Variance Component Models"

19. Shuhan Liang, graduated in May 2018 (co-advise with Rui Song)
    Thesis title: "Flexible Statistical Machine Learning Methods for Optimal Treatment Decision"

20. Lin Yu, graduated in May 2018
    Thesis title: "On Estimation of Contagion-Based Social Network Dependence with Event Time Data"

21. Lin Su, graduated in May 2018 (co-advise with Howard Bondell)
    Thesis title: "New Estimation and Decision-Making Methods for Correlated and Network Data"

Current:

1. Chengchun Shi (co-advise with Rui Song), expected to graduate in 2019
2. Liangyu Zhu (co-advise with Rui Song), expected to graduate in 2019
3. Dana Johnson (co-advise with Marie Davidian), expected to graduate 2020
4. Ye Liu (co-advise with Rui Song), expected to graduate 2020
5. Kevin Gunn (co-advise with Rui Song), expected to graduate 2020
6. Haoyu Chen (co-advise with Rui Song), expected to graduate 2021
7. Sheng Zhang (co-advise with Rui Song), expected to graduate 2021
8. Hengrui Cai (co-advise with Rui Song), expected to graduate 2022

Ph.D. Committee member:

Statistics Major at NCSU: 50 students
Bioinformatics Major at NCSU: 5 students
Other Majors at NCSU: 5 students
Biostatistics Major at UNC- Chapel Hill: 1 student

Department/University Services

Year 2004, Ph.D. Prelim Exam Committee, Dept. of Statistics, NC State University
Aug. 2005, PhD Qualifying Exam Committee, Dept. of Statistics, NC State University
Jan. 2006, PhD Qualifying Exam Committee, Dept. of Statistics, NC State University
Year 2006, Departmental Beach Trip Committee
Year 2007, Ph.D. Prelim Exam Committee, Dept. of Statistics, NC State University
Year 2007, Departmental Beach Trip Committee (chair)
Jan. 2008, PhD Qualifying Exam Committee, Dept. of Statistics, NC State University
Aug. 2009, PhD Qualifying Exam Committee (chair), Dept. of Statistics, NC State University
2010 - 2011, Seminar Committee (chair), Dept. of Statistics, NC State University
2010-2011, Faculty Search Committee, Dept. of Statistics, NC State University
Year 2011, Ph.D. Prelim Exam Committee, Dept. of Statistics, NC State University
Year 2012, Ph.D. Prelim Exam Committee, Dept. of Statistics, NC State University

Year 2012, Departmental Beach Trip Committee
Year 2013, 2014, 2016, Graduate admissions committee
Year 2015, Advancement committee, Dept. of Statistics, NC State University
2015-2106, Post-tenure review committee, Dept. of Statistics, NC State University
2015-2016, Faculty Search Committee, Dept. of Statistics, NC State University
2016-2107, Post-tenure review committee (chair), Dept. of Statistics, NC State University
2016-2017, Head Search Committee, Dept. of Statistics, NC State University

Invited and Contributed Talks

- July 2018, Department of Statistics, Wuhan University, "Maximin-Projection Learning for Optimal Treatment Decision with Heterogeneous Data"
- July 2018, School of Data Science, Fudan University, "Concordance-Assisted Learning for Optimal Treatment Regime Estimation"
- July 2018, ICSA China Conference, Qingdao, "Sparse Concordance-Assisted Learning for Optimal Individualized Treatment Regimes" (invited)
- June 2018, 4th IMS APRM Meeting, Singapore, "Testing and Estimation of Social Network Dependence with Time to Event Data" (invited)
- March 2018, University of South Carolina, Department of Biostatistics, “Change-Plane Analysis for Subgroup Detection and Sample Size Calculation”
- March 2018, University of Minnesota, School of Statistics, “On Testing Qualitative Treatment Effects”
- January 2018, Inter-disciplinary distinguished seminar series (IDSS), Department of Electrical and Computer Engineering at NCSU, “Statistical and Machine Learning Methods for Optimal Treatment Regime”
- September 2017, Conference on Causal Inference in Longitudinal Studies, Columbia University, New York, "On Testing Conditional Qualitative Treatment Effects" (invited)
- September 2017, IMA workshop “Innovative Statistics and Machine Learning in Precision Medicine", Minneapolis, MN, "Maximin-Projection Learning for Optimal Dynamic Treatment Decision with Heterogeneous Data” (invited)
- June 2017, School of Statistics and Management, Shanghai University of Finance and Economics, “Maximin-Projection Learning for Optimal Dynamic Treatment Decision with Heterogeneous Data”
- June 2017, Institute of Applied Mathematics, Chinese Academy of Sciences, “Maximin-Projection Learning for Optimal Dynamic Treatment Decision with Heterogeneous Data”
- April 2017, Virginia Commonwealth University, Biostatistics Department, “Maximin-Projection Learning for Optimal Dynamic Treatment Decision with Heterogeneous Data”

- March 2017, ENAR Meeting, Washington, D.C., “High-Dimensional A-Learning for Optimal Dynamic Treatment Regimes” (invited)
- November 2016, University of North Carolina at Chapel Hill, Biostatistics Department, "Concordance-Assisted Learning for Estimating Optimal Individualized Treatment Regimes"
- August 2016, JSM Meeting, Chicago, IL, “Doubly Robust Estimation of Optimal Treatment Regime with Additive Hazards Regression” (invited)
- July 2016, Sixth International Biostatistics Workshop of Jilin University, Changchun, China, “Doubly Robust Estimation of Optimal Treatment Regimes for Survival Data - with an Application to UNC AIDS Data" (invited)
- July 2016, National Cheng Kung University, Department of Statistics, "Minimax-Angle Learning for Optimal Treatment Decision with Heterogeneous Data"
- June 2016, 4th Institute of Mathematical Statistics Asia Pacific Rim Meeting, Hong Kong, China, “Concordance-Assisted Learning for Estimating Optimal Individualized Treatment Regimes” (invited)
- March 2016, ENAR Meeting, Austin, TX, “Doubly Robust Estimation of Optimal Treatment Regimes for Survival Data” (invited)
- December 2015, Department of Mathematics and Statistics, Central China Normal University, Wuhan, China, “On Estimation of Optimal Treatment Regimes For Maximizing t-Year Survival Probability”
- December 2015, 8th International Conference on Computational and Methodological Statistics, London UK, “Concordance-Assisted Learning for Estimating Optimal Individualized Treatment Regimes” (invited)
- September, 2015, UNC CFAR Biostatistics Core Research Group, “Doubly Robust Estimation of Optimal Treatment Regimes for Survival Data - with an Application to UNC AIDS Data"
- August 2015, JSM Meeting, Seattle, WA, "Testing the Goodness-of-Fit for the Proportional Hazards Model Based on Nested Case-Control Data" (topic contributed)
- July 2015, The ICSA China Statistics Conference, Shanghai, China, "Estimation of Optimal Treatment Regimes for Survival Endpoints from a Classification Perspective" (invited)
- June 2015, The Fourth International Symposium on Biopharmaceutical Statistics, Beijing, China, "Change-Plane Analysis for Subgroup Identification and Sample Size Calculation" (invited)
- June 2015, The Fourth International Symposium on Biopharmaceutical Statistics, Beijing, China, "On Estimation of Optimal Treatment Regimes For Maximizing t-Year Survival Probability" (invited)
- May 2015, The Fourth Workshop on Biostatistics and Bioinformatics, Atlanta, GA, "Estimation of Optimal Treatment Regimes for Survival Endpoints from a Classification Perspective" (invited)
- February 2015, University of Pennsylvania, Biostatistics Department, "On Estimation of Optimal Treatment Regimes For Maximizing t-Year Survival Probability"

- October 2014, University of Minnesota, Biostatistics Department, "On Estimation of Optimal Treatment Regimes For Maximizing t-Year Survival Probability"
- August 2014, University of North Carolina at Chapel Hill, Biostatistics Department, "On Estimation of Optimal Treatment Regimes For Maximizing t-Year Survival Probability"
- August 2014, JSM Meeting, Boston, MA, "On Estimation of Optimal Treatment Regimes For Maximizing Survival Probabilities" (invited)
- June 2014, The Third Joint Biostatistics Symposium, Chengdu, China, "On Optimal Treatment Selection for Mean Survival Time" (invited)
- May 2014, The Sixth International Statistics Forum at Renmin University, Beijing, China, "Censored Rank Independence Screening for High Dimensional Survival Data" (invited)
- December 2013, The Ninth ICSA International Conference, Hong Kong, China, "Low Rank Linear Discriminant Analysis for Matrix Predictors" (invited)
- December 2013, The Second HKUST International Forum on Probability and Statistics, Hong Kong, China, "Estimation and Selection of Complex Effects in Pooled Nested Case-Control Studies with Heterogeneity" (invited)
- December 2013, Beijing Normal University, Department of Mathematics, Beijing, China, "On Optimal Treatment Selection for Mean Survival Time"
- September 2013, MD Andersen Cancer Center, Department of Biostatistics, Houston, TX, "Kernel Smoothing-based Efficient Estimation for Censored Linear Regression with Clustered Survival Data"
- August 2013, JSM Meeting, Montreal, Canada, "Censored Rank Independence Screening for High Dimensional Survival Data" (topic contributed)
- March 2013, ENAR Meeting, Orlando, FL, "Semiparametric Regression for Estimating Longitudinal Medical Cost with Informative Hospitalization and Death" (invited)
- November 2012, Virginia Tech University, Department of Statistics, Blacksburg, VA, "Selection of Predictive Variables for Optimal Treatment Decision"
- September 2012, Memorial Sloan-Kettering Cancer Center, New York, NY, "Selection of Predictive Variables for Optimal Treatment Decision"
- June 2012, ICSA Applied Statistics Symposium, Boston, MA, "Variable Selection for Optimal Treatment Decision" (invited)
- March 2012, George Mason University, Department of Statistics, "Estimation and Inference for Censored Linear Regression with Heteroscedastic Errors"
- December 2011, Joint 2011 Taipei Statistics Symposium, Taipei, Tai Wan, " Estimation and Inference for AFT Cure Model" (invited)
- December 2011, National Cheng Kung University, Department of Statistics, "Estimation and Inference for Censored Linear Regression with Heteroscedastic Errors"
- November 2011, University of North Carolina at Chapel Hill, Biostatistics Department, "Estimation and Inference for Censored Linear Regression with Heteroscedastic Errors"
- October 2011, Conference on Risk Assessment and Evaluation of Predictions, Silver Spring, MD, "Variable Selection for Optimal Treatment Decision" (contributed)

- September 2011, Columbia University, Biostatistics Department, "Variance Component Selection in Linear Mixed Model for Longitudinal Data"
- September 2011, DCCPS 2011 New Grantee Workshop (NIH), Bethesda, MD, "New Statistical Methods for Complex Problems in Nested Case-Control Studies" (invited poster)
- July 2011, IMS-China International Conference on Statistics and Probability, XiAn, China, "FOSSA for High Dimensional Censored Regression" (invited)
- June 2011, ICSA Applied Statistics Symposium, New York, NY, "Dimension Reduction and Variable Selection for Censored Regression" (invited)
- October 2010, Georgia State University, Department of Mathematics and Statistics, "Variable Selection for Linear Transformation Models"
- August 2010, JSM Meeting, Vancouver, BC, Canada, "Dimension Reduction and Variable Selection for Censored Regression" (invited)
- May 2010, Frontiers in Applied and Computational Mathematics (FACM) meeting, NJIT, Newark, NJ, "Dimension Reduction and Variable Selection for Censored Regression" (invited)
- July 2009, 1st IMS APRM Meeting, Seoul, "Semiparametric Marginalized Model for Longitudinal Data with Nonignorable Dropout" (invited)
- March 2009, ENAR Meeting, San Antonio, TX, "Sparse estimation for semiparametric linear transformation model" (contributed)
- February 2009, University of North Carolina at Charlotte, Department of Mathematics and Statistics, "Estimation and Inference for Partial Linear Transformation Models"
- January 2009, University of South Carolina, Department of Biostatistics, "Variable Selection for Semiparametric Survival Models - Estimation & Inference"
- October 2008, Winemiller Conference on Survival Analysis and Its Applications, Columbia, MO, "Semiparametric Analysis of Mixture Regression Models with Competing Risks Data" (contributed)
- September 2008, University of Georgia, Statistics Department, "Estimation and Inference for Partial Linear Transformation Models"
- September 2008, Duke University, Department of Biostatistics and Bioinformatics, DCRI, "Variable Selection for Semiparametric Survival Models – Estimation & Inference"
- August 2008, NCSU, Statistics Department, "Estimation and Inference for Partial Linear Transformation Models" (faculty sampler)
- June 2008, ICSA Applied Statistics Symposium, Piscataway, NJ, "On Estimation Of Linear Transformation Models With Nested Case-Control Sampling" (invited)
- April 2008, Emory University, Department of Biostatistics, "Semiparametric Marginalized Model for Longitudinal Data with Nonignorable Dropout"
- March 2008, Division of Epidemiology, Statistics, Prevention Research, National Institute of Children and Health Development, NIH, "A Unified Variable Selection Method for Censored Survival Data"
- February 2008, University of Virginia, Statistics Department, "Estimation and Inference for Partial Linear Transformation Models with Censored Survival Data"

- December 2007, Iowa State University, Statistics Department, "Estimation and Inference for Partial Linear Transformation Models with Censored Survival Data"
- November 2007, NYU Medical School, Department of Environmental Medicine, "Transformation Models for Case-Cohort and Nested Case-Control Studies"
- October 2007, Nonparametric Conference, Columbia, SC, "Partial Linear Transformation Models For Survival Data" (invited)
- August 2007, JSM Meeting, Salt Lake City, UT, "Variable Selection for Censored Survival Data" (topic contributed)
- June 2007, ICSA Applied Statistics Symposium, Raleigh, NC, "Partial Linear Transformation Models For Survival Data" (invited)
- March 2007, ENAR Meeting, Atlanta, GA, "Semiparametric Analysis of Mixture Regression Models with Competing Risks Data" (contributed)
- August 2006, JSM Meeting, Seattle, WA, "Adaptive-Lasso for Cox's Proportional Hazards Model" (topic contributed)
- Fall 2005, NCSU, Statistics Department, "Mapping Quantitative Trait Loci with Time-to-Event Data from a Population of Mixed Susceptibility" (faculty sampler)
- Fall 2005, NCSU, Bioinformatics Research Center, "Interval Mapping of Quantitative Trait Loci for Time-to-Event Trait with the Mixture Cure Model"
- August 2005, JSM Meeting, Minneapolis, MN, "Marginal Regression of Multivariate Event Based on Linear Transformation Models" (contributed)
- March 2005, ENAR Meeting, Austin, TX, "Semiparametric transformation models for the case-cohort study" (contributed)
- Fall 2004, NCSU, Statistics Department, "Semiparametric transformation models for the case-cohort study" (faculty sampler)
- August 2004, JSM Meeting, Toronto, Canada, "Semiparametric Transformation Cure Models" (contributed)
- March 2004, ENAR Meeting, Pittsburgh, PA, "On Semiparametric Transformation Cure Models" (contributed)
- February 2004, UNC-Chapel Hill, Biostatistics Department, "On Semiparametric Transformation Cure Models"
- February 2003, North Carolina State University, Department of Statistics, "On Semiparametric Transformation Cure Models"
- August 2002, JSM Meeting, New York, NY, "Efficiency Comparison between Mean and Log-Rank Tests with Recurrent Event Times" (contributed)
- March 2002, ENAR Meeting, Arlington, VA, "Efficiency Comparison between Mean and Log-Rank Tests with Recurrent Event Times" (contributed)