

# Danping Liu, Ph.D.

## Date

June 9, 2016

## Current Position

Investigator  
Biostatistics and Bioinformatics Branch  
Division of Intramural Population Health Research  
*Eunice Kennedy Shriver* National Institute of Child Health and Human Development  
National Institute of Health

## Contact Information

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## Education

1999–2003 B.S. Statistics, Peking University.  
2003–2005 M.Phil. Statistics, University of Hong Kong.  
2006–2010 Ph.D. Biostatistics, University of Washington.

## Research Interests

Medical diagnostic testing and ROC curve  
Prediction modelling  
Longitudinal data analysis  
Missing data methodologies  
Nonparametric and semiparametric inferences

## Academic Positions

Graduate Student Research Assistant, Department of Statistics, University of Hong Kong, 2003–2005.  
Research Associate, Department of Statistics, University of Hong Kong, 2005–2006.  
Graduate Student Research Assistant, Department of Biostatistics, University of Washington, 2006–2010.

Post-doctoral Fellow, National Alzheimer's Coordinating Center, University of Washington, 2010–2012.

Investigator, Biostatistics and Bioinformatics Branch, National Institute of Child Health and Human Development, 2012–present.

## Visiting Positions

Visiting Scholar, Department of Mathematics and Statistics, La Trobe University, May–June 2004.

Visiting Scholar, Department of Mathematics and Statistics, University of Melbourne, August–September 2005.

Visiting Scholar, School of Mathematics and Statistics, University of South Australia, February–April 2006.

## Honors and Awards

Panasonic Scholarship, Peking University (2000)

Outstanding Student Award, Peking University (2000, 2001, 2002)

Distinguished Volunteer Award in SARS disease control, Peking University (2003)

Distinguished Graduate Student Award, Peking University (2003)

Donovan J. Thompson Award, University of Washington (2007)

Outstanding Student Award, University of Washington (2009)

## Professional Activities

### *Membership*

American Statistical Association, 2008–present.

Western North American Region (WNAR) of the International Biometric Society, 2010–2011.

Eastern North American Region (ENAR) of the International Biometric Society, 2012–present.

International Chinese Statistical Association (ICSA), 2013–present.

### *Professional Services*

Associate editor, *Statistics in Medicine*.

Referee for:

*Academic Radiology*

*American Journal of Epidemiology*

*Annals of Applied Statistics*

*Biometrics*

*BMC Medical Research Methodology*

*Health Services and Outcomes Research Methodology*

*Human Reproduction*  
*Journal of the American Statistical Association*  
*Journal of Biopharmaceutical Statistics*  
*Journal of the Royal Statistical Society, Series B*  
*Science China - Mathematics*  
*Statistics and Its Interface*  
*Statistics in Biopharmaceutical Research*  
*Statistics in Biosciences*  
*Statistics in Medicine*  
*Statistical Modelling*  
*Journal of Rheumatology*

Session chair on “Joint Models For Longitudinal and Survival Data”, ENAR Spring Meeting, Orlando, FL, March 2013.

Session organizer and chair on “Recent Developments in Biomarker Research and Medical Diagnosis”, ICSA Applied Statistics Symposium, Bethesda, MD, June 2013.

Member, ICSA Student Paper Award Committee, June 2013.

Session chair on “Statistical Methods for Microarray and Biomarker Data”, ENAR Spring Meeting, Baltimore, MD, March 2014.

Session organizer on “Recent Developments in Missing Data Methodologies in Nontraditional Missing Data Problems”, Joint Statistical Meetings, Seattle, WA, August 2015.

Search committee member for Staff Scientist at NICHD/DIPHR/EB, 2015.

## Mentoring

### *As Primary Mentor*

Kara Fulton, Postbaccalaureate Fellow, 2012-2013.

Van Tran, Summer Student, 2013.

Ashok Chaurasia, Postdoctoral Fellow, 2013-2015.

Jonathon O’Brien, Summer Student, 2014.

Joe Bible, Postdoctoral Fellow, 2015-.

### *As Co-mentor*

Jared Foster, Postdoctoral Fellow, 2013-2015.

## Refereed Research Articles

*Statistical Methodology* (\*first author is a student or fellow)

1. **Liu, D.**, Yip, P. S. F., and Huggins R. M. (2007). A nonparametric method for estimating the size of an open population using marginal data from repeated multiple lists. *Australian*

*ℰ New Zealand Journal of Statistics*, **49**, 303–320.

2. Yip, P. S. F., Watson, R., Chan, K. S., Lau, E., Chen, F., Xu, T., Xi, L., Cheung, D. Y. T., Ip, B. Y. T., and **Liu, D.** (2010). Estimation of the number of people in a demonstration. *Australian & New Zealand Journal of Statistics*, **52**, 17–26.
3. **Liu, D.** and Zhou, X. H. (2010). A model for adjusting for nonignorable verification bias in estimation of ROC curve and its area with likelihood-based approach. *Biometrics*, **66**, 1119–1128.
4. Lin, H., **Liu, D.**, and Zhou, X. H. (2010). A correlated random effects model for normal longitudinal data with nonignorable missingness. *Statistics in Medicine*, **29**, 236–247.
5. **Liu, D.** and Zhou, X. H. (2011). Semiparametric estimation of the covariate-specific ROC curve with ignorable missing gold standard. *Biometrics*, **67**, 906–916.
6. **Liu, D.** and Zhou, X. H. (2013). Covariate adjustment in estimating the area under ROC curve with partially missing gold standard. *Biometrics*, **69**, 91–100.
7. **Liu, D.** and Zhou, X. H. (2013). ROC analysis in biomarker combination with covariate adjustment. *Academic Radiology*, **20**, 874–882.
8. **Liu, D.** and Albert, P. S. (2014). Combination of longitudinal biomarkers in predicting binary events. *Biostatistics*, **15**, 706–718.
9. Fulton, K. A.\* , **Liu, D.**<sup>†</sup>, Albert, P. S., and Haynie, D. L. (2015). Mixed model and estimating equation approaches for zero-inflation in clustered binary response data with application to a dating violence study. *Annals of Applied Statistics*, **9**, 275–299. (<sup>†</sup>co-first authorship)
10. Tran, V.\* , **Liu, D.**, Pradhan, A. K., Li, K., Bingham, C. R., Simons-Morton, B. G. and Albert, P. S. (2015). Assessing risk-taking in a driving simulator study: modeling longitudinal semi-continuous driving data using a two part regression model with correlated random effects. *Analytic Methods in Accident Research*, **5**, 17–27.
11. Foster, J. C.\* , **Liu, D.**, Albert, P. S., and Liu, A. (2016). Identifying subgroups of enhanced predictive accuracy from longitudinal biomarker data using tree-based approaches: applications to monitoring fetal growth. *Journal of the Royal Statistical Society: Series A*, DOI:10.1111/rssa.12182.
12. Chaurasia, A.\* , **Liu, D.**, Albert, P. S. (2016). Pattern mixture models with incomplete informative cluster size: application to a repeated pregnancy study. Under revision for *Journal of the Royal Statistical Society: Series C*.
13. Bible, J.\* , **Liu, D.**, Albert, P. S. (2016). A cautionary note on the use of generalized estimating equations for estimating population-averaged transition probabilities. Under revision for *Biometrics*.

#### *Collaboration in Health Sciences*

14. Monsell, S. E., **Liu, D.**, Weintraub, S., and Kukull, W. A. (2012). Comparing measures of decline to dementia in amnesic MCI subjects in the National Alzheimer’s Coordinating Center (NACC) Uniform Data Set. *International Psychogeriatrics*, **24**, 1553–1560.

15. Quick, V., Nansel, T. R., **Liu, D.**, Lipsky, L. M., Due, P., and Iannotti, R. J. (2014). Body size perception and weight control in youth: 9-year international trends from 24 countries. *International Journal of Obesity*, **38**, 988–994.
16. Männistö, T., Mendola, P., **Liu, D.**, Leishear, K., Sherman, S., and Laughon, S. K. (2015). Acute air pollution exposure and blood pressure at delivery among women with and without hypertension. *American Journal of Hypertension*, **28**, 58–72.
17. Robledo, C. A., Mendola, P., Yeung, E., Männistö, T., Sundaram, R., **Liu, D.**, Ying, Q., Sherman, S., Lipsky, L., and Laughon, S. K. (2015). Preconception air pollution exposures and risk of gestational diabetes mellitus. *Environmental Research*, **137**, 316–322.
18. Männistö, T., Mendola, P., **Liu, D.**, Leishear, K., Ying, Q., and Sundaram, R. (2015). Temporal variation in the acute effects of air pollution on blood pressure measured at admission to labor/delivery. *Air Quality, Atmosphere and Health*, **8**, 13–28.
19. Wallace, M. E., Mendola, P., **Liu, D.**, and Grantz, K. L. (2015). Joint effects of structural racism and income inequality on small-for-gestational-age birth. *American Journal of Public Health*, **105**, 1681–1688.
20. Zhu, Y., Zhang, C., **Liu, D.**, Grantz, K. L., Wallace, M., and Mendola, P. (2015). Maternal ambient air pollution exposure preconception and during early gestation and offspring congenital orofacial defects. *Environmental Research*, **140**, 714–720.
21. Brooks-Russell, A., Conway, K. P., **Liu, D.**, Xie, Y., Vullob, G. C., Li, K., Iannotti, R. J., Compton, W., and Simons-Morton, B. G. (2015). Dynamic patterns of adolescent substance use: results from a nationally representative sample of high school students. *Journal of Studies on Alcohol and Drugs*, **76**, 962–970.
22. Männistö, T., Mendola, P., Grantz, K. L., Leishear, K., Sundaram, R., Sherman, S., Ying, Q., Schisterman, E. F., and **Liu, D.** (2015). Acute and recent air pollution exposure and cardiovascular events at labour and delivery. *Heart*, **101**, 1491–1498.
23. Lipsky, L. M., Haynie, D. L., **Liu, D.**, Chaurasia, A., Gee, B., Li, K., Iannotti, R. J., and Simons-Morton, B. G. (2016). Trajectories of eating behaviors in a nationally representative cohort of U.S. adolescents during the transition to adulthood. *International Journal of Behavioral Nutrition and Physical Activity*, DOI 10.1186/s12966-015-0298-x.
24. Simons-Morton, B. G., Haynie, D. L., **Liu, D.**, Chaurasia, A., Li, K., and Hingson, H. (2016). The effect of residential, school, work status and social influence on the prevalence of alcohol use among emerging adults. *Journal of Studies on Alcohol and Drugs*, **77**, 121–132.
25. Mendola, P., Wallace, M., **Liu, D.**, Robledo, C., Männistö, T., and Grantz, K. L. (2016). Air pollution exposure and preeclampsia among US women with and without asthma. *Environmental Research*, **148**, 248–255.
26. Wallace, M., Mendola, P., **Liu, D.**, Zhu, Y., Kim, S. S., and Grantz, K. L. (2016). Exposure to ambient air pollution and premature rupture of membranes. *American Journal of Epidemiology*, doi: 10.1093/aje/kwv284.
27. Mendola, P., Wallace, M., Hwang, B. S., **Liu, D.**, Robledo, C., Männistö, T., Sundaram, R., Sherman, S., Ying, Q., and Grantz, K. L. (2016). Preterm birth and air pollution: Critical

- windows of exposure for women with asthma. *Journal of Allergy and Clinical Immunology*, DOI: <http://dx.doi.org/10.1016/j.jaci.2015.12.1309>.
28. Lipsky, L. M., Nansel, T. R., Haynie, D. L., **Liu, D.**, Eisenberg, M. H., and Simons-Morton, B. G. (2016). Power of Food Scale in association with weight outcomes and dieting in a nationally representative cohort of U.S. young adults. *Appetite*, in press.
  29. Li, K., **Liu, D.**, Haynie, D. L., Gee, B., Chaurasia, A., Seo, D. C., Iannotti, R. J., and Simons-Morton, B. G. (2016). Individual, social, and environmental influences on the transitions in physical activity among emerging adults. Under revision for *BMC Public Health*.
  30. Ha, S., **Liu, D.**, Zhu, Y., Kim, S. S., Sherman, S., and Mendola, P. (2016). Ambient temperature and early delivery of singleton pregnancies. Under revision for *Environmental Health Perspectives*.
  31. Simons-Morton, B. G., Haynie, D. L., O'Brien, F., Lipsky, L. M., Bible, J., and **Liu, D.** (2016). Health behavior among emerging adults one year after high school according to college status. Under revision for *Journal of American College Health*.
  32. Murthy, S. R. K., Kuo, I. Y., **Liu, D.**, Lai, W. W., Chen, C. Y., Wang, Y. C., and Loh, Y. P. (2016). Carboxypeptidase E mRNA: overexpression predicts recurrence and death in non-small cell lung cancer patients. *Submitted*.
  33. Mendola, P., Sundaram, R., Louis, G. M. B., Sun, L., Wallace, M. E., Smarr, M. M., Sherman, S., Zhu, Y., Ying, Q., and **Liu, D.** (2016). Proximity to major roadways and prospectively-measured time-to-pregnancy and infertility. *Submitted*.
  34. Yang, Z., Gorden, T., **Liu, D.**, Mukasa, L., Patil, N., and Bates, J. H. (2016). Delayed diagnosis of tuberculosis in a low incident state: the reasons, consequences and solutions. *Submitted*.
  35. O'Brien, F., Bible, J., **Liu, D.**, and Simons-Morton, B. G. (2016). Do young drivers become safer after being involved in a collision? *Submitted*.
  36. Zhu, Y., Zhang, C., **Liu, D.**, Ha, S., Kim, S. S., Pollack, A., and Mendola, P. (2016). Ambient air pollution and risk of gestational hypertension. *Submitted*.
  37. Ha, S., **Liu, D.**, Zhu, Y., Kim, S. S., Sherman, S., Grantz, K. L., and Mendola, P. (2016). Ambient temperature and stillbirth. *Submitted*.
  38. Nansel, T. R., Lipsky, L. M., Eisenberg, M. H., Haynie, D. L., **Liu, D.**, and Simons-Morton, B. G. (2016). Greater food reward sensitivity is associated with more frequent intake of discretionary foods in a nationally representative sample of young adults. *Submitted*.
  39. O'Brien, F., Simons-Morton, B. G., Chaurasia, A., Luk, J., Haynie, D., and **Liu, D.** (2016). Post-high school changes in tobacco and marijuana use in the United States. *Submitted*.

#### *Refereed Book Chapters*

40. **Liu, D.**, and Zhou, X. H. (2015). Estimation of ROC curve with multiple types of missing gold standard. *Applied Statistics in Biomedicine and Clinical Trials Design: Selected Papers from 2013 ICASA/ISBS Joint Statistical Meetings*, (Editors: Z. Chen, A. Liu, Y. Qu, L. Tang, N. Ting, and Y. Tsong), Springer, 75-87.

## Books

1. Zhou, X. H., Zhou, C., **Liu, D.**, and Ding, X. (2014). *Applied Missing Data Analysis in the Health Sciences*. Wiley, New Jersey.

## Invited Talks

WNAR Annual Meeting, Seattle, WA, June 2010.

Department of Biostatistics, Indiana University at Indianapolis, January 2012.

*Eunice Kennedy Shriver* National Institute of Child Health and Human Development, National Institute of Health, January 2012.

Department of Epidemiology and Biostatistics, University of South Carolina, February 2012.

School of Public Health, University of Memphis, February 2012.

Department of Epidemiology and Biostatistics, State University of New York at Albany, March 2012.

School of Nursing, University of Michigan, March 2012.

ENAR Spring Meeting, Washington DC, April 2012.

ICSA Applied Statistics Symposium, Bethesda, MD, June 2013.

Department of Statistics, George Mason University, October 2013.

Survival, Longitudinal And Multivariate Data Working Group, Department of Biostatistics, Johns Hopkins University, November 2013.

Sibling Analysis Workshop, School of Public Health, Harvard University, April 2014.

ICSA Applied Statistics Symposium, Portland, OR, June 2014.

ENAR Spring Meeting, Miami, FL, March 2015.

8th Annual FDA/MTLI Medical Devices and Diagnostics Statistical Issues Workshop, Arlington, VA, April 2015.

Meeting of the NICHD-NIGMS T32 Trainees, Bethesda, MD, September, 2015.

Department of Statistics, Pennsylvania State University, December, 2015.

ICSA Applied Statistics Symposium, Atlanta, GA, June 2016.

George Washington University Biostatistics Center, June, 2016.

## Contributed Talks

The 25th European Meeting of Statisticians, Oslo, Norway, July 2005.

Joint Statistical Meetings, Denver, CO, August 2008.

Joint Statistical Meetings, Washington DC, August 2009.

WNAR Annual Meeting, Seattle, WA, June 2010.

Joint Statistical Meetings, Vancouver, Canada, August 2010.

ENAR Spring Meeting, Orlando, FL, March 2013.

ENAR Spring Meeting, Baltimore, MD, March 2014.

Joint Statistical Meetings, Seattle, WA, August 2015.

Joint Statistical Meetings, Chicago, IL, July 2016.