

Contact Information

Department of Biostatistics
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University of Alabama at Birmingham
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Education

May 2005 **Ph.D.**, Biostatistics
Department of Epidemiology and Public Health, Yale University
Dissertation Title: Statistical Methods for Haplotype Analysis in Genetic Studies
Committee: Theodore R. Holford, Hongyu Zhao, Kenneth K. Kidd

May 2003 **M.Phil.**, Biostatistics
Department of Epidemiology and Public Health, Yale University

Jul 1993 **M.S.**, Applied Mathematics
Peking University, Beijing, China

Jul 1990 **B.S.**, Computational Mathematics
Peking University, Beijing, China

Current Employment

- *Primary Appointment*
Associate professor Department of Biostatistics, the University of Alabama at Birmingham
 - *Secondary Appointment*
Assistant professor Division of Pulmonary, Allergy and Critical Care Medicine,
Department of Medicine, the University of Alabama at Birmingham
-

Professional Experience

Oct 2010 – present **Associate Professor (tenured)**, Department of Biostatistics, the University of Alabama at Birmingham

Jan 2010 – present **Assistant Professor**, Division of Pulmonary, Allergy and Critical Care Medicine, Department of Medicine, the University of Alabama at Birmingham

Aug 2005 – Sep 2010 **Assistant Professor**, Department of Biostatistics, the University of Alabama at Birmingham

Feb 2003 – Jul 2005 **Research Assistant**, Department of Epidemiology and Public Health, Yale University

Jun 2004 – Jul 2005 **Consultant**, University of Connecticut Health Center, Farmington, CT

Jan 2004/2001 – May 2004/2001 **Teaching Assistant**, Department of Epidemiology and Public Health, Yale University

Sep 2002 – Feb 2003	Research Assistant , Department of Genetics, Yale University
Nov 2001 – Sep 2002	Research Assistant , Connecticut Mental Health Center and Department of Psychiatry, Yale University
Sep 2000 – Dec 2001	Statistical Lab Tutor , Department of Epidemiology and Public Health, Yale University
Aug 1998 – Jun 1999	Researcher , China Academic Library and Information System Administration Center, Peking University, China
Jul 1993 – Aug 1998	Researcher & Software Engineer , Institute of Computer Science and Technology, Peking University
Nov 1994 – Dec 1995	Draftsman , participation in creating the China national standard: Chinese Internal Code Specification (abbreviated as GBK)
Sep 1990 – Jul 1992	Teaching Assistant , Department of Mathematics, Peking University, China
Oct 1989 – Jun 1990	Research Assistant , Department of Mathematics, Peking University, China

Research Interests

- Statistical genetics and genomics: Genetic linkage and association analysis, disequilibrium mapping, haplotype analysis, population genetics, genome-wide-association studies and next-generation sequencing data analysis, pharmacogenomics, and bioinformatics.
- Statistics/Biostatistics: Longitudinal data analysis, survival analysis, missing data problems and imputation methodology, prediction, machine learning methods, cluster and classification, and their applications in genetics and bioinformatics.

Selected Current Grant Support

- | | |
|---|---------------------|
| ○ R01GM081488 (PI: Nianjun Liu)
NIH/NIGMS
Genome Wide Haplotype Association Analysis | 04/01/08 - 03/31/13 |
| ○ 3R01GM081488-02S1 (PI: Nianjun Liu)
NIH/NIGMS
Genome Wide Haplotype Association Analysis (Supplement) | 09/30/09 – 08/31/12 |
| ○ R01HL092173 (PI: Nita Limdi)
NIH/NHLBI
Genetic and Environmental Determinants of Warfarin Response | 05/20/08 – 04/30/13 |
| ○ R01GM077490 (PI: Nianjun Liu)
NIH/NIGMS
Genome-wide Structured Association Testing & Regional Admixture Mapping | 09/01/11- 08/31/12 |
| ○ R01HL088141 (PI: Rui-Ming Liu)
NIH/ NHLBI
Glutathione and lung fibrosis | 09/25/08- 08/01/12 |
| ○ R01HL103859 (PI: Ballinger)
NIH/ NHLBI | 07/19/11 – 04/30/15 |

Mitochondrial Nuclear Interactions and CVD Susceptibility

Professional Memberships

American Statistical Association
Institute of Mathematical Statistics
American Society of Human Genetics
International Genetic Epidemiology Society

Teaching Activities

Course Instructors

- 2011 (Dept of Biostatistics, University of Alabama at Birmingham)
 - General Linear Models
 - Non- Dissertation Research
 - Non- Thesis Research
- 2010 (Dept of Biostatistics, University of Alabama at Birmingham)
 - General Linear Models
 - Non-Thesis Research
 - Intermediate Statistical Analysis II
- 2009 (Dept of Biostatistics, University of Alabama at Birmingham)
 - General Linear Models
 - Statistical Consulting
- 2008 (Dept of Biostatistics, University of Alabama at Birmingham)
 - General Linear Models
 - Non-Thesis Research
 - Statistical Consulting
- 2007 (Dept of Biostatistics, University of Alabama at Birmingham)
 - General Linear Models

Invited Lectures

- 2009
 - Statistical Methods for Genetic Analysis II (Dept of Biostatistics, University of Alabama at Birmingham)
 - One lecture on haplotype analysis
- 2007
 - Introduction to Statistical Genetics (Dept of Biostatistics, University of Alabama at Birmingham)
 - One lecture on haplotype analysis
 - Quantitative Methods (Hughes Med-Grad Fellowship Didactic Program, University of Alabama at Birmingham)
 - One lecture on pharmacokinetics statistics
- 2006
 - Principles of Genetics/Genetic Basis of Disease (Dept of Genetics, University of Alabama at Birmingham)
 - One lecture on genetic association analysis

Teaching Assistants

- 2004 (Department of Epidemiology and Public Health, Yale University)

- Statistical Thinking
- 2001 (Department of Epidemiology and Public Health, Yale University)
 - Statistical Thinking
 - Statistical Lab Tutor
- 2000 (Department of Epidemiology and Public Health, Yale University)
 - Statistical Lab Tutor
- 1990 – 1992 (Department of Mathematics, Peking University, China)
 - Calculus, Advanced Algebra and C Programming Language

Developing New Courses

- R and data analysis, pending approval

Current Advisees

- Postdoctoral Fellows
 - Wan-Yu Lin, primary mentor, Aug. 2010 –
- Ph.D. Students
 - Qi Yan, academic advisor, Biostatistics, Aug. 2011 –
 - Peng Li, academic advisor, Biostatistics, Aug. 2011 –
 - Rita Khoury, committee Member, Epidemiology, Jan 2010 –

Past Advisees

- Postdoctoral Fellows
 - Boshao Zhang, primary mentor, June 2009 – May 2011
 - Kofi Adragani, co-mentor, Oct 2009 – Aug 2010
 - Guobo Chen, co-mentor, Mar 2010 – Aug 2011
- Ph.D. Committee Member and Reader
 - Jun Li, Biostatistics, University of Alabama at Birmingham, Dec 2010 – Dec 2011
- Ph.D. Academic Advisors
 - Samantha Seals, Oct 2008 – Sep 2011
- M.S. Committee Member and Thesis Advisor
 - Fenglong Xie, Aug 2007 – Dec 2008. (Master project: Are SNPs in FCAR Associated with SLE?)
 - Qi Yan, Aug 2009 – May 2011. (Master project: The Effect of Racial Difference on Warfarin Dose Response and Hemorrhagic Complications)
 - Peng Li, Aug 2009 – May 2011. (Master project: Reanalysis of an Obesity Dataset Using a New Gene-based Method)
- M.S. Committee Members
 - Guodong Wu, 2010
 - Justin T. Arcury, 2007

Publications

Peer Reviewed

1. **N. Liu**, S.L. Sawyer, N. Mukherjee, A.J. Pakstis, J.R. Kidd, K.K. Kidd, A.J. Brookes, H. Zhao (2004) Haplotype Block Structures Show Significant Variation among Populations. *Genetic Epidemiology* 27: 385-400.

2. G. Sanacora, R.M. Berman, A. Cappiello, D. Oren, A. Kugaya, **N. Liu**, R. Gueorguieva, D. Fasula, D. Charney (2004) Addition of the α 2-Antagonist Yohimbine to Fluoxetine: Effects on Rate of Antidepressant Response. *Neuropsychopharmacology* 29: 1166-1171.
3. J.H. Krystal, W. Abi-Saab, E. Perry, C. D'Souza, **N. Liu**, R. Gueorguieva, L. McDougall, T. Hunsberger, A. Belger, L. Levine, A. Breier (2005) Preliminary Evidence of Attenuation of the Disruptive Effects of the NMDA Glutamate Receptor Antagonist, Ketamine, on Working Memory by Pretreatment with the Group II Metabotropic Glutamate Receptor (mGluR) Agonist, LY354740, in Healthy Human Subjects. *Psychopharmacology* 179: 303-309.
4. **N. Liu**, L. Chen, S. Wang, C. Oh, H. Zhao (2005) Comparison of Single Nucleotide Polymorphisms and Microsatellites in Inference of Population Structure. *BMC Genetics* 2005, 6(Suppl 1):S26.
5. L. Chen, **N. Liu**, S. Wang, C. Oh, H. Zhao (2005) Whole Genome Association Studies in Alcoholism Comparing Different Phenotypes Using Single-Nucleotide Polymorphisms and Microsatellites. *BMC Genetics* 2005, 6(Suppl 1):S130.
6. S. Wang, S. Huang, **N. Liu**, L. Chen, C. Oh, H. Zhao (2005) Whole-Genome Linkage Analysis in Mapping alcoholism genes Using Single Nucleotide Polymorphisms and Microsatellites. *BMC Genetics* 2005, 6(Suppl 1):S28.
7. C. Oh, S. Wang, **N. Liu**, L. Chen, H. Zhao (2005) A Bayesian Genome Screening of Maximum Number of Drinks as an Alcoholism Phenotype with the New Haseman-Elston Method. *BMC Genetics* 2005, 6(Suppl 1):S116.
8. S. Huang, S. Wang, **N. Liu**, L. Chen, C. Oh, H. Zhao (2005) Whole-Genome Scan in Mapping Recombination Modifier Genes Using Single Nucleotide Polymorphisms and Microsatellites. *BMC Genetics* 2005, 6(Suppl 1):S51.
9. Y. Liu, **N. Liu**, H. Zhao (2005) Inferring protein-protein interactions through high-throughput interaction data from diverse organisms. *Bioinformatics* 21: 3279-3285.
10. **N. Liu**, I. Beerman, R. Lifton, H. Zhao (2006) Haplotype Analysis in the Presence of Informatively Missing Genotype Data. *Genetic Epidemiology* 30: 290-300.
11. B. Wu, **N. Liu**, H. Zhao (2006) PSMIX: an R Package for Population Structure Inference via Maximum Likelihood Method. *BMC Bioinformatics* 2006, 7:317.
12. **N. Liu**, H. Zhao (2006) A Non-parametric Approach to Population Structure Inference Using Multilocus Genotypes. *Human Genomics* 2(6): 353-364.
13. D. Redden, J. Divers, L. Vaughan, H. Tiwari, M. Beasley, J. Fernandez, R. Kimberly, R. Feng, M. Padilla, **N. Liu**, M. Miller, D. Allison (2006) Regional Admixture Mapping and Structured Association Testing: Conceptual Unification and an Extensible General Linear Model. *PLoS Genet* 2(8): e137.
14. S. Wu, L. Leng, Z. Feng, **N. Liu**, H. Zhao, C. McDonald, A. Lee, F. Arnett, P. Gregersen, M. Mayes, R. Bucala (2006) Macrophage Migration Inhibitory Factor Promoter Polymorphisms and the Clinical Expression of Scleroderma. *Arthritis and Rheumatism* 54: 3661-3669.
15. S. Musani, D. Shriner, **N. Liu**, R. Feng, C. Coffey, N. Yi, H. Tiwari, D. Allison (2007) Detection of GenexGene Interactions in Genome-Wide Association Studies of Human Population Data. *Human Heredity* 63:67-84.

16. J. Arcaroli, J. Sankoff, **N. Liu**, D. B. Allison, J. Maloney, E. Abraham (2008) Association between Urokinase Haplotypes and Outcome from Infection-Associated Acute Lung Injury. *Intensive Care Medicine* 34:300–307.
17. J.M. Kelley, L.B. Hughes, R. Feng, **N. Liu**, M.A. Padilla, L.K. Vaughan, S.L. Bridges (2008) Evaluating Linkage Disequilibrium and Recombination Provides a Haplotype-tagging SNP Panel of the Major Histocompatibility Complex in African Americans. *Genes and Immunity* 9:271–273.
18. **N. Liu**, K. Zhang, H. Zhao (2008) Haplotype-Association Analysis. *Adv. Genet.* 60:335-405.
19. N.A. Limdi, T.M. Beasley, M.R. Crowley, J.A. Goldstein, M.J. Rieder, D.A. Flockhart, D.K. Arnett, R.T. Acton, **N. Liu** (2008) VKORC1 polymorphisms, haplotypes and haplotype groups on warfarin dose among African–Americans and European–Americans. *Pharmacogenomics* 9:1445-1458. PMID: PMC2586955.
20. W.K. Chung, A. Patki, N. Matsuoka, B.B. Boyer, **N. Liu**, S.K. Musani, A. Goropashnaya, P.L. Tan, N. Katsanis, S.B. Johnson, P.K. Gregersen, D.B. Allison, R.L. Leibel, H.K. Tiwari (2009) Analysis of 30 Genes (355 SNPS) Related to Energy Homeostasis for Association with Adiposity in European-American and Yup'ik Eskimo Populations. *Human Heredity* 67:193-205. PMID: PMC2715950.
21. **N. Liu**, D. Zhang, H. Zhao (2009) Genotyping Error Detection in Samples of Unrelated Individuals without Replicate Genotyping. *Human Heredity* 67:154-162. PMID: PMC2782542.
22. G. Kang, K. Ye, **N. Liu**, D. Allison, G. Gao (2009) Weighted Multiple Hypothesis Testing Procedures. *Statistical Applications in Genetics and Molecular Biology* Vol. 8: Iss. 1, Article 23 (DOI: 10.2202/1544-6115.1437). PMID: PMC2703613.
23. **N. Liu**, R. Bucala, H. Zhao (2009) Modeling Informatively Missing Genotypes in Haplotype Analysis. *Communications in Statistics – Theory and Methods* 38(18): 3445 – 3460. PMID: PMC2801447.
24. G. Kang, D. Childers, **N. Liu**, K. Zhang, G. Gao (2009) Genome-wide association studies of rheumatoid arthritis data via multiple hypothesis testing methods for correlated tests. *BMC Proceedings* 2009, 3(Suppl 7):S38. PMID: PMC2795936.
25. D. Childers, G. Kang, **N. Liu**, G. Gao, K. Zhang (2009) Application of imputation methods to the analysis of rheumatoid arthritis data in genome-wide association studies. *BMC Proceedings* 2009, 3(Suppl 7):S24. PMID: PMC2795921.
26. N.A. Limdi, M. Wadelius, L. Cavallari, N. Eriksson, D.C. Crawford, M.M. Lee, C. Chen, A. Motsinger-Reif, H. Sagreiya, **N. Liu**, A.H.B. Wu, B.F. Gage, A. Jorgensen, M. Pirmohamed, J. Shin, G. Suarez-Kurtz, S.E. Kimmel, J.A. Johnson, T.E. Klein and M.J. Wagner (2010) Warfarin Pharmacogenetics: A single VKORC1 polymorphism is predictive of dose across three racial groups. *Blood* Vol. 115, No. 18: 3827-3834. PMID: PMC2865873.
27. B. Zhang, D. Zhi, K. Zhang, G. Gao, N.A. Limdi, **N. Liu** (2011) Practical Consideration of Genotype Imputation: Sample Size, Window Size, Reference Choice, and Untyped Rate. *Statistics and Its Interface* Vol. 4, No. 3: 339-352. PMID: PMC3269888.

28. W. Lin, B. Zhang, N. Yi, G. Gao, **N. Liu** (2011) Evaluation of pooled association tests for rare variant identification. *BMC Proceedings* 2011, **5**(Suppl 9):S118. NIHMSID: NIHMS353951.
29. W. Chen, X. Gao, J. Wang, C. Sun, W. Wan, D. Zhi, **N. Liu**, X. Chen, G. Gao (2011) Evaluation of association tests for rare variants using simulated data sets in the Genetic Analysis Workshop 17 data. *BMC Proceedings* 2011, **5**(Suppl 9):S86. NIHMSID: NIHMS297654.
30. **N. Liu**, H. Zhao, A. Patki, N.A. Limdi, D.B. Allison (2011) Controlling Population Structure in Human Genetic Association Studies with Samples of Unrelated Individuals. *Statistics and Its Interface* Vol. 4, No. 3: 317-326. PMID: PMC3269890.
31. J. Arcaroli, **N. Liu**, N. Yi, E. Abraham (2011) Association between IL-32 genotypes and outcome in infection-associated acute lung injury. *Critical Care*, 15: R138. PMID: PMC3219007.
32. N. Yi, **N. Liu**, D. Zhi, J. Li (2011) Hierarchical generalized linear models for multiple groups of rare and common variants: jointly estimating group and individual-variant effects. *PLoS Genet* 7(12): e1002382. PMID: PMC3228815.
33. D. Zhi, J. Wu, **N. Liu**, K. Zhang (2012) Genotype Calling from Next Generation Sequencing Data using Haplotype Information of Reads. *Bioinformatics* (In press).
34. G. Gao, G. Kang, J. Wang, W. Chen, H. Qin, B. Jiang, Q. Li, C. Sun, **N. Liu**, K.J. Archer, D.B. Allison (2012) A Generalized Sequential Bonferroni Procedure Using Smoothed Weights for Genome-Wide Association Studies Incorporating Information on Hardy-Weinberg Disequilibrium among Cases. *Hum Hered.* 73:1-13. Publisher provided directly to PMC.
35. W. Lin, H.K. Tiwari, G. Gao, K. Zhang, J.J. Arcaroli, E. Abraham, **N. Liu** (2012) Similarity-based multi-marker association tests for continuous traits. *Annals of Human Genetics* (In press).

Book Chapters

1. B.R. Korf and **N. Liu** (2012). Human Genome Project, Genomics, and Clinical Research. In “Principles and Practice of Clinical Research” (J. I. Gallin and F.P. Ognibene, eds.), In press.
2. Z. Feng, **N. Liu**, and H. Zhao (2007). Haplotype inference and association analysis in unrelated samples. In “Current Topics in Human Genetics: Studies in Complex Diseases” (H. W. Deng, H. Shen, Y. J. Liu, and H. Hu, eds.), pp. 135–176. World Scientific Publishing Company, Singapore.

Published Conference Abstracts

1. G. Sanacora, R. Berman, A. Cappeillo, D. Oren, **N. Liu**, D. Charney. Addition of the 2-antagonist Yohimbine to Fluoxetine: Effects on Rate of Antidepressant Response. The Society of Biological Psychiatry 57th Annual Meeting, Philadelphia PA, May 16-18, 2002.
2. J.H. Krystal, W. Abi-Saab, E. Perry, C. D’Souza, **N. Liu**, L. McDougall, A. Belger, L. Levine, A. Breier. Modulation of Ketamine-induced Working Memory Deficits in Healthy Human Subjects by the Group II Metabotropic Agonist, LY354740. The American College of Neuropsychopharmacology 41st Annual Meeting, San Juan, Puerto Rico, December 8-12, 2002.

3. G. Sanacora, R. Berman, A. Cappeillo, D. Oren, **N. Liu**, D. Charney. The 2-antagonist Yohimbine Hastens Antidepressant Response to Fluoxetine. The American College of Neuropsychopharmacology 41st Annual Meeting, San Juan, Puerto Rico, December 8-12, 2002.
4. **N. Liu**, H. Zhao. A Nonparametric Approach for Population Structure Inference Using Multilocus Genotypes. The American Society of Human Genetics 54th Annual Meeting, Toronto, Ontario, Canada, October 26-30, 2004.
5. J.H. Krystal, E. Perry, W. Abi-Saab, C. D'Souza, **N. Liu**, R. Gueorguieva, L. McDougall, T. Hunsberger, A. Belger, L. Levine, A. Breier. Preliminary Evidence of Attenuation of the Disruptive Effects of the NMDA Glutamate Receptor Antagonist, Ketamine, on Working Memory by Pretreatment with the Group II Metabotropic Glutamate Receptor (mGluR) Agonist, LY354740, in Healthy Human Subjects. The International Congress on Schizophrenia Research, Savannah, Georgia, April 2-6, 2005.
6. **N. Liu**, H. Zhao. Haplotype Analysis in the Presence of Missing Data. International Genetic Epidemiology Society 14th Annual Meeting, Park City, Utah, October 23-24, 2005
7. S. Gu, **N. Liu**, H. Zhao, K.K. Kidd. The Efficiency and Transferability of tagSNPs in Six Populations from Three tagSNP Selection Algorithms. The American Society of Human Genetics 55th Annual Meeting, Salt Lake City, Utah, October 25-29, 2005.
8. **N. Liu**, I. Beerman, R. Lifton, H. Zhao. Haplotype Analysis in the Presence of Missing Data. The American Society of Human Genetics 55th Annual Meeting, Salt Lake City, Utah, October 25-29, 2005.
9. **N. Liu**. Using Disease Information in TagSNP selection for Disease Association Mapping. The American Society of Human Genetics 56th Annual Meeting, New Orleans, October 9-13, 2006.
10. **N. Liu**, D. Zhang, H. Zhao. Genotyping error detection in unrelated samples. The American Society of Human Genetics 57th Annual Meeting, San Diego, October 23-27, 2007.
11. **N. Liu**. Modeling SNP genotype data with informative missingness in samples of unrelated individuals. The American Society of Human Genetics 58th Annual Meeting, Philadelphia, November 12-15, 2008.
12. **N. Liu**, H. Zhao, D.B. Allison. Evaluation of Mixed-Model Approaches for Control of Population Structure in Human Genetic Association Studies. The American Society of Human Genetics 59th Annual Meeting, Honolulu, October 20-24, 2009.
13. D. Zhi and **N. Liu**. Bayesian network model for SNP calling in shallow sequencing with haplotype based prior. The American Society of Human Genetics 59th Annual Meeting, Honolulu, October 20-24, 2009.
14. W. Chen, X. Gao, J. Wang, C. Sun, W. Wan, D. Zhi, **N. Liu**, X. Chen, G. Gao. An Evaluation of Association Tests for Rare Variants by Using Simulated datasets in the GAW17 Data. Genetic Analysis Workshop 17, Boston, MA, October 13-16, 2010.
15. W. Lin, B. Zhang, N. Yi, G. Gao, **N. Liu**. Evaluation of Pooled Association Tests for Rare Variants Identification. Genetic Analysis Workshop 17, Boston, MA, October 13-16, 2010.
16. B. Zhang, D. Zhi, K. Zhang, G. Gao, N.A. Limdi, **N. Liu**. Practical Consideration of Genotype Imputation: Sample Size, Window Size, Reference Choice, and Untyped Rate.

- The American Society of Human Genetics 60th Annual Meeting, Washington DC, November 2-6, 2010.
17. **N. Liu**. Statistical Methods for Rare Variants Identification. IMS-China, Xi'an, China, July 8-11, 2011.
 18. J. Wu, G. Chen, D. Zhi, **N. Liu**, and K. Zhang. A Hidden Markov Model for Haplotype Inference Using Previously Identified Haplotype and Haplotype Patterns. ENAR 2011, Miami, FL, March 20-23, 2011.
 19. W. Lin and **N. Liu**. Statistical Methods for Rare Variants Identification. ENAR 2011, Miami, FL, March 20-23, 2011.
 20. **N. Liu** and B. Zhang. Differential call rates in genotype imputation and their effect on genetic association studies. The 12th International Congress of Human Genetics and the American Society of Human Genetics 61st Annual Meeting, Montreal, Canada, October 11-15, 2011.
 21. M. A. Perera, N. Limdi, L. Cavallari, E. R. Gamazon, A. Konkashbaev, A. Pluzhnikov J. Wang, **N. Liu**, M. Wagner, A. Wu, D. Roden, D. Crawford, J. Eversten, B. Gage, T. Mushiroda, M. Kubo, R. B. Altman, T. E. Klein, M. J. Rieder, Y. N., N. J. Cox, J. A. Johnson. Novel SNPs Associated with Warfarin Dose in a Large Multicenter Cohort of African Americans: Genome Wide Association Study and Replication Results. AHA/ASA, Orlando, FL, November 13-15, 2011.

Oral Presentations

Conference Oral Presentations

1. **N. Liu**, S.L. Sawyer, N. Mukherjee, A.J. Pakstis, J.R. Kidd, K.K. Kidd, A.J. Brookes, H. Zhao. Measures of Similarity for Haplotype Block Structures Show Variation among Populations. The American Society of Human Genetics 53rd Annual Meeting, Los Angeles, California, USA, November 4-8, 2003.
2. **N. Liu**, S.L. Sawyer, N. Mukherjee, A.J. Pakstis, J.R. Kidd, K.K. Kidd, A.J. Brookes, H. Zhao. Similarity Measures for Haplotype Block Structures Show Variation Among 16 Populations. The International HapMap Community Analysis Meeting, Baltimore, MD, USA, April 18-20, 2004. **(Invited)**
3. **N. Liu**, D. Zhang, H. Zhao. Genotyping Error Detection in Samples of Unrelated Individuals. International Biometric Society ENAR Annual Meeting, Arlington, VA, USA, March 16-19, 2008.
4. **N. Liu**, I. Beerman, R. Lifton, R. Bucala, H. Zhao. Haplotype Analysis in the Presence of Informatively Missing Genotype Data. 1st NHGRI-funded Conference: Haplotype Analysis of Population & Pedigree Data in Association Studies. Birmingham, AL, USA, May 7 - 8, 2008. **(Invited)**
5. **N. Liu**. Modeling SNP Genotype Data with Informative Missingness in Samples of Unrelated Individuals. International Biometric Society ENAR Annual Meeting, San Antonio, Texas, USA, March 15-18, 2009.
6. **N. Liu**. Modeling Informatively Missing Genotypes in Haplotype Analysis. Joint Conference of the Society for Mathematical Biology and the Chinese Society for Mathematical Biology, Hangzhou, P. R. China, June 14-17, 2009. **(Invited)**

7. **N. Liu**, H. Zhao, A. Patki, N.A. Limdi, D.B. Allison. Evaluation of Mixed-Model for Control of Population Stratification in Human Genetic Studies. First Joint Biostatistics Symposium, Beijing, China, July 17-18, 2010. (**Invited**)
8. **N. Liu**, H. Zhao, A. Patki, N.A. Limdi, D.B. Allison. Evaluation of Mixed-Model for Control of Population Stratification in Human Genetic Studies. Joint Statistical Meetings, Vancouver, Canada, July 31 - August 5, 2010.

Invited Seminar Talks

- Dec. 9, 2004 Computational Biology and Bioinformatics Track, Yale University
- Mar. 4, 2005 Department of Mathematics and Statistics, Georgia State University
- Mar. 24, 2005 Center for Human Genetics Research, Vanderbilt University
- Mar. 28, 2005 Department of Biostatistics, School of Public Health, University of Alabama at Birmingham
- Apr. 8, 2005 Department of Biostatistics, The Johns Hopkins University
- Apr. 15, 2005 Department of Biostatistics and Applied Mathematics, University of Texas M.D. Anderson Cancer Center
- Apr. 22, 2005 ROWE Program in Human Genetics, University of California, Davis
- Jan. 27, 2009 Cardiovascular Research Institute, Morehouse School of Medicine
-

Service Activities

Editorships

- Associate Editor of *Frontiers in Statistical Genetics and Methodology*, 2010 - present

Journal Reviewing

Reviewed more than 60 manuscripts for the following journals:

- American Journal of Human Genetics
- Annals of Human Genetics
- Bioinformatics
- Biometrics
- Biostatistics
- BMC Bioinformatics
- BMC Genetics
- Cancer Epidemiology Biomarkers & Prevention
- Computational Statistics and Data Analysis
- Genetic Epidemiology
- Genetics
- Heredity
- Human Heredity
- Human Genetics
- Human Molecular Genetics
- JAMA
- Journal of Clinical Endocrinology and Metabolism

- Journal of Computational Biology
- Journal of Genetics and Genomics
- Molecular Psychiatry
- PLoS Genetics
- PLoS ONE
- PNAS
- Statistics in Biosciences
- Statistica Sinica

Conference Reviewing

- BIOINFORMATICS 2012
- The Tenth Asia-Pacific Bioinformatics Conference (APBC2012)
- The 3rd International Conference on BioMedical Engineering and Informatics (BMEI'10), 2010
- The 59th Annual Meeting of the American Society of Human Genetics, 2009
- Computational Systems and Bioinformatics Conference (CSB), 2006

Conference Organizing

- Member, Program Committee, The 3rd International Congress on Image and Signal Processing (CISP'10) The 3rd International Conference on BioMedical Engineering and Informatics (BMEI'10), Yantai, China, October 16-18, 2010

Grant Reviewing

- 2012
 - University of Wisconsin-Milwaukee
- 2011
 - NIH study section ZRG1 HDM-R (11)
 - The Association of Schools of Public Health (ASPH)/Centers for Disease Control and Prevention (CDC) Alan Rosenfield Global Health Fellowship Program Application Review Committee
 - NORC and UWIRC, University of Alabama at Birmingham
 - KPRI at Children's Hospital, University of Alabama at Birmingham
- 2010
 - Italian Ministry of Health
 - Recovery Act Limited Competition: NIH Director's Opportunity for Research in Five Thematic Areas (RC4)
 - The Association of Schools of Public Health (ASPH)/Centers for Disease Control and Prevention (CDC) Alan Rosenfield Global Health Fellowship Program Application Review Committee
- 2009
 - The Association of Schools of Public Health (ASPH)/Centers for Disease Control and Prevention (CDC) Alan Rosenfield Global Health Fellowship Program Application Review Committee
 - Special Emphasis Panel reviewer for National Institutes of Health (2010/01 ZRG1 PSE-A (02) M)
 - National Institutes of Health Challenge Grants (ZRG1 PSE-C (58))
 - National Institutes of Health Challenge Grants (ZRG1 PSE-J (58))

- 2008
 - The Israel Science Foundation
- 2007
 - The Association of Schools of Public Health (ASPH)/Centers for Disease Control and Prevention (CDC)/Prevention Research Centers (PRC) Minority Fellowship Program Application Review Committee

Working Committee

- Member, China Information Technology Standardization Technical Committee, 1995 – 1997
- Member, China Universal Multiple-Octet Coded Character Set Working Group, 1995 – 1997

Other Selected Service Activities

- Member, Diversity Council, UAB, Sep. 1, 2011 – present
- Member, School of Public Health Educational Policy Committee, UAB, Sep. 2011 – present
- Vice Chair and Chair, School of Public Health Educational Policy Committee, UAB, Sep. 2009 – Aug. 2010, and Sep. 2010 – Aug. 2011, respectively
- Member, School of Public Health Internship Committee, UAB, Oct. 2009 – present
- Alternate Senator, University Faculty Senate, UAB, June 2009 – May 2011
- Member, Admission Committee, Department of Biostatistics, UAB, Dec. 2010 – present
- Member, Postdoctoral Search Committee, Section on Statistical Genetics, Department of Biostatistics, UAB, April 2008 – April 2010
- School of Public Health Representative on the University-wide Faculty Affairs Committee, UAB, June 2007 – present
- Senator, University Faculty Senate, UAB, June 2007 – May 2009, May 2011 – present
- Organizer and Chair, Session on Statistical Genetics and Genomics, First Joint Biostatistics Symposium, Beijing, P. R. China, July 2010
- Organizer and Chair, Mini-Symposium on Statistical Genetics, Joint Conference of the Society for Mathematical Biology and the Chinese Society for Mathematical Biology, Hangzhou, P. R. China, June 15, 2009
- Moderator of Session on Statistical Genomics, the American Society of Human Genetics 59th Annual Meeting, Honolulu, Hawaii, Oct. 22, 2009
- Moderator of Session on Haplotype-based Association Methods, 1st NHGRI – funded Conference: Haplotype Analysis of Population & Pedigree Data in Association Studies, Birmingham, AL, May 8, 2008
- Maintain an archive of data from real studies for SSG at UAB, July 2006 – present
- Judge, UAB Postdoctoral Research Day, 2006, 2009
- Judge, UAB Graduate Student Research Day, February 2010
- Grader, UAB Department of Epidemiology comprehensive exams, 2010 – 2012
- Grader, UAB Department of Biostatistics comprehensive exams, 2006 – 2011