

**BIOGRAPHICAL SKETCH**

Provide the following information for the key personnel and other significant contributors in the order listed on Form Page 2.  
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NAME Kui Zhang	POSITION TITLE Associate Professor		
eRA COMMONS USER NAME (credential, e.g., agency login) KUIZHANG			
EDUCATION/TRAINING (Begin with baccalaureate or other initial professional education, such as nursing, and include postdoctoral training.)			
INSTITUTION AND LOCATION	DEGREE (if applicable)	YEAR(s)	FIELD OF STUDY
Beijing University, P. R. China	B.Sc.	1990-1994	Probability and Statistics
Beijing University, P. R. China	Ph.D.	1994-1999	Probability and Statistics
Yale University, USA	Postdoctoral	1999-2001	Statistical Genetics
University of Southern California, USA	Postdoctoral	2001-2003	Statistical Genetics

Please refer to the application instructions in order to complete sections A, B, and C of the Biographical Sketch.

- A. Positions and Honors.** List in chronological order previous positions, concluding with your present position. List any honors. Include present membership on any Federal Government public advisory committee.

**Professional Experience**

1994-1997	Teaching Assistant, Department of Probability and Statistics, Beijing University
1997-1998	Instructor, College of Applied Science and Arts, Beijing University
1999-2001	Postdoctoral Associate, Department of Epidemiology and Public Health, Yale University School of Medicine
2001-2003	Postdoctoral Associate, Program of Molecular and Computational Biology, Department of Biological Sciences, University of Southern California
2003-2008	Research Assistant Professor, Section on Statistical Genetics, Department of Biostatistics, University of Alabama at Birmingham
2008-Present	Associate Professor, Section on Statistical Genetics, Department of Biostatistics, University of Alabama at Birmingham

**Other Experience and Professional Membership**

2000-Present	Member, American Society of Human Genetics
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**Honors**

1991-1993	The First Class Guang Hua Scholarship, Beijing University
1993	The Excellent Students Scholarship of Beijing City, Beijing University
1995	Dong Shi Dong Fang Scholarship, Beijing University
1996	Jiu Zhang Suan Shu Scholarship, Beijing University
2008	The Science Unbound Foundation 2008 Best Paper Award for Statistical Genetics Research at University of Alabama at Birmingham

- B. Selected peer-reviewed publications (in chronological order).** Do not include publications submitted or in preparation.

- Kui Zhang**, Hongyu Zhao. 2000. Assessing Reliability of Gene Clusters from Gene Expression Data. *Functional & Integrative Genomics* 1: 156-173. (PMID: 11793234)
- Kui Zhang**, Dayue Chen. 2001. The Probabilistic Study of  $d$ -SAT Problem. *Advances in Mathematics (Chinese)* 30: 231-237.
- Jinming Li, Dai Wang, Jianping Dong, Renfang Jiang, **Kui Zhang**, Shuanglin Zhang, Hongyu Zhao, Fengzhu Sun. 2001. The power of Transmission Disequilibrium Tests for Quantitative Traits. In Wijsman EM, Almasy L, Amos CI, Borecki I, Falk CT, King TM, Martinez MM, Meyers D, Neuman R, Olson JM, Rich S, Spence MA, Thomas DC, Vieland VJ, Witte JS, MacCluer JW (eds), *Analysis of complex genetic traits: Applications to asthma and simulated data*. In *Genetic Epidemiology* 21(Suppl 1): S632-S637. (PMID: 11793752)
- Shuanglin Zhang, **Kui Zhang**, Jinming Li, Fengzhu Sun, Hongyu Zhao. 2001. Test of Linkage and Association for quantitative Traits in General Pedigrees: The Quantitative Pedigree Disequilibrium Test. In Wijsman EM, Almasy L, Amos CI, Borecki I, Falk CT, King TM, Martinez MM, Meyers D, Neuman R, Olson JM, Rich S, Spence MA,

- Thomas DC, Vieland VJ, Witte JS, MacCluer JW (eds), *Analysis of complex genetic traits: Applications to asthma and simulated data*. In *Genetic Epidemiology* 21(Suppl 1): S370-S375. (PMID: 11793701)
5. Shuanglin Zhang, **Kui Zhang**, Jinming Li, Hongyu Zhao. 2002. On a Family-based Haplotype Pattern Mining Method for Linkage Disequilibrium Mapping. *The Proceeding of The Pacific Symposium on Biocomputing* 7: 100-111. (PMID: 11928467)
  6. **Kui Zhang**, Minghua Deng, Ting Chen, Michael S. Waterman, Fengzhu Sun. 2002. A Dynamic Programming for Haplotype Partitioning. *Proceedings of the National Academy of Sciences of the United States of America* 99: 7335-7339. (PMID: 12032283)
  7. **Kui Zhang**, Peter Calabrese, Magnus Nordborg, Fengzhu Sun. 2002. Haplotype Structure and Its Applications to Association Studies: Power and Study Designs. *The American Journal of Human Genetics* 71: 1386-1394. (PMID: 12439824)
  8. **Kui Zhang**, Fengzhu Sun, Michael S. Waterman, Ting Chen. 2003. Haplotype block partition with limited resources and applications to human chromosome 21 haplotype data. *The American Journal of Human Genetics* 73: 63-73. (PMID: 12802783)
  9. Sung Kim, **Kui Zhang**, Fengzhu Sun. 2003. Detecting Susceptibility Genes in Case-Control Studies Using Set Association Analysis. In Almasy L, Amos CI, Bailey-Wilson JE, Cantor RM, Jaquish CE, Martinez M, Neuman RJ, Olson JM, Palmer LJ, Rich SS, Spence MA, MacCluer JW (eds) Genetic Analysis Workshop 13: Analysis of longitudinal family data for complex diseases and related risk factors. *BMC Genetics* 2003, 4(Suppl 1): S9. (PMID: 14975077)
  10. Minghua Deng, **Kui Zhang**, Shipra Mehta, Ting Chen, Fengzhu Sun. 2003. Prediction of protein function using protein-protein interaction data. *Journal of Computational Biology* 10: 947-960. (PMID: 14980019)
  11. Thomas G. Schulze, **Kui Zhang**, Yu-Sheng Chen, Nirmala Akula, Fengzhu Sun, Francis J. McMahon. 2004. Defining haplotype blocks and tag single-nucleotide polymorphisms in the human genome. *Human Molecular Genetics* 35: 335-342. (PMID: 14681300)
  12. Sung Kim, **Kui Zhang**, Fengzhu Sun. 2004. A Comparison of Different Strategies for Computing Confidence Intervals of the Linkage Disequilibrium Measure. *The Proceeding of Pacific Symposium on Biocomputing* 9: 128-139. (PMID: 14992498)
  13. **Kui Zhang**, Zhaohui Qin, Jun Liu, Ting Chen, Michael S. Waterman, Fengzhu Sun. 2004. Haplotype Block Partitioning and Tag SNP Selection Using Genotype Data and Their Applications to Association Studies. *Genome Research* 14: 908-916. (PMID: 15078859)
  14. **Kui Zhang**, Fengzhu Sun, Hongyu Zhao. 2005. HAPLORE: A Program for Haplotype Reconstruction in General Pedigrees without Recombination. *Bioinformatics* 21: 90-103. (PMID: 15231536)
  15. **Kui Zhang**, Zhaohui Qin, Ting Chen, Jun Liu, Michael Waterman, Fengzhu Sun. 2005. HapBlock: Haplotype Block Partitioning and Tag SNP Selection Software Using a Set of Dynamic Programming Algorithms. *Bioinformatics* 21: 131-134. (PMID: 15333454)
  16. T. Mark Beasley, Howard Wiener, **Kui Zhang**, Alfred A. Bartolucci, Christopher I. Amos, David Allison. 2005. Empirical Bayes Method for Incorporating Data from Multiple Genome Scans. *Human Heredity* 60: 36-42. (PMID: 16137992)
  17. **Kui Zhang**, Fengzhu Sun. 2005. Assessing the Power of Tag SNPs in Mapping of Quantitative Trait Loci (QTL) with Extremal and Random Samples. *BMC Genetics* 6: 51. (PMID: 16236175)
  18. Yao-Ting Huang, **Kui Zhang**, Ting Chen, Kun-Mao Chao. 2005. Selecting Additional Tag SNPs for Tolerating Missing Data in Genotyping. *BMC Bioinformatics* 6: 263. (PMID: 16259642)
  19. **Kui Zhang**, Hongyu Zhao. 2006. A Comparison of Several Methods for Haplotype Frequency Estimation and Haplotype Reconstruction for Tightly Linked Markers from General Pedigrees. *Genetic Epidemiology* 30: 423-437. (PMID: 16685719)
  20. Jessica M. Grunda, L. Burton Nabors, Cheryl A. Palmer, David C. Chhieng, Adam D. Steg, Tom Mikkelsen, Robert B. Diasio, **Kui Zhang**, David Allison, William E. Grizzle, Wenquan Wang, Yancey Gillespie and Martin R. Johnson. 2006. Increased Expression of Thymidylate Synthetase (TS), Ubiquitin Specific Protease 10 (USP10) and Survivin Associated with Poor Survival in Glioblastoma Multiforme (GBM). *Journal of Neuro-Oncology* 80: 261-274. (PMID: 16773218)
  21. **Kui Zhang**, Howard Wiener, Marker Beasley, Varghese George, Christopher I. Amos, David Allison. 2006. An Empirical Bayes Method for Analysis of Quantitative-Trait Loci from Multiple Genome Scans. *Genetics* 173: 2283-2296. (PMID: 16751667)
  22. Shannon A. Ross, Zdenek Novak, Rekha A. Kumbla, **Kui Zhang**, Karen B. Fowler, Suresh Boppana. 2007. GJB2 and GJB6 Mutations in Children with Congenital Cytomegalovirus. *Pediatric Research* 61: 687-691. (PMID: 17426645)
  23. Yun Joo Yoo, Jianming Tang, Richard A. Kaslow, **Kui Zhang**. 2007. Haplotype Inference for Present-absent Genotype Using Previously Identified Haplotypes and Haplotype Patterns. *Bioinformatics* 23: 2399-2406. (PMID: 17644820)

Program Director/Principal Investigator (Last, First, Middle):

24. Hua Li, Guimin Gao, Jian Li, Grier P. Page, **Kui Zhang**. 2007. Detecting epistatic interactions contributing to human gene expression using the CEPH family data. *BMC Proceeding 2007*, 1 (suppl 1): S33. (PMID: 18466568)
25. Yun Joo Yoo, Guimin Gao, **Kui Zhang**. 2007. Case-control association analysis of rheumatoid arthritis with candidate genes using related cases. *BMC Proceeding 2007*, 1 (suppl 1): S67. (PMID: 18466531)
26. Nianjun Liu, **Kui Zhang**, Hongyu Zhao. 2008. Haplotype-Association Analysis. D.C. Rao and C. Charles Gu (Editors): *Genetic Dissection of Complex Traits. Advances in Genetics 60*: 335-405. (PMID: 18358327)
27. Yong-Jun Liu, Jose M. Ordovas, Guimin Gao, Michael Province, Robert J. Straka, Michael Y. Tsai, Chao-Qiang Lai, **Kui Zhang**, Ingrid Borecki, James E. Hixson, David B. Allison, Donna K. Arnett. 2008. The SCARB1 gene is Associated with Lipid Reponse to Dietary and Pharmacological Interventions. *The Journal of Human Genetics 53*: 709-717. (PMID: 18542840)
28. Yongjun Liu, Jose M. Ordovas, Guimin Gao, Michael Province, Robert J. Straka, Michael Y. Tsai, Chao-Qiang Lai, **Kui Zhang**, Ingrid Borecki, James E. Hixson, David B. Allison, Donna K. Arnett. Pharmacogenetic Association of the APOA1/C3/A4/A5 Gene Cluster and Lipid Responses to Fenofibrate - The Genetics of Lipid Lowering Drugs and Diet Network (GOLDN) Study. 2009. *Pharmacogenetics and Genomics 19*: 161-169. (PMID: 19057464)

**Research Projects Ongoing or Completed During the Last 3 Years**

NIH/NIEHS R01ES09912 (Amos)	07/01/02-06/30/07
Positional Gene Identification of Complex Traits To develop linkage/linkage disequilibrium methods for testing the effects of quantitative trait loci on complex quantitative traits. Role: Co-Investigator	
NIH/NHLBI U01HL072510 (LeFevre)	10/01/02-08/31/06
Diet, Genetics, and CVD Risk factor response in Blacks To study the genetic factors that influence response of CVD risk factors to dietary interventions. Role: Co-Investigator	
UAB/HSF/GEF (Allison)	03/01/04-02/28/06
Linkage & Linkage Disequilibrium Data Analysis Clearinghouse. To develop a facility for efficient collaborative applied analysis of linkage and linkage disequilibrium. Role: As-needed	
NIH/NHLBI R01HL75211 (Oparil)	07/01/04-06/30/09
Estrogen Modulates Injury-Induced Vascular Inflammation To elucidate the fundamental cellular/molecular mechanisms by which ovarian hormones, particularly estrogen (E2), modulate the inflammatory response to acute endoluminal vascular injury. Role: Co-Investigator	
NIH/NCI R01CA106168 (Kaslow)	07/01/04-06/30/08
Chromosome 6p21-24 Markers in HIV-Related Kaposi Sarcoma To search beyond the reported associations of <i>HLA</i> class II alleles with HIV-KS for alternative genetic determinants within and telomeric to the <i>HLA</i> complex. Role: Co-Investigator	
NIH/NIAID HHSN266200400068C (Kaslow)	09/01/04-08/31/09
Population Genetics Analysis Program: Immunity to Vaccines/Infections To identify host genetic characteristics that determine and predict the variability in antibody responses and adverse reactions to anthrax vaccine (AVA). Role: Co-Investigator	
NIH/NIAID/Emory University R01-AI064060 (Kaslow)	02/15/05 - 1/31/09
CTL and HIV Polymorphisms in Heterosexual Transmission To study CTL and HIV Polymorphisms in Heterosexual Transmission. Role: Co-Investigator	
NIH/NIGMS R01GM74913 (Zhang)	07/01/06-06/30/11
Haplotype Analysis in Linkage Disequilibrium Mapping. To develop association methods based on haplotypes for mapping genes that are responsible for complex human diseases. Role: Principal Investigator	
NIH/NHGRI-R13-HG-004593 (Zhang)	09/01/07-08/31/08
Haplotype analysis of population and pedigree data in association studies. To organize a scientific meeting to discuss the haplotype analysis in association studies Role: Principal Investigator	
NIH/NIGMS-R01-GM-081488 (Liu)	04/01/08-03/31/13
Genome Wide Haplotype Association Analysis. To develop novel statistical and computational methods and software tools for the analysis of haplotypes in mapping of complex human disease genes, especially in the presence of missing genotypes and genotyping errors and with large number of markers. Role: Co-Investigator	
NIH/NIGMS-R01-GM-073766 (Gao)	07/01/07-06/30/12
Haplotyping and QTL Mapping in Pedigrees with Missing Data. The major goal is to develop haplotyping and IBD probability estimation methods for large pedigrees with large numbers of loci and with missing marker data. Role: Co-Investigator	