

# Rui Feng

## Contact Information

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## Research Interest

Statistical genetics: Genetic linkage and association analysis, haplotype analysis, copy number variation analysis, and epigenetics.

Biostatistics: Longitudinal data analysis, survival analysis, and mixture models.

## Education

May 2005 Ph.D. in Biostatistics, Yale University  
Dissertation: A Latent Variable Model for Ordinal Traits  
Mentor: Heping Zhang

May 2001 M.S. in Statistics, The Johns Hopkins University  
Thesis: The EM Algorithm for Right-Censored Data  
Advisor: Colin Wu

Jul 1999 B.S. in Mathematics, University of Science and Technology of China

## Research Experience

Jul 2005- present Assistant Professor, Department of Biostatistics, The University of Alabama at Birmingham.

Jun 2001- May 2005 Research Assistant, Department of Biostatistics, School of Public Health, Yale University.

## Teaching Experience

Apr 2006- present Course Instructor, Department of Biostatistics, The University of Alabama at Birmingham.  
BST765 Advance Statistical Computing  
BST660 Applied Multivariate Analysis  
BST612 Intermediate Statistical Analysis II  
IBS702 Integrated Biomedical Science III/Principle of Genetics

Sep 2002- May 2005 Teaching Assistant, School of Public Health, Yale University.  
BIS625 Applied Regression Analysis  
BIS635 Topics in Statistical Epidemiology

Sep 1999- Apr 2001 Teaching Assistant, Department of Applied Mathematics and Statistics, The Johns Hopkins University.  
550.430 Introduction to Statistics  
550.620 Probability Theory  
550.621 Advanced Probability Theory  
550.291 Linear Algebra and Differential Equations  
550.171 Discrete Mathematics

## Honors and Awards

2008	“Back of the Envelope” Award, School of Public Health, The University of Alabama at Birmingham
2001- 2004	Departmental Graduate Student Fellowship at Yale University
1999- 2001	Departmental Graduate Student Scholarship at The Johns Hopkins University
1996- 1998	“Nine Chapters” Mathematical Scholarship at University of Science and Technology of China
1994- 1996	Departmental Outstanding Student Scholarship at University of Science and Technology of China

## Publications

1. **Feng R.**, McClure L., Tiwari H.K., Howard G. (2009). A New Estimate of Family Disease History Providing Improved Prediction of Disease Risks. *Statistics in Medicine*. Epub 2009 Jan 26.
2. Segal N., **Feng R.**, McGuire S.A., Allison D.B., Miller S. (2009). Genetic and Environmental Contributions to Body Mass Index: Analysis of Monozygotic Twins, Dizygotic Twins and Same-Age Unrelated Siblings. *International Journal of Obesity*. 33(1):37-41. Epub 2008 Nov 25.
3. Chen L., **Feng R.**, Mehta T., Page G.P., Cui X. (2009). Single Nucleotide Polymorphisms Affect both Cis- and Trans-eQTLs. *Genomics*. In print.
4. **Feng R.**, Zhou G., Zhang M., Zhang H. (2008). Analysis of Twin Data Using SAS. *Biometrics*. Epub 2008 Jul 21.
5. Zhang M., **Feng R.**, Chen X., Hu B., Zhang H. (2008). LOT: a Tool for Linkage Analysis of Ordinal Traits for Pedigree Data. *Bioinformatics*. Epub 2008 Jun 5.
6. **Feng R.** (2008). Discussion: Why do we test multiple traits in genetic association studies? *Journal of the Korean Statistical Society*. Epub 2008 Nov 28.
7. Mann M.L., Thornley-Brown D., Campbell R., Bell E., Burroughs L., Nunnally N., **Feng R.**, Morgan S. L. (2008). The Effect of Peritoneal Dialysate on DXA Bone Densitometry Results in Patients with End Stage Renal Disease. *Journal of Clinical Densitometry*. 11(4):532-536. Epub 2008 Sep 20.
8. Kelley J.M., Hughes L.B., **Feng R.**, Liu N., Padilla M.A., Vaughan K.L., Bridges L.S. (2008). Evaluating Linkage Disequilibrium and Recombination Provides a Haplotype-Tagging SNP Panel of the MHC in African-Americans. *Genes and Immunity*. 2008 Apr;9(3):271-3. Epub 2008 Feb 28.
9. **Feng R.**, Zhang H. (2008). A Genomic Imprinting Test for Ordinal Traits in Pedigree Data. *Genetic Epidemiology*. 32(2):132-42. Epub 2007 Oct 5.
10. **Feng R.**, Zhang H. (2008). A Score Test for Linkage Analysis of Ordinal Traits Based on IBD Sharing. *Biostatistics*. 9(1):114-27. Epub 2007 May 22.
11. Musani S.K., Shriner D., Liu N., **Feng R.**, Coffey C., Yi N., Tiwari H.K., Allison D.B. (2007). Detection of Gene-Gene interactions in Genome-Wide Association Studies of Human Population Data. *Human Heredity*. 63(2):67-84. Epub 2007 Feb 2.
12. Howard G., Go R. C., Rothwell P.M., Tiwari H.K., **Feng R.**, McClure L.A., Prineas R. J., Arnett D. K. (2006). The Association between Family Risk of Stroke and Family Risk of Heart Attack with Prevalent Risk Factors and Coexisting Diseases: Challenges for the Understanding of the Genetics of Stroke and Heart Disease. *Stroke*. 38 (2):528.
13. Bizzarro M.J., Hussain N., Jönsson B., **Feng R.**, Ment L.R., Gruen J.R., Zhang H., Bhandari V. (2006). The Genetic Susceptibility to Retinopathy of Prematurity. *Pediatrics*. 118(5):1858-63.
14. **Feng R.**, Zhang H. (2006). Ascertainment Adjustment in Genetic Studies of Ordinal Traits. *Human Genetics*. 119(4):429-35.

15. Bhandari V., Bizzarro M.J., Shetty A., Page G.P., Zhang H., Ment L.R., Gruen J.R., Neonatal Genetics Study Group\*(2006). Familial and Genetic Susceptibility to Major Neonatal Morbidities in Preterm Twins. *Pediatrics*. 117: 1901-1906.  
\*all the remaining authors including **Feng R.** were listed as part of the “Neonatal Genetics Study Group”.
16. Redden D., Divers J., Vaughan L., Tiwari H., Beasley M., Fernandez J., Kimberly R., **Feng R.**, Padilla M., Lui N., Miller M., Allison D. (2006). Regional Admixture Mapping and Structured Association Testing: Conceptual Unification and an Extensible General Linear Model. *PLoS Genetics*. 2(8): e137.
17. **Feng R.**, Leckman J. and Zhang H. (2004). Linkage Analysis of Ordinal Traits for Pedigree Data. *Proceedings of the National Academy of Sciences* 101(48): 16739-16744.
18. Kain Z.N., Caldwell-Andrews A.A., Maranets I., McClain B., Gaal D., Mayes L.C., **Feng R.** and Zhang H. (2004). Preoperative Anxiety, Emergence Delirium and Postoperative Maladaptive Behaviors. *Anesthesia and Analgesia* 99(6): 1648-1654.
19. Zhang H., **Feng R.** and Zhu H. (2003). A Latent Variable Model of Segregation Analysis for Ordinal Traits. *Journal of the American Statistical Association* 98: 1023-1034.

### **Presentations**

1. “Analysis of Twin Data Using SAS.” Oral Presentation at International Biometric Society Annual Meeting, San Antonio, TX. Mar, 2009.
2. “A Genomic Imprinting Test for Ordinal Traits.” Poster at Gordon Research Conference Quantitative Genetics and Genomics, Galveston, TX. Feb, 2009.
3. “Variance Decomposition of Relative Body Weight Using Biological-Related and Virtual Multiples.” Poster at Obesity Society Annual Scientific Meeting, Phoenix, AZ. Oct, 2008.
4. “Predicting the Risk of Familial Amyotrophic Lateral Sclerosis.” Poster at American Neurological Association Annual Meeting, Baltimore, MD. Oct, 2008.
5. “A New Estimate of Family Disease History Providing Improved Prediction of Disease Risks.” Oral Presentation at Joint Statistical Meeting 2008, Denver, CO. Aug, 2008.
6. “A Genomic Imprinting Test for Ordinal Traits in Pedigree Data.” Invited Talk at International Chinese Statistical Association 2008 Applied Statistics Symposium, Piscataway, NJ. Jun, 2008.
7. “A Genomic Imprinting Test for Ordinal Traits in Pedigree Data.” Oral Presentation at International Biometric Society Annual Meeting, Arlington, VA. Mar, 2008.
8. “Should dialysate be drained prior to dual-energy x-ray absorptiometry (DXA) scanning in Peritoneal Dialysis Patients?” Poster at International Society for Clinical Densitometry, San Francisco, CA. Mar, 2008.
9. “A Score Test for Linkage Analysis of Ordinal Traits Based on IBD Sharing.” Oral Presentation at International Biometric Society Annual Meeting, Atlanta, GA. March, 2007.
10. “A Score Test for Linkage Analysis of Ordinal Traits Based on IBD Sharing.” Poster at The American Society of Human Genetics Annual Meeting, New Orleans, AL. Oct, 2006.
11. “Ascertainment Adjustment in Genetic Studies of Ordinal Traits.” Oral Presentation at International Biometric Society Annual Meeting, Tampa, FL. Mar, 2006.
12. “Linkage Analysis of Ordinal Traits for Pedigree Data.” Oral Presentation at International Biometric Society Annual Meeting, Austin, TX. Mar, 2005.
13. “A Latent Variable Model of Linkage Analysis for Ordinal Traits.” Oral Presentation at International Biometric Society Annual Meeting, Pittsburgh, PA. March, 2004.

### **Professional Memberships**

1. American Statistician Association (ASA)

2. American Society of Human Genetics (ASHG)
3. International Biometric Society (ENAR)
4. International Chinese Statistical Association (ICSA)

### **Journals Reviewing**

1. Annals of Human Genetics 2008
2. Behavior Genetics 2006, 2007
3. Bioinformatics 2008, 2009
4. Computational Statistics and Data Analysis 2008
5. European Journal of Human Genetics 2009
6. Genetics 2006
7. Human Genetics 2006
8. Human Heredity 2006, 2008
9. The Journal of Clinical Endocrinology & Metabolism 2005, 2006, 2007, 2008
10. Journal of The American Statistical Association 2007

### **Grant Reviewing**

Oct 2008                      National Institutes of Health (ZRG1 BST-Q-01) study section for software extension and maintenance.

### **Professional Service**

Dec 2007- Current      Member, Graduate Student Admission Committee, Department of Biostatistics, The University of Alabama at Birmingham.

Dec 2007- Current      Biostatistics representative, Financial Aid Committee, School of Public Health, The University of Alabama at Birmingham.

Feb 2009                      Judge, Postdoc Research Days, The University of Alabama at Birmingham.

Aug 2005- Dec 2008      Organizer, Monthly Grant Writing Club at Section on Statistical Genetics, Department of Biostatistics, The University of Alabama at Birmingham.

Sep 2008                      Organizer, 2009 Joint Statistical Meeting Invited Session.

Jul 2007                      Judge, Summer Research Intern Poster Session, The University of Alabama at Birmingham.

Mar 2007                      Judge, Graduate Student Research Days, The University of Alabama at Birmingham.

Mar 2005                      Chair, International Biometric Society Annual Meeting Contributed Session.

### **Mentorship**

Mar 2009- Current      Mentor of Xiao Li, M.S. student in the Department of Computer Sciences, The University of Alabama at Birmingham.

Sep 2008- Current      Advisor of Liyan Gao, M.S. student in the Department of Biostatistics, The University of Alabama at Birmingham.

Sep 2008                      Co-mentor of Kimberly Gaston Pravia in Her Kraft Graduate Fellowship in Obesity Research, Ph.D. student in the Integrative Biomedical Science program, The University of Alabama at Birmingham

Sep 2007- Current      Advisor of Junxuan Zhang, M.S. student in the Department of Biostatistics, The University of Alabama at Birmingham.

Sep 2007- Feb 2008      Co-Mentor of Milind Phadnis, Ph.D. student in the Department of Biostatistics, The University of Alabama at Birmingham.

### **Current Grants**

- Jul 2009- Jul 2011 (Pending) NIH R01. Genome-wide Association Studies Using Integrated SNP and CNV Information. Role: Principal Investigator.
- Mar 2007- Feb 2011 NIH/NHLBI R01. Genetic and Environmental Determinants of Triglycerides. PI: Donna K. Arnett. Role: Co-Investigator.
- Apr 2007- Mar 2011 NIH/NHLBI R01. Genhat – Genetics of Hypertension Associated Treatments. PI: Donna K. Arnett. Role: Co-Investigator.
- Aug 2008- Jul 2009 UAB/CAEG Partnership Pilot Research Grant. Genome-wide Quantitative Analysis of Genetic Interactions. Role: Principal Investigator.
- Aug 2008- Jul 2009 UAB Faculty Development Award. A Pilot Genome-Wide Methylation Study to Characterize the Relationship between DNA Methylation, Marker Genotypes, and Phenotypes in Mouse RI Lines. PI: Xiangqin Cui. Role: Co-Investigator.
- Jan 2009- May 2009 UAB School of Public Health BOTE Award. Genome-wide Association Studies Using Integrated SNP and CNV Information. Role: Principal Investigator.
- Apr 2008- Mar 2013 NIHP01 AR49084-07 Program Project in the Genetics of SLE. PI: Robert Kimberly. Role: Co-Investigator.
- Nov 2008- Jul 2012 NIH 1R01HL088141-01A2. Glutathione and Lung Fibrosis. PI: Rui-Ming Liu. Role: Co-Investigator.

### **Completed Grants**

- Jul 2007- Dec 2007 P&G regional grant-in-aid. Does the Presence of Peritoneal Dialysate Affect Bone Mineral Density in the Lumbar Spine? PI: Sarah L. Morgan. Role: Co-Investigator.
- Mar 2006- Jul 2007 NIH 5R01ES009912-07. Positional Gene Identification. PI: Christopher I. Amos. Role: Co-Investigator.
- Mar 2007- Feb 2009 Health Services Foundation General Endowment Fund. GWA Test-Driver: A do-it-yourself genome-wide association study planner. PI: Hemant K. Tiwari and David B. Allison. Role: Co-Investigator.
- Jun 2006- Mar 2010 NIH/NCI P30CA13148-35. Comprehensive Cancer Center Core Support. PI: Edward E. Partridge. Role: Co-Investigator.

### **Pending Grants**

- Dec 2009- Nov 2013 NIH R01. Bayesian Methods for Genome-Wide Interacting QTL. PI: Nengjun Yi. Role: Co-Investigator.
- Dec 2008- Nov 2012 NIH R01. The Impact of RNA Editing on Psychosis, Mood and Suicide. PI: Monsheel Sodhi. Role: Co-Investigator.
- Dec 2008- Nov 2012 NIH R01. Genetic Analyses of the 5-HT<sub>2A</sub> Receptor in Anxiety and Mood Disorders. PI: Monsheel Sodhi. Role: Co-Investigator.
- Jul 2009- Jun 2013 NIH R01. Genetic Determinants of Non-Hodgkin Lymphoma Survival. PI: Yawei Zhang. Role: Subcontract Principal Investigator.