Curriculum Vitae

Zhaoxia Yu

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CONTACT INFORMATION

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EDUCATION

Ph.D. in Statistics, Rice University, 2005
M.S. in Statistics, University of California at Davis, 2002
B.S. in Statistics, University of Science and Technology of China, 2000

APPOINTMENTS

07/2007 – present, Assistant Professor
Department of Statistics, University of California, Irvine, CA

09/2005 – 06/2007, Researcher Associate
Section of Biostatistics, Mayo Clinic, Rochester, MN

08/2002 – 08/2005, Research Assistant
Department of Statistics, Rice University, Houston, TX

09/2001 – 07/2002, Research Assistant
Department of Statistics, University of California, Davis, CA

09/2000 – 07/2002, Teaching Assistant
Department of Statistics, University of California, Davis, CA

REFEREED JOURNAL ARTICLES

1. Jain T, Peshock R, McGuire DK, Willett D, **Yu Z**, Vega GL, Guerra R, Hobbs HH, Grundy SM, the Dallas Heart Study Investigators (2004). African Americans and Caucasians have a similar prevalence of coronary calcium in the Dallas Heart Study, *Journal of the American College of Cardiology*, 44: 1011-1017.
2. Levine R, **Yu Z**, Hanley W, Nitao J. (2005). Implementing componentwise Hastings algorithms, *Computational Statistics & Data Analysis*, 48: 363-389.
3. Levine R, **Yu Z**, Hanley W, Nitao J. (2005). Implementing the random scan Gibbs sampler, *Computational Statistics*, 20: 177-196.
4. Guerra R, **Yu Z**, Marcovina S, Peshock R, Cohen JC, Hobbs HH. (2005). Lipoprotein(a) and apolipoprotein(a) isoforms: no association with coronary artery calcification in the Dallas Heart Study, *Circulation*, 111: 1471-1479.
5. Wilcox MA, Li Z, Tapper W, Browning S, Curtin K, Ding J, Ding Y, Gagnon F, He Q, Kuo TY, Li M, Matthew G, Mei L, Rao S, Shaw J, Wei Z, **Yu Z**, Zhang W, Zheng T, Zhu G. (2007). Genetic association with rheumatoid arthritis-Genetic Analysis Workshop 15: summary of contributions from Group 2. *Genet Epidemiology*, 31 Suppl 1:S12-21.

6. **Yu Z**, Schaid D. (2007). Sequential haplotype scan methods for association analysis. *Genetic Epidemiology*, 31: 553-564.
7. **Yu Z**, Schaid D. (2007). Application of haplotype sequential scan methods to case-control data. *BMC Proceedings*, 1 Suppl 1:S21.
8. **Yu Z**, Schaid D. (2007). Methods to impute missing genotypes for population data. *Human Genetics*, 122:495-504.
9. **Yu Z**, Wang L, Hildebrandt MAT, Schaid D. (2008). Testing whether genetic variation explains correlation of quantitative measures of gene expression, and application to genetic network analysis. *Statistics in Medicine*, 27:3847 – 3867.
10. Jian Z, **Yu Z**, Yu L, Rao B, Chen Z, Tromberg BJ. (2009). Speckle attenuation in optical coherence tomography by curvelet shrinkage. *Optics Letters*, 34:1516-1518.
11. **Yu Z***, Garner C, Ziogas A, Anton-Culver H, Schaid D. (2009). Genotype determination for polymorphisms in linkage disequilibrium. *BMC Bioinformatics*, 10:63.
12. Browning B, **Yu Z**. (2009). Simultaneous genotype calling and haplotype phasing improves genotype accuracy and reduces false positive associations for genome-wide association studies. *American Journal of Human Genetics*, 85:847-861.
13. Weng L, Macciardi F, Subramanian A, Guffanti G, Potkin SG, **Yu Z***, Xie X. (2011) SNP-based pathway enrichment analysis for genome-wide association studies. *BMC Bioinformatics*, 12:99.
14. Mkhikian H, Grigorian A, Li GF, Chen HL, Newton B, Zhou RW, Beeton C, Torossian S, Tatarian GG, Lee SU, Lau K, Walker E, Siminovitch KA, Chandy KG, **Yu Z**, Dennis JW, Demetriou M. (2011) Environmental and genetic dysregulation of N-glycosylation is a unifying mechanism in Multiple Sclerosis. *Nature Communications*, 2:334.
15. Meng L, Cannesson M, Alexander BS, **Yu Z**, Kain ZN, Cerussi AE, Tromberg BJ, Mantulin WW. (2011) Effect of phenylephrine and ephedrine bolus treatment on cerebral oxygenation in anaesthetized patients. *British Journal of Anaesthesia*, 107:209-17.
16. **Yu Z*** (2011). Testing gene-gene interactions in the case-parents design. *Human Heredity*, 71:171-179.
17. **Yu Z***, Wang S (2011). Contrasting linkage-disequilibrium as a multi-locus family-based association test. *Genetic Epidemiology*, 35:487-498.
18. Wang S, **Yu Z**, Miller RL, Tang D, Perera FP. (2011). Methods for detecting interactions between imprinted genes and environmental exposures using birth cohort designs with mother-offspring pairs. *Human Heredity*, 71:196-208.
19. **Yu Z***, Deng L. (2011) Pseudosibship methods in the case-parents design. *Statistics in Medicine*, 30:3236-3251.
20. Shahbaba B, Shachaf CM, **Yu Z***. (2012) A pathway analysis method for genome-wide association studies. *Statistics in Medicine*, 31:988-1000.
21. **Yu Z*** (2012). Family-based association tests using genotype data with uncertainty. *Biostatistics*, 13:228-240.
22. Meng L, Mantulin WW, Alexander BS, Cerussi AE, Tromberg BJ, **Yu Z**, Laning K, Kain ZN, Cannesson M, Gelb AW. (2012) Head-up tilt and hyperventilation produce similar changes in cerebral oxygenation and blood volume: an observational comparison study using frequency-domain near-infrared spectroscopy. *Canadian Journal of Anesthesia*, 59:357-365.

23. Meng L, Gelb AW, Alexander BS, Cerussi AE, Tromberg BJ, **Yu Z**, Mantulin WW. (2012) Impact of phenylephrine administration on cerebral tissue oxygen saturation and blood volume is modulated by carbon dioxide in anaesthetized patients. *British Journal of Anaesthesia*, 108:815-822.
24. **Yu Z***, Gillen D, Li CF, Demetriou M. (2012) Incorporating parental information into family-based association tests. *Biostatistics* (in press)
25. Alexander BS, Gelb AW, Mantulin WW, Cerussi AE, Tromberg BJ, **Yu Z**, Lee C, Meng L. Impact of stepwise hyperventilation on cerebral tissue oxygen saturation in anesthetized patients: a mechanistic study. *Acta Anaesthesiologica Scandinavica* (in press).
26. Li GF, Zhou RW, Mkhikian H, Newton BL, **Yu Z**, Demetriou M. Hypomorphic MGAT5 polymorphisms promote multiple sclerosis cooperatively with MGAT1 and Interleukin-2 and 7 receptor variants. *Journal of Neuroimmunology* (in press)

*: corresponding author

OTHER PUBLICATIONS

1. Guerra R, **Yu Z**. (2005). Single nucleotide polymorphisms and their applications, book chapter in *Computational and Statistical Approaches to Genomics*, W. Zhang and I. Shmulevich (editors). Second Edition, Boston: Kluwer Academic Publishers.
2. **Yu Z**. (2012). Estimating genotype-specific call rates from offspring-parents trio data. JSM Proceedings.

INVITED TALKS

1. "Haplotype blocks and association analysis." Yale University, New Haven, CT, April 2005
2. "The impact of marker density, marker select strategy and samples size on the robustness of estimated haplotype blocks." University of Chicago, Chicago, IL, April 2005
3. "Reconstruction of haplotype blocks and application to association analysis." Mayo Clinic, Rochester, MN, March 2005
4. "Sequential haplotype analysis." MD Anderson Cancer Center, Houston, TX, January 2007
5. "An integrated analysis of genetic variants and co-expressed genes." Purdue University, Lafayette, IN. Apr 2007
6. "An integrated analysis of genetic variants and co-expressed genes." University of California, Irvine, CA, Feb 2007
7. "An integrated analysis of genetic variants and co-expressed genes." Colorado State University, Fort Collins, CO, Jan 2007
8. "An integrated analysis of genetic variants and co-expressed genes." University of Florida, Gainesville, FL, Feb 2007
9. "Genotype determination at the presence of linkage disequilibrium." University of California, Riverside, CA, November 2007
10. "Genotype determination at the presence of linkage disequilibrium." San Diego State University, San Diego, March 2008.
11. "Impute missing genetic data – from signal to phased." Columbia University, New York City, October 2008.

12. "Missing Data Problems in Genome-Wide Association Studies." University of California, Los Angles, April 2010
13. "Genotype-Specific Missingness in Family-Based Association Studied." University of California, Riverside, Jan 2012
14. "Family-Based Association Tests in the Presence of Informative Missingness". University of California, Irvine, Feb 2012
15. "Uncertainty in genotype data - nonrandom missingness, impact, and remedy". Joint Biostatistics Symposium, Beijing, China, July 2012
16. "Some recent work in family-based association studies". California State University at Fullerton, Sep 2012
17. "Improving family-based association tests". University of Santa Barbara, Oct 2012
18. "Some recent work in family-based association studies". University of Los Angles, Oct 2012
19. "When Less Is More: A Multi-locus Strategy for Family-based Association Studies". the Plant and Animal Genome XXI Conference, San Diego, Jan 2013

CONTRIBUTED TALKS

1. "Statistical methods for haplotype estimation and association Studies." The Joint Statistical Meetings, Toronto, Canada, August 2004
2. "Haplotype block based association mapping." The Joint Meeting of the Chinese Society of Probability and Statistics (CSPS) and the Institute of Mathematical Statistics (IMS), Beijing, China, July 2005
3. "The effect of marker density on haplotype block structure." International Genetic Epidemiology Society, 14th Annual Meeting, Park City, UT, October 2005
4. "Family-Based Association Tests using Genotype Data with Uncertainty". Eastern North American Region (ENAR) 2012 Spring Meeting , Washington DC, April 2012
5. "Genotype-Specific Missingness in Genetic Data." The Joint Statistical Meetings. San Diego, CA, August 2012

POSTER PRESENTATIONS

1. "Comparison of single-marker versus haplotype analyses in association studies." Annual Meeting of the American Society of Human Genetics, Salt Lake City, UT, October 2005
2. "Genome-wide association analysis using sequential haplotype scan statistics." International Genetic Epidemiology Society, 15th Annual Meeting, Tampa, FL, November 2006
3. "Haplotype Phasing from Signal Intensity Data." American Society of Human Genetics. Annual Meeting of the American Society of Human Genetics, Washington DC, November 2010
4. "Improving association tests by learning mode of inheritance from parental data." American Society of Human Genetics. The 13th International Meeting on Human Genome Variation and Complex Genome Analysis (HGV2012), Shanghai, China, September 2012
5. "Improving association tests by learning mode of inheritance from parental data." American Society of Human Genetics. Annual Meeting of the American Society of Human Genetics, San Francisco, CA, November 2012

RESEARCH GRANTS:

1. 2008 – 2009, University of California Irvine, Collaborative Research Initiation Awards, Principal Investigator, $14K, Improving genotyping accuracy and haplotype estimation for genome-wide studies
2. 2009 – 2012, NIH/R01 HG004960-01, Associate-Investigator, direct cost $108K, Improving genotyping accuracy and haplotype analysis for genome-wide studies

TEACHING

- **COURSES TAUGHT**

1. 2007 Fall: Intermediate Probability and Statistics Theory I (Statistics 200A, 4 units), Enrollment: 18 graduates
2. 2008 Spring: Introduction to Probability and Statistics III (Statistics 120C, 4 units), Enrollment: 58 undergraduates
3. 2008 Fall: Theory and Practice of Sample Survey (Statistics 262, 4 units), Enrollment: 12 graduates
4. 2009 Winter: Introduction to Statistical Genetics (Statistics 257, 4 units), Enrollment: 8 graduates
5. 2009 Spring: Introduction to Probability and Statistics III (Statistics 120C, 4 units), Enrollment: 53 undergraduates
6. 2010 Winter: Introduction to Biology Statistics (Statistics 8, 4 units), Enrollment: 167 undergraduates
7. 2010 Spring: Intermediate Probability and Statistics Theory III (Statistics 200C), Enrollment: 16 graduates
8. 2010 Fall: Theory and Practice of Sample Survey (Statistics 262, 4 units), Enrollment: 20 graduates
9. 2011 Spring: Introduction to Probability and Statistics III (Statistics 120C, 4 units), Enrollment: 37 undergraduates
10. 2011 Spring: Intermediate Probability and Statistics Theory III (Statistics 200C), Enrollment: 16 graduates
11. 2012 Spring: Introduction to Probability and Statistics III (Statistics 120C, 4 units), Enrollment: 27 undergraduates
12. 2012 Spring: Intermediate Probability and Statistics Theory III (Statistics 200C), Enrollment: 23 graduates

- **COURSES DEVELEOPED**

2008 Fall: Statistics 262 Theory and Practice of Sample Survey
2009 Winter: Statistics 257 Introduction to Statistical Genetics

- **GRADUATE MENTORING**

Jason Kramer (with Hal Stern)
Yan He (Summer 2009)
Jie Shen (Summer 2009)
Lu Bai (Summer 2012)

- **COMMITTEE ON PH.D. ADVANCEMENT**

1. Behrouz Shafei: Department of Civil and Environmental Engineering, 2008
2. Lars Otten: Department of Computer Sciences, 2009

3. Jie Shen: Department of Statistics, 2010
4. Natalia Flerova: Department of Computer Sciences, 2010
5. Peyman Kaviani: Department of Civil and Environmental Engineering, 2010
6. Leona Bessonova: Department of Epidemiology, 2011
7. Thao Duong: Department of Statistics, 2011
8. LingJie Weng: Department of Computer Sciences, 2011
9. Clifford Anderson-Bergman: Department of Statistics, 2011

- **COMMITTEE ON MASTER'S THESIS**
  Peng Zhong, Department of Civil and Environmental Engineering, 2011

PROFESSIONAL SERVICES

- **EDITORIAL BOARD**
  Frontiers in Statistical Genetics and Methodology (review editor)
  PLoS ONE (academic editor)

- **MANUSCRIPT REVIEWS**
  Algorithms, American Journal of Epidemiology, Annals of Applied Statistics, Autoimmunity, Biometrical Journal, Bioinformatics, BMC Bioinformatics, BMC Genetics, Genetics, Genome Medicine, Human Genetics, Human Heredity, Pharmacogenomics, PLoS ONE, Statistical Applications in Genetics and Molecular Biology, Statistics in Medicine, Statistical Science

- **GRANT REVIEWS**
  I served as a statistical reviewer in the *Clinical and Integrative Cardiovascular Sciences Study Section of NIH* in Oct 2010 and Oct 2011.

- **MEMBERSHIPS**
  American Statistical Association, American Society for Human Genetics, International Genetic Epidemiology Society

- **MEETING ORGANIZER/CHAIR**
  Session chair of *Joint Biostatistics Symposium, Beijing, China, July 2012*
  Session chair of *Joint Statistical Meeting, San Diego, August 2012*

UNIVERSITY SERVICES

- Academic Senate committee on Faculty Board for Undecided/Undeclared Students of UCI (September 1, 2011 to August 31, 2014)
- Member, ICS Lecturer Review Board (2009, 2010, 2011, 2012)
- Member, ICS Student Outreach Committee (2008)
- Member, ICS Undergraduate Policy Committee (2007)
- Member, Comprehensive First-Year Exam Committee (Department of Statistics, Since 2007)
- Member, Graduate Admission Committee (Department of Statistics, since 2007)
- Member, Faculty Search Committee (Department of Statistics, since 2007)