

Curriculum Vitae

Ruzong Fan

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POSITION: Associate Professor

MAJOR RESEARCH INTERESTS

Statistical Genetics, Stochastic Processes and Applications

EDUCATION

1998	Biostatistics	Ph.D.	University of Michigan, Ann Arbor
1996	Biostatistics	M.S.	University of Michigan, Ann Arbor
1988	Probability Theory	Ph.D.	Chinese Academy of Sciences, Beijing, China
1985	Probability Theory	M.S.	Yunnan University, Kunming, China
1983	Mathematics	B.S.	Yunnan University, Kunming, China

ACADEMIC APPOINTMENTS

2006–present	Associate Professor, Department of Statistics, Texas A&M University, Department of Epidemiology and Biostatistics, School of Rural Public Health, TAMU Health Science Center
2001–2006	Assistant Professor, Texas A&M University
1999–2001	Assistant Professor, Department of Health Evaluation Sciences, College of Medicine, Pennsylvania State University

HONORS AND DISTINCTIONS

1982	Excellent Student Award, Yunnan University
2001	Research Fellowship, The Alexander von Humboldt Foundation, Germany

RESEARCH GRANTS

2007-2012	Genetic Basis for Exercise Training Responses, NIH/NHLBI 1R01 HL085918-01, Dr. Massett (PI), 5% effect, Biostatistician
2005-2007	Haplotype Linkage and Association Mapping of Quantitative Trait Loci, DMS-0505025, The National Science Foundation, PI, \$61,147
2004	International Research Travel Assistance Grant, International Center, Texas A&M University, PI, \$1,100
2002	International Research Travel Assistance Grant, International Center, Texas A&M University, PI, \$2,000
2001-2002	Pilot Project Program, Center for Environmental and Rural Health (CERH), Texas A&M University, PI, \$20,000
2001	Surfactant Proteins and Respiratory Distress Syndrome, NIH 4 R37 HL34788-15, Dr. Floros (PI), Collaborator as a Statistical Geneticist
1999-2000	Pediatric Asthma Network Data Coordinating Center, NIH/NHLBI grant 1 U10 HL64313-01, Dr. Chinchilli (PI), Co-Investigator as a Statistical Geneticist
1990–1992	Research Grant of Probability Theory and Stochastic Analysis, National Natural Science Foundation of China, PI

TEACHING EXPERIENCES

- 2001- Texas A&M University: (1) Stat 211, Principles of Statistics I (undergraduate students); (2) Stat 651, Statistics in Research I (Master students); (3) Stat 652, Statistics in Research II (Master students); (4) Stat 661, Statistical Genetics (Master students); (5) Stat 689, Special Topics in Advanced Statistical Genetics (Ph.D students)
- 1999-2001 Pennsylvania State University: Statistical Genetics
- 1988-1991 Peking University: (1) Applied Stochastic Processes; (2) Martingale Limit Theory; (3) Ergodic Theory; (4) Stochastic Differential Equations and Diffusion Processes

WORKING EXPERIENCE (PRIOR TO PENN STATE and TEXAS A&M UNIVERSITY)

- 1998-1999 **Research Associate**, Center for Biostatistics in AIDS Research, Harvard School of Public Health
- 1995-1998 **Research Assistant**, Department of Biostatistics, University of Michigan
- 1994-1995 **Teaching Assistant**, Department of Biostatistics, University of Michigan
- 1994 **Research Scientist**, Institute of Applied Mathematics, University of Bonn, Germany
- 1992-1993 **Research Scientist**, Department of Mathematics, Ruhr-University Bochum, Germany
- 1991-1992 **Research Scientist**, Department of Mathematics, Humboldt-University Berlin, Germany
- 1988-1991 **Assistant Professor/Lecturer**, Department of Probability and Statistics, Peking University, Beijing, China
- 1986-1988 **Research Assistant**, Institute of Applied Mathematics, Chinese Academy of Sciences, Beijing, China
- 1985-1986 **Teaching Assistant**, Department of Mathematics, Yunnan University, Kunming, China
- 1984-1985 **Research Assistant**, Institute of Applied Mathematics, Chinese Academy of Sciences, Beijing, China
- 1983-1984 **Research Assistant**, Department of Mathematics, Yunnan University, Kunming, China

GRADUATE STUDENTS

Ph.D students:

- 2001-2004 Jeusun Jung, Assistant Professor, Department of Medical and Molecular Genetics, Indiana University, School of Medicine, Indianapolis, IN 46202; Thesis: High Resolution Linkage and Association of Quantitative Trait Loci
- 2007-present Ming Zhong

Master students:

- 2007-present Lianfu Chen
- 2005-2007 Ming Zhong
- 2001-2002 Shaokun Chuai
- 2003-2004 Minghua Mei
- 2003-2005 Lijun Ren

MEMBERSHIP

- 1998-present The American Society of Human Genetics
- 1999-present The International Biometric Society
- 2000-present The International Genetic Epidemiology Society
- 2000-present The American Statistical Association
- 2000-present The Institute of Mathematical Statistics

REFEREE

June 2008	Genetics
May 2008	American Journal of Human Genetics
April 2008	Biometrics
March 2008	Advances in Bioinformatics
January 2008	Computational Statistics & Data Analysis
January 2008	Genetic Epidemiology
2007	American Journal of Human Genetics, Statistical Applications in Genetics and Molecular Biology, Genetic Epidemiology
2006	Biomedcentral Bioinformatics, Biometrics, Genetics, Current Progress in Bioinformatics, Biomedcentral Genetics
2005	Genetics, Biomedcentral Genetics, Human Heredity, American Journal of Human Genetics, Federation of European Biomedical Societies Letters
2004	American Journal of Human Genetics, Genetic Epidemiology, Biometrics, Proceedings of National Academy of Sciences USA
2003	American Journal of Human Genetics, Nature Reviews Genetics, Human Heredity, Biometrics, Proceedings of National Academy of Sciences
2002	Genetic Epidemiology, American Journal of Human Genetics, Bioinformatics, Grant Review for The Wellcome Trust, London, UK
2001	Human Heredity, American Journal of Human Genetics, Proceedings of the Short Course on Mathematical Biology, edited by Dr. Sneyd J, American Mathematical Society
1999	Proceedings of National Academy of Sciences USA, Biometrics, Applied Mathematics Letters
1998	Theoretical Population Biology

CONTRIBUTED TALKS

March 2005	International Biometric Society, East North American Region Meeting, Austin, TX
March 2004	International Biometric Society, East North American Region Meeting, Pittsburgh, PA
March 2003	International Biometric Society, East North American Region Meeting, Tampa, Florida
March 2002	International Biometric Society, East North American Region Meeting, Washington, DC
August 2001	Joint Statistical meeting, Atlanta, GA
March 2001	International Biometric Society, East North American Region Meeting, Charlotte, North Carolina
August 1993	Oberwolfach Conference on Nonstandard Analysis, Germany
July 1992	International Conference of Nonstandard Analysis, Blaubeuren, Germany
June 1991	International Conference of Stochastic Processes, Physics and Geometry II, Locarno, Switzerland

INVITED SEMINARS

December 2007	Mt Sinai Medical School
December 2007	Columbia University
February 2007	UCLA, CA
August 2006	Bonn University, Germany
May 2006	University of Alabama at Birmingham, AL
March 2006	Stanford University, CA
September 2005	Case Western Reserve University, OH
July 2004	University of Bonn, Germany
June 2002	Hawaii International Conferences on Statistics, HI
March 2000	Department of Statistics, Penn State University, College Park, PA
May 1999	Department of Health Evaluation Sciences, Penn State University, Hershey, PA
May 1999	Department of Biostatistics, University of Iowa, Iowa City, IA
April 1999	Department of Human Genetics, University of Pittsburgh, Pittsburgh, PA
March 1999	Department of Biostatistics, University of North Carolina, Chapel Hill, NC
March 1999	Department of Statistics, University of Georgia, Athens, GA
March 1999	Anderson Cancer Center, University of Texas, Houston, TX
June 1998	Department of Environmental Health, Harvard School of Public Health, Boston, MA
April 1998	Department of Biostatistics, Washington University, St. Louis, MO
April 1998	Department of Mathematics, University of South California, Los Angeles, CA
March 1998	Department of Statistics, Iowa State University, Ames, IA
March 1998	Comprehensive Cancer Center, University of Alabama, Birmingham, AL
March 1998	Department of Statistics and Department of Biostatistics, University of Wisconsin, Madison, WI
December 1997	School of Public Health, Columbia University, New York, NY
September 1993	Department of Mathematics, University of Oslo, Norway
November 1992	Department of Mathematics, University of Strasburg, France
Septmber 1991	Department of Mathematics, Humboldt University of Berlin, Germany

PUBLICATIONS:

1. Jung JS, Zhong M, Liu L, and **Fan RZ** (2008) Bi-variate combined linkage and association mapping of quantitative trait loci. *Genetic Epidemiology* 32:396-412.
2. **Fan RZ**, Liu L, Jung J, and Zhong M (2008) Combined linkage and association mapping of quantitative trait loci with missing completely at random genotype data. *Behavior Genetics* 38:316-336.
3. Yang Q, Biernacka JM, Chen MH, Houwing-Duistermaat JJ, Bergemann TL, Basu S, **Fan R**, Liu L, Bourgey M, Clerget-Darpoux F, Lin WY, Dupuis J, Elston RC, Cupples LA (2007) Group 4: using linkage and association to identify and model genetic effects. *Genetic Epidemiology* 31 (Supplement 1):s34-s42.
4. Thomas NJ, **Fan RZ**, DiAngelo S, Hess JC, and Floros Y (2007) Haplotype of the surfactant protein genes A and D as susceptibility factors for the development of respiratory distress syndrome. *Acta Paediatrica* 96:985-989.
5. Pavlovic J, Papagaroufalis C, Xanthou M, Liu W, **Fan RZ**, Thomas NJ, Apostolidou I, Papatoma E, Megaloyianni E, DiAngelo S, Floros J (2006) Genetic Variants of Surfactant Proteins A, B, and D in Bronchopulmonary Dysplasia. *Disease Markers* 22:277-291.
6. Floros J, Thomas N, Liu W, Papagaroufalis C, Xanthou M, Pereira S, **Fan RZ**, Guo X, DiAngelo S, Pavlovic J (2006) Family-Based Association Tests suggest linkage between SP-B (and flanking

- region) and RDS; SP-B haplotypes and alleles from SP-B-linked loci are risk factors for RDS. *Pediatric Research* 59:616-621.
7. **Fan RZ**, Jung JS and Jin L (2006) High resolution association mapping of quantitative trait loci, a population based approach. *Genetics* 172:663-686.
http://www.stat.tamu.edu/~rfan/paper.html/2006/multi_allelic_qtl.pdf
 8. **Fan RZ** and Knapp (2005) Sib-ship T^2 association tests of complex diseases for tightly linked markers. *Human Genomics* 2:90-112.
http://www.stat.tamu.edu/~rfan/paper.html/2004-2005/case_control_sibs.pdf
http://www.stat.tamu.edu/~rfan/paper.html/2004-2005/supplementary_simu.pdf
http://www.stat.tamu.edu/~rfan/paper.html/2004-2005/Supplementary_non_ctr_para.pdf
 9. Jung JS, **Fan RZ** and Jin L (2005) Combined linkage and association mapping of quantitative trait loci by multiple markers. *Genetics* 170:881-898.
http://stat.tamu.edu/~rfan/paper.html/2004-2005/multi_mrk_family.pdf
 10. **Fan RZ**, Knapp M, Wjst M, Zhao CX and Xiong MM (2005) High resolution T^2 association tests of complex diseases based on family data. *Annals of Human Genetics* 69:187-208.
http://stat.tamu.edu/~rfan/paper.html/2004-2005/case_control_parent.pdf
http://stat.tamu.edu/~rfan/paper.html/2004-2005/supplementary_info.pdf
 11. **Fan RZ**, Spinka C, Jin L, and Jung JS (2005) Pedigree linkage disequilibrium mapping of quantitative trait loci. *European Journal of Human Genetics* 13:216-231.
http://stat.tamu.edu/~rfan/paper.html/2004-2005/gen_pedigree.pdf
 12. **Fan RZ** and Jung SJ (2004) High resolution joint linkage disequilibrium and linkage mapping of quantitative trait loci based on sibship data. *Human Heredity* 56:166-187.
http://stat.tamu.edu/~rfan/paper.html/2004-2005/HH_sibship_associ_linkage.pdf
 13. **Fan RZ** and Knapp M (2003) Genome association studies of complex diseases by case-control designs. *American Journal of Human Genetics* 72:850-868.
http://stat.tamu.edu/~rfan/paper.html/2003/case_control.pdf
 14. **Fan RZ** and Xiong MM (2003) Combined high resolution linkage and association mapping of quantitative trait loci. *European Journal of Human Genetics* 11:125-137.
http://stat.tamu.edu/~rfan/paper.html/2003/linkage_association.pdf
 15. **Fan RZ** and Xiong MM (2003) Linkage and association studies of QTL for nuclear families by mixed models. *Biostatistics* 4:75-95.
http://stat.tamu.edu/~rfan/paper.html/2003/biostatistics_2003.pdf
 16. **Fan RZ** and Jung SJ (2003) Association studies of QTL for multi-allele markers by mixed models. *Human Heredity* 54:132-150.
http://stat.tamu.edu/~rfan/paper.html/2003/multi_marker_mix_model.pdf
 17. **Fan RZ** and Xiong MM (2002) High resolution mapping of quantitative trait loci by linkage disequilibrium analysis. *European Journal of Human Genetics* 10:607-615.
http://stat.tamu.edu/~rfan/paper.html/2002/EJHG_10_2002.pdf
 18. Xiong MM, **Fan RZ**, and Jin L (2002) Linkage disequilibrium mapping of quantitative trait loci under truncation selection. *Human Heredity* 53:158-172.
http://stat.tamu.edu/~rfan/paper.html/2002/HH_QTL_trun_selection.pdf
 19. **Fan RZ**, Floros J, Xiong MM (2002) Models and tests of linkage and association studies of QTL for multi-allele marker loci. *Human Heredity* 53:130-145.
http://stat.tamu.edu/~rfan/paper.html/2002/HH_quan_loci_reg.pdf

20. **Fan RZ**, Floros J, Xiong MM (2001) Linkage transmission disequilibrium test of two unlinked disease loci; application to respiratory distress syndrome. *Advances and Applications in Statistics* **1**:277-308.
http://stat.tamu.edu/~rfan/paper.html/2001/two_loc_tdt.pdf
21. Floros J, **Fan RZ**, Diangelo S, Guo XX, Wert J and Luo JM (2001) SP-B associations and interactions with SP-A in RDS in whites and blacks. *Pediatric International* **43**:567-576.
http://stat.tamu.edu/~rfan/paper.html/2001/ped_int.pdf
22. Floros J, **Fan RZ**, Matthews A, DiAngelo S, Luo JM, Nielsen H, Dunn M, Gewolb I, Koppe J, vanSonderen L, Farri-Kostopoulos L, Rämets M, Merrill J, Robbins (2001) Case-control association studies and family based transmission disequilibrium test (TDT) reveal surfactant protein A (SP-A) susceptibility alleles for respiratory distress syndrome (RDS) in Caucasians and race differences. *Clinical Genetics* **60**:178-187. http://stat.tamu.edu/~rfan/paper.html/2001/clinical_genetics.pdf
23. Floros Y, **Fan RZ** (2001) Surfactant protein A and B genetic variants and respiratory distress syndrome; allele interactions. *Biology of the Neonate* **80 (Suppl 1)**:22-25.
24. **Fan RZ**, and Lange K (2000) Asymptotic Properties of the Maximal Subinterval of a Poisson process. *Stochastic Processes, Physics and Geometry: New Interplays. II: A Volume in Honor of Sergio Albeverio*; Conference Proceedings, Canadian Mathematical Society, Volume 29; edited by Gesztesy F, Holden H, Jost J, Paycha S, Röckner M and Scarlatti S; pp 175-187.
25. **Fan RZ**, and Lange K (1999) Diffusion process calculations for mutant genes in nonstationary populations. *Statistics in Molecular Biology and Genetics*, Institute of Mathematical Statistics, Lecture Notes-Monograph Series, Volume 33, Published by the Institute of Mathematical Statistics and the American Mathematical Society; Ed. Seillier-Moiseiwitsch F, pp 38-55.
26. **Fan RZ**, Lange K, and Pena E (1999) Applications of a formula for the variance function of a stochastic process. *Statistics & Probability Letters* **43-2**:123-130.
27. **Fan RZ**, and Lange K (1998) Models for haplotype evolution in a nonstationary population. *Theoretical Population Biology* **53**:184-198.
http://stat.tamu.edu/~rfan/paper.html/1998/tpb_1998.pdf
28. Lange K, and **Fan RZ** (1997) Branching process models for mutant genes in nonstationary populations. *Theoretical Population Biology* **51**:118-133; Erratum, *Theoretical Population Biology* **52**:165. http://stat.tamu.edu/~rfan/paper.html/1997/tpb_1997.pdf
29. **Fan RZ** (1996) Potential theory of hyperfinite Dirichlet forms. *Potential Analysis*, Netherlands **5**:417-462.
30. Albeverio S, **Fan RZ**, Röckner M, and Stannat W (1995) A remark on coercive forms and associated semigroups. *Partial Differential Equations and Mathematical Physics (Series: Operator Theory: Advances and Applications, Vol. 78, Birkhäuser Verlag, Basel/Switzerland)*, Eds. Demuth M and Schulze B, pp 1-8.
31. Albeverio S, and **Fan RZ** (1995) Representation of martingale additive functionals and absolute continuity of infinite dimensional symmetric diffusions. *Dirichlet Forms and Stochastic Processes*, Proceedings of the International Conference in Beijing, Eds. Ma ZM, Röckner M and Yan J, pp 25-45.
32. **Fan RZ** (1995) Nonstandard construction of symmetric strong Markov processes associated with Dirichlet forms. *Stochastic Processes, Physics and Geometry II*, Proceeding of the International Conference in Locarno, Switzerland, Eds Albeverio S, Cattaneo U and Merlini D, pp 247-277.
33. **Fan RZ** (1992) Some diffusion processes on the half-space and their associated Dirichlet forms (in Chinese). *Acta Mathematica Sinica* **35**:418-430.

34. **Fan RZ** (1992) Decomposition of a class of functionals and the predictable representation theorem on Banach spaces. *Acta Mathematicae Applicatae Sinica*, English Series **8**:153–167.
35. **Fan RZ** (1992) Beurling-Deny formulae on Banach spaces. *Acta Mathematica Scientia* **12**:79–84.
36. **Fan RZ** (1991) Decomposition of a class of functionals. *Acta Mathematica Sinica*, New Series **7**:224–240.
37. **Fan RZ** (1991) Closabilities of certain symmetric forms on Banach spaces (in Chinese). *Chinese Annals of Mathematics* **12A**:202–209.
38. **Fan RZ** (1990) Representation of martingale additive functionals on Banach spaces. *Acta Mathematicae Applicatae Sinica*, English Series **6**:74–80.
39. **Fan RZ** (1989) An extension of Dynkin formula and probabilistic solutions of some second-order partial differential equations (in Chinese). *Journal of Yunnan University, Natural Science Edition* **11**:10–14.
40. **Fan RZ** (1987) A class of stochastic differential equations with local time and the skew Brownian motion with two barriers (in Chinese). *Chinese Journal of Applied Probability and Statistics* **3**:130–136.