

LONG QU

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EXPERIENCE

- 08/2013~Present Assistant Professor in Biostatistics, Department of Mathematics & Statistics, Wright State University (WSU)
- 03/2011~09/2012 Statistician, BioStat Solutions, Inc.

EDUCATION & TRAINING

- 09/2012~07/2013 **Postdoctoral training**, Department of Statistics, Iowa State University.
Advisor: Dan Nettleton, Professor and Laurence H. Baker Endowed Chair in Biological Statistics.
- 10/2010~02/2011 **Postdoctoral training**, Department of Animal Science, Iowa State University.
Advisor: Dorian Garrick, Professor and Jay Lush Endowed Chair in Animal Breeding and Genetics.
- 08/2006~08/2010 **Ph.D. education**, co-major in Statistics, Iowa State University (**GPA=4.00**). Co-Major Professor: Dan Nettleton, Professor and Laurence H. Baker Endowed Chair in Biological Statistics.
- 08/2004~08/2010 **Ph.D. education**, major in Bioinformatics and Computational Biology (BCB), Iowa State University (GPA=3.92). Major Professor: Jack C.M. Dekkers, Professor and Section Leader of Animal Breeding and Genetics.
Ph.D. Thesis: Improving statistical inference for gene expression profiling data by borrowing information
- 06/2010~06/2010 Summer Short Course: Genomic Selection in Livestock, Iowa State University
- 06/2005~06/2005 Summer Short Course: ASReml and C++ for Quantitative Genetics, Iowa State University
- 08/2002~07/2004 **Master of Medical Science**, major in Occupational and Environmental Health, China Medical University. Advisor: Guifan Sun, Professor and Dean of School of Public Health
M.S. Thesis: Improvements on an Image Analysis System for the Comet Assay
- 07/2003~07/2003 Continuing Professional Education, Chinese Medical Association
- 12/2001~09/2002 Clinical Interns at 1st Hospital, 2nd Hospital and Psychological Hospital of China Medical University
- 07/2001~08/2001 Postgraduate Summer School: Theoretical Biophysics and Bioinformatics (**Final paper grade: 95/100**), Chinese Academy of Sciences and Xiamen University
- 09/1997~12/2001 **Bachelor of Medicine** (Equivalent to **M.D.** training in the United States), 7-Year Clinical Medicine Program, China Medical University

INTERESTS

- Statistical genetics / genomic selection / pharmacogenomics / genetic epidemiology
- Design & analysis of gene expression profiling experiments (microarrays / next-gen sequencing)
- Hierarchical modeling and Bayesian statistics
- Multiple testing
- Smoothing, data mining and machine learning
- Bioinformatics and systems biology
- Resampling-based methods
- Mixed models
- Environmental and molecular toxicology

- Statistical computing

CURRENT RESEARCH SUPPORT

- *The effect of psychological ownership and team size on venture growth*
Source: Ewing Marion Kauffman Foundation
Project PIs: Fei Zhu, Nottingham University Business School China; Long Qu, WSU
Period: September 2014 to September 2015
Total amount: Free access to Kauffman Firm Survey data (equivalent to \$5,200)
- *Distance-based variable selection for high-dimensional biological data*
Source: National Science Foundation (NSF) Mathematical Biology Program
Project PI: Dan Nettleton, Iowa State University
Period: September 15, 2013 to August 31, 2016
Total amount: \$150,000.00
Subaward Investigator: Long Qu, Wright State University
Subaward amount: \$30,863.00

HONORS & AWARDS

Academic awards:

- Ted A. Bancroft Award, Department of Statistics, Iowa State University (2008)
This academic award was first given in 1972, honoring the former Head and Director (1950-1972), Ted A. Bancroft. It is presented to the *top doctoral student* with declared minors in statistics or joint majors in statistics and another field. Each year, the winner is selected by the Honors and Awards Committee on the basis of a vote by the faculty.
- James Cornette Honorable Mention in Bioinformatics and Computational Biology (BCB), Interdepartmental BCB program, Iowa State University (2008)
This award honors James Cornette, retired University Professor of Mathematics and founder of the BCB Graduate Program, successfully brought biological and computational scientists together. The fellowships are awarded to deserving Ph.D. students with *strong records of research accomplishment* or evidence of great potential.
- Professional Advancement Grants (PAGs), Iowa State University (2005, 2008)
- Premium for Academic Excellence (PACE) Award, Iowa State University (2004)
- Golden Prize of Medical Study, United Laboratories (1999~2000)
- First Prize Scholarship, China Medical University (1999~2000, 1997~1998)

Competition Awards:

- Second Prize Student Paper, Science & Technology Festival of China Medical University (2002)
- Winner of Student Paper Contest to Promote Quality-oriented Education, China Medical University (1999)
- Member of the winning team, Computer Science Contest, 5th Shenyang College Student Cultural Festival (1998)
- Programming Winner of *Please Program* Competition, *Popular Computer Weekly* (1995)
- Second Prize of Regional Contest of National Olympiad in Informatics, Liaoning Province, China (1995)

Honor Societies:

- Phi Kappa Phi, Gamma Sigma Delta, Golden Key International

EDITING/REVIEWING SERVICES

- Regional Editor of *American Journal of Biostatistics* (2014-)
- External Reviewer for the Research Grant Council of Hong Kong (2014)
- Statistical Reviewer for *Journal of the American Veterinary Medical Association* (2013-), *American Journal of Veterinary Research* (2013-)
- Referee for *the Annals of Applied Statistics* (2014), *Statistics & Probability Letters* (2014), *BMC Complementary & Alternative Medicine* (2014, non-anonymous), *Genetics* (2014, 2006), *Biostatistics* (2013), *BMC Bioinformatics* (2013), *IEEE Transactions on NanoBioscience* (2013),

Animal Genetics (2011), *Journal of Agricultural, Biological, and Environmental Statistics* (2010), *Biometrics* (2010), *Animal Biotechnology* (2009), *Genetics Selection Evolution* (2007), *Toxicology and Applied Pharmacology* (2004)

- Invited Editor and Consultant for *Environmental Health Perspectives – Chinese Language Edition*, NIH-NIEHS (2003 ~ 2004)

SCHOLARSHIP

Manuscripts under review

Cheng H, Qu L, Garrick DJ, Fernando RL. A Fast and Efficient Gibbs Sampler for BayesB in Whole Genome Analysis. Under review by *BMC Bioinformatics*.

Journal Publications / Accepted Papers (Peer Reviewed)

Statistical / computational publications:

Qu L. Combining Dependent *F*-tests for Robust Association of Quantitative Traits under Genetic Model Uncertainty. *Statistical Applications in Genetics and Molecular Biology*, 2014, 13(2):123-139. [[link](#)]

Qu L, Guenel T, Marshall SL. Linear Score Tests for Variance Components in Linear Mixed Models and Applications to Genetic Association Studies. *Biometrics*, 2013, 69(4):883-892. [[link](#)] [[software](#)]

Sun X, Qu L, Garrick DJ, Dekkers JCM, Fernando RL. A Fast EM Algorithm for BayesA like Prediction of Genomic Breeding Values. *PLoS ONE*, 2012, 7(11): e49157. [[link](#)]

Qu L, Nettleton D, Dekkers JCM. A Hierarchical Semiparametric Model for Incorporating Inter-gene Information for Analysis of Genomic Data. *Biometrics*, 2012, 68(4): 1168-1177. [[link](#)] [[software](#)]

Qu L, Nettleton D, Dekkers JCM. Improved Estimation of Noncentrality Parameter Distribution from a Large Number of *t*-Statistics, with Applications to False Discovery Rates in Microarray Data. *Biometrics*, 2012, 68(4):1178-1187. [[link](#)] [[software](#)]

Qu L, Nettleton D, Dekkers JCM, Bacciu N. Variance model selection with application to joint analysis of multiple microarray datasets under false discovery rate control. *Statistics and Its Interface*, 2010, 3(4):477-492. [[link](#)]

Biomedical publications:

Gu T, Zhu M-J, Schroyen M, Qu L, Nettleton D, Kuhar D, Lunney JK, Ross JW, Zhao S-H, Tuggle CK. Endometrial gene expression profiling in pregnant Meishan and Yorkshire pigs on day 12 of gestation. *BMC Genomics*, 2014, 15:156. [[link](#)]

Uthe JJ, Qu L, Couture O, Bearson SMD, O'Connor AM, McKean JD, Torres YR, Dekkers JC, Nettleton D, Tuggle CK. Use of bioinformatic SNP predictions and gene expression profiling data to find and analyze SNPs associated with *Salmonella* colonization in swine. *Journal of Animal Breeding and Genetics*, 2011, 128(5):354-365. [[link](#)]

Uthe JJ, Bearson SMD, Qu L, Dekkers JC, Nettleton D, Torres YR, O'Connor AM, McKean JD, Tuggle CK. Integrating Comparative Expression Profiling Data with Association of SNPs to *Salmonella* Shedding for Improved Food Safety and Porcine Disease Resistance. *Animal Genetics*, 2011, 42(5):521-534. [[link](#)]

Barb CR, Hausman GJ, Rekaya R, Lents CA, Lkhagvadorj S, Qu L, Cai W, Couture OP, Anderson LL, Dekkers JCM, Tuggle CK. Gene expression in hypothalamus, liver and adipose tissues and food intake response to melanocortin-4 receptor (MC4R) agonist in pigs expressing MC4R mutations. *Physiol. Genomics*, 2010, 41:254-268. [[link](#)]

Lkhagvadorj S, Qu L, Cai W, Couture OP, Barb CR, Hausman GJ, Nettleton D, Anderson LL, Dekkers JCM, Tuggle CK. Gene expression profiling of the short-term adaptive response to acute caloric restriction in liver and adipose tissues of pigs differing in feed efficiency. *Am J Physiol Regul Integr Comp Physiol*. 2010, 298(2):R494-R507. [[link](#)]

Lkhagvadorj S, Qu L, Cai W, Couture OP, Barb CR, Hausman GJ, Nettleton D, Anderson LL, Dekkers JCM, Tuggle CK. Microarray gene expression profiles of fasting induced changes in liver and adipose tissues of pigs expressing the melanocortin-4 receptor D298N variant. *Physiol. Genomics*.

- 2009, 38(1):98-111. [[link](#)]
- Uthe JJ, Wang Y, [Qu L](#), Nettleton D, Tuggle CK, Bearson SMD. Correlating Blood Immune Parameters and a CCT7 Genetic Variant with the Shedding of *Salmonella enterica* Serovar Typhimurium in Swine. *Veterinary Microbiology*. 2009 Mar;135(3-4):384-388. [[link](#)]
- Wang Y, Couture OP, [Qu L](#), Uthe JJ, Bearson SMD, Kuhar D, Lunney JK, Nettleton D, Dekkers JCM, Tuggle CK. Analysis of Porcine Transcriptional Response to *Salmonella enterica* Serovar Choleraesuis Suggests Novel Targets of NF κ B are Activated in the Mesenteric Lymph Node. *BMC Genomics*. 2008, 9:437. [[link](#)]
- Tuggle CK, Wang YF, Couture OP, [Qu L](#), Uthe JJ, Kuhar D, Lunney JK, D. Nettleton D, J.C. Dekkers JC, Bearson SMD. Computational Integration of Structural and Functional Genomics Data across Species to Develop Information on Porcine Inflammatory Gene Regulatory Pathway. *Dev Biol (Basel)*. 2008,132: 105-13.
- Wang Y, [Qu L](#), Uthe JJ, Bearson SM, Kuhar D, Lunney JK, Couture OP, Nettleton D, Dekkers JC, Tuggle CK. Global Transcriptional Response of Porcine Mesenteric Lymph Nodes to *Salmonella enterica* Serovar Typhimurium. *Genomics*. 2007 Jul;90(1):72-84. [[link](#)]
- Liu S, Sun G, Wan C, Sun X, Wan Y, [Qu L](#). [Influence of Vitamin C on Oxidative Stress Induced by Cigarette Smoke Solution in Rat Lymphocyte]. *Chinese Journal of Public Health*. 2004 Aug;20(8):938-940. [In Chinese] [[link](#)]
- Sun XC, Sun GF, Wang L, Zhang Y, Liu S, Wang Y, [Qu L](#), Lin G. [Effect of Sodium Arsenite on the Proliferation and Cell Cycle of Keratogenetic Cells]. *Chinese Journal of Industrial Hygiene and Occupational Diseases*. 2004 Jun;22(3):219-220. [In Chinese] [[link](#)]
- Jin Y, Sun G, Li X, Li G, Lu C, [Qu L](#). Study on the Toxic Effects Induced by Different Arsenicals in Primary Cultured Rat Astroglia. *Toxicology and Applied Pharmacology*. 2004 May;196(3):396-403. [[link](#)]
- Liu S, Sun G, Wan C, Sun X, Wang Y, [Qu L](#). [Effect of Cigarette Smoke Solution on Viability of Rat Lymphocytes and the Intervention of Antioxidants]. *Journal of Hygiene Research*. 2004 May;33(3):300-302. [In Chinese] [[link](#)]
- Liu S, Sun G, Wan C, Sun X, Wang Y, [Qu L](#). [Oxidative Stress Produced by Cigarette Smoke Solution in Rat Lymphocytes]. *Journal of Health Toxicology*. 2004 March;18(1):15-17. [In Chinese] [[link](#)]
- Liu S, Sun G, Sun X, Wang Y, [Qu L](#). [DNA Damage and Repair of Human Lymphocytes Treated with Cigarette Smoke Solution]. *China Public Health*. 2004 Jan;20(1):52-53. [In Chinese] [[link](#)]
- Sun G, [Qu L](#). [Molecular Mechanisms of Arsenic: Current Research Situation and Prospectives]. *Chinese Journal of Endemiology*. 2003;22(z1):13-16. [In Chinese] [[link](#)]
- Li B, Sun G, Pi J, Jin Y, Li X, Gao S, Sun X, [Qu L](#). [Effects of 1-Year Water Remediation on DNA Damage in Populations Exposed to Arsenic Contaminated Drinking Water]. *Chinese Journal of Endemiology*. 2003;22(z1):453-455. [In Chinese]

Reports (Non-Peer Reviewed)

- Lkhagvadorj S, [Qu L](#), Cai W, Couture O, Anderson L, Dekkers J, Nettleton D, Tuggle C. Transcriptional Profiling of the Caloric Restriction in Key Metabolic Tissues of Pigs Differing in Feed Efficiency. *Animal Industry Report*. 2010; AS 656:ASL R2558.
- Tuggle CK, Bearson S, Dekkers J, O'Connor A, McKean J, Uthe J, [Qu L](#), Rodriguez Y, Robinson S. Identifying genes associated with *Salmonella* shedding to increase pork safety through improved genetic resistance. *National Pork Board (NPB) # 08-034*
- Lkhagvadorj S, [Qu L](#); Cai W, Couture O, Wang Y, Anderson LL, Dekkers JCM, Nettleton DS, Tuggle CK. Use of Transcriptional Profiling and Assessment of Blood Parameters to Understand Biological Mechanisms Controlling Feed Intake and Efficiency in Pigs, *Animal Industry Report*. 2007;AS 653:ASL R2233.

Invited Talks

- [Qu L](#). A Hybrid of Lasso and *t*-regularization for Penalized Regression in Genomic Selection. Presented at the University of Waterloo, May 22, 2014, Waterloo, Ontario, Canada

- Qu L, Guennel T, Marshall SL. Linear Score Tests for Variance Components in Linear Mixed Models and Applications to Genetic Association Studies. Presented at
Wright State University, March 11, 2013, Dayton, Ohio, USA
University of Illinois - Chicago, March 8, 2013, Chicago, Illinois, USA
University of Memphis, February 21, 2013, Memphis, Tennessee, USA
Kansas State University, February 1, 2013, Manhattan, Kansas, USA
- Qu L, Nettleton D, Dekkers JCM. A Hierarchical Semiparametric Model for Incorporating Inter-gene Information for Analysis of Genomic Data. Presented at
University of Kansas Medical Center, March 4, 2013, Kansas City, Kansas, USA
University of Connecticut, February 28, 2013, Storrs, Connecticut, USA
- Qu L, Nettleton D, Dekkers JCM. Permutation-based variable importance and variable selection for high dimensional genomic data. Novartis Institutes for Biomedical Research, December 16, 2011, Cambridge, Massachusetts, USA
- Qu L, Nettleton D, Dekkers JCM. A Hierarchical Semiparametric Model for Incorporating Inter-gene Information for Analysis of Genomic Data. 2010 NCCC-170/USSES Joint Meeting, July 8, 2010, National Laboratory for Agriculture and the Environment, Ames, Iowa, USA
- Qu L, Nettleton D, Dekkers JCM. Bias Reduction through Subsampling and Extrapolation in Estimating False Discovery Rates. Eli Lilly and Company, November 5, 2008, Indianapolis, Indiana, USA
- Qu L, Nettleton D, Dekkers JCM. A New Lie with Statistics in Genome-scale Studies and How to Avoid it. Center for Translational Neuromedicine, University of Rochester, October 24~27, 2008, Rochester, New York, USA

Contributed Conference Talks

- Qu L, Bacciu N, Nettleton D, Dekkers JCM. Model Selection in Gene-Specific Mixed Linear Models for Microarray Data with Application to Joint Analysis of Multiple Experiments. 2008 ADSA-ASAS Joint Annual Meeting, July 7-11, 2008, Indianapolis, Indiana, ADSA/ASAS. (Orally presented by Bacciu N)
- Qu L, Nettleton D, Dekkers JCM. Estimating the Proportion of True Null Hypotheses When Testing a Large Number of Hypotheses Simultaneously, with Application to Microarray Data. 2008 The 1st Iowa State University - University of Wisconsin, Madison (ISU-WI) Encounter. April 24, 2008, Department of Animal Science, Iowa State University, Ames, Iowa.
- Qu L, Nettleton D, Dekkers JCM. Improved Estimation of False Discovery Rates Based on Subsampling with Applications to Microarray Data. 2008 ENAR - Eastern North American Region Meeting of International Biometric Society. March 16-19, 2008, Arlington, Virginia, USA.
- Qu L, Nettleton D, Dekkers JCM. A Novel Estimator for the Proportion of True Null Hypotheses Based on Subsampling with Applications to Microarray Data. 2008 ASAS/ADSA Midwestern Meeting. March 17-19, 2008, Des Moines, Iowa, USA. (Orally presented by Dekkers JCM)
- Qu L, Nettleton D, Dekkers JCM. An A-optimal statistical design for post-hybridization washing procedures in Affymetrix microarray experiments. 2007 ASAS/ADSA Midwestern Meeting. March 20, 2007, Des Moines, Iowa, USA.

Contributed Departmental Talks

- Qu L, Guennel T, Marshall SL. Linear Score Tests for Variance Components in Linear Mixed Models and Applications to Genetic Association Studies. Seminar Series on Bioinformatics and Genetic Statistics, January 30, 2013, Iowa State University Department of Statistics, Ames, Iowa, USA.
- Qu L, Nettleton D, Dekkers JCM. Permutation-based sparse penalized weighting for high-dimensional response variable selection in one-way design. Seminar Series on high-dimensional inference, November 30, 2012, Iowa State University Department of Statistics, Ames, Iowa, U.S.A.
- Qu L. A Hybrid of Lasso and BayesA for Penalized Regression in Genomic Selection. Seminar Series on Bioinformatics and Genetic Statistics, October 29, 2010, Iowa State University Department of Statistics, Ames, Iowa, USA.
- Qu L, Nettleton D, Dekkers JCM. A Note on Constructing Permutation Tests for Mixed-Effect ANOVA Models. VIGRE Seminar - Bioinformatics and Genetic Statistics, April 9, 2009, Iowa State

University Department of Statistics, Ames, Iowa, USA.

- Qu L, Nettleton D, Dekkers JCM. Latent Nonparametric Logistic Regression for Modeling Gene Co-regulation in Microarray Data. *Research Training Group (RTG) in Statistics Seminar Series*. November 21, 2008, Iowa State University Department of Statistics, Ames, Iowa, USA.
- Qu L, Nettleton D, Dekkers JC. Some Attempts to Compromise on Disagreements in Gene Category Testing. *VIGRE Seminar - Bioinformatics and Genetic Statistics*, October 30, 2007, Iowa State University, Department of Statistics, Ames, Iowa, USA.
- Qu L. Comparison of Empirical Likelihood and Bootstrap Confidence Intervals for the Proportion of True Null Hypotheses in Large Scale Simultaneous Hypothesis Testing Based on Lai's (2007) Method. *Computer Intensive Statistical Methods* (in partial fulfillment of a course requirement). May 2007, Iowa State University, Ames, Iowa, USA.
- Qu L, Kim YM. A Bayesian Hierarchical Model for Detecting Differential Gene Expression from Microarray Data. *Bayesian Statistics* (in partial fulfillment of a course requirement). April 2007, Iowa State University, Ames, Iowa, USA.
- Qu L, Nettleton D, Dekkers JC. A Stochastic Method for Estimating the Number of Differentially Expressed Genes from Microarray Experiments. *Bioinformatics and Computational Biology Student Seminar*. February 9, 2007, Iowa State University, Ames, Iowa, USA.
- Qu L, Nettleton D, Dekkers JC. Estimating the Number of Differentially Expressed Genes from Microarray Experiments. *VIGRE Seminar - Bioinformatics and Genetic Statistics*, November 30, 2006, Iowa State University Department of Statistics, Ames, Iowa, USA.
- Qu L. Revisions on the Effective Number of Codons. *Computational Molecular Biology* (in partial fulfillment of a course requirement). April 2005, Iowa State University, Ames, Iowa, USA.

Poster Presentations / Abstracts / Proceedings

- Uthe JJ, Bearson SMD, Dekkers JC, Qu L, Nettleton D, Torres YR, O'Connor AM, McKean JD, Tuggle CK. Integrating Comparative Expression Profiling Data with Association of SNPs to *Salmonella* Shedding for Improved Food Safety and Porcine Disease Resistance. *32nd Conference for the International Society for Animal Genetics (ISAG)*. July 26-30, 2010, Edinburgh, Scotland
- Qu L, Nettleton D, Dekkers JC. Incorporating Gene Co-regulation Information via Multidimensional Scaling to Detect Differential Expression by Local False Discovery Rates for Microarray Data. *Celebrating 75 Years of Statistics at Iowa State*. June 3-5, 2009, Ames, Iowa, USA.
- Qu L, Nettleton D, Dekkers JC. Effect of Pooling Test Statistics Across Genes in Permutation Analysis of Microarray Data. *Statistical Genetics of Livestock for the Post-Genomic Era*. May 4-6, 2009, Madison, Wisconsin, USA.
- Lkhagvadorj S, Qu L, Cai W, Couture OP, Barb CR, Hausman GJ, Nettleton D, Anderson LL, Dekkers JC, Tuggle CK. Leptin Mediates Discriminate Response to Feed Restriction in Feed Efficient Pigs. *Experimental Biology 2009*. April 18-22, 2009, New Orleans, Louisiana, USA
- Uthe JJ, Bearson SMD, Dekkers JCM, Qu L, Nettleton DS, O'Connor AM, McKean JD, Steffensmeier KM, Tuggle CK. Identifying Genetic Polymorphisms Associated with *Salmonella* Shedding for Improved Food Safety and Porcine Disease Resistance. *Plant & Animal Genomes XVII Conference*. January 10-14, 2009, San Diego, California, USA.
- Qu L, Nettleton D, Dekkers JC. Bias Reduction through Subsampling and Extrapolation in Estimating False Discovery Rates. *2008 Fall Conference on Statistics in Biology*. October 13-15, 2008, Ames, Iowa, USA
- Tuggle CK, Wang Y, Couture OP, Christian C, Qu L, Uthe JJ, Kuhar D, Lunney J, Nettleton D, Dekkers JCM, Bearson SMD. Comparative Bioinformatic Analysis of the Transcriptional Response to *Salmonella enterica* Serovar Choleraesuis Suggests Novel Targets of NF κ B are Activated in the Porcine Mesenteric Lymph Node. *3rd International Symposium on Animal Functional Genomics*, April 7-9, 2008, Edinburgh, UK, ARS. (Orally presented by Tuggle CK)
- Lkhagvadorj S, Qu L, Cai W, Couture OP, Wang Y, Barb CR, Hausman GJ, Rekaya R, Nettleton D, Anderson LL, Dekkers JC, Tuggle CK. Sterol Regulatory Transcription Factor-1: Key Regulator of Fasting Response in the Adipose Tissue in Pigs? *Experimental Biology 2008*.

- April 5-9, 2008, San Diego, California, USA.
- Lkhagvadorj S, Qu L, Cai W, Couture OP, Wang Y, Barb CR, Hausman GJ, Rekaya R, Nettleton D, Anderson LL, Dekkers JC, Tuggle CK. Use of Transcriptional Profiling to Understand Genetic Mechanisms Responding to Fasting in Pigs. *2008 ASAS/ADSA Midwestern Meeting*. March 17-19, 2008, Des Moines, Iowa, USA, ASAS/ADSA.
- Tuggle CK, Wang YF, Couture OP, Qu L, Uthe JJ, Kuhar DJ, Lunney JK, Nettleton D, Dekkers JC, Bearson SM. Bioinformatic Integration of Structural and Functional Genomics Data across Species to Develop Porcine Inflammatory Gene Regulatory Pathway Information. *IEEE/ACM Transactions on Computational Biology and Bioinformatics*.
- Tuggle CK, Zhao SH, Qu L, Wang Y, Couture OP, Kuhar D, Lunney JK, Ross JW, Lucy M, Nettleton D, Dekkers JCM, Geisert RD. Differential Endometrial Transcript Expression between Yorkshire and the Prolific Meishan Breed of Pigs during the Critical Stage of Conceptus Elongation and Early Attachment. *Plant & Animal Genomes XVI Conference*. January 12-16, 2008, San Diego, California, USA.
- Tuggle C, Wang Y, Couture O, Qu L, Uthe J, Kuhar D, Lunney J, Nettleton D, Dekkers J, Bearson S. Computational integration of structural and functional genomics data across species to develop porcine inflammatory gene regulatory pathway information. *Proceedings in International Symposium on Animal Genomics for Animal Health*, October 23-25, 2007, Paris, France.
- Lunney JK, Bearson SM, Wang YF, Uthe JJ, Qu L, Couture OP, Zhao SH, Kuhar DJ, Nettleton D, Dekkers JC, Tuggle CK. Comparative Immune Responses of Pigs to Infection with *Salmonella enterica* Serovars of Food Safety (Typhimurium) and Animal Health (Choleraesuis) Importance. *Proceedings 8th International Veterinary Immunology Symposium*. August 10, 2007, Ouro Preto, Brazil.
- Tuggle C, Wang Y, Couture O, Qu L, Uthe J, Kuhar D, Lunney J, Nettleton D, Dekkers J, Bearson S. Characterizing the porcine transcriptional regulatory response to infection by *Salmonella*: identifying putative new NF κ B direct targets through comparative bioinformatics. *Proceedings In Genomics for Animal Health: E coli and Salmonella Workshop*, June 4-8, 2007, Utrecht, The Netherlands.
- Uthe JJ, Bearson SM, Wang Y, Qu L, Dekkers J, Nettleton D, Tuggle C. A Single Nucleotide Polymorphism in the Porcine CCT7 Gene Correlates with *Salmonella* Shedding in Swine. *107th General Meeting - American Society for Microbiology*. May 21-25, 2007, Toronto, Canada.
- Bearson SM, Uthe JJ, Wang Y, Qu L, Dekkers JC, Nettleton D, Tuggle CK. Associations of the Porcine Immune Response and Genetic Polymorphisms with the Shedding of *Salmonella enterica* Serovar Typhimurium. *7th International Symposium on the Epidemiology and Control of Food-borne Pathogens in Pork*. May 9-11, 2007, Verona, Italy.
- Wang Y, Qu L, Uthe JJ, Bearson SM, Kuhar D, Lunney J, Couture OP, Nettleton D, Dekkers JC, Tuggle CK. Lack of a Strong NF κ B-dependent Transcriptional Response during Infection with *Salmonella enterica* Serotype Typhimurium as Observed in *S. Choleraesuis* Infection. *24th Stadler Genetic Symposium, "The Genomics of Disease"*. October 1-4, 2006, Columbia, Missouri, USA, University of Missouri – Columbia Campus.
- Lkhagvadorj S, Qu L, Cai W, Couture O, Wang Y, Anderson L, Dekkers JC, Nettleton D, Tuggle CK, Barb R, Hausman G, Rekaya R. Use of Transcriptional Profiling to Understand Genetic Mechanisms Controlling Feed Intake and Efficiency in Pigs. *30th International Conference on Animal Genetics*. August 20-25, 2006, Porto Seguro, Brazil.
- Zhao S, Qu L, Nettleton D, Peng J, Wang Y, Lunney JK, Geisert R, Tuggle CK. Comparative Functional Genomics: Gene Expression Profiling in Early Pregnant and Cycling Yorkshire Gilts Using the Affymetrix Porcine GeneChipTM. *30th International Conference on Animal Genetics*. August 20-25, 2006, Porto Seguro, Brazil.
- Wang Y, Uthe JJ, Bearson SMD, Kuhar D, Lunney J, Qu L, Nettleton D, Tuggle CK. Lack of a Strong NF κ B-Dependent Transcriptional Response during Infection with *Salmonella enterica* Serotype Typhimurium as Observed in *S. Choleraesuis* Infection. *30th International Conference on Animal Genetics*. August 20-25, 2006, Porto Seguro, Brazil.
- Couture O, Zhao X, Zhao S, Recknor J, Lkhagvadorj S, Qu L, Nettleton D, Dekkers JC, Tuggle CK.

- Improved Annotation of the Porcine Affymetrix GeneChip® and Functional Comparison to QIAGEN-NRSP8 Oligonucleotide Array Data. *30th International Conference on Animal Genetics*. August 20-25, 2006, Porto Seguro, Brazil.
- Zhao S, Qu L, Nettleton D, Peng J, Wang Y, Lunney JK, Geisert R, Tuggle CK. Identification of Differentially Expressed Genes in Endometrium RNAs Collected from Early Pregnant and Cycling Yorkshire and Meishan Gilts Using the Affymetrix Porcine Genechip™. *Plant and Animal Genome Conference XIV*. January 14-18, 2006, San Diego, California, USA.
- Qu L, Nettleton D, Dekkers JCM. The Effect of Single Nucleotide Polymorphisms on One-Step Tukey's Biweight Estimates from Affymetrix Microarray Data. *2006 ASAS/ADSA Midwestern Meeting*. March 2006, Des Moines, Iowa, USA.
- Qu L, Nettleton D, Dekkers JCM. Evaluation of Common Affymetrix GeneChip™ Preprocessing Methods Based on Performance in Statistical Tests and the Validity of Benchmarking Datasets. *2nd International Symposium on Animal Functional Genomics*. May 2006, East Lansing, Michigan, USA. Michigan State University.
- Tuggle CK, Qu L, Wang Y, Couture O, Nettleton D, Dekkers JC, Zhao S, Uthe JJ, Bearson SM. Using a First-Generation Porcine Affymetrix Genechip® to Investigate the Functional Genomics of Immune Response and Reproductive Biology. *Plant and Animal Genome Conference XIV*, January 14-18, 2006, San Diego, California, USA. (orally presented by Tuggle CK)
- Wang Y, Uthe JJ, Bearson SMD, Kuhar D, Lunney J, Qu L, Nettleton D, Tuggle CK. Transcriptional Suppression of Specific Porcine Immune Pathways during Infection with *Salmonella enterica* Serotype Typhimurium Compared to Choleraesuis. *Plant and Animal Genome Conference XIV*, January 14-18, 2006, San Diego, California, USA. (orally presented by Wang Y)
- Wang Y, Uthe JJ, Bearson SM, Qu L, Nettleton D, Tuggle CK. Identification of Differentially Expressed Genes in Response to Infection to Host-Specific and Host-Generalist *Salmonella enterica* Serotypes in Pigs. *Integration of Structural and Functional Genomics Symposium*. September 22-25, 2005, Ames, Iowa, USA. Iowa State University.

Software Packages

- Lund S, Qu L (2014). QuasiSeq: QuasiSeq. R package version 1.0-3. <http://CRAN.R-project.org/package=QuasiSeq>
- Qu L (2013). varComp: Variance component models. R package version 0.1-317. <http://CRAN.R-project.org/package=varComp>
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- Qu L (2013). hisemi: Hierarchical Semiparametric Regression of Test Statistics. R package version 1.0-319. <http://CRAN.R-project.org/package=hisemi>
- Qu L (2012). pi0: Estimating the proportion of true null hypotheses for FDR. R package version 1.3-250. <http://CRAN.R-project.org/package=pi0>

PROFESSIONAL ASSOCIATION MEMBERSHIP

- Institute of Mathematical Statistics (IMS)
- The American Statistical Association (ASA)
- The International Biometric Society / Eastern North American Region (TIBS/ENAR)

OTHER SERVICES

- Member of Statistics Committee, Department of Mathematics & Statistics, Wright State University (2013—2014)
- Member of Colloquium Committee, Department of Mathematics & Statistics, Wright State University (2013—2014)
- Group interviewer for Biostatistics Group Needs Assessment, Wright State University (2013). Departments interviewed: Internal Medicine, Family Medicine
- Member of Asian Community Needs Survey committee, community service at Dayton, OH, 2013
- Host for a female speaker Dr. Yingli Qin from the University of Waterloo on November 8, 2013 to

present departmental seminar on hypothesis testing of high-dimensional covariance matrices, Wright State University

- Provided internal review feedback on the proposed Ph.D. program on Interdisciplinary Applied Sciences at Wright State University, 2013
- Provided external review feedback on the proposed Ph.D. program on Biomedical Informatics at the University of Cincinnati, 2013

TEACHING EXPERIENCE & RELATED TRAINING

- Instructor—*Theory of Statistics I*, Department of Mathematics & Statistics, Wright State University (Fall 2014). Deliver lectures to about 20 graduate students in statistics, mathematics and / or engineering majors; prepare online notes / lecture recordings; design and grade homework and exams.
- Instructor—*Elementary Statistics*, Department of Mathematics & Statistics, Wright State University (Fall 2013—Fall 2014). Deliver lectures to about 120 undergraduate students in total; prepare online notes and lecture recordings; manage lab sessions; hold office hours; design and grade homeworks, design and administer exams and quizzes; revise syllabus.
- Instructor—*Statistical Design and Analysis of Gene Expression Experiments*, Department of Statistics, Iowa State University (Spring 2013). Developed course contents based on recent literature on statistical design and analysis of microarray and next-generation sequencing data for gene expression profiling experiments; delivered lectures to 5 graduate students in statistics; designed and graded homeworks and exams; held office hours; organized in-class student presentations.
- Guest lecturer—*Theory and Applications of Linear Models*, Department of Statistics, Iowa State University (2012). Presented two lectures on the proofs of constrained estimation in linear models and the distribution of quadratic forms to ~15 graduate students in statistics.
- Lab instructor—*Principles of Statistics*, Department of Statistics, Iowa State University (2008). Organized 10 hands-on stochastic experiment sessions and led the discussion on the results and underlying statistical principles for ~50 undergraduate students
- Lab teaching assistant—*Design and Analysis of Microarray Experiments* (Summer short Course), Department of Animal Science, Iowa State University (2005). Helped organizing the lab sessions and demonstrated microarray data analysis using R for ~30 trainees from biomedical sciences
- Course instructor—*Intermediate English Grammar*, Creative Foreign Language School, Shenyang, China (2002-2003). Independently created lectures and exercises for ~30 high-school students planning to study abroad; all of them later successfully passed the Test of English as a Second Language (TOEFL) administered by the Educational Testing Service (ETS).
- Teaching training—The Teaching Professor Technology Conference, Denver, Colorado, October 10—12 (2014)
- Teaching training—Center for Teaching & Learning Faculty Orientation, Wright State University (2013)
- Teaching training—ABC's of Grading, Iowa State University (2008)
- Teaching training—McKeachie's Teaching Tips, Iowa State University (2008)
- Teaching training—Advanced Presentation Skills for International Teaching Assistants, Iowa State University (2008)

GRANT WRITING RELATED TRAINING

- Research & Sponsored Programs (RSP) Gateway training, Wright State University, October 23, 2013
- RSP Faculty Orientation Workshop, Wright State University, October 24, 2013
- Received grade A in the course *Grant Writing* (Political Science 610G, 2009) at ISU. The grade was based on a *complete* grant proposal titled *Analysis of High Dimensional Data Using Prior Distance Information with Applications to Functional Genomics* in the form of National Institute of Health (NIH) R01 program opportunity# PA-07-458.
- Part of the Ph.D. preliminary exam (2007) was based on a grant project description titled *Improving the estimation of the proportion of true null hypotheses in microarray gene expression experiments*

in the form of National Science Foundation (NSF) mathematical biology program opportunity #PD-04-7334.

- Primary author of a medicine-geoscience multi-disciplinary grant proposal on chronic arsenic poisoning in China (2003). A revised version of the proposal was later awarded as one of the national key grants on public health in China in 2005.

COMPUTER & PROGRAMMING SKILLS

- Proficient programming skills in R/SPLUS and C/C++
- Good programming skills in SAS (Base, STAT, IML), WinBUGS, JAGS, Matlab and Perl
- Working knowledge in high-performance computation, GPU programming & Hadoop
- Working knowledge in Python, MySQL & PHP.
- Working knowledge in algorithm design and asymptotic analysis of computational complexity
- Excellency in the National Computer Rank Examination, Grade 4 (top grade), 2000. The exam was offered by the National Educational Examinations Association of China and Educational Testing Services (ETS, the institution that offers GRE exams). Grade 4 is only awarded to non-major students with computer knowledge comparable to a typical college graduate majoring in computer sciences.

MENTORING

Co-mentored a postdoctoral fellow Dr. Nicola Bacciu under guidance of Dr. Jack C.M. Dekkers and Dr. Dan Nettleton. (2006-2008)

CONSULTING

Provided statistical, microarray, and/or computational consultations to:

Four biotech/pharmaceutical companies while working at Biostat Solutions, Inc., Dr. Fei Zhu, Dr. Xiance Sun, Dr. Li He, Dr. Dingxia Feng, Dr. Suqin Cai, Dr. Weiguo Cai, Dr. Boyi Dai, Dr. Bin Fan, Robert Fitzgerald, Dr. Fengli Fu, Dr. Wei He, Dr. Suneel Onteru, Dr. Napapan Piyasatian, Dr. Christopher K. Tuggle, Dr. Li Xue, Dr. Honghua Zhao, etc.

LANGUAGE ABILITIES

English:

- Proficient in speaking and listening, fully certified (Level 1) to teach classes in English without any restrictions by the Speak/Teach program of Iowa State University
- Proficient in reading and writing

Chinese:

- Native speaker of standard Mandarin
- Proficient in reading and writing modern simplified Chinese
- Good in reading traditional Chinese
- Artistic performer of traditional Chinese brush calligraphy
- Artistic performer of modern simplified Chinese hard-pen calligraphy
- Third Prize of Student Calligraphy Competition and Exhibition (Brush Group), China Medical University (1998)