

Curriculum Vitae

Haiyan Wang

Contact Information

Department of Statistics
Kansas State University
108E Dickens Hall
Manhattan, KS 66506, USA

Office: (785) 532-0519 Home: (785) 340-6865

Fax: (785) 532-7736 E-mail: hwangmo@gmail.com
<http://www-personal.ksu.edu/~hwang/>

Research Interests

Nonparametric methods in big data, rank tests in big data, longitudinal and functional data analysis, analysis of clustered data, image analysis, high dimensional data analysis and data mining, computational methods.

Education

- Ph.D. (Statistics), August 2004, The Pennsylvania State University, State College, Pennsylvania USA
 - Dissertation: Testing In Multifactor Heteroscedastic ANOVA and Repeated Measures Designs with Large Number Of Levels
 - Major professor: Michael G. Akritas
- M.S. (July, 1999), B.S. (July 1996), Beijing University, Beijing, China

Academic Experience

- Associate Professor with tenure: July, 2010 - Current, Kansas State University, Manhattan, Kansas USA
- Assistant Professor: Aug., 2004 - June 2010, Kansas State University, Manhattan, Kansas USA
- Graduate Teaching Assistant: Aug., 1999 - Dec. 2003, Pennsylvania State University
- Graduate Research Assistant: May - August, 2001, January - May 2004, Pennsylvania State University

Peer Reviewed Journal Publications

Journal Publications on Theory or Computational Methods

Student authors are labeled with *. Corresponding author is labeled with †

- Yuan Chen, Wei Zhou, **Haiyan Wang**, Lanzhi Li, Lifeng Wang, Zheming Yuan[†] (2015) Prediction of O-glycosylation sites based on Multi-Scale Composition of Amino Acids and Feature selection. *Medical & Biological Engineering & Computing*, Jun;53(6):535-44. doi: 10.1007/s11517-015-1268-9.

- Lei Jin, Suojin Wang[†], and **Haiyan Wang** (2014). A new nonparametric stationarity test of time series in time domain. *Journal of the Royal Statistical Society: Series B (Statistical Methodology)*. doi: 10.1111/rssb.12091
- Zhijun Dai*, Lifeng Wang*, Yuan Chen, **Haiyan Wang**, Lianyang Bai, and Zheming Yuan[†] (2014) A pipeline for improved QSAR Analysis of Peptides: physiochemical property parameter selection via BMSF, near-neighbor sample selection via semivariogram, and weighted SVR regression and prediction. *Amino acid*. 46(4):1105-19. doi: 10.1007/s00726-014-1667-5.
- Yuanguai Xie*, Hongyan Zhang*, Haiyan Wang, Lifeng Wang* and Zheming Yuan[†] (2013). Prediction of Multidimensional Time Series Based on GS-RSR-SVR and Its Application in Agricultural Economy. *Bulgarian Journal of Agricultural Science*. **19**: 1327-1336. <http://www.agrojournal.org/19/06-24.html>
- Sharad Silwal*, and **Haiyan Wang**[†], Diego Maldonado (2013). Assessment of random-noise contamination in digital images via testing on wavelet coefficients. *Statistics and Its Interface*. **6**:117135. DOI: <http://dx.doi.org/10.4310/SII.2013.v6.n1.a11>
- **Haiyan Wang**, Hongyan Zhang*, Zhijun Dai*, Ming-shun Chen, and Zheming Yuan (2013). TSG: A New Algorithm for Binary and Multi-class Cancer Classification and Informative Genes Selection . *BMC Medical Genomics*. **6**(Suppl 1):S3. doi:10.1186/1755-8794-6-S1-S3
- Hongyan Zhang*, **Haiyan Wang**[†], Zhijun Dai*, Ming-shun Chen, and Zheming Yuan[†] (2012). Improving Accuracy for Cancer Classification with a New Algorithm for Genes Selection. *BMC Bioinformatics*, **13**:298. doi:10.1186/1471-2105-13-298
- Wei Zhou[†], Zhijun Dai*, Yuan Chen, **Haiyan Wang**, Zheming Yuan (2012). High-dimensional descriptor selection and computational QSAR modeling for antitumor activity of ARC-111 analogues based on SVR. *International Journal of Molecular Sciences*, **13**, 1161-1172; doi:10.3390/ijms13011161
- Santosh Ghimire* and **Haiyan Wang**[†] (2012). Classification of Image Pixels based on Minimum Distance and Hypothesis Testing. *Computational Statistics and Data Analysis*, **56**, 2273-2287. <http://www.sciencedirect.com/science/article/pii/S0167947312000072>
- Gang Qian*, **Haiyan Wang**, and Zheming Yuan[†] (2012). Using homology information from PDB to improve the accuracy of protein β -turn prediction by NetTurnP. *Progress in Biochemistry and Biophysics*. **39**(5): 472-482. http://www.pibb.ac.cn/pibbcn/ch/reader/create_pdf.aspx?file_no=20110370
- JinLiang Li*, LiFeng Wang*, **Haiyan Wang**, LianYang Bai*, Zheming Yuan[†] (2012) High-Accuracy Splice Sites Prediction Based on Sequence Component and Position Features. *Genetics and Molecular Research*. **11** (3): 3432-3451. <http://dx.doi.org/10.4238/2012.September.25.12>
- Ke Zhang*, **Haiyan Wang**[†], Arne C. Bathke, Solomon Harrar, Hans-Peter Piepho, Youping Deng (2011). A nonparametric test to compare replicated longitudinal microarray data with application in IL-2 stimulation study. *BMC Bioinformatics*. **12**:273. **Highly Accessed**. <http://www.biomedcentral.com/1471-2105/12/273>
- **Haiyan Wang**[†], Diego Maldonado, and Sharad Silwal* (2011). A Nonparametric-Test-Based

Structural Similarity Measure for Digital Images. *Computational Statistics and Data Analysis*. 55: 2925-2936.

doi:10.1016/j.csda.2011.04.021

- ❑ **Haiyan Wang**[†] and Michael Akritas (2011). Asymptotically Distribution Free Tests in Heteroscedastic Unbalanced High Dimensional ANOVA. *Statistica Sinica*. **21**(3), 1341-1377.
- ❑ **Haiyan Wang**[†] and Michael Akritas (2010a). Rank test for heteroscedastic functional data. *Journal of Multivariate Analysis*. **101**: 1791-1805.
- ❑ Ke Zhang* and **Haiyan Wang**[†] (2010), Nonparametric tests for longitudinal array comparative genomic hybridization data. *Statistics and Its Interface*. **3**(2), 211-222.
- ❑ Arne C. Bathke[†], Solomon W. Harrar, **Haiyan Wang**, Ke Zhang*, and Hans-Peter Piepho (2010). Series of Randomized Complete Block Experiments with Non-normal Data. *Computational Statistics and Data Analysis*. **54**(7), 1840-1857.
- ❑ **Haiyan Wang**[†], Siti Tolos*, and Suojin Wang (2010). A Distribution Free Nonparametric Test to Detect Dependence Between a Response Variable and Covariate in Presence of Heteroscedastic Treatment Effects. *The Canadian Journal of Statistics*. **38**(3), 408433.
- ❑ **Haiyan Wang**[†], James Higgins, and Dale Blasi (2010). Distribution-Free Tests For No Effect Of Treatment In Heteroscedastic Functional Data Under Both Weak And Long Range Dependence. *Statistics and Probability Letters*. **80**: 390-402. Doi:10.1016/j.spl.2009.11.016
- ❑ **Haiyan Wang**[†] and Michael Akritas (2010b). Inference from heteroscedastic functional data, *Journal of Nonparametric Statistics*. **22**:2, 149-168. DOI: 10.1080/10485250903171621
- ❑ Weixing Song[†], **Haiyan Wang** and Weixin Yao (2009). On the Adaptive Robust Modal Local Polynomial Regression, *International Journal of Statistical Sciences*. **9**: 217-231.
- ❑ **Haiyan Wang**[†] and Michael Akritas (2009). Rank Tests in Heteroscedastic Multi-Way HANOVA, *Journal of Nonparametric Statistics*. **21**(6): 663-681.
- ❑ George von Borries*, and **Haiyan Wang**[†] (2009). Partition clustering of high dimensional low sample size data based on p-values, *Computational Statistics and Data Analysis*. **53**: 3987-3998.
- ❑ **Haiyan Wang**[†], James W. Neill, and Forrest R. Miller (2008). Nonparametric Clustering of Functional Data, *Statistics and Its Interface*. **1**: 47-62.
- ❑ **Haiyan Wang**[†] and Michael Akritas (2004). Rank Tests for ANOVA with Large Number of Factor Levels, *Journal of Nonparametric Statistics*, **16**(3-4): 563-589.
- ❑ Peide Shi[†], **Haiyan Wang*** and Zhongguo Zheng (2001). Semiparametric model selection in large samples, *J. Syst. Sci. Complex*. **14**(4): 378-387.
- ❑ Peide Shi[†], **Haiyan Wang***, Lihua Zhang* (2000). Asymptotic theory of nonparametric regression estimates with censored data, *Science in China (Mathematics)*. **43**(6): 574-580.

Journal Publications on Application or Collaborative Research

- ❑ Ming-Shun Chen[†], Shanda Wheeler, **Haiyan Wang**, R. Jeffrey Whitworth (2014). Impact of Tem-

peratures on Hessian Fly (Diptera: Cecidomyiidae) Resistance in Selected Wheat Cultivars (Poales: Poaceae) in the Great Plains Region. *Journal of Economic Entomology*, **107**(3):1266-1273. <http://www.bioone.org/doi/full/10.1603/EC13357>

- Sandra Garcs-Carrera, Allen Knutson, **Haiyan Wang**, Kristopher L. Giles, Fangneng Huang, R. Jeffrey Whitworth, C. Michael Smith, and Ming-Shun Chen[†] (2014) Virulence and Biotype Analyses of Hessian Fly (Diptera: Cecidomyiidae) Populations From Texas, Louisiana, and Oklahoma. *Journal of Economic Entomology*, **107**(1):417-423.
- Chitvan Khajuria, **Haiyan Wang**, Xuming Liu, Shanda Wheeler, John C Reese, Mustapha El Bouhssini, R J Whitworth and Ming-Shun Chen[†] (2013). Mobilization of lipids and fortification of cell wall and cuticle are important in host defense against Hessian fly. *BMC Genomics*. **14**:423. <http://www.biomedcentral.com/1471-2164/14/423>
- Zenglei Wang, Daniel Parker, Hao Meng, Lanou Wu, Jia Li, Zhen Zhao, Rongping Zhang, Miao Miao, Qi Fan, **Haiyan Wang**, Liwang Cui[†] and Zhaoqing Yang[†], (2012). In Vitro Sensitivity of Plasmodium falciparum from China-Myanmar Border Area to Major ACT Drugs and Polymorphisms in Potential Target Genes. *PLoS ONE* **7**(5): e30927. doi:10.1371/journal.pone.0030927
- Lieceng Zhu, Xuming Liu, **Haiyan Wang**, Chitvan Khajuria, John C. Reese, R. Jeff Whitworth, Ruth Welti, and Ming-Shun Chen[†] (2012). Rapid Mobilization of Membrane Lipids in Wheat Leaf-Sheaths during Incompatible Interactions with Hessian Fly. *Molecular Plant-Microbe Interactions*. **25**(7):920-30. doi: 10.1094/MPMI-01-12-0022-R.
- Long Cui, Zenglei Wang, Hongying Jiang, **Haiyan Wang**, Xin-zhuan Su, and Liwang Cui[†]. (2012) Lack of Association of the S769N Mutation in Plasmodium falciparum SERCA (PfATP6) with Resistance to Artemisinins. *Antimicrobial Agents and Chemotherapy*. **56**(5):2546-52. <http://www.ncbi.nlm.nih.gov/pubmed/22354307>
- Liu, X., Williams, C.E., Nemacheck, J.A., **Wang, H.**, Subramanyam, S., Zheng, C. and Chen, M.[†] (2010), Reactive Oxygen Species Is Involved in Plant Defense against a Gall Midge. *Plant Physiology*. **152**: 985-999.
- Miao, J., Fan, Q., Cui, L., Li, X., **Wang, H.**, Ning, G., Reese, J.C., Cui, L.[†] (2010) The MYST family histone acetyltransferase regulates gene expression and cell cycle in malaria parasite Plasmodium falciparum. *Molecular Microbiology* **78**(4): 883902.
- Zhang, S., Shukle, R., Mittapalli, O., Zhu, Y.C., Reese, J.C., **Wang, H.**, Hua B., and Chen M.[†] (2010). The gut transcriptome of a gall midge, Mayetiola destructor. *Journal of Insect Physiology*. Volume 56, Issue 9, September 2010, Pages 1198-1206.
- Chen M.S.[†], Echegaray E., Whitworth, R.J., **Wang H.**, Sloderbeck, P.E., Knutson, A., Giles K.L. and Royer T.A. (2009). Virulence analysis of Hessian fly (Mayetiola destructor) populations from Texas, Oklahoma, and Kansas, *Journal of Economic Entomology*. **102**(2): 774-780.
- Chen, M.S.[†], Liu X.M., **Wang H.**, and El Bouhssini M. (2009). Hessian fly (Mayetiola destructor) interactions with barley, rice, and wheat seedlings, *Journal of Economic Entomology*. **102**(4): 1663-1672.
- **Wang, H.**[†] (2006). Book review for "Extending the Linear Model with R: Generalized Linear,

Mixed Effects and Nonparametric Regression Models Edited by Faraway J. J.", *Biometrics*. **62**(4): 1278.

Manuscripts under review/revision/in progress

Student authors are labeled with *. Corresponding author is labeled with †

- Mohammed Gharaibeh*, Mohammad Sahtout*, **Haiyan Wang**† (2015). A nonparametric lack-of-fit test of constant regression in presence of heteroscedastic variances.
- Zhijun Dai*, Haiyan Wang, Lianyang Bai*, and Zheming Yuan† (2015) A New Feature Selection Algorithm and Immediate Inference Machine for Cancer Classification Based on Variance Analysis. In review by Bioinformatics.
- Mohammed Gharaibeh* and **Haiyan Wang**† (2014). A nonparametric lack-of-fit test of nonlinear regression in presence of heteroscedastic variances.
- Dayou Jiang* and **Haiyan Wang**† (2014) A BMSF Algorithm for Genome-Wide Association Study.
- Girly M. Ramirez* and **Haiyan Wang**† (2014) Variable selection in sparse ultra-high dimensional additive models.
- Girly M. Ramirez* and **Haiyan Wang**† (2014) Feature selection in ultra-high dimensional additive logistic models.
- **Wang H.**†, Zhang, K., Carroll R.J. and Suojin Wang (2011). Distribution-Free tests for unbalanced heteroscedastic longitudinal data in high dimensional ANOVA setting.
- Tolos, S.*, **Wang, H.**†, Wang, S. and Brown, S. (2011). A distribution-free test of no main nonparametric covariate effect and no treatment and covariate interaction.
- Lee, G.* and **Wang, H.**† (2011) Hypothesis Testing in Correlated High Dimensional Matrix Data with Limited Replications.

Jeff Zacharakis, Haiyan Wang, Lori Andersen, Margaret Patterson (2014). Using modern statistical methods to analyze demographics of Kansas ABE/GED students who transition to community or technical college programs. Submitted.

Haiyan Wang, Jeff Zacharakis, (2014) Comparison of different variable selection and modeling methods in analysis of KBOR data on Kansas ABE/GED students who transition to community or technical college programs

Peer reviewed conference paper: Jeff Zacharakis, Haiyan Wang (2014) A Pilot Study of Adult Literacy Student Pathways between Secondary and Postsecondary Education, accepted by 2014 AERA Annual Meeting (presented by Jeff Zacharakis in Philadelphia, April 2014)

Final report for KBOR Scholars Award: Jeff Zacharakis, Haiyan Wang (2014) Exploration of KBOR Data to Better Understand Participation, Retention and Graduation Patterns of ABE/GED Students Transitioning to Community College Programs

Presentations and Invited Talks

- Co-organizer of an invited session "Modeling of Complex Biological Data" for ISNPS 2015 Conference on "Biosciences, Medicine, and novel Non-Parametric Methods", 12th-15th of July, 2015,

in Graz, Austria.

- ❑ Feature selection, sample selection, and prediction for quantitative structure-activity relationship analysis of peptides. Invited talk at 6th International Statistics Forum, May 24-25, 2014, Renmin University, Beijing, China.
- ❑ Improved Prediction Analysis of Microarray (PAM) through different thresholding methods and Heteroscedastic Modeling. Invited talk at The Fourth International Biostatistics Workshop, June 4-8, 2014, Jilin University, Changchun, China.
- ❑ A QSAR analysis of peptides: physiochemical property parameter selection, near-neighbor sample selection, and weighted SVR regression and prediction. Invited talk at Second Conference of the International Society for NonParametric Statistics. Cadiz, Spain. June 12-16, 2014.
- ❑ An algorithm for binary and multi-class cancer classification and informative genes selection. Contributed talk at 2013 Joint Statistical Meeting, Montreal, Canada, July 2013.
- ❑ Distribution-free Tests for Unbalanced Heteroscedastic longitudinal Data in high dimensional ANOVA settings. Invited talk at 2012 Joint Statistical Meeting, San Diego, July 2012.
- ❑ Nonparametric Variable Selection in High Dimensional Data (with continuous response). Invited talk at 1st Conference of International Society of NonParametric Statistics, Greece, June 2012.
- ❑ Nonparametric variable selection in high dimensional data for classification. Invited seminar talk at Department of Statistics, Texas A&M university, March 22, 2012.
- ❑ A Distribution-Free Test to Detect General Dependence and High Dimensional Variable Selection. Invited talk in special session of "Mathematical Statistics" at the 1081st AMS Meeting. March 30 - April 1, 2012.
- ❑ Nonparametric Variable Selection in High Dimensional Data for Classification. Invited seminar talk at Department of Statistics, Penn State University. Aug. 2011.
- ❑ Nonparametric tests and test-based genome partitioning for longitudinal DNA copy number data. Invited seminar talk at Department of Mathematics and Statistics, University of Missouri at Kansas City. Oct. 2010.
- ❑ K-nearest neighbor based distribution-free tests to identify relationship between variables in presence of potentially a large number of categorical factors. Invited seminar talk at Department of Statistics, University of Missouri. Sep. 2010.
- ❑ A new image similarity index based on nonparametric hypothesis testing. Invited talk at the International Conference on Statistical Analysis of Complex Data. July 2010.
- ❑ A nonparametric test of nonlinear covariate effects and their interactions with categorical factors. Invited seminar talk at Department of Statistics, Shanghai Finance and Economics University. July 2010.
- ❑ A Nonparametric Test of Independence and Its Application in Digital Image Quality Assessment, Invited Project PACE speaker for Colloquium at Department of Mathematical Sciences, University of Montana (PACE represents Partnership for Comprehensive Equity with the goal to increase the representation and advancement of women in academic science and engineering

careers). May 2-6, 2010.

- ❑ Nonparametric test for longitudinal data in nonclassical setting, Invited young researcher talk at UGA symposium "New Directions in Asymptotic Statistics", May 15-16, 2009.
- ❑ Nonparametric Tests For Longitudinal Array Comparative Genomic Hybridization Data, poster at Statistical Methods for Complex Data, College Station, TX, March 2009.
- ❑ A nonparametric test of independence between response and covariates adjusted for treatment effects, invited talk at Workshop on "Nonparametric Statistics, Refined, Redefined, and Renewed", Arlington TX, April 2009.
- ❑ Computational Methods to Characterize Regulatory Networks involved in Plant Response to Abiotic Stresses, Poster presentation at Genes in Ecology, Ecology in Genes Symposium at Kansas City, Nov. 2008.
- ❑ Nonparametric Mixture Model Based Clustering of Discrete Functional Data, Topic contributed talk on Joint Statistical Meetings, Aug. 2008.
- ❑ Invited talk at Classification Society of North America in Saint Louis, June 2008.
- ❑ Invited talk at Nonparametrics and mixture models conference in Penn State, May 2008.
- ❑ Invited talk at the Kansas Ecological Genomics Research forum, May 2008.
- ❑ Inference on nonparametric hypothesis testing in high dimensional data, International Conference on High Dimensional Data Analysis, August, 2007, Kuming, China, invited.
- ❑ Clustering time course gene expression data using nonparametric hypothesis testing, Joint Statistical Meetings 2007, topic-contributed.
- ❑ Inference on nonparametric hypothesis testing and its application in microarray and mass spectrometric data, IMS 10th Meeting of New Researchers in Statistics and Probability, 2007.
- ❑ A divisive method via multivariate hypothesis testing for clustering gene expression patterns, Joint Statistical Meetings 2006, contributed.
- ❑ Chair for Session: QTL Analysis and Mapping, Joint Statistical Meetings, 2006.
- ❑ "Analysis of Microarray Gene Expression Data with Nonparametric Hypothesis Testing", Department of Statistics seminar at University of Florida, Mar 21, 2006, invited.
- ❑ Nonparametric Hypothesis Testing in Functional Data, Joint Statistical Meetings, 2005, topic contributed.
- ❑ Clustering curves based on hypothesis testing, 8th New Researchers' Conference, 2005, poster.
- ❑ Clustering Genes for Time Course Microarray Data, Graybill Conference, 2005, poster.
- ❑ "Testing in multi-factor heteroscedastic ANOVA and repeated measures designs with large number of levels", at seminars between January 2004 and March 2004 in Oklahoma State University; Kansas State University; Utah State University; Portland State University; Texas A & M University; University of Toronto.
All invited.

- ❑ Analysis of Heteroscedastic Multifactor Designs with Large Number of Factor Levels, ENAR 2004, contributed.
- ❑ Rank tests for Heteroscedastic Mixed-Effects Model when the Number of Repeated Measurements is Large, Joint Statistical Meetings, 2003, contributed.
- ❑ Inference of Mixed-Effects Model based on original observations when the Number of Repeated Measurements is large, International Conference on Current Advances and Trends in Nonparametric Statistics, July 2002, invited.
- ❑ Semiparametric Model Selection in Large Samples, Sixth Chinese National Conference on Probability and Statistics, 1999, contributed.

Workshops Attended

- ❑ Enhancing the Grant-Writing Environment in the Animal Health Industry, Global Food Systems Arenas and Beyond: Writing NIH, NSF, and USDA Grant Proposals. Workshop given by Stephen Russell, the Grant Writers Seminars and Workshops, LLC (GWSW). The workshop was held at Hilton Garden Inn, Manhattan, KS, April 24, 2014.
- ❑ NISS/ASA Writing Workshop for Junior Researcher
- ❑ Workshop on Frontiers of Statistics, 2006, Princeton University.
- ❑ Seventh Annual Winter Workshop on longitudinal data analysis, 2005, UFL.
- ❑ American Statistical Association (ASA) Workshop on "Nonparametric Statistics: Frontier", 2005, Texas.

Honors, Awards and Funding

- ❑ Consultant, Exploration of KBOR Data to Better Understand Participation, Retention and Graduation Patterns of ABE/GED Students Transitioning to Community College Programs. Date of Approval: 09/17/2012. Requested award period 07/15/12 - 07/14/13. Annual Direct Costs: \$10,500. Funding agency: Kansas Board of Regents. Award number: KS0699, Parent Project: GDED002754.
- ❑ Principal Investigator, Collaboration Grant Proposal on Methods for High Dimension Data. Award period: 9/1/2012 to 8/31/2017; award amount: \$35,000; funding agency: Simons Foundation; grant number: 246077.
- ❑ Travel grant for First Conference of the International Society for NonParametric Statistics (ISNPS), 2012, \$2504.18.
- ❑ President's Faculty Development Award, \$2500, May 2010.
- ❑ Principal Investigator, Ecological Genomics Seed Grant, \$35,589 for June 2008 - May, 2009, "Computational methods to characterize regulatory networks involved in plant response to abiotic stresses". Nine month support for a GRA in Statistics. Funded by Kansas State University Ecological Genomics Institute. Award number: NOBO 283010.

- ❑ Big 12 Faculty Fellowship Award \$2500, 2008-2009 Academic Year.
- ❑ ADVANCE CEO Award, Kansas State University (2004, 2005, 2006, 2007, 2008, 2009 total \$6,533)
- ❑ ADVANCE Distinguished Lecture Series grant (2004, 2005, 2006, 2007, total around \$4,800)
- ❑ Travel Fund Awards, Department of Statistics, Penn State (2002, 2003, 2004)
- ❑ Vollmer-Kleckner Scholarship, Department of Statistics, Penn State, 2001

Courses Taught at K-State

My standard teaching loads are four courses per academic year (two courses per semester except for Spring 2014 and Fall 2012, during which I had my sabbatical leave partly at Texas A&M Univ.). Among the courses listed below, Stat 902, 903, 904, 940 were recently developed Ph.D core courses; the two Stat 950's were new graduate level special topics courses.

Undergraduate level courses:

Stat 490: Statistics for Engineering I (Spring 2007, Fall 2007, Fall 2011, Spring 2013, Fall 2014, Spring 2015)

Stat 510: Introductory Probability and Statistics I (Fall 2004)

Graduate level courses:

Stat 702: Statistical Methods for the Social Sciences (Spring 2005, Spring 2006, Spring 2010)

Stat 703: Statistical Methods for Natural Scientists (Fall 2009, Fall 2010, Spring 2013, Summer 2014, Summer 2015)

Stat 706: Basic Elements of Statistical Theory (Fall 2004, Fall 2005, Fall 2006)

Stat 716: Nonparametric Statistics (Fall 2011, Fall 2013)

Stat 726: Introduction to Splus/R computing (Spring 2009)

Stat 745: Statistical Graphics (Spring 2006 (2nd half), Spring 2008, Spring 2010, Spring 2012)

Stat 770: Theory of Statistics (Fall 2006, Fall 2008, Fall 2013)

Stat 825: Numerical Methods in Statistics (Spring 2011, Spring 2015)

Stat 902: Generalized Linear Models (Spring 2005, Spring 2007, Spring 2009)

Stat 903: Spatial and Longitudinal Data Analysis (Fall 2005, Fall 2007, Fall 2009, Spring 2011)

Stat 904: Resampling methods (Spring 2014)

Stat 940: Advanced Statistical Methods (Fall 2014)

Stat 950: Data Mining (Spring 2006, Fall 2010)

Stat 950: Special topics on hypothesis testing in high-dimensional data (Spring 2005)

Stat 981: Advanced Inference (Spring 2012)

Student Advising

I have been the major professor for eight Ph.D. students and eight master students. Six of my Ph.D. students have completed their study and found job in academia or industry. Except for two M.S. students who chose to pursue further study, all my other M.S. students found satisfactory job upon graduation.

Ph.D. students:

- George von Borries (Defended in Feb. 2008. First job: Assistant Prof., Univ. of Brasilia)

- Ke Zhang (Defended in Dec. 2008. First job: Abbott Laboratories. Second job starting in Nov. 2009: Tenure track Assis. Prof., Director of ND INBRE Bioinformatics Core, Univ. of North Dakota)
- Siti Tolos (Defended in Nov 2010, First job: Assistant Prof., International Islamic Univ. of Malaysia.)
- Girly Ramirez (Defended in July 2013. First job: Novatis, North Carolina)
- Mohammed Gharaibeh (Defended in Summer 2014. First job: Assistant Professor, Al Al-Bayt University, Jordan)
- Mohammad Sahtout (Defended in Summer 2014. First job: Statistics Specialist, Statistics and Analysis Division, Development Sector, United Arab Emirates)
- Bo Tong (program of study filed in Fall 2013, to defend in December 2015).
- Richard Opoku-Nsiah (Program of study filed in May 2015)

Master students

- Lei Dong (Defended in Dec. 2009). First job: Statistician in K.U. Medical Center, Department of Internal Medicine.
- Sharad Silwal (Defended in Dec. 2009 with M.S., 2012 Ph.D.in Mathematics, Currently, tenure track faculty in Northland College).
- Santosh Ghimire (Defended in Spring 2011 with M.S. in Statistics, 2012 Ph.D. in Mathematics, currently Assistant Professor in Tribhuvan University, Kathmandu, Nepal).
- Liang Peng ((program of study filed in Spring 2011; Defended in Summer 2011. Career choice: Ph.D. study in Computer Science, Utah State Univ.).
- Dustin Maurer (program of study filed in Spring, 2011; Defended in Summer 2011. Currently: Ph.D. student in Bioinformatics, University of Kansas).
- Eric Mann (program of study filed in Summer, 2011; Defended in Fall 2011. First Job: Consultant, a private firm at Kansas City).
- Dayou Jiang (Defended in Fall 2012). First job: Software Engineer, Cerner Corporation, Kansas City.
- Grace Lee (program of study approved in Fall 2010; degree awarded Fall 2010. Career choice: Ph.D. study in statistics, K-State Univ.).

Student Committees Served

Lianqing Zheng (Ph.D., Statistics), Ying Liu (Ph.D., Statistics), Wijith (Ph.D., Statistics), Champa Magalla (Ph.D. Statistics), Nishantha Samarakoon (Ph.D. Statistics), Zhongwen Tang (Ph.D. Statistics), Mike Anderson (Ph.D. Statistics), Edwin Nudm (Ph.D. Statistics), Champa Magalla (Ph.D. Statistics). Chun Yu (Ph.D., Statistics)

Zhiwei Sun (M.S., Statistics), Zanying Zhong (M.S., Statistics), Tej Shrestha (M.S. Statistics, June 2010), Jianjun Hua (M.S. Fall 2011), Lixia Fan (M.S. Statistics, April 2010), Xiuqin Bai (M.S. Statistics, June 2010), John Richards (M.S. Statistics, May 2010), Sam Wilson (M.S., Statistics).

Shih-Hsiung Chou (Ph.D., Industrial and Manufacturing Systems Engineering), Weilong Cong (Ph.D., Industrial and Manufacturing Systems Engineering), Prashanth Boddhireddy (Ph.D., Plant Pathology), Zhigang Guo (Ph.D., Plant Pathology), Nikhil Churi (Ph.D., Industrial and Manufacturing Systems Engineering), Yu Jiang (Ph.D., Human Nutrition), Na Qin (Ph.D., Industrial and Manufacturing Systems Engineering), Yaseen Alhaj-Yaseen (Ph.D., Economics), Cristiana Rosa Piccinni (Ph.D. Human Ecology), Aobo Dong (M.S., A.Q. Miller School of Journalism & Mass Communications) Reddy Prashanth (Ph.D. Plant Pathology), Cristina Andreescu, (M.S. Plant Pathology). Weilong Cong (Ph.D., Industrial and Manufacturing Systems Engineering)

Outside chair for Alexey V. Ferapontov (Ph.D., Physics). Outside chair for Hao Zheng (Ph.D., Mathematics). Outside chair for Jie Ren (Ph.D., Mathematics). Outside chair for Misty Long (Ph.D., Mathematics).

Service to the Department

Chair of Doctoral assessment committee (Fall 2014 - Summer 2015) Coordinator of Ph.D. qualifying exam committees (Fall 2014 -Summer 2015)
Ph.D. qualifying exam committee for Linear Models Exam (member during Jan. to July 2013, chair during Aug - Dec. 2013)
MS Exam on Theory (Aug. 2013 to Summer 2015)
Promotion, tenure and evaluation document revision committee (Fall 2010)
Applied Statistics in Agriculture Conference, Chair for local arrangement (Spring 2010 -Fall 2011)
Qualifying exam committee (August 2007-Spring 2008, Chair; Fall 2008-Summer 2009, member)
Department Head search committee (Fall 2007- Spring 2008)
Undergraduate assessment committee (Fall 2007-current)
Masters assessment committee (Fall 2011 - Aug. 2012)
Seminar Chair (Dec. 2004 - May 2006, Aug. 2009- Dec. 2009, Aug. 2011 - Dec. 2011, Fall 2014, Spring 2015)
Student Progress Committee (Dec. 2005 - May 2007)
Faculty Search Committee (Spring 2006, Spring 2007, Fall 2010)
Undergraduate Lead Advisor (August 2005 - August 2007)
Statistics in Agriculture - local arrangements (Fall 2009-Spring 2010)
Departmental scholarships and awards (Fall 2009-Spring 2010)
Library liaison (Fall 2009- Aug 2013)

Service to the University

- Faculty Senate Committees (Aug. 2014- 2017)
 - Faculty Salaries and Fringe Benefits committee
 - University Library Committee
- Presidential Committee on Big 12 Faculty Fellowship (Fall 2014 - 2017)
- Graduate Council representative for Mathematical and Engineering Sciences Academic Area (September 2015 - August 2018)

Professional Membership and Service

Jan. 2012 - current, Elected member of the International Statistical Institute (ISI).

May 2014 - current, Associate Editor for Austin Statistics.

July 2012 - current, Associate Editor for Statistics Research Letters.

Jan. 2011 - current, Associate Editor for Journal of Nonparametric Statistics.

Dec. 2011 - current, Associate Editor for Open Journal of Statistics.

April 2011 - current, Review Editor for Frontiers in Bioinformatics and Computational Biology.

April 2007- March 2008, Treasurer of ASA Kansas-Missouri Section.

Served as a member for International Biometric Society Young Statistician Showcase Committee. In charge of selecting the Best Student Paper Award from all applicants in the continent of America attending IBC 2012 in Kobe, Japan.

Served as a reviewer for a tenure & promotion case for a faculty of Department of Mathematics and Statistics at Old Dominion University.

Served as a reviewer for a promotion case for a faculty of the Department of Information Sciences at City of Hope National Medical Center.

Served as a reviewer for Journal of the American Statistical Association, Statistica Sinica, Annals of Applied Statistics, Journal of Nonparametric Statistics, Statistica Neerlandica, Journal of Classification, Journal of Royal Statistical Society (serial B), Journal of Systems Science and Complexity, Computational Statistics and Data Analysis, Statistics Research Letters, Journal of the Chemical Society of Pakistan, BMC Medical Genomics, BMC Bioinformatics, BMC Genomics, Computational Statistics and Data Analysis, Frontiers In Bioinformatics and Computational Biology, British Journal of Mathematics & Computer Science, Annals of the Institute of Statistical Mathematics, Statistical Papers, Bioinformatics.

Served as a book reviewer for Prentice Hall, John Wiley & Sons, Ltd., Psychology Press/Routledge, Taylor and Francis.

Some interdisciplinary synergistic activities

- Served as a member of the Advisory Committee for a NIH proposal by Venkat N Gudivada (Engineering and Computer Science Professor, Marshall University), Elizabeth Wells (Math/Stat professor, University of Arkansas at Pine Bluff) and Dhana Rao (Biology professor, Marshall University).
- Participated in development of a NSF-NRT proposal that requests funding for a graduate training program to increase student familiarity with large data sets, the design of studies generating such data, training on common computational and analytical tools to analyze such data, and the development and refinement of such tools to improve the precision and speed of biological inference.

- Participated in a NSF IGERT preliminary proposal to promote interdisciplinary training on ecological genomics for graduate students in Biology.
- Representative for a multi-department effort on Bioinformatics Minor curriculum for K-State undergraduate students. Made a sample program of study for Statistics major.
- Co-organizer for Kansas State Sorghum Translational Genomics Symposium (2009).
- Some statistical analysis of life sciences data (2008-current):
 - Providing design of experiment and data analysis for investigating virulence of five Hessian fly (HF) populations from Oklahoma, Texas, and Louisiana.
 - RNA sequence data analysis to compare samples from Hessian fly Molly and Newton populations at multiple time points
 - Data analysis for a study to investigate the impact of different temperatures on the resistance/susceptibility to the Hessian fly experimented on many different wheat cultivars
 - Comparing Newton and Molly time-course wheat microarray data to discover plant defense mechanism against Hessian fly attack.
 - Identifying differentially expressed genes between antibiotic spray treatment vs control using Hessian fly microarray data
 - Comparison of Hessian fly interaction with rice, barley, and wheat
 - Lipid analysis during Hessian fly interaction with resistant and susceptible wheat
 - Role of reactive oxygen species in plant defense against Hessian fly
 - Gene expression and tiling array data analysis during Hessian fly interaction with rice and wheat.
 - Virulence analysis of Hessian fly populations from Texas, Oklahoma, and Kansas
 - Identifying effective mutants through fatty acyl composition of complex lipids by collision-induced dissociation time-of-flight mass spectrometry
 - Clustering to find cyclic lipids for day vs night time course lipidomics data
 - Significance test for the effects of mutants and knockouts on longitudinally observed PA lipids
 - Clustering analysis to group lipids based on the change in lipid amount comparing wounded vs unwounded plants
 - Graphical view of the relationship between concentration and the observed lipid count from blood plasma considering each lipid head group

Computer Skills

- Very strong in R/Splus; familiar with SAS, Minitab; some experience on SPSS.
- Languages: C, Fortran, Pascal.
- Applications: \LaTeX , common Windows database, spreadsheet, and presentation software