Curriculum Vitae
Grace S. Shieh
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Education

1984-1990 Ph.D. degree, Statistics, University of Wisconsin-Madison, U.S.A
1978-1982 B.S. degree, Mathematics, National Taiwan University, Taiwan

Employment History

2010, May, Research Fellow, Academia Sinica, Taiwan
1999-2010 April, Associate Research Fellow, Academia Sinica, Taiwan
2001, Aug.-2009, Adjunct Associate professor, National Taiwan Univ.
1994-1999, Assistant Research Fellow, Academia Sinica, Taiwan
1990-1995, Assistant Professor, University of Missouri-Columbia
1982-1983, Teaching Assistant, Dept. of Mathematics, NTU, TAIWAN

Professional Experience

Dec.,1996, visiting Fellow, ISI-Calcutta, India.
Fall of 1998, visiting scholar, UC-Berkeley.
Spring of 1999, visiting scholar, UW-Madison.

Honor and Awards

NSC Young Investigators Award (Statistics division), 1997-98
Elected member of the International Statistical institute, 2012

Fellowships and Grants

Summer Research Fellowship, University of Missouri-Columbia, 1991 and 1994
NSF Research Planning Grants for Women Scientists and Engineers, 1993-95
Research Council Grant, U.M.C., 1994
NSC Statistics Research Grant, 1995-present
Genomics and Proteomics Program Grant, Academia Sinica, 2002-04,2006-08
Pilot project of the Thematic Program Grant, Academia Sinica, 2005-06
Biotechnology Developing Grant, Academia Sinica, 2006-07
National Research Program-Genome Medicine, 2010
Taiwan Semiconductor Manufacturing Company Joint Development Project,
2010-11, 2013-2014

Research Interests

Computational Biology, Directional Data

Professional Societies

International Society of Computational Biology
International of Statistical Institute

Courses Taught

Linear Models I, Theory of Nonparametric Statistics, Nonparametric Statistical Methods, Regression and Correlation Analysis, Statistical Analysis, and Introduction to Probability and Statistics I.

Invited Lectures at International Meetings and Institutes

- Dept. of Mathematics, Limburgs Universitair Centrum, Belgium, July, 1994.

- Graduate Inst. of Statistics in National Chao-Tung Univ., National Chengchi Univ., National Ching-Hwa Univ., and National Central Univ., Taiwan, 1995.

- Dept. of Mathematics, Chung-Yuen Univ., Dept. of Mathematics, Dan-Chiang Univ., 1996.

- The 4th-12th South Taiwan Statistics Conference, 1995-97, 2003.

- Annual Meeting of Chinese Statistical Association (CSA), 1997 and 2002.

- Invited lectures delivered in the fall semester of 1998 at Univ. of Wisconsin-Madison, UC-Berkeley and UCLA.

- *2002 Taipei International Statistical Symposium and Bernoulli Society EAPR Conference.* "Analyzing Single-slide Microarray Data Via A Bayesian Approach".

- The 2nd Graybill Conference on Microarrays, Bioinformatics and Related Topics, Fort Collins, CO, USA, 2003. *"Reconstructing Yeast Gene Networks from Microarray Data"* .

- Bio-Engineering Conference, Functional Genomics Session, NSC-USA, December, 2003. *"Reconstructing Gene Network by Regression"*.

- Cherry Bud Workshop, Yokohama, Japan, 2004. *"Reconstructing gene networks by a data-driven response surface"*.

- 36th symposium on the interface: computing science and statistics, Baltimore, USA, 2004. *"Using Bayesian Networks to Reconstruct Yeast Genetic Networks"*.

- Tutorials on analysis of microarray data," Bioinformatics workshop 2004 at National Chung-Cheng University, Taiwan.

- "A Data-driven Response Surface approach to reconstruct Gene Networks," 2004 Taiwan Computational Biology Consortium conference, Hsin Chu, Taiwan.

- "Mining Information from Microarray Data," 2004 Knowledge Discovery and Data Mining Advanced Technology and Applications, Hsin-Chu, Taiwan.

- Taipei International Symposium on Statistical Genomics, Taipei, Taiwan, 2004 *"A Regression Approach to Reconstruct Genetic Networks"*.

- 37th Symposium on the Interface: Computing Science and Statistics, St. Louis, USA., 2005. *" A stepwise Structure Equation Modeling Approach to Reconstruct Genetic Networks"*.

- The 55th session of ISI, Sydney, Australia., 2005. *"A Covariance Structure Modeling Approach to Reconstruct gene networks"*.

- International Statistics Conference, Kuala Lumpur, Malaysia., 2005 *"A stepwise Structure Equation Modeling Approach to Reconstruct Genetic Networks"*.

- Workshop on Directional Statistics, the Institute of Statistical Mathematics, Tokyo, JAPAN, 2006 *"A Bivariate Generalized von Mises Distribution with Applications to Circular Genomes"*.

- Compstat 2006 and 17th Symposium of the IASC, Rome, ITALY, 2006 *"A Pattern Recognition Approach to infer Genetic Networks"*.

- Compstat 2006 Satellite Conference: Workshop on Data and Information Visualization, Berlin, German, 2006 *"Visualization for Genetic Networks Reconstruction"*.

- 2006 ICSA Applied Statistics Symposium, University of Connecticut, Storrs, USA, 2006 *"A stepwise Structural Equation Modeling Algorithm to Predict Genetic Networks"*.

- Workshop on Directional Statistics, the Institute of Statistical Mathematics, Tokyo, JAPAN, 2007 *"Application of directional statistics to circular genomes"*.

- "A Pattern Recognition Approach to Infer Genetic Networks from Microarray Data," 2007 International Conference on Systems Biology/Gene co-expression network workshop, Long Beach, California.

- "A Stepwise Structural Equation Modeling Algorithm to Reconstruct Genetic Networks," 2007 Korean Biometric section Meeting, Seoul, Korea.

- "A Machine Learning Approach to Infer Genetic Networks," 2008 International Symposium on Cellular Systems Biology, National Chung-Cheng University, Taiwan.

- "A Bivariate von Mises Distribution and its applications to Circular Genomes", International Conference 'Statistics—Theory and Practice', University of Wisconsin-Madison, USA, 2008.

- "A Pattern Recognition Approach to Infer Genetic Networks", Dept. of Biostatistics, UCLA, and Dept. of Molecular and Computational Biology, USC, 2008.

- Workshop on Directional Statistics, the Institute of Statistical Mathematics, Tokyo, JAPAN, 2008 *"A family of Distribution And A New Association Measure for Circular Genomes"*.

- The 2nd International Conf. on BioMedical Engr. and Informatics (BMEI 2009), Tianjin, China, 2009, *"A Nonlinear Model and an Optimization algorithm to Infer Genetic Interaction"*.

- Humboldt-Xiaman workshop, Berlin, Germany, July, 2010, *"Patching Puzzles of genetic Networks"*.

- Department of Statistics and Applied Probability, National University of Singapore, Singapore, 2011 *"Modeling And Comparing the Organization of Circular Genomes"*.

- International Conference on Mathematical Biology, Bangalore, India, July 4-7, 2011, *"Modeling And Comparing the Organization of Circular Genomes"*.

- Program in Molecular and Computational Biology, Dept. of Biological Sciences, University of Southern California. (Jan., 2012), *"Modeling the organization of circular genomes and its applications."*.

- The Second Joint Biostatistics Symposium, Renmin University, Beijing, China, July 8-9, 2012, *"Inferring co-regulation of transcription factors and microRNAs in human breast cancer"*.

- Academy of Mathematics and Systems Science, Chinese Academy of Science, Beijing, China, July 12, 2012, *"Inferring co-regulation of transcription factors and microRNAs in cancers"*

- The sixth IEEE International Conference on Systems Biology, Xi'an, Shanxi, China, Aug 18-20, 2012, *"Inferring co-regulation of transcription factors and microRNAs in human breast cancer"*.

- The 23th International Conference on Genome Informatics (GIW2012, highlight session), NCKU, Tainan, Taiwan, Dec 12-14, 2012, *"Inferring co-regulation of transcription factors and microRNAs in human breast cancer"*.

- The 2nd Taiwan Epigenomics Symposium (2012), N. Chung-Cheng univ., Chia-Yi, Taiwan, July 5, *"Analyzing transcriptomics and epigenomics data of ovarian cancer stem cells"*.

- Joint Meeting of the IASC Satellite Conference for the 59th ISI WSC and the 8th Conference of ARS, Seoul, Korea, Aug. 22-23, 2013. *"Interrogating the function of HO-1 in cancer cells via ChIP-seq"*.

- International symposium of Statistcal Genetics, Seoul, Korea, Aug. 21, 2013. "Uncovering synthetic lethal interactions for colorectal cancer therapeutics via an integrated approach.

Professional Service

Associate editor of **Statistical Methodology** (since 2004).

Associate editor of **Frontiers in Statistical Genetics and Methodology**.

Associate editor of **STAT**

Review editor of **Frontiers in Plant Physiology**

Co-guest Editor of **Bioinformatics special issue** for **Statistical Methodology, 2006**

Refereed papers for *Bioinformatics, BMC Bioinformatics, PLoS-Computational Biology, IEEE/ACM Transactions Bioinfo. Compu. Biol., JASA, IEEE/Transactions Signal Processing, CSDA, J. of Statistical Plan. and Inf., J. of the Chinese Statistical Asso., Methodology and Computing in Applied Probab., Metron, Psychometrika, Sankhyā A, STAT, Statist. and Prob. Letters, Statistica Sinica, Statistical Methodology, Taiwan J. of Forest Science, IEEE BIBE 2004 Conference, Intern. J. of Business Intell. and Data Mining, Nanoscience Current.*

Reviewed grant proposals for NSC, Taiwan; NSC of Hong Kong.

Reviewed grant proposals for NTU, Taiwan

Research Grants Council, University of Missouri system, USA.

Reviewed patten application for Academia Sinica, Taiwan.

Reviewed a promotion case for Bowling Green State university, Ohio, USA; two promotion cases (to asso. prof. & to full prof.) for NYMU (Bioinformatics); one recruitment (asso. prof.) case for NTHU (Inst. Bioinfo. & Structural Biology)

- Chaired a contributed session for the Joint Statistical Meeting of ASA, IMS, Biometric Society iat Atlanta, GA, in 1991.

- Chaired a contributed session for IMS at 3rd World Congress of the Bernoulli Society and 57th Annual Meeting of IMS, Chapel Hill, NC, USA in 1994.

- Chaired an invited session for the Annual Statistical Meeting of CSA, Tsing-Hua Univ., Sing-Chu, 1996.

- Organized and chaired an invited session for IMS Asia and Pacific Regional Meeting joint with CIPS and CSA, Taipei, Taiwan. July, 1997.

- Organized an invited session on Bioinformatics at the 13th Southern Taiwan Statistical conference, 2004, Kaohsiung, NSYSU, Taiwan.

- Organized an invited session on Bioinformatics at the 14th Southern Taiwan Statistical conference, 2005, Tainan, NCKU, Taiwan.

- Organized an invited session on Bioinformatics at the 37th Symposium on the Interface: Computing Science and Statistics, 2005, St. Louis , USA.

- Organized an invited session on Bioinformatics at the International Statistics Conference, 2005, Kuala Lumpur, Malaysia.

- On the Program Committee and Organized a special focus session on Bioinformatics for Interface of Statistics and Computing Science 2006, Anaheim, CA.

- Organized a session on Gene network reconstruction for CompStat 2006, Rome, Italy.

- Convened an session on Bioinformatics at the 39th Symposium on the Interface: Computing Science and Statistics, 2007, Philadelphia, Pennsylvania , USA.

- Organized a session on Bioinformatics: Inferring Gene Networks and Systems Biology for 2007 Taipei International Statistical Symposium, Taipei, Taiwan.

- Discussant of an invited session "When Genomics Meets Genetics: How To Combine Linkage, Allelic Association, Gene Expression, And Proteomics Studies To Dissect Complex Traits." 56th Session of the International Statistical Institute, 2007, Lisbon, Portugal.

- Organized a session on Bioinformatics: Genetic Networks Prediction for 56th Session of the International Statistical Institute, 2007, Lisbon, Portugal.

- Organized an invited session on Bioinformatics at the Southern Taiwan Statistical conference, 2008, NKU, Kaohsiung, Taiwan.

- Organized a workshop 'Genetic Networks for Disease', 9th International conference on Systems Biology, 2008, Goteburg, Sweden.

- Organized an invited session on Bioinformatics at the Southern Taiwan Statistical conference, 2009, NSYSU, Kaohsiung, Taiwan.

- Attended and survived Cold Spring Harbor's Yeast Genetics & Genomics course, summer 2009.

- The 2nd International Congress on Image and Signal Processing and the 2nd International Conference on BioMedical Engineering and Informatics, Oct, 2009, Tianjin, China.

- Chaired a session on Bioinformatics at the Southern Statistical conference, July, 2010, NCKU, Taiwan.

- Organized an invited session on Computational Biology at Humboldt-Xiaman workshop, July, 2010, Germany.

- Chaired an invited session on Bioinformatics at the Southern Statistical conference, July, 2011, Chung-Cheng Univ., Chia-Yi, Taiwan.

- Organized an invited session 'Advances in Computational Biology" at the Joint meeting of 2011 Taipei International Statistical Symposium and 7th Conference of the ARS of the IASC, Taipei, Taiwan.

Other Professional Activities

- Presented a talk at "A Regression Approach to Reconstructing Gene Networks," The 56th session of ISI, Lisbon, Portugal, 2007.

- Presented a poster at 10th International Conference on Intelligent Systems for Molecular Biology, Edmonton, Canada, 2002.

- Presented a poster at 9th International Conference on Intelligent Systems for Molecular Biology, Copenhagen, Denmark, 2001.

- Presented a poster at 8th International Conference on Intelligent Systems for Molecular Biology, San Diego, CA, USA, 2000.

- Presented a paper at 1991-1993, 1995 and 1997 Joint Statistical Meeting in USA, and "Asymptotic Methods in Probab. and Mathematical Statist.", St. Petersburg, Russia in June, 1998.

- Served on Master and Ph.D. Exam Committee in Dept. of Statistics at U.M.-Columbia. Served on Master Exam Committee in Graduate School of Statistics at National Sun-Yet-San Univ., 1996 and 1998; Graduate School of Statistics at National Tsing-Hwa Univ. (1997) and Central Univ., 1997-98, etc.

- Visited Division of Biostatistics, Columbia Univ. Feb.-mid April 1996.

- Presented a contributed paper entitled "Measuring Top-down correlation" at 1995 Joint Statistical Meetings, Orlando, FL, U.S.A.

- Participated at "Mentor Program for Young Researchers" at 3rd World Congress of the Bernoulli Society and 1994 Annual Meeting of IMS, Chapel Hill, NC.

- Presented a contributed paper entitled "Limiting Distribution of Weighted Degenerate U-statistics with estimated parameters", at 3rd World Congress of the Bernoulli Society and 1994 Annual Meeting of IMS, Chapel Hill, NC.

- Visited Dept. of Statistics, University of Wisconsin-Madison in July-Aug. 1993.

- Participated in "Writing workshop" of 1993 Joint Statistical Meeting, San Francisco, CA.

- Participated in "Pathway to the Future Workshop" of 1992 Joint Statistical Meeting, Boston, MA.

Research Supervision

1. Postdoctoral fellows: Drs. C.-Y.Yu (2004-2005, July), Shurong Zheng (2006), T. Yogesh (2007), Jia-Hong Wu (Aug., 2009-Jan., 2012), Shih-Chung Chuang (Oct., 2010-July, 2011), Kuo-Ching Chang (July, 2011-Dec., 2012), Chia-Cheng Chen (July, 2012-present)

2. Ph.D. student, C.-L. Chuang, Inst. of Biomedical Engr., NTU, Taiwan (co-advising with Prof. Chung-Ming Chen, from fall 2005-Jan., 2010)

3. Master student, Yuan-Ru Sun, Inst. of Biomedical Engr., NTU co-advising with Prof. Chung-Ming Chen, from fall 2009-Aug, 2011)

4. Ph.D. student, K.-L. Tiong, TIGP, Bioinformatics program (from Oct., 2010)

List of Publication

- Shieh*, G.S. (1994). "Infinite Order V-statistics". *Statist. and Probab. Letters*, **20**, 75-80.

- Shieh*, G.S., Johnson, R. A. and Frees, E. W. (1994). "Testing Independence of Bivariate Circular Data and Degenerate Weighted U-statistics". *Statistica Sinica*, **4**, 729-747.

- Shieh*, G.S. (1997). "Refined Composite Sampling for Acute Toxicity Standard". *Environmetrics*, **8**, 121-132.

- Shieh*, G.S. (1997). "Weighted Degenerate U- and V-statistics with Estimated Parameters", *Statistica Sinica*, **7**, 1021-1038.

- Shieh*, G.S. (1998). "A Weighted Kendall's tau Statistic", *Statist. and Probab. Letters*, **39**, 17-24.

- *Invited paper* Shieh*, G.S. (1999). "U-statistics and V-statistics (update)", *Encyclopedia of Statistical Sciences* (update volume 3), 765-771. Wiley, NY.

- Shieh*, G.S., Bai, Z.D. and Tsai, Wei-Yann (2000). "Rank Tests for Independence — with A Weighted Contamination Alternative", *Statistica Sinica*, **10**, pp. 577-593.

- Johnson*, R.A. and Shieh*, G.S. (2002). "On Tests of Independence for Spherical Data-Invariance and Centering". *Statist. and Probab. Letters*, **57**, pp. 327-35.

- Shieh*, G.S., Bai, C.H. and Lee, Chi (2004). "Identify Breast Cancer Subtypes by Gene Expression Profiles", *J. Data Science*, **2**, pp. 165-175.

- Shieh*, G.S. and Johnson, R.A. (2005). "Inferences Based on A Bivariate Distribution with Von-Mises Marginals". *Ann. Inst. Stat. Math.*, **57**, pp. 789-802.

- *Invited paper* Shieh*, G.S. (2005). "U- and V-statistics", *Encyclopedia of Statistical Sciences* (2nd edit.),**14**, pp. 8807-8809. Wiley, NY.

- *Invited paper* Shieh*, G.S. and Kotz, S. (2005). "Correlation coefficients, Weighted", *Encyclopedia of Statistical Sciences* (2nd edit.),**2**, pp. 1392-1393. Wiley, NY.

- Chuang, C.L., Chen, C.M. and Shieh, G.S. (2006). "A Hybrid Algorithm to Infer Genetic Network, *Lecture Notes in Computer Science*, **4233**, pp. 1079-1089.

- Ho, C. H. and Shieh*, G.S. (2006). "Two stage U-statistics for Hypothesis Testing", *Scand. J. Statist.*, **33**, pp. 861-873.

- Shieh*, G.S., Jiang, Y. C. and Shih, Y.C. (2006). "Comparison of SVMs to Other Classifiers Using Gene Expression Data", *Communication in Statist.*, **35**, pp. 241-256.

- Shieh* G.S., Fan, T. H. and Chu, H. P. (2007). "A Bayesian Analysis of Single-Slide Microarray Gene Expression Data", *J. Statist. Comp. Simu.*, **78**, pp.178-191.

- Chuang, C. L., Chen, C. M., Shieh G. S. and Jiang, J. A. (2007), "GeneCFE-ANFIS: A Neuro-Fuzzy Inference System to Infer Gene-Gene Interactions Based on Recognition of Microarray Gene Expression Patterns, *Biomedical Engineering: Applications, Basis and Communications*, **19**(2), pp. 71-78.

- *Invited paper* Shieh* G.S. and Guo, C. Y. (2008). "Visualization for Genetic Networks Reconstruction", *Handbooks of Computational Statistics, vol. III*, pp.793-811.

- Shieh*†, G.S., Chen, C.M.†, Yu, C.Y., Hwang, J., Wang, W.F. and Lo, Y.C. (2008). "Inferring Transcriptional Compensation Interactions in Yeast via Stepwise Stucture equation Modeling", *BMC Bioinformatics*, **9**, pp. 134-143.

- Chuang, C. L., Jen, C. H., Chen, C. M. and Shieh*, G.S.(2008). "A Pattern Recognition Approach to Infer time-lagged Genetic Interactions, *Bioinformatics*, **24**, pp. 1183-1190.

- Kato*, S., Shimizu, K. and Shieh, G.S. (2008). "A Circular-Circular Regression Model", *Statistica Sinica*, **18**, pp. 633-645.

- C.L. Chuang, K. Hung, C.M. Chen* and G.S. Shieh* (2009). "Uncovering Transcriptional Interactions via An Adaptive Fuzzy Logic Approach", *BMC Bioinformatics*, **10**, pp. 400-.

- Cheng-Long Chuang†, Jia-Hong Wu†, Chi-Sheng Cheng and Grace S. Shieh* (2010). "WebPARE: Web-computing for inferring genetic/transcriptional interactions", *Bioinformatics*, **26**, pp. 582-584. doi: 10.1093/bioinformatics/btp684.

- C.M. Chen†, Chih Lee†, C.L. Chuang, C.C. Wang and G. S. Shieh* (2010). "Inferring Genetic Interactions via A Nonlinear Model And An Optimization algorithm", *BMC Systems Biology*, **4**, pp.16-. doi:10.1186/1752-0509-4-16.

- Wen-Hung Wang, Grace S. Shieh and Feng-Sheng Wang* (2010). "Run-to-run optimization of fed-batch fermentation for ethanol production", *Chemical Engineering & Technology*, DOI: 10.1002/ceat.200900513.

- G. S. Shieh*, Shurong Zheng, R. A. Johnson, Y.-F. Chang, K. Shimizu, C.-C. Wang, and S.-L. Tang (2011). "Modeling And Comparing the Organization of Circular Genomes," *Bioinformatics*, **27**, pp. 912-918.

- G. S. Shieh et al., (2011). "H2B ubiquitylation is part of chromatin architecture that marks exon-intron structure in budding yeast," *BMC Genomics*, **12**, .pp627-.

- Jeng-Wei Lu, Yu Hsia, Wan-Yu Yang, Yu-I Lin, Chao-Chin Li, Ting-Fen Tsai, Ko-Wei Chang, Grace S. Shieh, Shih-Feng Tsai, Horng-Dar Wang and Chiou-Hwa Yuh* (2012). "Identification of the common regulators for hepatocellular carcinoma induced by hepatitis B virus X antigen in a mouse model," *Carcinogenesis*, **30**, pp. 209-219.

- Wen-Hung Wang, Grace S. Shieh and Feng-Sheng Wang* (2012). "Optimization of fed-batch fermentation using mixture of sugars to produce Ethanol," *Journal of the Taiwan Institute of Chemical Engin.*, **43**, pp. 1-8.

- C.R. Jiang, C.R. Hung, C.M. Chen and G.S. Shieh* (2012). "Inferring Genetic Interactions via A Data-driven Second Order Model," *Statistical Genetics and Methodology*, **3**, Articel 7, pp. 1-10. DOI:10.3389/fgene.2012.00071.

- Jia-Hong Wu[†], Yun-Ju Sun[†], Ping-Heng Hsieh, Grace S. Shieh* (2013). "Inferring coregulation of transcription factors and microRNAs in breast cancer," *GENE*, **518**, pp. 139-144.

  [*] Corrsponding author
  [†] Contributed equally

Refereed Proceedings

- C. M. Chen[+], C. Lee[+], C. L. Chuang, C.C. Wang and G. S. Shieh*, (2009), "A Nonlinear Model and an Optimization algorithm to Infer Genetic Interactions," Proceedings of the 2nd International Conference on Biomedical Engr. and Informatics, pp. 1917-20. (EI)

- C.-L. Chuang, C.-M. Chen, G. S. Shieh and J.-A. Jiang (2008), "A Fuzzy Logic Approach to Infer Transcriptional Regulatory Network in Saccharomyces cerevisiae using Promoter Site Prediction and Gene Expression Pattern Recognition," Proceedings of the 2008 IEEE Congress on Evolutionary Computation, pp. 1714-21. (EI)

- C.-L. Chuang, C. M. Chen, G. S. Shieh and J.-A. Jiang (2007) A Neuro-Fuzzy Inference System to Infer Gene-Gene Interactions Based on Recognition of Microarray Gene Expression Patterns, Proceedings of the 2007 IEEE Congress on Evolutionary Computation, pp. 904-910. (EI)

- C.Y. Yu, C.M. Chen, J. Hwang and G.S. Shieh (2005)*. "Using Covariance Structure Models to Reconstruct Genetic Networks", pp. 1-4, *Proceedings of ISI 2005 Conference.* Sydney, Australia.

Other Proceedings

- Ping-Heng Hsieh, Yu-Chin Hsu, Chih-Li Sung, Fu-Fei Hsu, Lee-Young Chau and Grace S. Shieh* (2013), "Interrogating the function of HO-1 in cancer cells via ChIP-seq", accepted by *Proceedings of the 2013 IASC Satellite for the ISI WSC and the 8th IASC-ARS conference.*

- G.S. Shieh, Y. C. Jiang, Y. C. Hung and T.F. Wang (2004). "A Regression Approach to Reconstruct Gene Networks", pp. 357-370, *Proceedings of Taipei Symposium in Statistical Genomics.*

- Shieh, G.S. (2004). "Reconstructing Gene Networks by a Data-driven Response Surface", pp. 18-31, The Cherry Bud Workshop, Yokohama, Japan.

Technical Reports

- Grace S. Shieh*, Shurong Zheng, Richard A. Johnson, Yi-Feng Chang, Kunio Shimizu, Chia-Chang Wang and Sen-Lin Tang (2011), "Modeling and Comparing the Organization of Circular Genomes", Technical Report 11-02, Institute of Statistical Science, Academia Sinica, Taiwan.

- C.M. Chen†, Chih Lee†, C.L. Chuang, C.C. Wang and G. S. Shieh* (2009), "Inferring genetic networks via a nonlinear model and an optimization algorithm", Technical Report 09-06 Institute of Statistical Science, Academia Sinica, Taiwan.

- C.L. Chuang, C.M. Chen and G.S. Shieh* (2009) "Discovering transcriptional interactions via a Fuzzy-logic approach", Technical Report 09-05 Institute of Statistical Science, Academia Sinica, Taiwan.

- G.S. Shieh*, S.R. Zheng, K. Shimizu (2006) "A Bivariate Generalized von Mises Distribution with Applications to Circular Genomes, Technical Report 06-06, Institute of Statistical Science, Academia Sinica, Taiwan.

- C.L. Chuang, C.M. Chen and G.S. Shieh* (2005), "A Pattern Recognition Approach to Infer Genetic Networks," Technical Report 05-05, Institute of Statistical Science, Academia Sinica, Taiwan.

- Shieh*†, G.S., Chen, C.M.†, Yu, C.Y., Hwang, J. and Wang, W.F. (2005). "A Stepwise Structure equation Modeling Algorithm to Reconstruct Genetic Networks", Technical Report 05-04, Institute of Statistical Science, Academia Sinica, Taiwan.

- C.M. Chen, C.F. Chang, C. Lee and G.S. Shieh*(2004), " Evaluating Genetic Networks Reconstruction by Simulated Microarray Data," Technical Report 04-02, Institute of Statistical Science, Academia Sinica, Taiwan.

Manuscript

- Khong-Loon Tiong, Jan-Gowth Chang, Kun-Tu Yeh, Kuo-Ching Chang, Ping-Heng Hsieh, Jia-Hong Wu, Shu-Hui Lin, Wei-Yun Lai, Jeou-Yuan Chen, and Grace S. Shieh*, "Uncovering synthetic lethal interactions for colorectal cancer therapeutics via an integrated approach", under revision for Cancer Research (IF= 8.6).

- Grace S. Shieh* and Chin-Yuan Guo, "Visualization for genetic network reconstruction (update)", in preparation for Handbooks of Visualization (2nd edit.).

Posters

- Chuang *et al.* (2008), "A Machine Learning Approach to Infer Genetic Networks", Posters presented at 9th ISCB, Goteberg, Sweden.

- Lee *et al.* (2007) "Inferring Genetic Networks via Optimization Algorithms", Posters presented at 8th ISCB, Long Beach, CA, USA.

- Chuang *et al.* (2006). "A Pattern Recognition Approach to Infer Genetic Networks", Shieh *et al.* (2006). 'A stepwise structural equation modeling to infer genetic networks', Posters presented at 7th ISCB 2006, Yokohama, Japan.

- Y.C. Liu, F.C. Hsieh, J.N. Chen, G. S. Shieh and C. M. Chen* (2002). "Mining Characteristic Genes That Determine the Vascularity Index of A Tumor Based on cDNA Microarrays." **Best graduate poster award**, Annual Conference of Taiwan Biomedical Engineering Conference.

- Presented a poster at 2002 ISMB Edmonton, Canada

- Shieh*, G.S., Chen, C.-C., Jiang, Y. C. and Shih, Y.C. (2001). "Comparison of Methods for the Classification of Tumors Using Gene Expression Data," Poster presented at ISMB 2001, Copenhagen, Denmark.

- Wang, Wen-Yen, Hwang, Ming-Jing and Shieh, G. S. (2000). "Comparison of 3D-structures of Proteins based on Point Set Pattern Matching Algorithm". Poster presented at ISMB 2000, San Diego, CA, USA.

Service

UW-Madison Department of Statistics Awards Committee (1987-89)
UM-Columbia Department of Statistics
Computer Committee (1990-91)
Search Committee for visiting faculty (1990-91)
Chair of Colloquium Committee (1991-92 and 1993-94)
Director of Undergraduate Studies (1992-93)
Graduate Instructors Training Committee (1992-93)
Statistics 150 and 250 coordinator (1992 Winter)
New Nonparametric Course Committee (1992-93)
Assessment Committee (1993 Winter)
Coordinator of Statistics 150 and 250 (1993 Winter)
Course Committee: Statistics 385, Statistics 150 and 250 (1993 Winter)
Recording Secretary (1993-94)
Endowment Funds committee (1993-94)
UM-Columbia, College of Arts and Science Status of Women Committee (1992-94)

Advisory committee of office of Survey Research, Academia Sinica (1996-98)
Colloquium chair, Inst. of statistical Science, Academia Sinica, 2000
TIGP, Bioinformatics program, Statistics coordinator (2004-present)
Arts and Performances committee, Academia Sinica (2009-present)