

## Xueli Liu

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**RESEARCH INTERESTS**      Microarray data analysis, biomarker data, cancer genetics, clinical trials, curve alignment, functional data analysis, longitudinal data analysis, and survival analysis.

**EDUCATION**      Ph.D. in Statistics with Emphasis in Biostatistics, December 2002  
Department of Statistics, University of California, Davis, CA (1999–2002)  
GPA: 4.0/4.0 Statistics; 3.92/4.0 overall  
Dissertation: “Time-Warping and Convex Synchronization for Random Curves, with Applications to Biological Functional Data”  
Advisor: Hans-Georg Müller, Ph.D. & M.D.

Graduate Student, Department of Statistics, University of Wisconsin, Madison (1998–1999)  
GPA: 3.9/4.0

M.S. in Mathematical Statistics, June 1998  
Department of Probability and Statistics, Peking University, Beijing, P.R.China (1995–1998)

B.S. in Mathematics (Excellent Undergraduate in Beijing), June 1995  
Department of Mathematics, Beijing Normal University, Beijing, P.R.China (1991–1995)

**RESEARCH EXPERIENCE**      Tenure-track Assistant Professor, Department of Statistics, University of Florida (August 2004–present)  
In collaboration with the Genetics Institute  
Developing statistical methods for analyzing gene expression data, providing statistical consulting to people who work on array data  
Developing statistical methods for combining functional data analysis with Quantitative Trait Loci (QTL) analysis

Postdoctoral Researcher, Department of Biostatistics and Human Genetics (October 2002–August 2004)  
Mentors: Drs. Steve Horvath and Robert M. Elashoff  
In collaboration with the Department of Pathology and the Department of Urology, David Geffen School of Medicine, University of California, Los Angeles (UCLA)  
Developing statistical methods for analyzing molecular data that arise in cancer genetics, statistical consulting to clinicians working with tissue microarray data  
Analyzing clinical trials data using nonparametric techniques and repeated measurement models  
Assisting with grant proposals on Statistical Methods section

Research Assistant, Department of Statistics (1999–2002)  
In collaboration with the Department of Entomology, University of California, Davis (UCD)  
Working on projects of aging and longevity and their relation to reproduction  
Doing survival analysis in longitudinal studies: the effect of onset of supine behavior to the longevity of medflies  
Analyzing the dynamics of egg-laying behavior in medflies and modelling the relationship between asymmetry and longevity in *Drosophila*

**TEACHING EXPERIENCE**      Instructor, Department of Statistics, University of Florida (August 2004–present)

Matrix Algebra and Statistical Computing (STA 6329), Fall 2006  
Statistical Analysis of Microarray Gene Expression Data (STA 6934), Spring 2006  
Nonparametric Statistical Methods & Applied Nonparametric Methods (STA 4502 & STA 5507),  
Fall 2005  
Introduction to Probability & Mathematical Statistics I (STA 4321 & STA 5325), Spring 2005

Adjunct Group Facilitator, Clinical Research Center, University of California, Los Angeles (July 2003)

Participating the whole process of developing a research proposal  
Serving as Biostatistician, providing suggestion on experimental design, data management and statistical analysis

Teaching Assistant, Department of Statistics, University of California, Davis (1999–2001)

Leading discussions, lab works, grading exams and homework, and holding office hours  
Generalized Linear Models, core course for Emphasis in Biostatistics Ph.D. program (2001 Winter)  
Advanced Data Analysis, Graduate course (2000 Fall)  
Applied Regression Analysis, upper division course (1999 Fall)

Teaching Assistant, Department of Statistics, University of Wisconsin-Madison (1998–1999)

Leading discussions, grading exams and homework, and holding office hours  
Statistical Methods in Bio Sciences II, Graduate course (1999 Spring)  
Introduction to Statistics (1998 Fall)  
Probability Theory for Engineering Students (1998 Fall)

Teaching Assistant, Peking University, P.R.China (1996–1998)

Leading discussions, preparing and grading exams, grading homework  
Advanced Calculus, College of Applied Arts and Sciences

#### HONORS AND AWARDS

**First prize in AUA/ ACMI essay contest. American Urological Association Annual Meeting, San Francisco.** Han, K., Seligson, D.B., **Liu, X.**, Horvath, S., Shintaku, P.I., Thomas, G.V., Said, J.W. and Reiter, R.E. Prostate Stem Cell Antigen (PSCA) expression is associated with increasing Gleason score, seminal vesicle invasion, and capsular invasion in prostate cancer (2004). *The Journal of Urology* 171, 1117–1121.

**Summer Research Assistantship Award** (Based on the excellence in participants' research projects and academic records), University of California, Davis, 2001

**Julius R. Blum Memorial Award** (Presented to Outstanding Graduate Students in Statistics), University of California, Davis, 2000

**Excellent Student Scholarship**, Peking University, 1997

**Bao Gang Education Scholarship (First Class)**, Beijing Normal University, 1995

**Nine-Chapter Mathematics Scholarship (First Class)**, Beijing Normal University, 1993

**Excellent Study Scholarship (First Class)**, Beijing Normal University, 1992–1995

#### PUBLICATIONS

Harshman, L., Müller, H.G., **Liu, X.**, Wang, Y., and Carey, J.R. (2005). The Symmetry of Longevity. *Journal of Gerontology: Biological Sciences* 60A, 1233–1237.

Kim, H.L., Seligson, D.B., **Liu, X.**, Janzen, N., Bui, M.H.T., Yu, H., Shi, T., Beldegrun, A.S., Horvath, S., Figlin, R.A. (2005). Using Tumor Markers to Predict Survival of Metastatic Renal Cell Carcinoma Patients. *Journal of Urology* 173, 1496–1501.

Seligson, D.B., Horvath, S., Huerta-Yepez, S., Hanna, S., Garban, H., Roberts, A., **Liu, X.**, Chia, D., Goodglick, L., and Bonavida, B. (2005). Expression of Transcription Factor Ying Yang 1 in

Prostate Cancer. *International Journal of Oncology* 27, 131–141.

Lam, J.S., Shvarts, O., Said, J.W., Pantuck, A.J., Seligson, D.B., Aldridge, M.E., Bui, M.H., **Liu, X.**, Horvath, S., and Beldegrun, A.S. (2005). Clinical, Pathologic, and Molecular Correlations of Necrosis in the Primary Tumor of Patients with Renal Cell Carcinoma. *Cancer* 103, 2517–2525.

**Liu, X.** and Müller, H.G. (2004). Functional Convex Averaging and Synchronization for Time-Warped Random Curves. *Journal of American Statistical Association* 99, 687–699.

**Liu, X.**, Minin, V., Huang, Y., Seligson, D.B. and Horvath, S. (2004). Statistical Methods for Analyzing Tissue Microarrays Data. *Journal of Biopharmaceutical Statistics*, 14, 671–685.

Kim, H.L., Seligson, D.B., **Liu, X.**, Janzen, N., Bui, M.H.T., Yu, H., Shi, T., Figlin, R.A., Horvath, S. and Beldegrun, A.S. (2004). Molecular Staging using Protein Expression Profile Accurately Predicts Survival in Clear Cell Renal Carcinoma. *Clinical Cancer Research* 10, 5464–5471.

Han, K., Seligson, D.B., **Liu, X.**, Horvath, S., Shintaku, P.I., Thomas, G.V., Said, J.W. and Reiter, R.E. (2004). Prostate Stem Cell Antigen (PSCA) expression is associated with increasing Gleason score, seminal vesicle invasion, and capsular invasion in prostate cancer. *The Journal of Urology* 171, 1117–1121.

Seligson, D.B., Pantuck, A.J., **Liu, X.**, Huang, Y., Horvath, S., Bui, M.H.T., Han, K., Correa, A.J.L., Eeva, M., Tze, S., Palotie, A., Figlin, R.A. and Beldegrun, A.S. (2004). EpCAM (KSA) Expression: Pathobiology and Its Role as An Independent Predictor of Survival in Renal Cell Carcinoma. *Clinical Cancer Research* 10, 2659–2669.

**Liu, X.** and Müller, H.G. (2003). Modes and Clustering for Time-Warped Gene Expression Profile Data. *Bioinformatics* 19, 1937–1944.

**Liu, X.**, Huang, Y., Seligson, D.B. and Horvath, S. (2003). Tree- and Forest-based Methods for Analyzing Tissue Microarrays Data. *The JSM 2003 Proceedings (Biopharmaceutical section)*.

Papadopoulos, N.T., Carey, J.R., Katsoyannos, B., Kouloussas, N., Müller, H.G. and **Liu, X.** (2002). Supine Behavior Indicates Deteriorating Health and Impending Death in Male Mediterranean Fruit Flies. *Proceedings of the Royal Society B* 269, 1633–1637.

Carey, J.R., Liedo, P., Harshman, L., **Liu, X.**, Müller, H.G., Partridge, L. and Wang, J.L. (2002). Food pulses increase longevity and induce cyclical egg production in mediterranean fruit flies. *Functional Ecology* 16: 313–325.

GRANT PROPOSAL SUBMITTED “Towards a non-invasive molecular test for bladder cancer”, National Cancer Institute/National Institute of Health, 09/01/2007–08/30/2012, Total Direct Costs \$1,854,500.00. Principal Investigator: Goodison, S.; Co-Invetigators: Rosser, C., Urquidi, V., Iczkoski, K., **Liu, X.**

PH.D. THESIS **Liu, X.** (2002). Time-Warping and Convex Synchronization for Random Curves, with Applications to Biological Functional Data. Department of Statistics, University of California, Davis.

TALKS Detecting Time Differentially-expressed Genes (Invited)  
Department of Statistics, Oregon State University, October 16, 2006

Comparison of Clustering and Classification in Genomic Data Analysis (Invited)  
Department of Statistics, Kansas State University, Manhattan, October 06, 2005

Detecting Time Differentially-expressed Genes

8th New Researcher's Conference, University of Minnesota, August 08, 2005

Joint Statistical Meeting, Minneapolis, August 10, 2005

Functional Convex Averaging for Time-Warped Random Curves and Its Application to Clustering Temporal Gene Expression Data (Invited)

Department of Statistics, FSU/UF Joint Colloquium at Florida State University in Tallahassee, October 02, 2004

Brownbag Seminar, Department of Biostatistics, University of Florida, September 28, 2004

Modes and Clustering for Time-Warped Gene Expression Profile Data and Random Forest-based Pre-validation Applied to Tissue Microarray Data (Invited, 2003-2004)

Mathematics Department, Georgia Institute of Technology, December 2003

Department of Biostatistics, University of Alabama, Birmingham, January 2004

Department of Biostatistics, Emory University, January 2004

Department of Mathematics, William and Mary College, February 2004

Department of Probability and Statistics, Michigan State University, February 2004

Department of Biostatistics, Washington University in St. Louis, February 2004

Department of Statistics, University of Missouri, February 2004

Department of Statistics, University of Florida, February 2004

Department of Statistics, George Washington University, February 2004

Computational and Applied Genomics Program, Duke University, March 2004

Random Forest Pre-validation Method for Analyzing Tissue Microarray Data (Invited)

Computational Biology Seminar Series, Department of Biochemistry, UCLA, December 2003

Jonsson Comprehensive Cancer Center (JCCC) Research Conference, UCLA, January 2004

Tree- and Forest-based Methods for Analyzing Tissue Microarray Data (Contributed)

Joint Statistical Meeting, San Francisco, August 2003.

Time-Warping and Convex Synchronization for Random Curves, with Applications to Biological Functional Data (Invited)

Department of Statistics, Texas A& M University, February 2002.

Department of Statistics, University of Illinois, Urbana Champaign, February 2002.

Department of Statistics, University of California, Riverside, February 2002.

Array Data Analysis Group, University of California, Los Angeles, March 2002.

Department of Statistics, Kansas State University, April 2002.

Department of Mathematics & Statistics, University of Maryland, Baltimore, May 2002.

Averaging of Curves (Contributed)

22nd Annual Institute on Research and Statistics, California State University, Sacramento, April 2000

#### PRESENTATION

Introduction to Statistics

Tissue Array Core Facility Lab, University of California, Los Angeles, December 2002.

#### TECHNICAL SKILLS

Statistics: array data analysis, computational biology, functional data analysis, longitudinal data analysis

Statistical software: SAS, S-plus, R, Minitab

Programming languages: Matlab, HTML, Unix, C, Fortran

Text formatting and office computing: LaTeX, Word, Excel, PowerPoint

Computing platforms: Unix/Linux, Windows

REFeree SERVICE The Annals of Statistics  
Bioinformatics  
Computers and Mathematics with Applications  
Journal of American Statistical Association (Theory and Methods)  
Journal Computational Statistics and Data Analysis  
Journal of the Royal Statistical Society, Series B (Statistical Methodology)  
Journal of Statistical Computation and Simulation  
Molecular Biology and Evolution  
Scandinavian Journal of Statistics (Scand J Stat)  
Statistica Sinica

SERVICE  
COMMITTEES Faculty Search Committee, Department of Statistics, College of Liberal Arts and Sciences (2004–  
2005)  
Chair of Web Committee and Councilor, ASA Sacramento Chapter (2001, 2002)  
Peer Committee, Department of Statistics, University of California, Davis (2000)

PROFESSIONAL  
MEMBERSHIPS American Statistical Association  
Institute of Mathematical Statistics

REFERENCES AVAILABLE UPON REQUEST