

**Kerby Shedden**  
Department of Statistics  
The University of Michigan  
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## Education

|   |                    |      |
|---|--------------------|------|
| The University of Michigan                | B.S. (Mathematics) | 1994 |
| The University of California, Los Angeles | Ph.D. (Statistics) | 1999 |

## Professional Experience

|   |                   |           |
|---|-------------------|-----------|
| Professor of Statistics                               | Univ. of Michigan | 2011-     |
| Professor of Biostatistics (courtesy appt.)           | Univ. of Michigan | 2011-     |
| Associate Professor of Statistics                     | Univ. of Michigan | 2005-2011 |
| Associate Professor of Biostatistics (courtesy appt.) | Univ. of Michigan | 2005-2011 |
| Assistant Professor of Statistics                     | Univ. of Michigan | 1999-2005 |
| Assistant Professor of Biostatistics (courtesy appt.) | Univ. of Michigan | 2004-2005 |

## Affiliations

Bioinformatics Program Affiliated Faculty  
UM Center for Statistical Genetics

## Honors and awards

2011 John Dewey Award (LSA)  
2010 LSA Excellence in Education Award  
2010 LSA Excellence in Concentration Advising Award

## Publications

1. Vuong H, Shedden K, Liu Y, Lubman DM (2011). Outlier-Based Differential Expression Analysis in Proteomics Studies. *J Proteomics Bioinform* 4(6):116-122. PMID: 21949600
2. Fukuda A, Wickman LT, Venkatarreddy MP, Sato Y, Chowdhury MA, Wang SQ, Shedden KA, Dysko RC, Wiggins JE, Wiggins RC (2011). Angiotensin II-dependent persistent podocyte loss from destabilized glomeruli causes progression of end stage kidney disease. *Kidney Int.* doi:10.1038/ki.2011.306 PMID:21937979.

3. Ouillette P, Collins R, Shakhani S, Li J, Li C, Shedden K, Malek SN (2011). The prognostic significance of various 13q14 deletions in chronic lymphocytic leukemia. *Clin Cancer Res*. PMID: 21890456.
4. Ouillette P, Collins R, Shakhani S, Li J, Peres E, Kujawski L, Talpaz M, Kaminski M, Li C, Shedden K, Malek SN (2011). Acquired genomic copy number aberrations and survival in chronic lymphocytic leukemia. *Blood*. 118(11):3051-61. PMID: 21795749.
5. Zheng N, Tsai HN, Zhang X, Shedden K, Rosania GR. The subcellular distribution of small molecules: a meta-analysis. *Mol Pharm*. 8(5):1611-8. PMID: 21774504.
6. Park J, Shedden K, Polk TA (2011). Correlation and heritability in neuroimaging datasets: A spatial decomposition approach with application to an fMRI study of twins. *Neuroimage*. PMID: 21763433.
7. Cai XW, Shedden KA, Yuan SH, Davis MA, Xu LY, Xie CY, Fu XL, Lawrence TS, Lubman DM, Kong FM (2011). Baseline Plasma Proteomic Analysis to Identify Biomarkers that Predict Radiation-Induced Lung Toxicity in Patients Receiving Radiation for Non-small Cell Lung Cancer. *J Thorac Oncol*. 2011 Apr 28. PMID: 21532507
8. Yang N, Feng S, Shedden K, Xie X, Liu Y, Rosser CJ, Lubman DM, Goodison S (2011). Urinary Glycoprotein Biomarker Discovery for Bladder Cancer Detection using LC-MS/MS and Label-free Quantification. *Clin Cancer Res*. 2011. PMID: 21459797
9. Karg K, Burmeister M, Shedden K, Sen S (2011). The Serotonin Transporter Promoter Variant (5-HTTLPR), Stress, and Depression Meta-analysis Revisited: Evidence of Genetic Moderation. *Arch Gen Psychiatry* 68(5):444-54.
10. Lin Z, Simeone DM, Anderson MA, Brand RE, Xie X, Shedden KA, Ruffin MT, Lubman DM. (2011). Mass Spectrometric Assay for Analysis of Haptoglobin Fucosylation in Pancreatic Cancer. *J Proteome Res*. PMID: 21417406
11. Parkin B, Erba H, Ouillette P, Roulston D, Purkayastha A, Karp J, Talpaz M, Kujawski L, Shakhani S, Li C, Shedden K, Malek SN (2010). Acquired genomic copy number aberrations and survival in adult acute myelogenous leukemia. *Blood* (in press). doi: 10.1182/blood-2010-01-266999.
12. Saiya-Cork K, Collins R, Parkin B, Ouillette P, Kuizon E, Kujawski L, Erba H, Campagnaro E, Shedden K, Kaminski M, Malek SN (2011). A pathobiological role of the insulin receptor in chronic lymphocytic leukemia. *Clin Cancer Res*. 17(9):2679-92.
13. Cai XW, Shedden K, Ao X, Davis M, Fu XL, Lawrence TS, Lubman DM, Kong FM. (2010). Plasma proteomic analysis may identify new markers for radiation-induced lung toxicity in patients with non-small-cell lung cancer. *Int J Radiat Oncol Biol Phys*. 77(3):867-76. PMID:20510197, doi:10.1016/j.ijrobp.2010.01.038.

14. Parkin B, Ouillet P, Wang Y, Liu Y, Wright W, Roulston D, Purkayastha A, Dressel A, Karp JE, Bockenstedt P, Al-Zoubi A, Talpaz M, Kujawski L, Liu Y, Shedden K, Shakhan S, Li C, Erba H, Malek SN (2010). NF1 Inactivation in adult acute myelogenous leukemia. *Clin Cancer Res* (in press) PMID:20505189, doi:10.1158/1078-0432.CCR-09-2639.
15. Dai L, Li C, Shedden K, Lee CJ, Li C, Quoc HV, Simeone DM, Lubman DM. (2010). Quantitative Proteomic Profiling Studies of Pancreatic Cancer Stem Cells. *J Proteome Res* (in press). PMID: 20486718, doi:10.1021/pr100231m.
16. Long J, Parkin B, Ouillet P, Bixby D, Shedden K, Erba H, Wang S, Malek SN. (2010). Multiple distinct molecular mechanisms influence sensitivity and resistance to MDM2 inhibitors in adult acutemyelogenous leukemia. *Blood* (in press) PMID: 20404136, doi:10.1182/blood-2010-01-261628.
17. Wiggins JE, Patel SR, Shedden KA, Goyal M, Wharram BL, Martini S, Kretzler M, Wiggins RC (2010). NF $\kappa$ B Promotes Inflammation, Coagulation, and Fibrosis in the Aging Glomerulus. *J Am Soc Nephrol* 21(4):587-97. PMID:20150534, doi: 10.1681/ASN.2009060663.
18. Shedden K, Rosania GR (2010). Chemical address tags of fluorescent bioimaging probes. *Cytometry A*. 77(5):429-38. PMID:20104576, doi:10.1002/cyto.a.20847.
19. Ouillet P, Fossum S, Parkin B, Ding L, Bockenstedt P, Al-Zoubi A, Shedden K, Malek SN (2010). Aggressive chronic lymphocytic leukemia with elevated genomic complexity is associated with multiple gene defects in the response to DNA double-strand breaks. *Clinical Cancer Research*. 16(3):835-47. PMID:20086003, doi:10.1158/1078-0432.CCR-09-2534.
20. Shedden K, Yang Y, Rosania G (2009). Gene expression associations with the growth inhibitory effects of small molecules on live cells: Specificity of effects and uniformity of mechanisms. *Statistical Analysis and Data Mining*. 2(3):175-185. doi:10.1002/sam.10049
21. Dai L, Li C, Shedden KA, Misek DE, Lubman DM. (2009). Comparative proteomic study of two closely related ovarian endometrioid adenocarcinoma cell lines using cIEF fractionation and pathway analysis. *Electrophoresis*. 30(7):1119-31. PMID:19288585, doi:10.1002/elps.200800505.
22. Ju W, Eichinger F, Bitzer M, Oh J, McWeeney S, Berthier CC, Shedden K, Cohen CD, Henger A, Krick S, Kopp JB, Stoeckert CJ Jr, Dikman S, Schrupp B, Thomas DB, Schlondorff D, Kretzler M, Bottinger EP (2009). Renal gene and protein expression signatures for prediction of kidney disease progression. *American Journal of Pathology*. 174(6):2073-85. PMID:19465643, doi:10.2353/ajpath.2009.080888.

23. Sun YV, Shedden K, Zhu J, Choi NH, Kardia SLR (2009). Identification of correlated genetic variants jointly associated with rheumatoid arthritis using ridge regression. *BMC Proceedings* 3 Suppl 7:S67. PMID:20018061.
24. Luo W, Friedman MS, Shedden K, Hankenson KD, Woolf PJ (2009). GAGE: generally applicable gene set enrichment for pathway analysis. *BMC Bioinformatics*. 10:161. PMID:19473525, doi:10.1186/1471-2105-10-161.
25. K Shedden, Q Li, F Liu, YT Chang, and GR Rosania (2009). Machine vision assisted analysis of structure-localization relationships in a combinatorial library of prospective bioimaging probes. *Cytometry A*. 75(6):482-93. PMID:19243023, doi:10.1002/cyto.a.20713.
26. Abdullah NM, Rosania GR, Shedden K (2009). Selective Targeting of Tumorigenic Cancer Cell Lines by Microtubule Inhibitors. *PLoS ONE* 4(2):e4470. PMID:19214225, doi:10.1371/journal.pone.0004470.
27. Wang Y, Wu R, Cho KR, Thomas DG, Gossner G, Liu JR, Giordano TJ, Shedden KA, Misek DE, Lubman DM. (2009). Differential Protein Mapping of Ovarian Serous Adenocarcinomas: Identification of Potential Markers for Distinct Tumor Stage. *J Proteome Res* 8(3):1452-63. PMID:19159301, doi:10.1021/pr800820z.
28. Park J, Rosania GR, Shedden KA, Nguyen M, Lyu N, Saitou K (2009). Automated extraction of chemical structure information from digital raster images. *Chem Cent J*. 3(1):4. PMID:19196483, doi:10.1186/1752-153X-3-4.
29. Cooper S, Shedden K, Vu-Phan D (2009). Invariant mRNA and mitotic protein breakdown solves the Russian Doll problem of the cell cycle. *Cell Biol Int*. 33(1). PMID:18996490.
30. Li C, Simeone DM, Brenner DE, Anderson MA, Shedden KA, Ruffin MT, Lubman DM (2009). Pancreatic Cancer Serum Detection Using a Lectin/Glyco-Antibody Array Method. *J Proteome Res*. 8(2):483-92. PMID:19072160, doi:10.1021/pr8007013.
31. Shedden K (2008). The effects of intergene associations on statistical inferences from microarray data. In *Statistical Advances in the Biomedical Sciences*, A. Biswas, S. Datta, J. Fine, M. Segal eds. Wiley.
32. Kujawski L, Ouillette P, Erba H, Saddler C, Jakubowiak A, Kaminski M, Shedden K, Malek SN (2008). Genomic complexity identifies patients with aggressive chronic lymphocytic leukemia. *Blood* 112(5):1993-2003. PMID:18436738, doi:10.1182/blood-2007-07-099432.
33. Qiu Y, Patwa TH, Xu L, Shedden K, Misek DE, Tuck M, Jin G, Ruffin MT, Turgeon DK, Synal S, Bresalier R, Marcon N, Brenner DE, Lubman DM (2008). Plasma

- Glycoprotein Profiling for Colorectal Cancer Biomarker Identification by Lectin Glycoarray and Lectin Blot. *J Proteome Res* 7(4):1693-1703. PMID:18311904, doi:10.1021/pr700706s.
34. Ouillette P, Erba H, Kujawski L, Kaminski M, Shedden K, Malek SN (2008). Integrated genomic profiling of chronic lymphocytic leukemia identifies subtypes of deletion 13q14. *Cancer Research* 68(4):1012-21. PMID:18281475, doi:10.1158/0008-5472.CAN-07-3105.
  35. K Shedden and RA Zucker (2008). Regularized Finite Mixture Models for Probability Trajectories. *Psychometrika* 73:4, doi:10.1007/S11336-008-9077-9.
  36. Cho RW, Wang X, Diehn M, Shedden K, Chen GY, Sherlock G, Gurney A, Lewicki J, Clarke MF (2008). Isolation and molecular characterization of cancer stem cells in MMTV-Wnt-1 murine breast tumors. *Stem Cells*. 26(2):364-71. PMID:17975224, doi:0.1634/stemcells.2007-0440
  37. Saddler C, Ouillette P, Kujawski L, Shangary S, Talpaz M, Kaminski M, Erba H, Shedden K, Wang S, Malek SN (2008). Comprehensive biomarker and genomic analysis identifies p53 status as the major determinant of response to MDM2 inhibitors in chronic lymphocytic leukemia. *Blood*. 111(3):1584-93. PMID:17971485, doi:10.1182/blood-2007-09-112698
  38. Lee AC, Shedden K, Rosania GR, Crippen G (2008). Data Mining the NCI60 to Predict Generalized Cytotoxicity. *J Chem Inf Model*. 48(7):1379-88. PMID:18588283.
  39. K Shedden et al. (2008). Gene expression-based survival prediction in lung adenocarcinoma: a multi-site, blinded validation study. *Nature Medicine* 14(8):822-7. PMID:18641660. doi:10.1038/nm.1790
  40. Ross CW, Ouillette PD, Saddler CM, Shedden KA, Malek SN (2007). Comprehensive analysis of copy number and allele status identifies multiple chromosome defects underlying follicular lymphoma pathogenesis. *Clinical Cancer Research* 13(16):4777-85. PMID:17699855, doi:10.1158/1078-0432.CCR-07-0456
  41. EA Leicht, G Clarkson, K Shedden, MEJ Newman (2007). Large-scale structure of time evolving citation networks. *The European Physical Journal B - Condensed Matter and Complex Systems*, Volume 59, Number 1, September, 2007.
  42. S Cooper, K Shedden (2007). Microarrays and the relationship of mRNA variation to protein variation during the cell cycle. *J Theor Biol* 249(3):574-581. PMID:17915257, doi:10.1016/j.jtbi.2007.08.019
  43. Kim JH, Dhanasekaran SM, Mehra R, Tomlins SA, Gu W, Yu J, Kumar-Sinha C, Cao X, Dash A, Wang L, Ghosh D, Shedden K, Montie JE, Rubin MA, Pienta KJ, Shah RB, Chinnaiyan AM (2007). Integrative analysis of genomic aberrations associated

- with prostate cancer progression. *Cancer Res.* 67(17):8229-39. PMID:17804737, doi: 10.1158/0008-5472.CAN-07-1297
44. Rosania GR, Crippen G, Woolf P, States D, Shedden K (2007). A Cheminformatic Toolkit for Mining Biomedical Knowledge. *Pharm Res.* 24(10):1791-802, PMID:17385012, doi:10.1007/s11095-007-9285-5
  45. R Liu, X Wang, GY Chen, P Dalerba, A Gurney, T Hoey, G Sherlock, J Lewicki, K Shedden, MF Clarke (2007). The prognostic role of a gene signature from tumorigenic breast-cancer cells. *N Engl J Med* 356(3):217-26 PMID:17229949.
  46. X Zhang, K Shedden, GR Rosania (2006). A cell-based molecular transport simulator for pharmacokinetic prediction and cheminformatic exploration. *Mol Pharm.* 3(6):704-16. PMID:17140258, doi:10.1021/mp060046k
  47. Wang Y, Wu R, Cho KR, Shedden KA, Barder TJ, Lubman DM (2006). Classification of cancer cell lines using an automated two-dimensional liquid mapping method with hierarchical clustering techniques. *Mol Cell Proteomics* 5(1):43-52. PMID:16141455, doi:10.1074/mcp.T500023-MCP200
  48. Y Zhu, R Wu, N Sangha, C Yoo, KR Cho, KA Shedden, H Katabuchi, DM Lubman (2006). Classifications of ovarian cancer tissues by proteomic patterns. *Proteomics.* 6(21):5846-56. PMID:17068758, doi:10.1002/pmic.200600165
  49. J Zhao, AC Chang, C Li, KA Shedden, DG Thomas, DE Misek, TJ Giordano, DG Beer, DM Lubman (2006). Comparative proteomic analysis of Barrett's metaplasia and esophageal adenocarcinomas using 2-D liquid mass mapping. *Mol Cell Proteomics.* 6(6):987-99. PMID:16829691, doi:10.1074/mcp.M600175-MCP200
  50. K Shedden, MP Kshirsagar, DR Schwartz, R Wu, H Yu, DE Misek, S Hanash, H Katabuchi, LH Ellenson, ER Fearon and KR Cho (2005). Histological Type, Organ of Origin, and Wnt Pathway Status: Impact on Gene Expression in Ovarian and Uterine Carcinomas. *Clinical Cancer Research.* 11(6):2123-31. PMID:15788657, doi: 10.1158/1078-0432.CCR-04-2061
  51. Giordano TJ, Kuick R, Thomas DG, Misek DE, Vinco M, Sanders D, Zhu Z, Ciampi R, Roh M, Shedden K, Gauger P, Doherty G, Thompson NW, Hanash S, Koenig RJ, Nikiforov YE (2005). Molecular classification of papillary thyroid carcinoma: distinct BRAF, RAS, and RET/PTC mutation-specific gene expression profiles discovered by DNA microarray analysis. *Oncogene.* 24(44):6646-56.
  52. Wiggins JE, Goyal M, Sanden SK, Wharram BL, Shedden KA, Misek DE, Kuick RD, Wiggins RC (2005) Podocyte hypertrophy, "adaptation," and "decompensation" associated with glomerular enlargement and glomerulosclerosis in the aging rat: prevention by calorie restriction. *J Am Soc Nephrol.* 16(10):2953-66. PMID:16120818, doi:10.1681/ASN.2005050488

53. Shedden K, Chen W, Kuick R, Ghosh D, MacDonald J, Cho KR, Giordano TJ, Gruber SB, Fearon ER, Taylor JM, Hanash S (2005). Comparison of seven methods for producing Affymetrix expression scores based on False Discovery Rates in disease profiling data. *BMC Bioinformatics*. 6(1):26.
54. K Shedden (2004). Confidence levels for the comparison of microarray experiments. *Statistical applications in genetics and molecular biology* 3(1), doi : 10.2202/1544-6115.1088
55. VY Chen, SM Khersonsky, K Shedden, YT Chang, and G Rosania (2004). System Dynamics of Subcellular Transport. *Molecular Pharmaceutics* 1(6), 414-425.
56. K Shedden, G Rosania (2004). Exploratory chemoinformatic analysis of cell type-selective anticancer drug targeting. *Molecular Pharmaceutics* 1(4), pp 267-280.
57. K Shedden, J Taylor (2004). Differential correlation detects complex associations between gene expression and clinical outcomes in lung adenocarcinomas. *Methods of Microarray Data Analysis IV (Jennifer Shoemaker ed.)*, Kluwer.
58. G Michailidis, K Shedden (2003). The application of rule based methods to class prediction problems in genomics. *Journal of Computational Biology*, 10(5):689-98.
59. K Shedden, J Brumer, YT Chang, GR Rosania (2003). Chemoinformatic analysis of a supertargeted combinatorial library of styryl molecules. *Journal of Chemical Information and Computer Sciences*, 43(6):2068-2080.
60. K Shedden, JMG Taylor, TJ Giordano, R Kuick, DE Misek, G Rennert, DR Schwartz, SB Gruber, C Logsdon, D Simeone, SLR Kardia, JK Greenon, KR Cho, DG Beer, ER Fearon, S Hanash (2003). Accurate Molecular Classification of Human Cancers Based on Gene Expression using a Simple Classifier with a Pathologic Tree-Based Framework. *American Journal of Pathology*, 163(5):1985-95.
61. G Chen, TG Gharib, H Wang, CC Huang, R Kuick, DG Thomas, K Shedden, DE Misek, JMG Taylor, TJ Giordano, SL Kardia, MD Iannettoni, J Yee, PJ Hogg, MB Orringer, SM Hanash, DG Beer (2003). Protein profiles associated with survival in lung adenocarcinoma. *Proceedings of the National Academy of Sciences, USA*, 100(23):13537-42.
62. S Cooper, K Shedden (2003). Microarray analysis of gene expression during the cell cycle. *Cell and Chromosome*, 2(1).
63. K Shedden, XT Xie, P Chandaroy, YT Chang, GR Rosania (2003). Expulsion of small molecules in vesicles shed by cancer cells: association with gene expression and chemosensitivity profiles. *Cancer Research*, 63(15):4331-7.

64. K Shedden, L Townsend, J Drach, G Rosania (2003). A rational approach to personalized anticancer therapy: chemoinformatic analysis reveals mechanistic gene-drug associations. *Pharmaceutical Research* **6**:843-847.
65. K Shedden, KC Li (2003). Dimension reduction and spatiotemporal regression: applications to neuroimaging. *IEEE Computers in Science and Engineering*, 5(5):30-36.
66. D Schwartz, R Wu, S Kardia, A Levin, CC Huang, K Shedden, R Kuick, D Misek, S Hanash, J Taylor, H Reed, N Hendrix, Y Zhai, E Fearon, and K Cho (2003). Novel candidate targets of  $\beta$ -catenin/TCF signaling identified by gene expression profiling of ovarian endometrioid adenocarcinomas. *Cancer Research*, 63(11):2913-22.
67. KC Li, Y Aragon, K Shedden, CT Agnan (2003). Dimension reduction for multivariate response data. *Journal of the American Statistical Association* **98**:461.
68. G Chen, H Wang, TG Gharib, CC Huang, DG Thomas, K Shedden, R Kuick, JMG Taylor, SLR Kardia, DE Misek, TJ Giordano, MD Iannettoni, MB Orringer, SM Hanash, DG Beer (2003). Overexpression of oncoprotein 18 correlates with poor differentiation in lung adenocarcinomas. *Molecular and Cellular Proteomics*, Feb;2(2):107-16.
69. KC Li, K Shedden (2002). Identification of Shared Components in Large Ensembles of Time Series using Dimension Reduction. *Journal of the American Statistical Association* **97**:459.
70. K Shedden, S Cooper (2002). Analysis of Cell-Cycle-Specific Gene Expression in Human Cells as Determined by Microarrays and Double-Thymidine Block Synchronization. *Proceedings of the National Academy of Sciences, USA* **99**(7):4379-4384.
71. K Shedden, S Cooper (2002). Analysis of Cell-Cycle-Specific Gene Expression in *Saccharomyces cerevisiae* as Determined by Microarrays and Multiple Synchronization Methods. *Nucleic Acids Research* **30**(13):2920-2929.
72. D Schwartz, S Kardia, K Shedden, R Kuick, G Michailidis, J Taylor, D Misek, R Wu, Y Zhai, D Darrah, H Reed, L Ellenson, T Giordano, E Fearon, S Hanash, and K Cho (2002). Gene Expression in Ovarian Cancer Reflects Both Morphology and Biological Behavior, Distinguishing Clear Cell from Other Poor-Prognosis Ovarian Carcinomas. *Cancer Research* **62**:4722-4729.
73. K Shedden (2002). Modeling the influence of disease processes on gene expression. *Statistica Sinica* **12**(1):263-272.
74. TG Gharib, G Chen, H Wang, CC Huang, MS Prescott, K Shedden, DE Misek, DG Thomas, TJ Giordano, JMG Taylor, SLR Kardia, J Yee, MB Orringer, S Hanash, DG Beer (2002). Proteomic analysis of cytokeratin isoforms uncovers association with survival in lung adenocarcinoma. *Neoplasia*, Sep-Oct;4(5):440-8.



75. G Chen, TG Gharib, CC Huang, DG Thomas, K Shedden, JMG Taylor, SLR Kardia, DE Misek, TJ Giordano, MD Iannettoni, MB Orringer, SM Hanash, DG Beer (2002). Proteomic analysis of lung adenocarcinoma: identification of a highly expressed set of proteins in tumors. *Clinical Cancer Research*, Jul;8(7):2298-305.
76. KC Li, K Shedden (2001). Monte Carlo Blind Deconvolution Guided by the Inverse Filter. *Journal of the American Statistical Association* **96**:455.
77. T Giordano, K Shedden, D Schwartz, R Kuick, J Taylor, D Misek, J Greenon, S Kardia, D Beer, G Rennet, K Cho, S Gruber, E Fearon, S Hanash (2001). Organ-Specific Molecular Classification of Primary Lung, Colon, and Ovarian Adenocarcinomas Using Gene Expression Profiles. *American Journal of Pathology* **159**(4):1231-1238.
78. B Muthén, K Shedden (1999). Finite mixture modeling with mixture outcomes using the EM algorithm. *Biometrics* **55**(2):463-469.

### **Grant support (PI and selected grants as co-investigator)**

MACE - Michigan Alliance for Cheminformatic Exploration NIH P20, 2005-2007, PI K Shedden.

Liquid Proteomics for Biomarker Screening of Ovarian Cancer, 2003-2008, PI D Lubman.

A Lectin Glycoarray Approach to Markers of Pancreatic Cancer 2007-2009, PI D Lubman.

Identification of Biomarkers for Progressive Diabetic Nephropathy, 2007-2009, PI M Kretzler.

Molecular Predictors of Progressive Renal Failure in the Chronic Renal Insufficiency Cohort, NIH R01, 2008-2013, PI M Kretzler.

University of Michigan Comprehensive Cancer Center Support Grant, 2006-2011.

CHEMICAL ADDRESS TAGS: A Cheminformatic & Image Data Management and Analysis Plan, NIH R01, 2006-2012, PI G Rosania.

Differential Mapping of Posttranslational Modifications in Tumor Cells, 2007-2011, PI D Lubman.

Proteomic Pathways to Pancreatic Cancer Stem Cells, 2008-2010, PI D Lubman.

The University of Michigan George M. O'Brien Renal Core Center, NIH P30, 2008-2013, PI M Kretzler/R Wiggins.

Distinctive Glycan Fingerprints of Pancreatic Cancer for Plasma Detection, NIH R01, 2009-2014, PI D Misek.

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Genomic Complexity and Clinical Outcome in Chronic Lymphocytic Leukemia, NIH R01, 2009-2014, PI S Malek.

Raman Markers of Allograft Osseointegration, NIH R01, 2009-2013, PI M Morris.

Brain Endophenotypes Modulating Drug Abuse Risk, NIH R01, 2009-2014, PI R Zucker.

The Insulin Receptor as a Diagnostic and Therapeutic Target in Chronic Lymphocytic Leukemia (CLL), 2009-2012, PI S Malek.

Analysis of Glycan Structural Modifications to Identify Improved Biomarkers for Breast Cancer Detection, 2009-2012, PI D Misek.

## Teaching & Advising

### PhD Students

Current:

1. Fangyi Liu. Topic: Understanding heterogeneity in cells' responses to small molecules using digital microscopic images. Expected graduation May 2011.
2. Toshiya Hoshikawa (joint with Tailen Hsing and Naisyin Wang). Topic: Visualization of multivariate associations, applications to chemical biology. Expected graduation May 2012.
3. Juan Zheng. Topic: Attributes of population structures that affect classification performance: effect concentration and consistency of polarity. Expected graduation May 2011.
4. Ming-Chi Hsu (joint with Ji Zhu). Topic: Empirical methods for assessing the presence of approximate sparsity in molecular assay data. Expected graduation May 2012.
5. Ruth Cassidy (joint with Liza Levina). Topic: Image classification of raman spectroscopic images.

Graduated:

1. Jason Goldstick. Topic: Familiarity analysis for longitudinal measurements. Graduated May 2010. Currently post-doc with Joe Eisenberg, Univ. Michigan School of Public Health.
2. Nam-Hee Choi (joint with Ji Zhu). *Comparative evaluation of penalized regression methods for genetic mapping*. Graduated May 2009. Currently lecturer in statistics, University of Michigan.

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3. Chuang Zheng, *Uniform simulation of SPD matrices, with applications to validating a new approach to linear classification in high dimensions*. Graduated May 2005.
4. A Phaibulpanich, *Contributions to metric learning for nearest neighbor classification*. Graduated May 2005. Currently at Office of Atoms for Peace National Research Council of Thailand Bangkok, Thailand.
5. R Kulkarni, *Inference for pairwise interactions in large time series ensembles using correlation quantiles*. Graduated May 2006. Currently at Roche Pharmaceuticals.

### **Undergraduate students**

1. Lo-Hua Yuan (2008-2009 UROP, joint with Ji Zhu), project title: Sparsity in the distribution of correlation coefficients in molecular screening data.
2. Christine Kim (2009-2010 UROP), project title: Individual-specific and disease-specific factors in acquired copy number variations in cancer.
3. Nick Parenti (2009-2010 UROP), project title: Detection of DNA lesions in acute myelogenous leukemia.
4. Jia Jin Kee (2010 reading course), project title: Two-tiered false discovery rates.
5. Newaj Abdullah (2008 UROP, joint with Gus Rosania): project title: Selective targeting of stem-cell-like cancer cell lines.

### **Courses taught**

- 401 Applied Statistical Methods II
- 403 Introduction to quantitative research methods
- 406 Introduction to Statistical Computing
- 600 Linear models
- 606 Statistical Computing
- 545 Data analysis in molecular biology
- 547 Probabilistic Modeling in Bioinformatics
- 710 Special topics (statistical methods in bioinformatics)
- 810 Literature seminar

### **Service**

### **UM committees**

|  |                             |
|--|-----------------------------|
| Undergraduate advisor (Statistics)               | 2006-                       |
| Informatics Program steering committee           | 2007- (chair 2008-)         |
| Undergraduate curriculum committee (Statistics)  | 2006- (chair 2007-)         |
| LSA Instructional Technology Committee           | 2005- (chair 2008-)         |
| CCMB seminar committee                           | 2008- (chair 2008-2010)     |
| Bioinformatics prelim committee                  | 2008- (chair 2008-)         |
| Senate financial affairs advisory committee      | 2010-                       |
| LSA course demand planning consultant            | 2005                        |
| LSA-MAIS analytic advisor                        | 2002-2004                   |
| Computing committee (Statistics)                 | 1999-2005                   |
| Graduate affairs and admissions (Bioinformatics) | 2001-2005                   |
| Rackham Graduate Fellowship                      | 2002                        |
| Graduate admissions (Statistics)                 | 2001,2005,2006              |
| Graduate admissions (GSTP/CSG)                   | 2001                        |
| Qualifying review (Statistics)                   | 2000-2001, 2004-2005, 2007- |
| Executive committee (Statistics)                 | 2005-                       |
| Faculty search committee (Biostatistics)         | 2010                        |

### External service

|  |                |
|--|----------------|
| ASA/SPES Chemometrics program chair                  | 2008-          |
| JASA Applications and Case Studies, Associate Editor | 2009-          |
| PloS One Associate Editor                            | 2008-          |
| BMC Medical Genomics Associate Editor                | 2010-          |
| NSF/NIGMS panel                                      | 2007           |
| NIH proposal reviewer                                | 2004,2006,2007 |
| US Army (USAMRMC) proposal reviewer                  | 2007           |
| Pennsylvania Dept. of Health proposal review panel   | 2008,2011      |

### Invited Talks

National Sun Yat Sen University, Kaohsiung, Taiwan (September 2010)  
 Adademia Sinica, Taipei, Taiwan (August 2010)  
 International Society for the Advancement of Cytometry (May 2010)  
 Ohio State University Department of Statistics (March 2010)  
 Workshop on Statistical Frontiers, Academia Sinica Taiwan (December 2009)  
 High Content Analysis East (September 2009)  
 Joint Statistical Meetings (August 2009)  
 Spring Research Conference (May 2009)  
 FDA-DIA Biomarker Day (April 2009)  
 International Society for the Advancement of Cytometry (2 talks, May 2008)  
 American Chemical Society Spring Meeting (April 2008)  
 Joint Statistical meetings (August 2007)  
 University of Georgia Department of Statistics (February 2007)  
 UCLA Statistics Department (May 2006)

Interface, Pasadena CA (May 2006)  
Kansas State University Statistics Department (March 2006)  
University of Michigan Statistics Department (October 2005)  
MD Anderson Biostatistics (October 2005)  
Cambridge Biotech Biomarker Discovery Summit (September 2005)  
University of Pittsburgh Department of Biostatistics (April 2005)  
Johns Hopkins University Department of Biostatistics (April 2004)  
Harvard University Department of Statistics (March 2004)  
CAMDA (Critical Analysis of Microarray Data, November 2003)  
SAMSI Virtual Screening Workshop (February 2004)  
University of Michigan Biostatistics (October 2003)  
Michigan State University Bioinformatics Seminar (October 2003)  
IEEE ISBI (July 2002)  
WNAR (June 2002)  
ASA Joint Statistical Meetings (August 2002)  
UCLA Statistics Seminar Series (October 2001)  
Japan-U.S. Joint Time Series Seminar (June 2001)  
Great Lakes Symposium (October 2000)  
University of Chicago School of Business (February 2000)