

Zhenyu Jia, Ph.D.

CURRICULUM VITAE

CONTACT

Department of Statistics, The University of Akron
Department of Family and Community Medicine, Northeast Ohio Medical University
Phone: (330)972.8005 / (330)325-6180
Email: zjia@uakron.edu / zjia@neomed.edu

EDUCATION

BS	Biochemistry Molecular Biology	Wuhan University, China Chinese Academy of Sciences, China	1994-1998 1998-1999
MS	Statistics	UC Riverside	2003-2005
PhD	Genetics, Genomics & Bioinformatics	UC Riverside	2002-2006

EXPERIENCES

Research Assistant	Institute of Biophysics, CAS, China	1999-2001
Teaching Assistant	UC Riverside	2005-2006
Statistical Consulting	UC Riverside	2004-2007
Postdoctoral Scholar	UC Riverside	2006-2007
Specialist	UC Irvine	2007-2008
Statistical Consulting	UC Irvine	2007-present
Project Scientist	UC Irvine	2008-2013
Assistant Professor	U Akron/Northeast Ohio Medical University (NEOMED)	2013-present
Director of Stat Consulting Group	F&C Medicine at NEOMED	2013-present

TEACHING AND MENTORING

- Lectures (Evaluation: 4.7 out of 5):
 - ✧ Introductory Statistics I (UA)
 - ✧ Introductory Statistics II (UA)
 - ✧ Probability & Statistics for Engineers (UA)
- Advisor of Master Papers:
 - 1) “Predicting Ulnar Collateral Ligament Reconstruction in Major League Baseball Starting Pitchers Using Survival Analysis” by Steven Metzger (UA)
 - 2) “Comparison of Methods for Estimating Tissue Components in Mixed-tissue Samples” by Xuerong Liu [in progress] (UA)
 - 3) “Sample Size Calculation for Prostate Cancer Trial Studies” by Xiao Xu [in progress] (UA)

PEER REVIEWED PUBLICATIONS (* Corresponding author; ¹ Co-First author)

1. Jia, Z. and Xu, S. (2005) Clustering expressed genes on the basis of their association with a quantitative phenotype. *Genetical Research*, 86:193-207.
2. Xu, S. and Jia, Z. (2007) Genome-wide Analysis of Epistatic Effects for Quantitative Traits in Barley. *Genetics*, 175:1955-1963.
3. Jia, Z. and Xu, S. (2007) Mapping Quantitative Trait Loci for Expression Abundance. *Genetics*, 176:611-623.
4. Jia, Z.* and Xu, S. (2008) Bayesian Mixture Model Analysis for Detecting Differentially Expressed Genes. *The International Journal of Plant Genomics*, Volume 2008, Article ID 892927, 12 pages. [<http://dx.doi.org/10.1155/2008/892927>].
5. Arora, S., Wang, Y., Jia, Z., Vardar-Sengul, S., Munawar, A., Doctor, K., Birrer, M., McClelland, M., Adamson, E. and Mercola, D. (2008) Egr1 Regulates the Coordinated Expression of Numerous EGF Receptor Target Genes as identified by ChIP on chip of Prostate Cancer Cells. *Genome Biology*, 9:R166. [doi:10.1186/gb-2008-9-11-r166].
6. Koziol, J., Feng, A., Jia, Z., Wang, Y., Goodison, S., McClelland, M. and Mercola, D. (2009) The Wisdom of the Commons: Ensemble Tree Classifiers for Prostate Cancer Prognosis. *Bioinformatics*, 25:54-60.

7. Koziol, J. and Jia, Z.* (2009) The Concordance Index C and the Mann-Whitney Parameter $\Pr[X>Y]$ with Randomly Censored Data. *Biometrical Journal*, 51:467-474.
8. Cheng, C., Bettahi, I., Cruz-Fisher, M., Pal, S., Jain, P., Jia, Z., Holmgren, J., Harandi, A. and de la Maza, L. (2009) Effective vaccination against Chlamydia trachomatis using the major outer membrane protein adjuvanted with CpG oligodeoxynucleotide coupled to the nontoxic B subunit of cholera toxin. *Vaccine*, 27:6239-6246.
9. Cao, J.N., Gollapudi, S., Sharman, E.H., Jia, Z., Gupta, S. (2010) Age-related Alterations of Gene Expression Patterns in Human CD8+ T cells. *Aging Cell*, 9:19-31.
10. Ye, K., Jia, Z., Wang, Y., Flicek, P., Apweiler, R. (2010) Mining Unique-m Substrings from Genomes. *Journal of Proteomics & Bioinformatics*, 3:99-103.
11. Xia, X.¹, Jia, Z.¹, Porwollik, S., Long, F., Hömme, C., Ye, K., Müller-Tidow, C., McClelland, M., Wang, Y. (2010) Evaluating Oligonucleotide Properties for DNA Microarray Probe Design. *Nucleic Acids Research*, 38:11 e121. [doi:10.1093/nar/gkq039].
12. Wang, Y.¹, Xia, X.¹, Jia, Z.¹, Sawyers, A., Yao, H., Wang-Rodriguez, J., Mercola, D., McClelland, M. (2010) In silico estimates of tissue components in surgical samples based on expression profiling data. *Cancer Research*, 70:6448-6455.
13. Basu, A., Banerjee, H., Rojas, H., Martinez, S., Roy, S., Jia, Z., Lilly, M., De León, M., and Casiano, C. (2011) Differential Expression of Peroxiredoxins in Prostate Cancer: Consistent Upregulation of PRDX3 and PRDX4. *The Prostate*, 71:755-765.
14. Jia, Z.¹, Wang, Y.¹, Sawyers, A., Yao, H., Rahmatpanah, F., Xia, X., Xu, Q., Pio, R., Turan, T., Koziol, J., Goodison, S., Carpenter, P., Wang-Rodriguez, J., Simoneau, A., Meyskens, F., Sutton, M., Lernhardt, W., Beach, T., Monforte, J., McClelland, M. and Mercola, D. (2011) Diagnosis of Prostate Cancer Using Differentially Expressed Genes in Stroma. *Cancer Research*, 71:2476-2487.
15. Jia, Z.* , Rahmatpanah, F., Chen, X., Lernhardt, W., Wang, Y., Xia, X., Sawyers, A., McClelland, M.* and Mercola, D.* (2012) Expression changes in the stroma of prostate cancer predict subsequent relapse. *PLoS ONE*, 7(8): e4137. [doi: 10.1371/journal.pone.0041371].
16. Chen, X., Xu, S., McClelland, M., Rahmatpanah, F., Sawyers, A., Jia, Z.* , Mercola, D.*. (2012) An Accurate Prostate Cancer Prognosticator Using a Seven-Gene Signature Plus Gleason Score and Taking Cell Type Heterogeneity into Account. *PLoS ONE*, 7(9): e45178. [doi: 10.1371/journal.pone.0045178].
17. Lee, C., Zhang, Q., Zi, X., Dash, A., Soares, M., Rahmatpanah, F., Jia, Z., McClelland, M., Mercola, D. (2012) TGF- β mediated DNA methylation in prostate cancer. *Transl Androl Urol*, 1(2):78-88.
18. Jia, Z.^{1*}, Wang, Y.¹, Hu, Y., McLaren, C., Yu, Y., Ye, K., Xia, X., Koziol, J., Lernhardt, W., McClelland, M. and Mercola, D. (2013) A Sample Selection Strategy to Boost the Statistical Power of Signature Detection in Cancer Expression Profile Studies. *Anti-Cancer Agents in Medicinal Chemistry*, 13(2):203-11.
19. Pio, R., Jia, Z., Baron, V., Merola, D. (2013) Early Growth Response Gene 3 (Egr3) is highly over-expressed in non-relapsing prostate cancer but not in relapsing prostate cancer. *PLoS ONE*, 8(1):e54096. [doi: 10.1371/journal.pone.0054096].
20. Rahmatpanah, F., Jia, Z.* , Chen, X., Jones, F., McClelland, M. and Mercola, D. (2012) Expression of HER2 in Breast Cancer Promotes a Massive Reorganization of Gene Activity and Suggests a Role for Epigenetic Regulation. *J Data Mining Genomics Proteomics* 3:e102. [doi:10.4172/2153-0602.1000e102].
21. Chen, Y., Jia, Z., Mercola, D., Xie, X. (2013) A Gradient Boosting Algorithm for Survival Analysis via Direct Optimization of Concordance Index. *Comput Math Methods Med*. Volume 2013 (2013), Article ID 873595, 8 pages [http://dx.doi.org/10.1155/2013/873595].
22. Hu, Y., Ru, N., Xiao, H., Chaturbedi, A., Hoa, N.T., Tian, X.J., Zhang, H., Ke, C., Yan, F., Nelson, J., Li, Z., Gramer, R., Yu, L., Siegel, E., Zhang, X., Jia, Z., Jadus, M.R., Limoli, C.L., Linskey, M.E., Xing, J., Zhou, Y.H. (2013) Tumor-specific chromosome mis-segregation controls cancer plasticity by maintaining tumor heterogeneity. *PLoS One*, 25;8(11):e80898. [DOI: 10.1371/journal.pone.0080898].
23. Cheng, C., Pal, S., Tifrea, D., Jia, Z., de la Maza, L.M. (2014) A vaccine formulated with a combination of TLR-2 and TLR-9 adjuvants and the recombinant major outer membrane protein elicits a robust immune response and significant protection against a Chlamydia muridarum challenge. *Microbes Infect*. 16(3):244-52.
24. Kinseth, M., Jia, Z., Rahmatpanah, F., Sawyers, A., Sutton, M., Wang-Rodriguez, J., Mercola, D., McGuire, K. (2014) Expression differences between African American and Caucasian prostate cancer tissue reveals that stroma is the site of aggressive changes. *International Journal of Cancer*, 134(1):81-91.
25. Jia, Z.* , Lilly, M., Koziol, J., Chen, X., Xia, X., Wang, Y., Skarecky, D., Sutton, M., Sawyers, A., Ruckle, H., Carpenter, P., Wang-Rodriguez, J., Jiang, J., Deng, M., Pan, C., Zhu, J., McLaren, C., Gurley, M., Lee, C., McClelland, M., Ahlering, T., Kattan, M., Mercola, D. (2014) Generation of “virtual” control groups for single arm prostate cancer adjuvant trials. *PLoS One*. 9(1): e85010. [doi:10.1371/journal.pone.0085010].
26. Li, L, Hu, X, Yang, Z, Jia, Z, Fang, M, Zhang, L, and Zhou, Y. (2014) Establishing Reliable MiRNA-cancer Association Network Based on Text-mining Method. *Computational and Mathematical Methods in Medicine*, Volume 2014, Article ID 746979, 8 pages. [http://dx.doi.org/10.1155/2014/746979].
27. Koziol, J, and Jia, Z.*. (2014) Weighted Lin-Wang Tests for Crossing Hazards. *Computational and Mathematical Methods in Medicine* Volume 2014, Article ID 643457, 5 pages. [http://dx.doi.org/10.1155/2014/643457].
28. Lee, C, Jia, Z., Rahmatpanah, F, Zhang, Q, Zi, X, McClelland, M, and Mercola, D. (2014) Role of the Adjacent Stroma Cells in Prostate Cancer Development and Progression: Synergy between TGF-beta and IGF Signaling. *BioMed Research International*, Volume 2014, Article ID 502093, 8 pages. [http://dx.doi.org/10.1155/2014/502093].

29. Einsporn, R. and Jia, Z. (2014) A Note regarding Problems with Interaction and Varying Block Sizes in a Comparison of Endotracheal Tubes. *Computational and Mathematical Methods in Medicine*, Volume 2014, Article ID 956917, 4 pages. [http://dx.doi.org/10.1155/2014/956917].
30. Gao, L., Phan, S., Nadora, D.M., Chernova, M., Sun, V., Preciado, S.M., Ballew, B., Jia, Z., Jia, W., Wang, G., Mihm, M.C. Jr, Nelson, J.S., Tan, W. (2014) Topical Rapamycin Systematically Suppresses Early Stage of Pulsed Dye Laser-Induced Angiogenesis Pathways. *Lasers in Surgery and Medicine* 46(9):679-88.
31. Cao, J.N., Agrawal, A., Sharman, E., Jia, Z., Gupta, S. (2014) Alterations in gene array patterns in dendritic cells from aged humans. *PLoS One*, 9(9):e106471. [doi:10.1371/journal.pone.0106471].
32. Datta, S., Xia, X., Bhattacharjee, S. Jia, Z.* (2014) Editorial: Advances in Statistical Medicine. *Computational and Mathematical Methods in Medicine*, Volume 2014, Article ID 316153, 2 pages. [http://dx.doi.org/10.1155/2014/316153].
33. Rahmatpanah, F., Jia, Z., Chen, X., Char, J., Men, B., Franke, A.C., Jones, F., McClelland, M., Mercola, D. (2014) A class of genes in the HER2 regulon that is poised for transcription in breast cancer cell lines and expressed in human breast tumors. *Oncotarget*, 6(2):1286-301.
34. Chen, X., McClelland, M., Jia, Z., Rahmatpanah, F., Sawyers, A., Trent, J., Duggan, D., Mercola, D. (2014) The identification of trans-associations between prostate cancer GWAS SNPs and RNA expression differences in tumor-adjacent stroma. *Oncotarget*, 6(3):1865-73.
35. Simon, E.L., Kovacs, M., Jia, Z., Hayslip, D., Orlik, K., Jouriles, N. (2015) Variation in Emergency Department Acuity Between a Tertiary Care Center and Three Freestanding Emergency Departments. *The American Journal of Emergency Medicine*, [in press].
36. Baron, V.T., Pio, P., Jia, Z. and Mercola, D. (2015) Early Growth Response 3 regulates genes of inflammation and directly activates IL6 and IL8 expression in prostate cancer. *British Journal of Cancer*, [in Press].
37. Zhu, J., Pan, C., Jiang, J., Deng, M., Gao, H., Men, B., McClelland, M., Mercola, D., Zhong, W*, Jia, Z*. (2015) Six stroma-based RNA markers diagnostic for prostate cancer in European-Americans validated at the RNA and protein levels in patients in China. *Oncotarget*, [in Press].

BOOKS, BOOKS CHAPTERS, AND CONFERENCE PAPERS (* Corresponding author; ¹ Co-First author)

1. Jia, Z.*, Tang, S., Mercola, D. and Xu, S. (2008) Detection of Quantitative Trait Associated Genes Using Cluster Analysis. *EvoBIO 2008, Lecture Notes in Computer Science 4973, E. Marchiori and J.H. Moore (Eds.)*, 83-94.
2. Jia, Z.*, Wang, Y., Koziol, J., McClelland, M. and Mercola, D. (2008) A New Bi-Model Classifier for Predicting Outcomes of Prostate Cancer Patients. in *JSM Proceedings, Biometrics Section, Denver, CO: American Statistical Association*.
3. Jia, Z.*, Wang, Y., Ye, K., Li, Q., Tang, S., Xu, S. and Mercola, D. (2009) Association Study between Gene Expression and Multiple Relevant Phenotypes with Cluster Analysis. *EvoBIO 2009, Lecture Notes in Computer Science 5483, C. Pizzuti, M.D. Ritchie, and M. Giacobini (Eds.)*, 1-12.
4. Chen, X., Xu, S., Wang, Y., McClelland, M., Jia, Z.* and Mercola, D.* (2011) Identification of Biomarkers for Prostate Cancer Prognosis Using a Novel Two-step Cluster Analysis. *PRIB 2011, Lecture Notes in Computer Science 7036, M. Loog, L. Wessels, M. J. T. Reinders, D. de Ridder (Eds.)*, 63-74.

AWARDS

1. Outstanding freshman scholarship, Wuhan University, China, 1994
2. Wuhan university fellowship, Wuhan University, China, 1995-1997
3. Tong-yi fellowship, Wuhan University, China, 1997-1998
4. Excellent graduate student scholarship, CAS, China, 1998-1999
5. Dean's fellowship, UC Riverside, 2002-2003
6. Ecology and Evolution Summer Fellowship, UC Riverside, Summer 2003
7. Travel Award, EvoStar 08 in Naples, Italy, 2008
8. Faculty Career Development Award, University of California, Irvine, 2008-2009
9. Travel Award, EvoStar 09 in Tubingen, Germany, 2009
10. Scholarship, AACR Cancer Biostatistics Workshop, Sonoma, CA, 2009

GRANTS

- Funded:
 1. "Prognosis of Prostate Cancer using Expression Biomarkers", Bridging Fund award, \$50,000.00 (Co-PI), UC Irvine Chao Family Comprehensive Cancer Center, UC Irvine, 2012
 2. "Identification and Validation of Biomarkers for Prostate Cancer using Chinese Patient samples", Natural Science Foundation of GuiZhou Province of China (NO. [2013] 2238), \$100,000.00 (PI), 2013
 3. "Biomarkers for diagnosing Prostate Cancer", International Collaborative Fund of GuiZhou Province of China, \$20,000.00 (PI), 2014
- Submitted and Under Review:

1. "Joint analysis of miRNAs, mRNAs and SNPs to identify markers for prognosis of prostate cancer", National Institutes of Health R21, \$318,581.00 (PI), 2015

PATENTS

1. U.S. Application Serial No. 13/857,060 for "Materials and Methods for Determining Diagnosis and Prognosis of Prostate Cancer" by The Regents of the University of California in pursuit of Dan Mercola, Michael McClelland, Zhenyu Jia, Yipeng Wang and Xin Chen. Council: Fish and Richardson P. C., reference no. 23791-0003002, April 4, 2013. Allowed March 4, 2014.
2. Gene Expression Signatures Useful for the Diagnosis and Prognosis of Prostate Cancer. (2009), pending
3. The Prostate Cancer Tumor Microenvironment Exhibits Numerous Differentially Expressed Gene Changes Useful for Diagnosis of Prostate Cancer without Tumor Cells. (2010), pending

PROFESSIONAL ACTIVITIES

- University Services:
 - ✧ Research Committee (NEOMED)
 - ✧ Search Committee for Research Director (NEOMED)
- Organizations and Societies :
 - ✧ Member, American Statistical Association (ASA), 2006 – present
 - ✧ Member, American Association for Cancer Research (AACR), 2008 – present
- Editorial Board :
 - ✧ Editorial Board Member, Journal of Data Mining in Genomics & Proteomics, 2010 – present
 - ✧ Lead Guest Editor of special issue 'Advanced Statistical Medicine' for the journal of Computational and Mathematical Methods in Medicine, 2013-2014
 - ✧ Guest Editor of special issue 'Biomarkers for Prostate Cancer' for the journal of BioMed Research International, 2013-2014
 - ✧ Lead Guest Editor of special issue 'Bioinformatics and Biostatistics in Cancer Research' for The Scientific World Journal, 2014-2015
- Manuscript Referee:

Journal of Biotechnology; Bioinformatics; Genetics Research; Biotechnology Advances; Journal of Proteomics & Bioinformatics; Cancer Letters; Proteomics; Current Proteomics; Journal of Proteomics; Biotechnology and Applied Biochemistry; Electrophoresis; Biometrical Journal; Neurocomputing; Proteome Science; Lecture Notes in Computer Science(EvoBIO); ICPR; PLoS Computational Biology; Computer Methods and Programs in Biomedicine; Journal of Translational Medicine; BMC Bioinformatics; Nucleic Acids Research; Molecular Cancer
- Conference Program Committee:
 - ✧ EvoStar (EvoBIO), 2009 – present
 - ✧ International Association for Pattern Recognition (ICPR), 2010 – present
- Consultations

UC Riverside, UC Irvine, Sidney Kimmel Cancer Center, Proveri Inc., Agendia Inc., Biostatistics Shared Resource at UCI, Vaccine Research Institute of San Diego, UC San Diego, San Diego State University, GlaxoSmithKline Plc., AltheaDX Inc., BioTheragnostics Inc, The University of Akron, and Northeast Ohio Medical University.
- Invited Talk and Oral Presentation
 - ✧ International
 - ❑ EvoStar 08 in Naples, Italy 2008, "Detection of Quantitative Trait Associated Genes Using Cluster Analysis", Oral Presentation
 - ❑ EvoStar 09 in Tübingen, Germany 2009, "Association Study between Gene Expression and Multiple Relevant Phenotypes with Cluster Analysis", Oral Presentation
 - ❑ 1st Chinese Young Chemical Physicists Forum, Guiyang, China, July 28-30, 2012, "Identification of gene signatures in tumor microenvironment that are useful for prostate cancer diagnosis and prognosis", Invited Talk
 - ❑ 1st International Conference on Translational Medicine in Prostate Diseases (ICTMPD2014), Guiyang, China, July 4-6, 2014, Chair and invited talk.
 - ✧ National
 - ❑ SPECS Investigators Meeting, University of Vanderbilt, Nashville, 2008, "A New Bi-Model Approach for the Development of a Classifier for Predicting Outcomes for Prostate Cancer Patients", Oral Presentation
 - ❑ SPECS Investigators Meeting, Vandervilt University, Nashville 2008, "The Prostate Cancer Tumor Microenvironment Exhibits Numerous Differentially Expressed Gene Changes Useful for Diagnosis of Prostate Cancer", Oral Presentation
 - ❑ SPECS Annual Meeting, Laguna Beach, 2009, "A New Bi-Model Approach for the Development of a Classifier for Predicting Outcomes for Prostate Cancer Patients", Oral Presentation
 - ❑ SPECS Annual Meeting, UC Irvine, 2010, "Diagnosis of Prostate Cancer without Tumor Cells Using Differentially Expressed Genes in Stroma near Tumors", Oral Presentation

- ❑ JSM 10 in Vancouver, Canada, 2010, "The Use of Nomogram Predictions as Comparators for Adjuvant Treatment Studies in Prostate Cancer", Oral Presentation
- ❑ 2nd International Conference on Proteomics & Bioinformatics, Las Vegas, July 2-4, 2012, "The use of nomogram predictions as comparators in a phase II prostate cancer adjuvant treatment trial", Invited Talk
- ✧ Regional
 - ❑ Sidney Kimmel Cancer Center 2007, "Mixture Models for Microarray Data Analysis", Invited Talk
 - ❑ University of California, Irvine 2007, "Mixture Models for Microarray Data Analysis", Invited Talk
 - ❑ University of California, Riverside, 2008, "A New Bi-Model Classifier for Predicting Outcomes of Prostate Cancer Patients", Invited Talk
 - ❑ Biostatistics Shared Resource, Chao Family Comprehensive Cancer Center, University of California, Irvine, 2009, "Genomics Data Analysis Using R", Tutorials
 - ❑ Department of Epidemiology, University of California, Irvine, 2010, "Diagnosis of prostate cancer without tumor cells using differentially expressed genes in stroma adjacent to tumors", Invited Talk
 - ❑ Baylor College of Medicine, Houston, TX, 2010, "Diagnosis of prostate cancer using differentially expressed genes in stroma", Invited Talk
 - ❑ Department of Computer Science, University of California, Irvine, 2010, "Diagnosis of prostate cancer using differentially expressed genes in stroma", Invited Talk
 - ❑ The University of Texas MD Anderson Cancer Center, Department of Bioinformatics and Computational Biology, 2011, "Diagnosis and Prognosis of Prostate Cancer Using Gene Expression Signatures", Invited Talk
 - ❑ Graduate School of Public Health, San Diego State University, February 12, 2015, "Biomarkers for Diagnosis and Prognosis of Prostate Cancer", Invited Talk
 - ❑ Department of Mathematical Sciences, Kent State University, March 12, 2015, "Biomarkers for Diagnosis and Prognosis of Prostate Cancer", Invited Talk