

YUNYUN ZHOU

Assistant Professor ◊ Department of Data Science
University of Mississippi Medical Center
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EDUCATION

Washington State University (WA, USA) Ph.D in Electrical and Computer Engineering	<i>Aug. 2007 - Aug. 2012</i>
Nanjing University, (China) MS (2007) in Electrical Engineering BS (2004) in Electrical Engineering	<i>Aug. 2000 - Jun. 2007</i>

PROFESSIONAL POSITIONS

Assistant Professor	Department of Data Science, University of Mississippi Medical Center (2016-current)
Computational Biologist	Department of Clinical Science, UT Southwestern Medical Center at Dallas (2012-2016)
Graduate Research Assistant	Department of Electrical Engineering and Computer Science Washington State University (2007-2012)

RESEARCH INTERESTS

Genetic Biomarker discovery and validation, Next generation sequence (NGS) data processing and analysis, genetic and pathway integrative analysis for cancer research

Genome wide association analysis and risk predictive model development for cardiovascular disease outcomes, such as heart failure, coronary heart disease, etc.

Database, web portal, and tool development for cancer and cardiovascular research through Mysql, javascript, html5, php, Rshiny etc.

RESEARCH EXPERIENCE

Assistant Professor <i>University of Mississippi Medical Center</i>	<i>Aug. 2016 - current</i>
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- Developing computational algorithms and database tools for cancer research in imaging and molecular biomarkers for disease early detection, coding/non-coding genes regulation mechanisms and functional pathway networks study, translational discovery from in vitro experiment to cancer patients genetic and clinical outcomes risk prediction
- Developing high throughput computational next generation sequencing (NGS) analysis pipelines for cancer genomes and integrating bio-omics data with clinical data for target chemotherapy, cancer subtypes prediction, and driver genes discovery.
- Developing mathematical methods for cardiovascular disease outcomes (i.e. heart failure, coronary heart disease, etc.) risk factors prediction, genome wide association analysis, and genetic epidemiology study to find the genetic interaction with disease traits.

Computational Biologist <i>UT Southwestern Medical Center</i>	<i>Dec. 2012 - Aug. 2016</i>
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- Developed predictive model on genetic biomarkers discoveries and validation in cancer research.
- Analysis and modelling of signal transduction pathways in systems biology for cancer research
- Implemented machine learning algorithms (i.e. supervise/unsupervised classification and regression) and statistic models for genotype and phenotype association prediction
- Developed R packages for user friendly website to facilitated complicated, dynamic and high dimensional cancer research.

Research Assistant

Aug. 2007 - Aug. 2012

Washington State University

- Developed computational tools and statistics models for microbial genomic / proteomics sequences relationship study, evaluated the predicative model performance.
- Developed machine learning algorithms, analyzed a huge e-commerce database and predicted the potential consumers for retailers.

TEACHINGS AND INVITATION TALKS

Invitation talk	University of Mississippi, Oxford, MS (Oct. 2016) <i>Big-Data revolution and opportunities in Translational and Precision Medicine</i>
Invitation talk	Sun Yat-sen University, Guangzhou, China (Aug. 2015) <i>Integrative cancer Database and tools for driver genes discovery</i>
Instructor	Jiangsu Maritime Institute, Nanjing, China (Jun. 2007) <i>Introduction of Computer Architecture and Network</i>

PROFESSIONAL SERVICE

Lead guest Editor	Journal of Cancer Informatics Leading 4 reviewers solid and review papers
Reviewer	Journal of Medicine, Journal of Ploes One

PUBLICATIONS

1. J. Wang[#], **Y. Zhou[#]**, X. Fei, X. Chen, R. Chen, Z. Zhu, Y. Chen*, Integrative bioinformatics analysis identifies ROBO1 as a potential therapeutic target modified by miR-218 in hepatocellular carcinoma, *Oncotarget*, 2017, April 15
2. L. Yang, S. Wang, **Y. Zhou**, S. Lai, G. Xiao, A. Gazda, Y. Xie*, Evaluation of the 7th and 8th editions of the AJCC/UICC TNM staging systems for lung cancer in a large North American cohort, *Oncotarget*, 2017, May 24
3. H. Wu, J. Bi, Y. Peng, L. Huo, X. Yu, Z. Yang, **Y. Zhou**, L. Qin, Y. Xu, L. Liao, Y. Xie, O. Conneely, J. Jonkers, J. Xu*, Nuclear receptor NR4A1 is a tumor suppressor down-regulated in triple-negative breast cancer, *Oncotarget*, 2017, April 28
4. J. Wang, **Y. Zhou**, X. Chen, X. Fei, J. Yan, B. Liu, Z. Zhu*, ABCG2 confers promotion in gastric cancer through modulating downstream CRKL in vitro combining with biostatistics mining, *Oncotarget*, 2017 Jan 17;8(3):5256-5267
5. J. Wang[#], **Y. Zhou[#]**, X. Chen, X. Fei, J. Yan, B. Liu, Z. Zhu*, Regulator of G-Protein Signaling 3 targeted by miR-126 with poor prognosis in gastric cancer patients, *Anti-Cancer Drugs*, 2017, Feb; 16. doi: 10.3892/or.2017.5460
6. J. Wang[#], **Y. Zhou[#]**, X. Chen, X. Fei, J. Yan, B. Liu, Z. Zhu*, ADAM9 functions as a promoter of gastric cancer growth which is negatively and post-transcriptionally regulated by miR-126, *Oncology Report*, 2017, Feb; 16. doi: 10.3892/or.2017.5460

7. YA. Zhang #, **Y. Zhou**#, Luo X, Song K, Ma X, Sathe A, Girard L, Xiao G, Gazdar AF*, ADAM9 functions as a promoter of gastric cancer growth which is negatively and post-transcriptionally regulated by miR-126, *EBioMedicine*, 2016 Nov;13:80-89.
8. J. Wang, X. Chen, L. Su, B. Liu, **Y. Zhou***, SLC7A5 functions as a downstream target modulated by CRKL in metastasis process of gastric cancer SGC-7901 cells, *Plos One*, 2016, Nov. 15;11(11).
9. J. Wang, X. Chen, L. Su, B. Liu, **Y. Zhou***, Suppressive effects on cell proliferation and motility in gastric cancer SGC-7901 cells by introducing Ulinastatin in vitro, *Anti-Cancer Drugs*, 2016, Aug; 27(7):651-9.
10. Dalvi MP, Wang L, Zhong R, Kollipara RK, Park H, Bayo J, Yenerall P, **Y. Zhou**, Timmons BC, Xie Y, Minna JD, Martinez ED*, Taxane-Platin-Resistant Lung Cancers Co-develop Hypersensitivity to JumoniC Demethylase Inhibitors, *Cell Report*, 2017 May 23;19(8):1669-1684. doi: 10.1016/j.celrep.2017.04.077.
11. Van Buren PN, **Y. Zhou**, Neyra JA, Xiao G, Vongpatanasin W, Inrig J, Toto R*, Extracellular Volume Overload and Increased Vasoconstriction in Patients With Recurrent Intradialytic Hypertension., *Oncology Report*, 2017, Feb; 16. doi: 10.3892/or.2017.5460
12. Zhou X, Updegraff BL, Guo Y, Peyton M, Girard L, Larsen JE, Xie XJ, **Y. Zhou**, Hwang TH, Xie Y, Rodriguez-Canales J, Villalobos P, Behrens C, Wistuba II, Minna JD, O'Donnell KA.*, PROTOCADHERIN 7 Acts through SET and PP2A to Potentiate MAPK Signaling by EGFR and KRAS during Lung Tumorigenesis, *Cancer Research*, 2017, Jan 1;77(1):187-197.
13. Praveen L. Patida, Edward A. Motea, Farjana J. Fattah, **Y. Zhou**, Julio C. Morales, Yang Xie, Harold R. Garner and David A. Boothman*, The Kub5-Hera/RPRD1B interactome: a novel role in preserving genetic stability by regulating DNA mismatch repair, *Nucleic Acids Research*, 2016, Jan. doi: 10.1093/nar/gkv1492.
14. Westcott JM, Precht AM, Maine EA, Dang TT, Esparza MA, Sun H, **Y. Zhou**, Xie Y, Pearson GW*. An epigenetically distinct breast cancer cell subpopulation promotes collective invasion, *J Clin Invest*, 2015 May 125(5):1927-43.
15. Kimberly Maxeld, Patrick Taus, Kathleen Corcoran, Joshua Wooten, Jennifer Macion, **Y. Zhou**, Mark Borromeo, Rahul K. Kollipara, Jingsheng Yan, Yang Xie, Xian-Jin Xie, and Angelique Whitehurst*, Comprehensive Functional Characterization of Cancer-Testis Antigens Denes Obligate Participation in Multiple Hallmarks of Cancer,, *Nature Communication*, 2015 Nov 16; 6:8840.doi: 10.1038/ncomms9840.
16. Jin-Huan Wei, Ahmed Haddad, Kaijie Wu, Hong-Wei Zhao, Payal Kapur, Zhi-Ling Zhang, Liang-Yun Zhao, Zhen-Hua Chen, **Y. Zhou**, Jian-Cheng Zhou, Bin Wang, Yan-Hong Yu, Muyan Cai, Dan Xie, Bing Liao, Cai-Xia Li, Pei-Xing Li, Zong-Ren Wang, Fangjian Zhou, Lei Shi, Qing-Zuo Liu, Zhen-Li Gao, Da-Lin He, Wei Chen, Jer-Tsong Hsieh, Quan-Zhen Li, Vitaly Margulis, and Jun-Hang Luo*, A CpG-methylation-based assay to predict survival in clear cell renal cell carcinoma, *Nature Communication*, 2015 Oct 30;6:8699. doi: 10.1038/ncomms9699.
17. Tang H, Sebti S, Titone R, **Y. Zhou**, Isidoro C, Ross TS, Hibshoosh H, Xiao G, Packer M, Xie Y, Levine B*, B.Decreased BECN1 mRNA Expression in Human Breast Cancer is Associated with Estrogen Receptor-Negative Subtypes and Poor Prognosis, *EBioMedicine*, 2015 Mar;2(3):255-263.
Media Reported by Science daily, BioNews Texas, Medical News Today, Consultant360 (Primary Care Physician Journal)
18. Zang X, Chen M, **Y. Zhou**, Xiao G, Xie Y, Wang X*, Identifying CDKN3 Gene Expression as a Prognostic Biomarker in Lung Adenocarcinoma via Meta-analysis, *Cancer Informatics*, 2015

May 24;14(Suppl 2):183-91.

19. Sarah R Elkin, Nawal Bendris, Carlos Reis, **Y. Zhou**, Yang Xie, Kenneth E Human, John D Minna, Sandra L Schmid,* , systematic analysis reveals heterogeneous changes in the endocytic activities of cancer cells, *Cancer Research.*, 09/2015; DOI:10.1158/0008-5472.CAN-15-0939.
20. Gaurab Chakrabarti, Zachary R Moore, Xiuquan Luo, Mariya Ilcheva, Aktar Ali, Mahesh Padanad, **Y. Zhou**, Yang Xie, Sandeep Burma, Pier P Scaglioni, Lewis C Cantley, Ralph J DeBerardinis, Alec C Kimmelman, Costas A Lyssiotis, David A Boothman,* , Targeting glutamine metabolism sensitizes pancreatic cancer to PARP-driven metabolic catastrophe induced by -lapachone, *Cancer Metab.*, 2015 Oct 12;3:12. doi: 10.1186/s40170-015-0137-1.
21. Lingling Duan, Ganesha Rai, Carlos Roggero, Qing-Jun Zhang, Qun Wei, Shi Hong Ma, **Y. Zhou**, John Santoyo, Elisabeth D Martinez, Guanghua Xiao, Ganesh V Raj, Ajit Jadhav, Anton Simeonov, David J Maloney, Josep Rizo, Jer-Tsong Hsieh, Zhi-Ping Liu* , KDM4/JMJD2 Histone Demethylase Inhibitors Block Prostate Tumor Growth by Suppressing the Expression of AR and BMYB-Regulated Genes, *Chemistry and biology*, 09/2015; 22(9).
22. D. Gerber, Y. Arriaga, M. S. Beg, J. E. Dowell, J. H. Schiller, A.E. Frankel, R. Le, C. Meek, J. Bolluyt, O. Fatunde, R. T. Martinez, P. Vo, F. Fattah, V. Sarode, **Y. Zhou**, Y. Xie, M. McLeod, B. Schwartz, D.A. Boothman* , Phase 1 correlative study of ARQ761, a p-lapachone analogue that promotes NQ01-mediated programmed cancer cell, *European Journal of Cancer*, 50:84-85. DOI:10.1016/S0959-8049(14)70379
23. Allen GI, Amoroso N, Anghel C, Balagurusamy V, Bare CJ, Beaton D, Bellotti R, Bennett DA, Boehme KL, Boutros PC, Caberlotto L, Caloian C, Campbell F, Chaibub Neto E, Chang YC, Chen B, Chen CY, Chien TY, Clark T, Das S, Davatzikos C, Deng J, Dillenberger D, Dobson RJ, Dong Q, Doshi J, Duma D, Errico R, Erus G, Everett E, Fardo DW, Friend SH, Frhlich H, Gan J, St George-Hyslop P, Ghosh SS, Glaab E, Green RC, Guan Y, Hong MY, Huang C, Hwang J, Ibrahim J, Inglese P, Iyappan A, Jiang Q, Katsumata Y, Kauwe JS, Klein A, Kong D, Krause R, Lalonde E, Lauria M, Lee E, Lin X, Liu Z, Livingstone J, Logsdon BA, Lovestone S, Ma TW, Malhotra A, Mangravite LM, Maxwell TJ, Merrill E, Nagorski J, Namasivayam A, Narayan M, Naz M, Newhouse SJ, Norman TC, Nurtdinov RN, Oyang YJ, Pawitan Y, Peng S, Peters MA, Piccolo SR, Praveen P, Priami C, Sabelnykova VY, Senger P, Shen X, Simmons A, Sotiras A, Stolovitzky G, Tangaro S, Tateo A, Tung YA, Tustison NJ, Varol E, Vradenburg G, Weiner MW, Xiao G, Xie L, Xie Y, Xu J, Yang H, Zhan X, **Y. Zhou**, Zhu F, Zhu H, Zhu S* , Crowdsourced estimation of cognitive decline and resilience in Alzheimer's disease., *Alzheimers Dement.*, 2016 Jun;12(6):645-53. doi: 10.1016/j.jalz.2016.02.006.
24. **Y. Zhou**[#], Douglas R. Call, Shira Broschat, Whole-Proteome analysis of twelve species of Alphaproteobacteria links four Pathogens, *Pathogens*, 2013, 2, 627-635.
25. **Y. Zhou**[#], Douglas R. Call, Shira Broschat, Using protein clusters from whole proteomes to construct and augment a dendrogram, *Advanced Bioinformatics*, 2013, 191586.
26. **Y. Zhou**[#], Douglas R. Call, Shira Broschat, Genetic Relationships among 527 Gram-Negative Bacterial *Plasmids*, 2012, 133-141, vol.68.

PUBLICATIONS IN CONFERENCE PROCEEDINGS

1. Wei Zhang, Yibing Yao, **Y. Zhou**, Xiaotu Ma, Jingsheng Yan, Tao Wang, Luc Girard, John Minna, Guanghua Xiao, Yang Xie, Adi Gazdar* , Identification of SMARCA4/BRG1 mutation types in NSCLC cell lines and tumors, *Cancer Research*, 08/2015; 75(15 Supplement):2965-2965.
2. Lin Yang[#], **Y. Zhou**[#], Guanghua Xiao, Adi Gazdar, Yang Xie* , Validations of the 8th AJCC/UICC Lung Cancer Staging System in a Large North America Cohort, *Journal of Thoracic Oncology*,

