Jun Wan, Ph.D.

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CURRENT APPOINTMENTS

2022-present Associate Professor (with tenure starting on 7/1/23) in Bioinformatics, Department of Medical and Molecular Genetics, Indiana University School of Medicine (IUSM), Indianapolis, IN USA

2022-present Adjunct Associate Professor, Department of BioHealth Informatics, Indiana University School of Informatics and Computing, Indiana University – Purdue University at Indianapolis (IUPUI), IN USA

2016-present Director, Collaborative Core for Cancer Bioinformatics (C^3B) shared by two NCI-designated cancer centers, Indiana University Simon Comprehensive Cancer Center (IUSCCC) and Purdue University Center for Cancer Research (PUCCR), Indianapolis, IN USA

EDUCATION & TRAINING

2007-2011 Postdoctoral Fellow, Wilmer Institute, Johns Hopkins University, Baltimore, MD USA

2006-2007 Postdoctoral Fellow, Department of Electrical and Computer Engineering, University of Victoria, Victoria, BC Canada

2006 Ph.D., Department of Physics, Queen's University, Kingston, ON Canada

2001 M.S., Department of Physics, Fudan University, Shanghai, China

1991 B.S., Department of Applied Physics, Shanghai Jiaotong University, Shanghai, China

ACADEMIC EXPERIENCE

2022-present Associate Professor (with tenure starting on 7/1/23) in Bioinformatics, Department of Medical and Molecular Genetics, Indiana University School of Medicine (IUSM), Indianapolis, IN USA

2022-present Adjunct Associate Professor, Department of BioHealth Informatics, Indiana University School of Informatics and Computing, Indiana University – Purdue University at Indianapolis (IUPUI), IN USA

2016-present Director, Collaborative Core for Cancer Bioinformatics (C^3B) shared by two NCI-designated cancer centers, Indiana University Simon Comprehensive Cancer Center (IUSCCC) and Purdue University Center for Cancer Research (PUCCR),

Indianapolis, IN USA

2016-present Core faculty member of Center for Computational Biology and Bioinformatics (CCBB), Indiana University School of Medicine (IUSM), Indianapolis, IN USA

2016-2022 Tenure-track Assistant Professor in Bioinformatics, Department of Medical and Molecular Genetics, Indiana University School of Medicine (IUSM), Indianapolis, IN USA

2017-2022 Adjunct Assistant Professor, Department of BioHealth Informatics, Indiana University School of Informatics and Computing, Indiana University – Purdue University at Indianapolis (IUPUI), IN USA

2015-2016 Research Associate (non-tenure-track faculty), Wilmer Institute, Johns Hopkins University, Baltimore, MD USA

2011-2015 Senior Bioinformatician, Wilmer Institute, Johns Hopkins University, Baltimore, MD USA

2001-2005 Research Assistant, Department of Physics, Queen's University, Kingston, ON Canada

2001-2005 Teaching Assistant, Department of Physics, Queen's University, Kingston, ON Canada

1999-2000 Research Assistant (full-time), Department of Physics and Materials Science, City University of Hong Kong, Hong Kong China

OTHER PROFESSIONAL SERVICES

Editorial Activities (*Impact factors (IF) were published in 2022*)

2022-present Associate Editor for Evolutionary and Genomic Microbiology, specialty section of *Frontiers in Microbiology* (IF: 6.06), *Frontiers in Genetics* (IF: 4.77), and *Frontiers in Ecology and Evolution* (IF: 13.78)

2017-present Editorial Board Member, *Briefings in Bioinformatics* (IF: 13.99)

2012-present Editorial Board Member, *International Journal of Computational Biology and Drug Design*

2019-present Topics Board Member, *Life* (IF: 3.81)

2013 Guest Editor, Special Issues "*Computational Systems Biology*" of Scientific World Journal

2011-present Journal reviewer for: *Lancet* (IF: 202.73)*, Cell Research* (IF: 46.29), *Journal of Hematology & Oncology* (IF: 23.17)*, Journal of Medical Virology* (IF: 20.69), *Nucleic Acids Research* (IF: 19.16), *Genome Biology* (IF: 17.91), *Briefings in Bioinformatics* (IF: 13.99), *Environment International* (IF: 13.35), *Clinical and translational medicine* (IF: 8.55), *Cells* (IF: 7.67), *BMC Biology* (IF: 7.36), *Genes & Diseases* (IF: 7.24), *Bioinformatics* (IF: 6.93), *Genomics Proteomics & Bioinformatics* (IF: 6.41), *Frontiers in Cell and Developmental Biology* (IF: 6.08), *Epigenetics* (IF: 4.86), *PLoS Computational Biology* (IF: 4.78), *BMC Genomics* (IF: 4.55), *Genes* (IF: 4.14), *Frontiers in Neurology* (IF: 4.09), *PLoS One* (IF: 3.75), *Translational Vision Science & Technology* (IF: 3.05), *Oncotarget, Journal of Biomedicine and Biotechnology, Journal of Integrative Bioinformatics*

Study Sections

2021 DFG (German Research Foundation) on "COVID-19 Focus Funding: SARS-CoV-2 Sequencing Projects**"**

2020 Ohio State University Center for Clinical and Translational Science (CCTS) Pilot Grants

2017 Research Support Funds Grant (RSFG) from IUPUI Office of the Vice Chancellor for Research

2017 Indiana University Simon Cancer Center Pilot Grants

2017 Indiana Clinical and Translational Sciences Institute (CTSI) Pilot Grants

Other Organizational Activities

2021 Co-Chair, Tutorial Session of the 12th Association of Computing Machinery (ACM) Conference on Bioinformatics, Computational Biology, and Health Informatics

2021 Chair, Session "AI in Omics", and Moderator of Panel Discussion on "Traditionalist vs AI approaches", 2021 Conference of "Bringing Artificial Intelligence to the Bedside", West Lafayette, Indiana USA

2020/21/22 Chair, Organizing Committee for IUSM CCBB Annual Retreats

2019-present Chair, Seminar Committee at the Center for Computational Biology and Bioinformatics (CCBB), Indiana University School of Medicine

2018 Chair, Session "Cancer Genomics" in 2018 International Conference on Intelligent Biology and Medicine, Los Angeles CA USA

2018 Co-chair, Organizing Committee for Walther Cancer Foundation Annual Symposium at Notre Dame University

2018 Chair, Session of Bioinformatics, Walther Cancer Foundation Annual Symposium

2012-present Program Committee Member, International Conference on Intelligent Biology and Medicine

2010-present Program Committee Member, Workshop on Integrative Data Analysis in Systems Biology in the IEEE International Conference on Bioinformatics and Biomedicine

2008-2009 Organizer, Wilmer Eye Institute Research Discussion

RESEARCH ACTIVITIES

Peer Reviewed Original Science Publications

§: co-corresponding author; *****: co-first author

(*https://scholar.google.com/citations?user=4pP5A50AAAAJ&hl=en*)

1. S Fang, S Liu, D Yang, L Yang, C-D Hu, J Wan (2022) Decoding Regulatory Associations of G-quadruplex with Epigenetic and Transcriptomic Functional Components. ***Frontiers in Genetics*** 13:957023. (PMID: 36092921)

2. K Li, AKY Wang, S Liu, S Fang, AZ Lu, J Shen, L Yang, C-D Hu, K Yang, J Wan (2022) Advanced Functions Embedded in the Second Version of Database, Global Evaluation of SARS-CoV-2/hCoV-19 Sequences 2. ***Frontiers in Medicine*** 9:813964. (PMID: 35479940)
3. J Owens, E Beketova, S Liu, Q Shen, JS Pawar, AM Asberry, J Yang, X Deng, BD Elzey, TL Ratliff, L Cheng, CR Choo, DE Citrin, TJ Polascik, B Wang, J Huang, C Li, J Wan§, CD Hu§ (2022) Targeting protein arginine methyltransferase 5 (PRMT5) suppresses radiation-induced neuroendocrine differentiation and sensitizes prostate cancer cells to radiation. ***Molecular Cancer Therapeutics*** 21(3):448-459. (PMID: 35027481)
4. Q Liu, J Wan§, G Wang§ (2022) A survey on computational methods in discovering protein inhibitors of SARS-CoV-2. ***Briefings in Bioinformatics*** 23(1):bbab416. (PMID: 34623382)
5. J Du, Q Wand, S Yang, S Chen, Y Fu, S Spath, P Domeier, D Hagin, S Anover-Sombke, M Haouili, S Liu, J Wan, L Han, J Liu, L Yang, N Sangani, Y Li, X Lu, SC Janga, MH Kaplan, TR Torgerson, SF Ziegler, B Zhou (2022) FOXP3 exon 2 controls Treg stability and autoimmunity. ***Science Immunology*** 7(72):eabo5407. (PMID: 35749515)
6. K Singh, Y Rustagi, AS Abouhashem, S Tabasum, P Verma, E Hernandez, D Pal, DK Khona, SK Mohanty, M Kumar, R Srivastava, PR Guda, SS Verma, S Mahajan, JA Killian, LA Walker, S Ghatak, SS Mathew-Steiner, K Wanczyk, S Liu, J Wan, P Yan, R Bundschuh, S Khanna, GM Gordillo, MP Murphy, S Roy, CK Sen (2022) Genome-wide DNA hypermethylation opposes healing in chronic wound patients by impairing epithelial-to-mesenchymal transition. ***Journal of Clinical Investigation*** 132(17):e157279. (PMID: 35819852)
7. H Chen, Y Bai, M Kobayashi, S Xiao, W Cai, S Barajas, S Chen, J Miao, F Nguele Meke, S Vemula, J Ropa, J Croop, HS Boswell, J Wan, Y Jia, H Liu, L Li, JK Altman, EA Eklund, P Ji, W Tong, H Band, D Huang, LC Platanias, ZY Zhang, Y Liu (2022) PRL2 phosphatase enhances oncogenic FLT3 signaling via dephosphorylation of the E3 ubiquitin ligase CBL at tyrosine 371. ***Blood*** (in press). (PMID: 36206490)
8. C Shao*, J Wan*, FC Lam, H Tang, AR Marley, Y Song, C Miller, M Brown, J Han, G Adeboyeje (2022) A comprehensive literature review and meta-analysis of the prevalence of pan-cancer BRCA mutations, homologous recombination repair gene mutations, and homologous recombination deficiencies. ***Environmental and Molecular Mutagenesis*** 63(6):308. (PMID: 36054589)
9. T Zhao, S Liu, X Ding, EM Johnson, NH Hanna, K Singh, CK Sen, J Wan, H Du§, C Yan§ (2022) Lysosomal acid lipase, CSF1R and PD-L1 determine functions of CD11c+ myeloid-derived suppressor cells. ***JCI Insight*** 7(17):e156623. (PMID: 35917184)
10. AM Asberry, X Cai, X Deng, U Santiago, S Liu, HS Sims, W Liang, X Xu, J Wan, W Jiang, CJ Camacho, M Dai, CD Hu (2022) Discovery and Biological Characterization of PRMT5:MEP50 Protein-Protein Interaction Inhibitors. ***Journal of Medicinal Chemistry*** (in press). (PMID: 36206451)
11. X Zhong, A Narasimhan, LM Silverman, AR Young, S Shahda, S Liu, J Wan, Y Liu, LG Koniaris, TA Zimmers (2022) Sex specificity of pancreatic cancer cachexia phenotypes, mechanisms, and treatment in mice and humans – role of Activin. ***J Cachexia Sarcopenia Muscle*** 13(4):2146-2161. (PMID: 35510530)
12. Y Rustagi, AS Abouhashem, P Verma, SS Verma, E Hernandez, S Liu, M Kumar, PR Guda, R Srivastava, SK Mohanty, S Kacar, S Mahajan, KE Wanczyk, S Khanna, MP Murphy, GM Gordillo, S Roy, J Wan, CK Sen, K Singh (2022) Endothelial Phospholipase Cγ2 Improves

Outcomes of Diabetic Ischemic Limb Rescue Following VEGF Therapy. ***Diabetes*** 71(5):1149. (PMID: 35192691)

13. J Liu, Y Zhang, L Han, S Guo, S Wu, EH Doud, C Wang, H Chen, M Rubart-von der Lohe, J Wan, L Yang (2022) Genome-wide Analyses Revealed the Detrimental Impacts of SARS-CoV-2 Viral Gene Orf9c on Human Pluripotent Stem Cell-derived Cardiomyocytes. ***Stem Cell Reports*** 17(3):522. (PMID: 351803944)
14. Z Shi, J Lopez, W Kalliney, B Sutton, J Simpson, K Maggert, S Liu, J Wan, MS Stack (2022) Development and evaluation of ActSeq: a targeted next-generation sequencing panel for clinical oncology use. ***PLoS One*** 17(4):e0266914. (PMID: 35446881)
15. AY Hsu, T Wang, R Syahirah, S Liu, K Li, W Zhang, J Wang, Z Cao, S Tian, S Matosevic, C Staiger, J Wan, Q Deng (2022) RORA regulates neutrophil migration and activation in zebrafish. ***Frontiers in Immunology*** 13:756034. (PMID: 35309302)
16. Y Rustagi, AS Abouhashem, P Verma, SS Verma, E Hernandez, S Liu, M Kumar, PR Guda, R Srivastava, SK Mohanty, S Kacar, S Mahajan, KE Wanczyk, S Khanna, MP Murphy, GM Gordillo, S Roy, J Wan, CK Sen, K Singh (2022) Endothelial Phospholipase Cγ2 Improves Outcomes of Diabetic Ischemic Limb Rescue Following VEGF Therapy. ***Diabetes*** 71(5):1149. (PMID: 35192691)
17. J Xu, Y Liu, S Liu, W Ou, A White, S Stewart, KHR Tkaczuk, LM Ellis, J Wan, X Lu[§], X He[§] (2022) Metformin bicarbonate-mediated efficient RNAi for precise targeting of TP53 deficiency in colon and rectal cancers. ***Nano Today*** 43:101406. (PMID: 35251293)
18. GM Cunningham, F Shen, X Wu, EL Cantor, L Gardner, S Philips, G Jiang, CL Bales, Z Tan, Y Liu, J Wan, JC Fehrenbacher, BP Schneider (2022) The impact of SBF2 on taxane-induced peripheral neuropathy. ***PLoS Genetics*** 18(1):e1009968. (PMID: 34986146)
19. S Fang, K Li, JK Shen, S Liu, J Liu, L Yang, CD Hu, J Wan (2021) GESS: A database of Global Evaluation of SARS-CoV-2 Sequences. ***Nucleic Acids Research*** 49(D1):D706. (PMID: 33045727)
20. Y Chen, S Fang, Q Ding, R Jiang, J He, Q Wang, Y Jin, X Huang, S Liu, ML Capitano, T Trinh, Y Teng, Q Meng[§], J Wan[§], HE Broxmeyer[§], B Guo[§] (2021) ADGRG1 enriches for functional human hematopoietic stem cells following ex vivo expansion-induced mitochondrial oxidative stress. ***Journal of Clinical Investigation*** 131(20):e148329. (PMID: 34464351)
21. S Fang, S Liu, J Shen, AZ Lu, AKY Wang, Y Zhang, K Li, J Liu, L Yang, CD Hu, J Wan (2021) Updated SARS-CoV-2 Single Nucleotide Variants and Mortality Association. ***Journal of Medical Virology*** (selected as **cover image**) 93 (12):6525. (PMID: 34245452)
22. J Wan, H Dai, X Zhang, S Liu, Y Ling, A-K Somani, J Xie[§], J Han[§] (2021) Distinct Transcriptomic Landscapes of Cutaneous Basal Cell Carcinomas and Squamous Cell Carcinomas. ***Genes & Diseases*** 8(2):181. (PMID: 33997165)
23. Z Zhou, K Van der Jeught, Y Fang, T Yu, Y Li, Z Ao, S Liu, L Zhang, Y Yang, H Eyvani, M Cox, X Wang, X He, G Ji, B Schneider, F Guo, J Wan, X Zhang[§], X Lu[§] (2021) An organoid-based screen for epigenetic inhibitors that stimulate antigen presentation and potentiate T-cell-mediated cytotoxicity. ***Nature Biomedical Engineering*** 5 (11):1320. (PMID: 34725507)
24. N Morral, S Liu, AM Conteh, X Chu, Y Wang, XC Dong, Y Liu, AK Linnemann, J Wan (2021) Aberrant gene expression induced by a high fat diet is linked to H3K9 acetylation in the

promoter-proximal region. ***Biochimica et Biophysica Acta - Gene Regulatory Mechanisms*** 1864(3):194691. (PMID: 33556624)

25. G Song, G Wang, X Luo, Y Cheng, Q Song, J Wan, C Moore, H Song, P Jin, J Qian, H Zhu (2021) An All-to-All Approach to the Identification of Sequence-Specific Readers for Epigenetic DNA Modifications on Cytosine. ***Nature Communications*** 12(1):795. (PMID: 33542217)
26. D Xu, M Yang, M Capitano, B Guo, S Liu, J Wan, H Broxmeyer§, X Huang§ (2021) Pharmacological activation of nitric oxide signaling promotes human hematopoietic stem cell homing and engraftment. ***Leukemia*** 35(1):229. (PMID: 32127640)
27. SR Sripathi, MW Hu, RC Turaga, J Mertz, MM Liu, J Wan, J Maruotti, KJ Wahlin, CA Berlinicke, J Qian, DJ Zack (2021) Proteome Landscape of Epithelial-to-Mesenchymal Transition (EMT) of Retinal Pigment Epithelium Shares Commonalities With Malignancy-Associated EMT. ***Molecular & Cellular Proteomics*** 20:100131 (PMID: 34455105)
28. W Zhao, L Jiang, T Fang, F Fang, Y Liu, Y Zhao, Y You, H Zhou, X Su, J Wang, S Liu, Y Chen, J Wan, X Huang (2021) β-Lapachone selectively kills hepatocellular carcinoma cells by targeting NQO1 to induce extensive DNA damage and PARP1 hyperactivation. ***Frontiers in Oncology*** 11:747282. (PMID: 34676172)
29. NP Rayana, CK Sugali, J Dai, M Peng, S Liu, Y Zhang, J Wan, W Mao (2021) Using CRISPR interference as a therapeutic approach to treat TGFβ2-induced ocular hypertension and glaucoma. ***Investigative Ophthalmology & Visual Science*** 62(12):7. (PMID: 34499703)
30. K Zhang, Y Zhang, Y Maharjan, F Sugiokto, J Wan, R Li (2021) Caspases Switch off the m^6A RNA Modification Pathway to Foster the Replication of a Ubiquitous Human Tumor Virus. ***mBio*** 12(4): e0170621. (PMID: 34425696)
31. J Liu, S Liu, L Han, Y Sheng, Y Zhang, I Kim, J Wan, L Yang (2021) LncRNA HBL1 is Required for Genome-Wide PRC2 Occupancy and Function in Cardiogenesis from Human Pluripotent Stem Cells. ***Development*** 148(13):dev199628. (PMID: 34027990)
32. C Zhu, M Huang, HG Kim, K Chowdhury, J Gao, S Liu, J Wan, L Wei, XC Dong (2021) SIRT6 controls hepatic lipogenesis by suppressing LXR, ChREBP, and SREBP1. ***Biochimica et Biophysica Acta - Molecular Basis of Disease*** 1867(12):166249. (PMID: 34425214)
33. M Bam, S Chintala, K Fetcko, BC Williamsen, S Siraj, S Liu, J Wan, X Xuei, Y Liu, AT Leibold, M Dey (2021) Genome wide DNA methylation landscape reveals glioblastoma's influence on epigenetic changes in tumor infiltrating CD4+ T cells. ***Oncotarget*** 12(10):967. (PMID: 34012510)
34. WX Huff, M Bam, JM Shireman, JH Kwon, L Song, S Newman, AA Cohen-Gadol, S Shapiro, T Jones, K Fulton, S Liu, H Tanaka, Y Liu, J Wan, M Dey (2021) Aging- and Tumor-Mediated Increase in CD8+CD28− T Cells Might Impose a Strong Barrier to Success of Immunotherapy in Glioblastoma. ***ImmunoHorizons*** 5(6):395.
35. C Xu, Y Fu, S Liu, J Trittipo, X Lu, R Qi, H Du, C Yan, C Zhang, J Wan, MH Kaplan, and K Yang (2021) BATF regulates T regulatory cell functional specification and fitness of triglyceride metabolism in restraining allergic responses. ***Journal of Immunology*** 206(9):2088. (PMID: 33879580)

36. MY Zhang, S Fang, H Gao, X Zhang, D Gu, Y Liu, J Wan, J Xie (2021) A critical role of AREG for bleomycin-induced skin fibrosis. ***Cell & Bioscience*** 11(1):40. (PMID: 33622407)

37. SR Sripathi, MW Hu, MM Liu, J Wan, J Cheng, Y Duan, JL Mertz, KJ Wahlin, J Maruotti, CA Berlinicke, J Qian, DJ Zack (2021) Transcriptome Landscape of Epithelial to Mesenchymal Transition of Human Stem Cell-Derived Retinal Pigment Epithelium. ***Investigative Ophthalmology & Visual Science*** 62(4):1. (PMID: 33792620)

38. P Bhat-Nakshatri, H Gao, L Sheng, PC McGuire, X Xuei, J Wan, Y Liu, SK Althouse, A Colter, G Sandusky, AM Storniolo, H Nakshatri (2021) A single cell atlas of the healthy breast tissues reveals clinically relevant clusters of breast epithelial cells. ***Cell Reports Medicine*** 2(3):100219. (PMID: 33763657)

39. N Lin, J Liu, J Castle, J Wan, A Shendre, Y Liu, C Wang, C He (2021) Genome-wide DNA methylation profiling in human breast tissue by illumina TruSeq methyl capture EPIC sequencing and infinium methylationEPIC beadchip microarray. ***Epigenetics*** 16(7):754-769. (PMID: 33048617)

40. S Liu, JK Shen, S Fang, K Li, J Liu, L Yang, CD Hu, J Wan (2020) Genetic spectrum and distinct evolution patterns of SARS-CoV-2. ***Frontiers in Microbiology*** 11:593548. (PMID: 33101264)

41. E Beketova, S Fang, J Owens, S Liu, X Chen, Q Zhang, A Asberry, X Deng, J Malola, J Huang, C Li, R Pili, B Elzey, T Ratliff, J Wan[§], CD Hu[§] (2020) Protein arginine methyltransferase 5 promotes androgen receptor transcription in a pICln-dependent manner in castration-resistant prostate cancer. ***Cancer Research*** 80(22):4904. (PMID: 32999000)

42. R Choudhury, J Beezley, B Davis, J Tomeck, S Gratzl, L Golzarri-Arroyo, J Wan, D Raftery, J Baumes, TM O'Connell (2020) Viime: Visualization and Integration of Metabolomics Experiments. ***The Journal of Open Source Software*** 5(54):2410. (PMID: 33768193)

43. J Liu, S Liu, H Gao, L Han, X Chu, Y Sheng, W Shou, Y Wang, Y Liu, J Wan[§], L Yang[§] (2020) Genome-wide studies reveal the essential and opposite roles of ARID1A in controlling human cardiogenesis and neurogenesis from pluripotent stem cells. ***Genome Biology*** 21(1):169. (PMID: 32646524)

44. JL Owens, E Beketova, S Liu, C Li, J Wan[§], CD Hu[§] (2020) PRMT5 cooperates with pICln to function as a master epigenetic activator of DNA double-strand break repair genes. ***iScience*** 23(1):100750. (PMID: 31884170)

45. N Marino, R German, X Rao, E Simpson, S Liu, J Wan, Y Liu, G Sandusky, M Jacobsen, M Stoval, S Cao, AMV Storniolo (2020) Upregulation of lipid metabolism genes in the breast prior to cancer diagnosis. ***NPJ Breast Cancer*** 6:50 (PMID: 33083529).

46. S Dey, S Liu, TD Factora, S Taleb, P Riverahernandez, L Udari, X Zhong, J Wan, J Kota (2020) Global targetome analysis reveals critical role of miR-29a in pancreatic stellate cell mediated regulation of PDAC tumor microenvironment. ***BMC Cancer*** 20(1):651. (PMID: 32660466)

47. B Khambu, H Hong, S Liu, G Liu, X Chen, Z Dong, J Wan, XM Yin (2020) The HMGB1-RAGE axis modulates the growth of autophagy-deficient hepatic tumors. ***Cell Death & Disease*** 11(5):333. (PMID: 32382012)

48. D Xu, D Zhou, K Bum-Erdene, BJ Bailey, K Sishtla, S Liu, J Wan, UK Aryal, JA Lee, CD Wells, ML Fishel, TW Corson, KE Pollok, SO Meroueh (2020) Phenotypic Screening of

Chemical Libraries Enriched by Molecular Docking to Multiple Targets Selected from Glioblastoma Genomic Data. ***ACS Chemical Biology*** 15(6):1424-1444. (PMID: 32243127)

49. J Wen, G Huang, S Liu, J Wan, X Wang, Y Zhu, W Kaliney, C Zhang, L Cheng, X Wen, X Lu (2020) Polymorphonuclear MDSCs are Enriched in the Stroma and Expanded in Metastases of Prostate Cancer. ***Journal of Pathology: Clinical Research*** 6(3):171-177. (PMID: 32149481)
50. S Dey, JJ Kwon, S Liu, GA Hodge, S Taleb, TA Zimmers, J Wan, J Kota (2020) miR-29a is repressed by MYC in pancreatic cancer and its restoration exhibits anti-tumorigenicity via downregulation of LOXL2. ***Molecular Cancer Research*** 18(2):311-323. (PMID: 31662451)
51. MM Xie, S Fang, Q Chen, H Liu, J Wan§**,** AL Dent§ (2019) Follicular Regulatory T Cells Inhibit the Development of Granzyme B-Expressing Follicular Helper T Cells. ***JCI Insight*** 4(16):e128076. (PMID: 31434804)
52. J Xu, Y Liu, Y Li, H Wang, S Stewart, K Van der Jeught, P Agarwal, Y Zhang, S Liu, G Zhao, J Wan, Lu X§, He X§ (2019) Precise targeting of POLR2A as a therapeutic strategy for human triple negative breast cancer. ***Nature Nanotechnology*** 14(4):388-397. (PMID: 30804480)
53. AY Hsu, D Wang, S Liu, J Lu, R Syahirah, DA Bennin, A Huttenlocher, DM Umulis, J Wan, Q Deng (2019) Phenotypical microRNA screen reveals a noncanonical role of CDK2 in regulating neutrophil migration. ***Proceedings of the National Academy of Sciences*** 116(37):18561-18570. (PMID: 31451657)
54. Y Chen, C Yao, Y Teng, R Jiang, X Huang, S Liu, J Wan, H Broxmeyer§, and G Bin§ (2019) Phorbol ester induced ex vivo expansion of rigorously-defined phenotypic but not functional human cord blood hematopoietic stem cells: a cautionary tale demonstrating that phenotype does not always recapitulate stem cell function. ***Leukemia*** 33(12):2962-2966. (PMID: 31350528)
55. HG Kim, M Huang, Y Xin, Y Zhang, X Zhang, G Wang, S Liu, J Wan, AR Ahmadi, Z Sun, S Liangpunsakul, X Xiong, XC Dong (2019) The epigenetic regulator SIRT6 protects the liver from alcohol-induced tissue injury by reducing oxidative stress in mice. ***Journal of Hepatology*** 71(5):960-969. (PMID: 31295533)
56. C Zibetti, S Liu, J Wan, J Qian, S Blackshaw (2019) Epigenomic profiling of retinal progenitors reveals LHX2 is required for developmental regulation of open chromatin. ***Communications Biology*** 2(1):142.
57. AY Hsu, S Liu, R Syahirah, KA Brasseale, J Wan, Q Deng (2019) Inducible overexpression of zebrafish microRNA-722 suppresses chemotaxis of human neutrophil like cells. ***Molecular immunology*** 112:206-214. (PMID: 31176200)
58. A Shinde, SD Hardy, D Kim, SS Akhand, MK Jolly, WH Wang, JC Anderson, RB Khodadadi, WS Brown, JT George, S Liu, J Wan, H Levine, CD Willey, CJ Krusemark, RL Geahlen, MK Wendt (2019) Spleen tyrosine kinase-mediated autophagy is required for epithelial-mesenchymal plasticity and metastasis in breast cancer. ***Cancer Research*** 79(8):1831-1843. (PMID: 30733195)
59. Y Jia, D Gu, J Wan, B Yu, X Zhang, E Chiorean, Y Wang, J Xie (2019) The Role of GLI-Sox2 signaling axis for gemcitabine resistance in pancreatic cancer. ***Oncogene*** 38(10):1764-1777. (PMID: 30382189)

60. A Cerra-Franco, S Liu, M Azar, K Shiue, S Freijie, J Hinton, CR Deig, D Edwards, NCEstabrookIII, SG Ellsworth, K Huang, K Diab, MP Langer, R Zellars, F Kong, J Wan, T Lautenschlaeger (2019) Predictors of Nodal and Metastatic Failure in Early Stage Non–small-cell Lung Cancer After Stereotactic Body Radiation Therapy. ***Clinical Lung Cancer*** 20(3):186-193. (PMID: 30711394)

61. O Oyinlade, S Wei, K Kammers, S Liu, S Wang, D Ma, Z Huang, J Qian, H Zhu, J Wan[§], S Xia[§] (2018) Analysis of KLF4 regulated genes in cancer cells reveals a role of DNA methylation in promoter-enhancer interactions. ***Epigenetics*** 13(7):751-768. (PMID: 30058478)

62. Y Liu, J Xu, H Choi, C Han, Y Fang, Y Li, K Jeught, H Xu, L Zhang, M Frieden, L Wang, H Eyvani, Y Sun, G Zhao, Y Zhang, S Liu, J Wan, C Huang, G Ji, X Lu, X He, X Zhang (2018) Targeting 17q23 amplicon to overcome the resistance to anti-HER2 therapy in HER2+ breast cancer. ***Nature Communications*** 9(1):4718. (PMID: 30413718)

63. X Huang, B Guo, S Liu, J Wan, H Broxmeyer (2018) Neutralizing negative epigenetic regulation by HDAC5 enhances human haematopoietic stem cell homing and engraftment. ***Nature Communications*** 9(1):2741. (PMID: 30013077)

64. A Sehdev, O Gbolahan, B Hancock, M Stanley, S Shahda**,** J Wan, H Wu, M Radovich, B O'Neill (2018) Germline and Somatic DNA Damage Repair Gene Mutations and Overall Survival in Metastatic Pancreatic Adenocarcinoma Patients Treated with FOLFIRINOX. ***Clinical Cancer Research*** 24(24):6204-6211. (PMID: 30131383)

65. Y Liu, H Xu, KV Jeught, Y Li, S Liu, L Zhang, Y Fang, X Zhang, M Radovich, BP Schneider, X He, C Huang, C Zhang, J Wan, G Ji[§], X Lu[§] (2018) Somatic mutation of the cohesin complex subunit confers therapeutic vulnerabilities in cancer. ***Journal of Clinical Investigation*** 128(7):2951-2965. (PMID: 29649003)

66. EA Newman, DW Kim, J Wan, J Wang, J Qian, S Blackshaw (2018) Foxd1 is required for terminal differentiation of anterior hypothalamic neuronal subtypes. ***Developmental Biology*** 439(2):102-111. (PMID: 29679559)

67. JW Foster, V Shinde, US Soiberman, G Sathe, S Liu, J Wan, J Qian, Y Dauoud, A Pandey, AS Jun, S Chakravarti (2018) Integrated Stress Response and Decreased ECM in Cultured Stromal Cells From Keratoconus Corneas. ***Investigative Ophthalmology & Visual Science*** 59(7):2977-2986. (PMID: 30029277)

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98. YR Ren, R Chaerkady, S Hu, J Wan, J Qian, H Zhu, A Pandey, S Kern (2012) Unbiased discovery of interactions at a control locus driving expression of the cancer-specific therapeutic and diagnostic target, mesothelin. ***Journal of Proteome Research*** 11(11):5301-5310.

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103. J Hu, J Wan, L Hackler, D Zack, J Qian (2010) Computational analysis of tissue specific gene networks: application to murine retinal functional studies. ***Bioinformatics*** 26(18):2289-2297.

104. J Wan, J Lin, D Zack, J Qian (2009) Relating periodicity of nucleosome organization and gene regulation. ***Bioinformatics*** 25(14):1782-1788.

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107. R Iyer, S Aitchison, J Wan, MM Dignam, CM de Sterke (2007) Exact Dynamic Localization in Curved AlGaAs Optical Waveguide Arrays. ***Optics Express*** 15, 3212-3233.

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113. RQ Zhang, SF Lo, J Wan, DK Yu, ST Lee (2002) Characteristics of Boron and Nitrogen species on Aluminum surface. ***Computational Materials Science*** 23, 38.

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Current Grants

06/2022-05/2025 PRMT5/MEP50 as a critical epigenetic regulator and therapeutic target for therapy-induced neuroendocrine
DoD W81XWH2210332 ($1,081246)
PI: Hu CD/Wan J (IU Site PI, 5%)

04/2020-03/2025 Converting Cold to Hot Tumor Microenvironment in Prostate Cancer by Targeting Chromatin Effector
NIH/NCI R01 CA248033 ($1,832,205)
PI: Lu X/Wan J (IU Site PI, 10%)

04/2020-03/2025 Nucleolin recognition of MYC promoter G-quadruplex and its role in MYC regulation by MycG4-ligands
NIH/NCI U01 CA240346 ($1,808,305)
PI: Yang DZ/Wan J (IU Site PI, 5%)

09/2019-08/2024 Indiana University Melvin and Bren Simon Cancer Center Support Grant
NIH/NCI P30 CA082709-20 ($13,746,24)
PI: Lee K/Wan J (Module PI, 10%)

09/2020-09/2023 Targeting Basal-Like Prostate Cancer with Cadherin 3 Antibody-Drug Conjugate as single agent and in combination with immunotherapy
DOD W81XWH2010312/203994IUSM ($1,150,994)
PI: Lu X/Wan J (IU Site PI, 8.33%)

09/2020-09/2023 Decoding and Disrupting the Coupled Cellular Plasticity and Myeloid Cell Instigation in Metastatic Prostate Cancer
DOD W81XWH2010332/203995IUSM ($582,561)
PI: Lu X/Wan J (IU Site, 4.17%)

05/2021-06/2023 Mechanisms and targeting of treatment-induced neuroendocrine differentiation in prostate cancer
IUSCCC Near Miss Initiative ($50,000)
PI: Wan J (no salary)/Hu CD

12/2021-11/2026 Role of disrupted polyamine synthesis during CKD-MBD related bone loss

NIH R01DK130866 ($2,010,595)
PI: Clinkenbeard E Role: co-I (4%)

09/2021-07/2026 The role of Wnt signaling in treating glucocorticoid-induced glaucoma
NIH R01EY031700 ($2,877,337)
PI: Mao W Role: co-I (5%)

07/2021-06/2026 Novel DNA damage response therapeutics targeting replication protein A
NIH/NCI R01CA257430 ($3,185,878)
PI: Turchi J Role: co-I (5%)

05/2021-04/2026 Transcriptional and metabolic regulation of Treg cell specification for the control of allergic airway disease
NIH R01AI153255 ($2,511,660)
PI: Yang K Role: co-I (5%)

06/2021-05/2025 Targeting EZH2-HOTAIR to Block Platinum-Induced Ovarian Cancer Stem Cell Enrichment and Reduce Recurrence
DOD W81XWH2110284 ($950,999)
PI: Nephew K/O'Hagan H Role: co-I (5% for year 3-4)

09/2019-08/2024 IUSM Alzheimer's Disease Drug Discovery Center
NIH U54 AG065181 ($28,074,203)
PI: Palkowitz A Role: co-I (5%)

09/2019-08/2024 Big Data Training for Cancer Research
NIH/NCI R25 CA233429 ($1,193,545)
PI: Zhang M Role: co-I (2.5%)

07/2020-06/2024 Epigenetic regulation in liver fibrosis
NIH R01DK121925-01A1 ($1,828,228)
PI: Dong C Role: co-I (4.17%)

04/2021-04/2024 Blood-Based DNA Methylation Biomarkers of Acquired Platinum Resistance in Women with Ovarian Cancer
DOD W81XWH-21-1-0281 ($591,772)
PI: Nephew K Role: co-I (2% for year 3)

12/2018-11/2023 Metabolic Regulation of PD-L1 in CD11c+ Cells
NIH R01 CA225108 ($2,672,290)
PI: Yan C/Du H Role: co-I (4%)

09/2018-08/2023 (PQ12) Enhancement of DNA repair in neurons via a targeted APE1 small molecule modifier to decrease and reverse chemotherapy-induced peripheral neuropathy (CIPN)
NIH/NCI R01CA231267-03 ($2,304,070)
PI: Fehrenbacher J/Kelley M Role: co-I (3.5%)

07/2019-06/2023 Transcriptional Factor SOX2, LncRNA HBL1, MicroRNA1 and PRC2 Epigenetic Complex Compose A Network to Orchestrate Cardiac Differentiation from Human Pluripotent Stem Cells
NIH R01 HL147871 ($1,967,679)
PI: Yang L Role: co-I (10%)

Previous Grants

09/2020-08/2022 Analysis of the MR1/MAIT cell axis in a murine model of Alzheimer's

disease
NIH R21AG071269 ($435,875)
PI: Brutkiewicz R Role: co-I (5%)

07/2019-06/2022 Dissecting essential roles of ARID1A in controlling cardiac and neural differentiation from human pluripotent stem cells
AHA Transformational Project Award ($300,000)
PI: Yang L Role: co-I (5%)

07/2018-06/2022 Role of microRNA-29 in pancreatic cancer tumor-stromal biology
American Cancer Society ($792,000)
PI: Kota J Role: co-I (2%)

12/2020-11/2021 Determining the molecular mechanisms of SARS-CoV-2 caused heart dysfunctions
IUSM CCBB pilot grant ($10,000)
PI: Yang L/Wan J (MPI)

04/2020-12/2020 Inter-Personnel Agreement
VA IPA (Richard L. Roudebush, VAMC) ($7,936)
PI: Wan J (no salary)

09/2018-08/2020 Open scalable software infrastructure for metabolomics data integration
NIH SBIR ($286,868)
PI: Kitware, Inc. Role: co-I (15%)

07/2017-06/2020 Collaborative Core for Cancer Bioinformatics and Bioinformatics Training
Walther Cancer Foundation ($1,000,000)
PI: Ratliff T Role: IU Site co-PI (10%)

07/2015-06/2020 Bioinformatics-Molecular Genomics/Genetics Joint IU-Purdue Initiative
Walther Cancer Foundation Loehrer ($1,000,000)
PI: Loehrer P Role: Director of C^3B core (50%)

Awards & Honors

2004-2005 Ontario Graduate Scholarship, ON Canada

2003-2005 Carl Reinhardt Fellowship, Queen's University, Kingston, ON Canada

2002-2003 Queen Elizabeth II Graduate Scholarship in Science and Technology, ON Canada

2001-2002 Carl Reinhardt Fellowship, Queen's University, Kingston, ON Canada

Invited Talks

2022 Invited speaker, Genomics Seminar Series, University of Wisconsin at Madison, WI USA

2021 Invited speaker, Precision Medicine, University of Texas School of Biomedical Informatics, Houston, TX USA

2021 Invited speaker, Center for Biomedical Informatics at Loyola University Chicago, Chicago, IL USA

2021 Invited speaker, "Philips Institute Seminar Series" at Virginia Commonwealth University (VCU), Richmond, VA USA

2021 Invited speaker, Genomics Seminar Series, University of South Florida, Tampa, FL USA

2020 Keynote speaker, BIOKDD 2020, 19th International Workshop on Data Mining in Bioinformatics

2021 Invited speaker, Dental School, Indiana University School of Medicine, Indianapolis, IN USA

2019 Invited speaker, Purdue University, West Lafayette, IN USA

2019 Invited speaker, The Biomarkers and Computational Biology Meeting at IUSM, Indianapolis, IN USA

2018 Invited speaker, Regenstrief Institute, Indianapolis, IN USA

2018 Invited speaker, Walther Cancer Foundation Annual Symposium, South bend, IN USA

2018 Invited speaker, Hematopoiesis & Hematologic Malignancies Research Program, Indiana University Simon Cancer Center, Indianapolis, IN USA

2018 Invited speaker, Tumor Microenvironment & Metastasis Research Program, Indiana University Simon Cancer Center, Indianapolis, IN USA

2017 Invited speaker, Purdue University Institute for Drug Discovery, West Lafayette, IN USA

2017 Invited speaker, Harper Cancer Center, University of Notre Dame, South bend, IN USA

2017 Invited speaker, Annual Retreat of Cancer Research Program of Experimental & Developmental Therapeutics, Indiana University Simon Cancer Center, Indianapolis, IN USA

2017 Invited speaker, BioHealth Informatics Colloquia Series, Indiana University School of Informatics and Computing, Indianapolis, IN USA

2016 Invited speaker, Walther Cancer Foundation Annual Symposium, West Lafayette, IN USA

EDUCATIONAL ACTIVITIES

Teaching

2017-present Co-instructor of “Introduction to Next Generation Sequencing” (IUSM G788), Indiana University – Purdue University at Indianapolis (IUPUI), IN USA

2018-2022 Lecturer of “Bioinformatics, Genomics, Proteomics, and Systems Biology” (IUSM G848), Indiana University School of Medicine, Indianapolis, IN USA

2018-2022 Lecturer of “Molecular and Biochemical Genetics Lab” (IUSM Q613), Indiana University School of Medicine, Indianapolis, IN USA

2020 Co-instructor of 10-week short course “Bioinformatics for Biologist (B4B)”, Indiana University School of Medicine, Indianapolis, IN USA

2020 Lecturer of “Big Data Training for Cancer Research”, Purdue University, West Lafayette, IN USA

2019 Lecturer of summer workshop “Molecular Biology”, Indiana University School of Public Health, Indianapolis, IN USA

2019 Lecturer of “overview of Precision Health”, Indiana University School of Public Health, Indianapolis, IN USA

Mentoring

2021-present Jamie L. Felton, M.D. (Assistant Professor, junior faculty), Department of Pediatrics, IUSM, Indianapolis, IN USA

2017-present Sheng Liu, Ph.D. (Assistant Scientist, junior faculty), Department of Medical and Molecular Genetics, Indiana University School of Medicine, Indianapolis, IN USA

2022-present Sulaiman Xierzhatijiang, Ph.D. (Postdoctoral fellow), Department of Medical and Molecular Genetics, IUSM, Indianapolis, IN USA

2022-present Sandali Dewni Lokuge, Ph.D. student, Department of BioHealth Informatics, School of Informatics and Computing, IUPUI, Indianapolis, IN USA

2022-present Xiashiyao Zhang, Ph.D. student, Department of BioHealth Informatics, School of Informatics and Computing, IUPUI, Indianapolis, IN USA

2017-2022 Shuyi Fang, Ph.D., Department of BioHealth Informatics, School of Informatics and Computing, IUPUI, Indianapolis, IN USA

2019-present Kailing Li, Ph.D. student, Department of BioHealth Informatics, School of Informatics and Computing, IUPUI, Indianapolis, IN USA

2020 Audrey Wang, summer student, Park Tudor School, Indianapolis, IN USA (now undergraduate student at Cornell University)

2019 Alex Lu, summer student, Park Tudor School, Indianapolis, IN USA

2019 Michael Wang, summer student, Carmel High School, Carmel, IN USA

2017 Arun Kumar Boddapati, summer student, Department of BioHealth Informatics, School of Informatics and Computing, IUPUI, Indianapolis, IN USA

2017 Yi Li, summer student, Department of Chemistry, Indiana University, Bloomington, IN USA

Research/Thesis Committee

2018-present Fahim Syed, Ph.D. student, Department of Microbiology, IUSM, Indianapolis, IN USA

2020-present Paige Dausinas, Ph.D. student, Department of Cellular and Integrative Physiology, Indiana University School of Medicine (now scientist at Eli Lilly)

2019-2022 Chuanpeng Dong, Ph.D., Department of BioHealth Informatics, School of Informatics and Computing, IUPUI, Indianapolis, IN USA (now postdoctoral fellow at Yale University)

2018-2022 Duojiao Chen, Ph.D., Department of BioHealth Informatics, School of Informatics and Computing, IUPUI, Indianapolis, IN USA (now postdoctoral fellow at Zhejiang University)

2018-2021 Ed Ronald Simpson, Ph.D., Department of BioHealth Informatics, School of

Informatics and Computing, IUPUI, Indianapolis, IN USA (now scientist at Eli Lilly)

2018-2020 Alan Hsu, Ph.D., Department of Biological Sciences, Purdue University, West Layfette, IN USA (now postdoctoral fellow at Harvard University)

2019-2021 Enze Liu, Ph.D., Department of BioHealth Informatics, School of Informatics and Computing, IUPUI, Indianapolis, IN USA (now assistant research professor at IUSM)

2019-2019 Deepak Kumar Lakshmipathi, M.S., Department of BioHealth Informatics, School of Informatics and Computing, IUPUI, Indianapolis, IN USA

2019-2020 Sunneta Modekurty, M.S., Department of BioHealth Informatics, School of Informatics and Computing, IUPUI, Indianapolis, IN USA (now scientist at IUSM)

Supervising as the director of C^{3}B shared by IUSCCC and PUCCR

2021-present Asha Jacob Jannu, M.S. (Research Associate, part-time), Department of Biostatistics & Health Data Science, Indiana University School of Medicine, Indianapolis, IN USA

2020-2021 Yucheng Zhang, Ph.D. (bioinformatician I), Department of Medical and Molecular Genetics, Indiana University School of Medicine, Indianapolis, IN USA (now Senior Life Science Scientist at Purdue University)

2016-2019 Guanglong Jiang, M.S. (Bioinformatician), Department of Medical and Molecular Genetics, Indiana University School of Medicine, Indianapolis, IN USA

2017-2017 Xi Rao, Ph.D. (Research Associate), Department of Medical and Molecular Genetics, Indiana University School of Medicine, Indianapolis, IN USA

2016-2017 Yan Dong, Ph.D. (Research Associate), Department of Biostatistics & Health Data Science, Indiana University School of Medicine, Indianapolis, IN USA

2016-present Nadia Atallah Lanman, Ph.D. (Research Assistant Professor), Department of Comparative Pathobiology, Purdue University, West Layfette, IN USA

2016-present Sagar Utturkar, Ph.D. (Bioinformatician), Purdue University, West Layfette, IN USA