

Yanxiao Zhang

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Employment

Aug 2016 – Now **Postdoctoral Fellow**, Dr. Bing Ren's laboratory
Ludwig Institute for Cancer Research, San Diego, CA, USA

Education

2016 **University of Michigan**, Ann Arbor, Michigan, USA
Ph.D in Bioinformatics
2016 M.A. in Statistics
Peking University, Beijing, China
2010 B.S. in Biotechnology

Publications

Journal articles (*equal contribution)

- 9) Qin T, Zhang Y, Zarins KR, Jones TR, Virani S, Peterson LA, McHugh JB, Chepeha D, Wolf GT, Rozek LS, Sartor MA. Expressed HNSCC variants by HPV-status in a well-characterized Michigan cohort. *Scientific Reports*. 2018
- 8) Preissl S, Fang R, Huang H, Zhao Y, Raviram R, Gorkin D, Zhang Y, Sos B, Afzal V, Dickel D, Kuan S, Visel A, Pennacchio L, Zhang K, Ren B. "Single nucleus analysis of accessible chromatin in developing mouse forebrain reveals cell type-specific transcriptional regulation" *Nature Neuroscience*, 2018
- 7) Koneva L, Zhang Y, Virani S, Hall P, McHugh J, Chepeha D, Wolf G, Carey T, Rozek L, Sartor M. "HPV integration in head and neck cancer correlates with survival and suggests candidate drivers.", *Molecular Cancer Research*, 2017
- 6) Xiong X, Zhang Y, Yan J, Jain S, Chee S, Ren B, Zhao H. "A Scalable Epitope Tagging Approach for High Throughput ChIP-Seq Analysis.", *ACS synthetic biology*, 2017
- 5) Zhang Y, Yu J, Grachtchouk V, Lumeng C, Sartor M, Koenig R. "Genomic binding of PAX8-PPARG fusion protein regulates cancer-related pathways and alters the immune landscape of thyroid cancer.", *Oncotarget*, 2016
- 4) Xu B, O'Donnell M, O'Donnell J, Yu J, Zhang Y, Sartor MA, Koenig RJ. "Adipogenic Differentiation of Thyroid Cancer Cells Through the Pax8-PPARG Fusion Protein Is Regulated by Thyroid Tran-

scription Factor 1 (TTF-1)", *Journal of Biological Chemistry*, 2016

- 3) Zhang Y, Koneva LA, Virani S, Arthur AE, Virani A, Hall PB, Warden CD, Carey TE, Chepeha DB, McHugh JB, Wolf GT, Rozek LS, Sartor MA. "Subtypes of HPV-positive head and neck cancers are associated with HPV characteristics, copy number alterations, PIK3CA mutation, and pathway signatures.", *Clinical Cancer Research*, 2016
- 2) Zhang Y*, Yu J*, Lee C*, Xu B, Sartor MA, Koenig RJ. "Genomic binding and regulation of gene expression by the thyroid carcinoma-associated PAX8-PPARG fusion protein." *Oncotarget*, 2015
- 1) Zhang Y*, Lin YH*, Johnson TD, Rozek LS, Sartor MA. "PePr: a peak-calling prioritization pipeline to identify consistent or differential peaks from replicated ChIP-Seq data." *Bioinformatics*, 2014

Preprints

Yanxiao Zhang*, Ting Li*, Sebastian Preissl*, Jonathan Grinstein, Elie Farah, Eugin Destici, Ah Young Lee, Sora Chee, Yunjiang Qiu, Kaiyue Ma, Zhen Ye, Quan Zhu, Hui Huang, Rong Hu, Rongxin Fang, Sylvia Evans, Neil Chi, Bing Ren "3D Chromatin Architecture Remodeling during Human Cardiomyocyte Differentiation Reveals A Novel Role of HERV-H In Demarcating Chromatin Domains" [bioRxiv](#)

Guoqiang Li*, Yaping Liu*, Yanxiao Zhang, Rongxin Fang, Manolis Kellis, Bing Ren "Simultaneous profiling of DNA methylation and chromatin architecture in mixed populations and in single cells" [bioRxiv](#)

Ivan Juric, Miao Yu, Armen Abnousi, Ramya Raviram, Rongxin Fang, Yuan Zhao, Yanxiao Zhang, Yuchen Yang, Yun Li, Bing Ren, Ming Hu "MAPS: model-based analysis of long-range chromatin interactions from PLAC-seq and HiChIP experiments" [bioRxiv](#)

David U. Gorkin*, Iros Barozzi*, Yanxiao Zhang*, Ah Young Lee, Bin Li, Yuan Zhao, Andre Wildberg, Bo Ding, Bo Zhang, Mengchi Wang, J. Seth Strattan1, Jean M. Davidson1, Yunjiang Qiu, Veena Afzal, Jennifer A. Akiyama, Ingrid Plajzer-Frick, Catherine S. Pickle, Momoe Kato, Tyler H. Garvin, Quan T. Pham, Anne N. Harrington, Brandon J. Mannion, Elizabeth A. Lee, Yoko Fukuda-Yuzawa, Yupeng He, Sebastian Preissl, Sora Chee, Brian A. Williams, Diane Trout, Henry Amrhein, Hongbo Yang, J. Michael Cherry, Yin Shen, Joseph R. Ecker, Wei Wang, Diane E. Dickel, Axel Visel, Len A. Pennacchio, Bing Ren "Systematic mapping of chromatin state landscapes during mouse development" [bioRxiv](#)

Software & Web application

Peak-calling Prioritization pipeline for ChIP-seq data ([PePr](#))

[OmicsPedia](#) website: online bioinformatics community

Academic Community Involvement

Reviewers for: *Genome Biology*, *Nucleic Acids Research*, *Scientific Reports*, *BMC Bioinformatics*, *PLOSone*

Memberships in Professional Societies

- 2018 American Society of Human Genetics (ASHG), member
2015 American Association for Cancer Research (AACR), associate member

Honors & Awards

- 2015 Endowment for the Basic Sciences Award
2012, 2015 Rackham Conference Travel Award, University of Michigan
2012 New Investigator Award, 1st head and neck cancer stem cell symposium
2011 Rackham International Student Fellowship, University of Michigan
2010 MAAS/Dean's fellowship, University of Michigan
2009 Suzhou Industrial Park Scholarship, Peking University
2008 Yang Fuqing & Wang Yangyuan Academician Scholarship, Peking University

Presentations

Oral presentations

- 2018 Cold Spring Harbor Asia meeting for Systems Biology and Gene Regulation , “Endogenous Retrovirus HERV-H Delineates Chromatin Domains in Human Pluripotent Stem Cells”
2017 Bench to Bassinet Face-to-face meeting, “Chromatin organization dynamics in human cardiomyocyte differentiation”
2015 UM Head and Neck Cancer S.P.O.R.E. Meeting, “Subtypes of HPV-positive head and neck cancers are associated with HPV characteristics, copy number variations, PIK3CA mutation, and pathway signatures”
2013 NCIBI Tools and Technology Seminar Series, “PePr: a Peak-calling and Prioritization pipeline to test group differences in ChIP-Seq data”
2012 The 10th Annual Rocky Mountain Bioinformatics Conference, “PePr: a peak-calling and prioritization pipeline to test group differences in ChIP-seq data”

Poster presentations

- 2015 American Association for Cancer Research (AACR) Annual Meeting, “Gene expression analysis of human papillomavirus positive head and neck cancer primary tumor samples reveal two distinct subgroups”
2012 The 1st Head and Neck Cancer Stem Cell Symposium, “Characterization of H3K27 trimethylation in two HPV-positive and two HPV-negative squamous cell carcinomas”

Research experience

University of Michigan, Ann Arbor, Michigan, USA

- Jan 2011 Ph.D candidate (Thesis advisor: Maureen Sartor)
– Jan 2016 • Project: Develop a peak-calling software program for replicated ChIP-seq data. High-throughput

data analysis on head and neck squamous cell carcinomas. Investigate the regulatory mechanisms of oncogenic fusion PAX8/PPAR γ protein in thyroid cancer.

Sep 2010 Rotation student (Supervisor: David Lubensky)

– Dec 2010 • Project: Model the cell compartment boundary in the wing of *D. melanogaster*.

Jun 2009 Undergraduate Researcher (Supervisor: Ari Gafni, Duncan Steel)

– Aug 2009 • Project: Investigate the toxicity of amylin towards pancreatic beta cells

Hong Kong University of Science and Technology, Hong Kong, China

Jan 2010 Visiting student researcher (Supervisor: Jun Xia)

– May 2010 • Project: Use Bimolecular Fluorescence Complementation (BiFC) to visualize the *in vivo* interaction of PICK1 and RIC-19 in *C.elegans*.

Peking University, Beijing, China

Nov 2007 Undergraduate researcher (Supervisor: Hongwei Guo)

– Jun 2009 • Project: Identification of mutated genes in T-DNA inserted *Arabidopsis thaliana* mutants that developed ethylene resistance. Discovered new phenotypes of a mutant: hypersensitivity to abscisic acid and delayed flowering time.

Teaching experience

Winter Graduate Student Teaching Assistant

2012 • BIOSTAT646/BIOINF545: “High-throughput Molecular Genomic and Epigenomic Data Analysis”

Technical Skills

Programming languages: Python, R, C/C++, \LaTeX

Molecular biology: Molecular cloning, PCR, cell culture

~~~ Last updated: January 3, 2019~~~