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

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

Publications

Journal articles (*equal contribution)

13) **Zhang Y***, Li T*, Preissl S*, Amaral ML, Grinstein, JD, Farah, EN, Destici E, Qiu Y, Hu R, Lee AY, Chee S, Ma K, Ye Z, Zhu Q, Huang H, Fang R, Yu L, Izpisua Belmonte JC, Evans SM, Chi NC, Ren B. "Transcriptionally active HERV-H retrotransposons demarcate topologically associating domains in human pluripotent stem cells" *Nature Genetics (in press)*, 2019

12) Gorkin D*, Barozzi I*, Zhao Y*, **Zhang Y***, Huang H*,Lee AY, ...,Visel A, Pennacchio LA, Ren B."An atlas of dynamic chromatin landscapes in the developing mouse fetus", *Nature (in press)*, 2019

11) Li G*, Liu Y*, **Zhang Y**, Kubo N, Yu M, Fang R, Kellis M, Ren B. "Joint profiling of DNA methylation and chromatin architecture in single cells", *Nature Methods*, 2019

10) Juric I*, Yu M*, Abnousi A, Raviram R, Fang R, Zhao Y, **Zhang Y**, Qiu Y, Yang Y, Li Y, Ren B, Hu M. "MAPS: model-based analysis of long-range chromatin interactions from PLAC-seq and HiChIP experiments" *PLoS computational biology*, 2019

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 Transcription Factor 1 (TTF-1)", *Journal of Biologcal 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

2) Arvanitis M, **Zhang Y**, Wang W,Auton A, 23andMe Research Team, Keramati A, Chi N, Ren B, Post WS, Battle A. "Genome-wide association and multi-omic analyses reveal new mechanisms for Heart Failure" bioRxiv, 2019

1) Fang R, Preissl S, Hou X, Lucero J, Wang X, Motamedi A, Shiau AK, Mukamel EA, **Zhang Y**, Behrens MM, Ecker J, Ren B. "Fast and Accurate Clustering of Single Cell Epigenomes Reveals Cis-Regulatory Elements in Rare Cell Types" bioRxiv, 2019 April 22;

Software & Web application

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

Academic Community Involvement

Reviewers for: *Genome Biology, PLOS Computational 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

2019 Keystone symposium 3D Genome: Gene Regulation and Disease."Primate-Specific Retrotransposon HERV-H Demarcates Chromatin Domains in Lineage Specification and Evolution "

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"

Past Research experience

University of Michigan, Ann Arbor, Michigan, USA

Jan 2011 – Jan 2016 Ph.D candidate (Thesis advisor: Maureen Sartor)
- 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/PPARγ protein in thyroid cancer.

Sep 2010 – Dec 2010 Rotation student (Supervisor: David Lubensky)
- Project: Model the cell compartment boundary in the wing of *D. melanogaster*.

Jun 2009 – Aug 2009

Undergraduate Researcher (Supervisor: Ari Gafni, Duncan Steel)
• Project: Investigate the toxicity of amylin towards pancreatic beta cells

Hong Kong University of Science and Technology, Hong Kong, China
Jan 2010 – May 2010 Visiting student researcher (Supervisor: Jun Xia)
• 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 – Jun 2009 Undergraduate researcher (Supervisor: Hongwei Guo)
• Project: Identification of mutated genes in T-DNA inserted *Arabidopsis thaliana* mutants that developed ethylene resistance. Discovered new phenotypes of a mutant: hypersensibility to abscisic acid and delayed flowering time.

Teaching experience

Winter 2012 Graduate Student Teaching Assistant
• BIOSTAT646/BIOINF545: "High-throughput Molecular Genomic and Epigenomic Data Analysis"

∼∼∼ Last updated: August 12, 2019∼∼∼