

## EDUCATION

**Cincinnati Children's Hospital Medical Center**, Cincinnati, United States

Ph.D, **Biomedical Informatics** Aug 2018 to May 2023 (*expected*)

- Advisor: Dr. Bruce Aronow

**Zhejiang University**, Hangzhou, China

B.S., **Biological Science** Aug 2014 to Jun 2018

- Advisor: Dr. Chen Xin
- GPA: 87.3/100 (3.88/4.0), **Rank: 2/25 (total); 1/25(3<sup>rd</sup> year)**



## RESEARCH INTEREST

Single Cell Analysis, System Biology, Biomedical Informatics, Computational Immunology, Developmental Biology, Precision Medicine

## PUBLICATION

(sort by time)

- [1] Yao H, Wang X, Chen P, Hai L, **Jin K**, Yao L, Mao C, Chen X. Predicted Arabidopsis Interactome Resource and Gene Set Linkage Analysis: A Transcriptomic Analysis Resource. *Plant Physiol.* 2018 May;177(1):422-433. doi: 10.1104/pp.18.00144. Epub 2018 Mar 12. PMID: 29530937; PMCID: PMC5933134.
- [2] Prates, Erica T., et al. "Functional Immune Deficiency Syndrome via Intestinal Infection in COVID-19." *bioRxiv* (2020).
- [3] Pak C, Danko T, Mirabella VR, Wang J, Liu Y, Vangipuram M, Grieder S, Zhang X, Ward T, Huang YA, **Jin K**, Dexheimer P, Bardes E, Mitelpunkt A, Ma J, McLachlan M, Moore JC, Qu P, Purmann C, Dage JL, Swanson BJ, Urban AE, Aronow BJ, Pang ZP, Levinson DF, Wernig M, Südhof TC. Cross-platform validation of neurotransmitter release impairments in schizophrenia patient-derived NRXN1-mutant neurons. *Proc Natl Acad Sci U S A.* 2021 Jun 1;118(22):e2025598118. doi: 10.1073/pnas.2025598118. PMID: 34035170.
- [4] **Jin, K.**, Bardes, E. E., Mitelpunkt, A., Wang, Y. J., Bhatnagar, S., Sengupta, S., ... & Aronow, B. J. (2021). A Web Portal and Workbench for Biological Dissection of Single Cell COVID-19 Host Responses. *bioRxiv*.
- [5] Xu, X., **Jin, K.**, Bais, A. S., Zhu, W., Yagi, H., Feinstein, T. N., ... & Lo, C. W. (2021). iPSC modeling shows uncompensated mitochondrial mediated oxidative stress underlies early heart failure in hypoplastic left heart syndrome. *bioRxiv*.

## RESEARCH EXPERIENCE

### Research Assistant

*Aug 2018 to present*

Aronow Research Lab    Mentor: Dr. Bruce Aronow

- Applied unsupervised clustering in human cell atlas and found subclasses in [bone marrow](#), [lung](#), [brain](#), [GI](#) and other tissues for downstream analysis.
- Participated in the development of [ToppCell project](#): a hierarchical modular differential analysis system for single cell datasets.
- Analyzed transcriptomic variance between human hepatoblastoma and xenograft counterpart in mice and found upregulated pathways for xenograft tumors.

### Research Internship

*Nov 2016 to July 2018*

[Synergy Laboratory for Biomedicine](#)    Mentor: Dr. Chen Xin

- Measured a gene set annotation tool in Arabidopsis: Gene Set Linkage Analysis (GSLA); Checked GSLA with a great deal of known functional associations and newest research papers. Compared GSLA with other predicting tools in Arabidopsis, such as MapMan and DAVID to test its performance.
- Participated in a precision medicine project. Designed a part of decision support system for cancer patients, based on gene mutations and expression level. Constructed the database PMKB as the knowledge base of this system.
- Found underlying genes behind response towards SOX-chemotherapy of 18 gastric carcinoma patients with LOBICO model. Improved the LOBICO Model with MATLAB. Dug into the connections of these genes.

### Research Internship

*Jul 2015 to Oct 2016*

Developmental Biology Key Laboratory, Zhejiang University    Mentor: Dr. Chen Jun

- Selected scoliosis zebrafishes which express mutational genes with molecular biology methods, like PCR and gel electrophoresis.
- Used CRISPR technology in zebrafishes with double gRNAs to knock in long DNA fragments with higher precision and specificity.

## HONORS & AWARDS

- Second Place in Graduate Student Research Forum (GSRF) in University of Cincinnati, 2020
  - Best Application Award of Zhejiang Bioinformatics Competition, 2017
  - China National Award (1.8%), 2017
  - First Scholarship for Excellent Students, 2017
  - Tang Lixin Scholarship for Excellent Model Student, 2017
  - Zhejiang Provincial Government Scholarship, 2016
- Only one student awarded among around 80 students in Biology Department*
- Second Prize, Physics Innovation Competition in Zhejiang Province, 2015

## SKILLS

**Programming:** Python, R, C++

**Tools:** CellRanger, Kallisto, DESeq2, MATLAB, Linux Shell