Xiaojie Qiu, PhD Candidate

CONTACT INFORMATION

Department of Genome Sciences
MCB program
University of Washington
Seattle WA 98195

+1-(206) 669-8470
xqiu@uw.edu
www.devo-evo.com

OBJECTIVE

To obtain a postdoctoral position at the interface of computational biology and single-cell genomics.

PHD

University of Washington **Aug 2013 – Jun 2018 (Expected)**
MOLECULAR AND CELLULAR BIOLOGY (MCB) PROGRAM

- Reconstructing developmental trajectories with single-cell RNA-seq
- Inferring causal regulatory networks underlying cellular fate transitions

MASTERS

East China Normal University, BIOINFORMATICS **Aug 2009 – Jun 2012**

- Mathematical modeling of cell differentiation, transdifferentiation and reprogramming

BA

Changchun University of Technology, BIOENGINEERING **Aug 2004 – Jun 2008**

RESEARCH EXPERIENCE

University of Washington, Seattle, WA **Aug 2013 – Present**
Graduate Research Assistant (Advisors: Dr. Cole Trapnell)

Institute for Systems Biology, Seattle, WA **Jan. 2012 – Sep. 2013**
Research Staff (Advisors: Dr. Sui Huang)

Shanghai Jiaotong University, Shanghai, China **Sep. 2011 – Jun. 2012**
Research Assistant (Advisors: Dr. Ping Ao)

East China Normal University, Shanghai, China **Sep. 2009 – Jun. 2012**
Master Candidate Research Assistant (Advisors: Dr. Tieliu Shi)

HONORS AND AWARDS

China Scholarship Council Award (Finalist) **2017**
This award honors overseas Chinese students with outstanding academic accomplishments from different disciplines.

JOURNAL PUBLICATIONS

[1] **X Qiu**, Q Mao, Y Tang, L Wang, R Chawla, H Pliner, C Trapnell. "Reversed graph embedding resolves complex single-cell trajectories." **Nature methods**, ADVANCE ONLINE PUBLICATION, **2017**. doi:10.1038/nmeth.4402

[2] **X Qiu**, A Hill, J Packer, D Lin, YA Ma, C Trapnell "Single-cell mRNA quantification and differential analysis with Census. ", **Nature methods** 14 (3), 309-315, **2017**. doi:10.1038/nmeth.4150

[3] J Cao, J S. Packer, V Ramani, D A. Cusanovich, C Huynh, R Daza, **X Qiu**, C Lee1, S N. Furlan, F J. Steemers, A Adey, R H. Waterston, C Trapnell, J Shendure. "Comprehensive single-cell transcriptional profiling of a multicellular organism. " **Science** 357.6352: 661-667, **2017**. DOI: 10.1126/science.aam8940.

[4] NK Hanchate, K Kondoh, Z Lu, D Kuang, X Ye, **X Qiu**, L Pachter, C Trapnell, L B Buck. "Single-cell transcriptomics reveals receptor transformations during olfactory neurogenesis." **Science** 350 (6265), 1251-1255, **2015**. DOI:10.1126/science.aad2456

[5] **X Qiu**, S Ding, T Shi. "From understanding the development landscape of the canonical fate-switch pair to constructing a dynamic landscape for two-step neural differentiation." **PloS one** 7 (12), e49271, **2012**. doi:10.1371/pone.0049271

[6] J Wang, **X Qiu**, Y Li, Y Deng, T Shi. "A transcriptional dynamic network during Arabidopsis thaliana pollen development". **BMC systems biology** 5 (3), S8, **2011**. doi.org/10.1186/1752-0509-5-S3-S8

[7] B He, **X Qiu**, P Li, L Wang, Q Lv, T Shi. HCCNet: an integrated network database of hepatocellular carcinoma. **Cell research** 20 (6), 732, **2010**. DOI:10.1038/cr.2010.67

Submitted

[8] D Cacchiarelli, **X Qiu**, S Srivatsan, M Ziller, E Overbey, J Grimsby, P Pokharel, K Livak, S Li, A Meissner, T Mikkelsen, J Rinn, C Trapnell "'Aligning single-cell developmental and reprogramming trajectories identifies molecular determinants of reprogramming outcome"', **2017** *(submitted).* `https://www.biorxiv.org/content/early/2017/03/30/122531`

[9] D A Cusanovich, JP Reddington, DA Garfield, R Daza, R Marco-Ferreres, L Christiansen, **X Qiu**, F Steemers, C Trapnell, J Shendure, EEM Furlong. "The cis-regulatory dynamics of embryonic development at single cell resolution", **2017** *(Under review in **Nature**).* `https://www.biorxiv.org/content/early/2017/07/20/166066`

[10] H Pliner, J Packer, J McFaline-Figueroa, D Cusanovich, R Daza, S Srivatsan, **X Qiu**, D Jackson, A Minkina, A Adey, F Steemers, J Shendure, C Trapnell. "Chromatin accessibility dynamics of myogenesis at single cell resolution", **2017** *(Under review in **Cell**).* `https://www.biorxiv.org/content/early/2017/06/26/155473`

Book Chapters

[11] JX Zhou, **X Qiu**, AF d'Hroul, S Huang. "Discrete Gene Network Models for Understanding Multicellularity and Cell Reprogramming: From Network Structure to Attractor Landscape." in **Computational Systems Biology**, 2rd ed., Elsevier Inc. **2013**.

Software Products

[12] C Trapnell, D Cacchiarelli, **X Qiu**. "Monocle". `http://cole-trapnell-lab.github.io/monocle-release/`. **2017**.

[13] T Lin, S Hughes, **X Qiu**. "densityClust". `https://github.com/Xiaojieqiu/densityClust`. **2017**.

[14] **X Qiu**, C Trapnell, Q Mao, L Wang. "DDRTree". `https://cran.r-project.org/web/packages/DDRTree/index.html`. **2017**.

[15] **X Qiu**, C Trapnell, Q Mao, L Wang. "SimplePPT". `https://github.com/cole-trapnell-lab/monocle2-rge-paper/tree/master/Supplementary_scripts/Packages`. **2017**.

[16] **X Qiu**, C Trapnell, Q Mao, L Wang. "L1Graph". `https://github.com/cole-trapnell-lab/monocle2-rge-paper/tree/master/Supplementary_scripts/Packages`. **2017**.

Scientific Computing Skills

Languages Proficient in R, bash/csh, Python, Julia; Familiar with C++, PHP, HTML and others.
Other Tools Proficient in MatLab, Cytoscape, Illustrator, git; Familiar with LaTeXand others.

Experimental Skills

Tissue cell culture, RNA-seq library preparation, Flow cytometry, other basic molecular biology techniques

Outreach and Teaching

Science Education Partnership, Fred Hutchison Cancer Research Center **Fall 2016**
Tutor. Trained middle school teachers in molecular biology techniques and how to apply them in laboratory research.

STEMPREP Program, University of Washington **Summer 2017**
Tutor. The STEMP prep program aims to assist in producing the next generation of minority researchers in Science, Technology, Engineering, Math and Medicine (STEMM).

References

PhD Thesis Advisor: Cole Trapnell, PhD
Assistant Professor
Genome Sciences Department
http://cole-trapnell-lab.github.io/
coletrap@uw.edu

Jay Shendure, MD, PhD
Professor, HHMI investigator
Genome Sciences Department
http://krishna.gs.washington.edu/
shendure@uw.edu

Sreeram Kannan, PhD
Assistant Professor
Department of Electrical Engineering
http://infotheory.ee.washington.edu/
ksreeram@ee.washington.edu

Sui Huang, MD, PhD
Professor
Institute for Systems Biology
https://www.systemsbiology.org/people/labs/huang-lab/
shuang@systemsbiology.org