

# Shixiang Wang

## 王诗翔

wangsx1@sysucc.org.cn  
[github.com/ShixiangWang](https://github.com/ShixiangWang)  
[ORCID Scholar](#)

## Research summary

I am a computational biologist working on cancer genomics. I use bioinformatics skills to decode the unfound patterns in cancer, and explore biomarkers for explaining the cancer heterogeneity and predicting the efficacy of cancer treatments, mainly in immunotherapy.

**I am passionate about** open science and developing open-source analysis toolkits. Because of this, currently I am a community member of OpenbioX<sup>1</sup>, rOpenSci<sup>2</sup> and Bioconductor<sup>3</sup>. My long-term goal in academic field is being a master in a subfield of cancer bioinformatics and trying my best to continually boost the open-source bioinformatics ecosystem in China.

## Research positions

2021 — present

**Postdoctoral Researcher**, Experiment Research Department, Sun Yat-sen University Cancer Center<sup>4</sup>  
Supervisor: Prof. Rui-Hua Xu<sup>5</sup>; Cooperate with Prof. Qi Zhao<sup>6</sup>

## Education

2016 — 2021

**PhD in Cancer Biology**, ShanghaiTech University<sup>7</sup> & Shanghai Institute of Biochemistry and Cell Biology, Chinese Academy of Sciences<sup>8</sup>  
Supervisor: Prof. Xue-Song Liu<sup>9</sup>

2012 — 2016

**B.E. in Biomedical Engineering**, University of Electronic Science and Technology of China  
Supervisor: Prof. Yang Xia

## Major grants and funding

2022 — 2023

**China Postdoctoral Science Foundation**<sup>10</sup> (¥ 80k), General Project

2024 — 2026

**National Natural Science Foundation of China**<sup>11</sup> (¥ 300k), Young Scientists Fund

## Awards & honours

2021

**2021 Outstanding Graduate Award**, ShanghaiTech University

2020

**National Scholarship for Doctoral Students**, ShanghaiTech University

**ShanghaiTech University Class A Postgraduate Academic Scholarship**, ShanghaiTech University

# Publications

## Journal articles (fully reviewed, † for co-first, \* for corresponding)

- 2023 J19 **Unveiling the interplay between mutational signatures and tumor microenvironment: a pan-cancer analysis**  
L. Luo, S. Li, C. Wei, J. Ma, L. Qian, Y. Chen, S. Wang<sup>\*</sup>, Q. Zhao<sup>\*</sup>  
[Frontiers in Immunology](#)
- J18 **Accurate prediction of pan-cancer types using machine learning with minimal number of DNA methylation sites**  
W. Ning, T. Wu, C. Wu, S. Wang, Z. Tao, G. Wang, X. Zhao, K. Diao, J. Wang, J. Chen, F. Chen, X. Liu  
[Journal of Molecular Cell Biology](#)
- J17 **The repertoire of copy number alteration signatures in human cancer**  
Z. Tao<sup>†</sup>, S. Wang<sup>†</sup>, C. Wu<sup>†</sup>, T. Wu, X. Zhao, W. Ning, G. Wang, J. Wang, J. Chen, K. Diao, F. Chen, X. Liu  
[Briefings in Bioinformatics \(representative work\)](#)
- 2022 J16 **Hiplot: a comprehensive and easy-to-use web service for boosting publication-ready biomedical data visualization**  
J. Li<sup>†</sup>, B. Miao<sup>†</sup>, S. Wang<sup>†</sup>, W. Dong<sup>†</sup>, H. Xu<sup>†</sup>, C. Si<sup>†</sup>, W. Wang, S. Duan, J. Lou, Z. Bao, H. Zeng, Z. Yang, W. Cheng, F. Zhao, J. Zeng, X. Liu, R. Wu, Y. Shen, Z. Chen, S. Chen, M. Wang, H. Consortium  
[Briefings in Bioinformatics \(representative work\)](#)
- J15 **Deciphering clonal dynamics and metastatic routines in a rare patient of synchronous triple-primary tumors and multiple metastases with MPTEvol**  
Q. Chen, Q. Wu, Y. Rong, S. Wang, Z. Zuo, L. Bai, B. Zhang, S. Yuan, Q. Zhao  
[Briefings in Bioinformatics](#)
- J14 **Quantification of neoantigen-mediated immunoediting in cancer evolution**  
T. Wu, G. Wang, X. Wang, S. Wang, X. Zhao, C. Wu, W. Ning, Z. Tao, F. Chen, X. Liu  
[Cancer Research](#)
- J13 **UCSCXenaShiny: an R/CRAN package for interactive analysis of UCSC Xena data**  
S. Wang<sup>†</sup>, Y. Xiong<sup>†</sup>, L. Zhao<sup>†</sup>, K. Gu<sup>†</sup>, Y. Li, F. Zhao, J. Li, M. Wang, H. Wang, Z. Tao, T. Wu, Y. Zheng, X. Li, X. Liu  
[Bioinformatics \(representative work\)](#)
- 2021 J12 **Ggct (γ-glutamyl cyclotransferase) plays an important role in erythrocyte antioxidant defense and red blood cell survival**  
Z. He, X. Sun, S. Wang, D. Bai, X. Zhao, Y. Han, P. Hao, X. Liu  
[British Journal of Haematology](#)
- J11 **Copy number signature analysis tool and its application in prostate cancer reveals distinct mutational processes and clinical outcomes**  
S. Wang, H. Li, M. Song, Z. Tao, T. Wu, Z. He, X. Zhao, K. Wu, X. Liu  
[PLoS Genetics \(representative work\)](#)
- J10 **Pan-cancer noncoding genomic analysis identifies functional CDC20 promoter mutation hotspots**  
Z. He<sup>†</sup>, T. Wu<sup>†</sup>, S. Wang<sup>†</sup>, J. Zhang<sup>†</sup>, X. Sun, Z. Tao, X. Zhao, H. Li, K. Wu, X. Liu  
[iScience](#)

- J09      **Association of CSMD1 with Tumor Mutation Burden and Other Clinical Outcomes in Gastric Cancer**  
X. Wang<sup>†</sup>, S. Wang<sup>†</sup>, Y. Han, M. Xu, P. Li, M. Ke, Z. Teng, P. Huang, Z. Diao, Y. Yan, Q. Meng, Y. Kuang, W. Zheng, H. Liu, X. Liu, B. Jia  
[International Journal of General Medicine](#)
- 2020      J08      **Sigflow: an automated and comprehensive pipeline for cancer genome mutational signature analysis**  
S. Wang, Z. Tao, T. Wu, X. Liu  
[Bioinformatics \(representative work\)](#)
- 2019      J07      **Can tumor mutational burden determine the most effective treatment for lung cancer patients?**  
S. Wang, Z. He, X. Wang, H. Li, T. Wu, X. Sun, K. Wu, X. Liu  
[Lung Cancer Management](#)
- J06      **Antigen presentation and tumor immunogenicity in cancer immunotherapy response prediction**  
S. Wang, Z. He, X. Wang, H. Li, X. Liu  
[eLife \(representative work\)](#)
- J05      **The predictive power of tumor mutational burden in lung cancer immunotherapy response is influenced by patients' sex**  
S. Wang, J. Zhang, Z. He, K. Wu, X. Liu  
[International Journal of Cancer \(representative work\)](#)
- J04      **Ras downstream effector GGCT alleviates oncogenic stress**  
Z. He<sup>†</sup>, S. Wang<sup>†</sup>, Y. Shao<sup>†</sup>, J. Zhang<sup>†</sup>, X. Wu, Y. Chen, J. Hu, F. Zhang, X. Liu  
[iScience](#)
- J03      **Sex Differences in Cancer Immunotherapy Efficacy, Biomarkers, and Therapeutic Strategy**  
S. Wang<sup>†</sup>, L. An Cowley<sup>†</sup>, X. Liu  
[Molecules](#)
- J02      **The UCSCXenaTools R package: a toolkit for accessing genomics data from UCSC Xena platform, from cancer multi-omics to single-cell RNA-seq**  
S. Wang, X. Liu  
[Journal of Open Source Software](#)
- 2018      J01      **APOBEC3B and APOBEC mutational signature as potential predictive markers for immunotherapy response in non-small cell lung cancer**  
S. Wang<sup>†</sup>, M. Jia<sup>†</sup>, Z. He, X. Liu  
[Oncogene \(representative work\)](#)

### **Preprints (not reviewed, † for co-first, \* for corresponding)**

- 2023      P5      **TCCIA: A Comprehensive Resource for Exploring CircRNA in Cancer Immunotherapy**  
S. Wang<sup>†</sup>, Y. Xiong<sup>†</sup>, Y. Zhang<sup>†</sup>, H. Wang, M. Chen, J. Li, P. Luo, Y. Luo, M. Hecht, B. Frey, U. S. Gaipal, X. Li, Q. Zhao, H. Ma, J. Zhou  
bioRxiv
- 2022      P4      **The repertoire of copy number alteration signatures in human cancer**  
Z. Tao<sup>†</sup>, S. Wang<sup>†</sup>, C. Wu<sup>†</sup>, T. Wu, X. Zhao, W. Ning, G. Wang, J. Wang, J. Chen, K. Diao, F. Chen, X. Liu  
bioRxiv

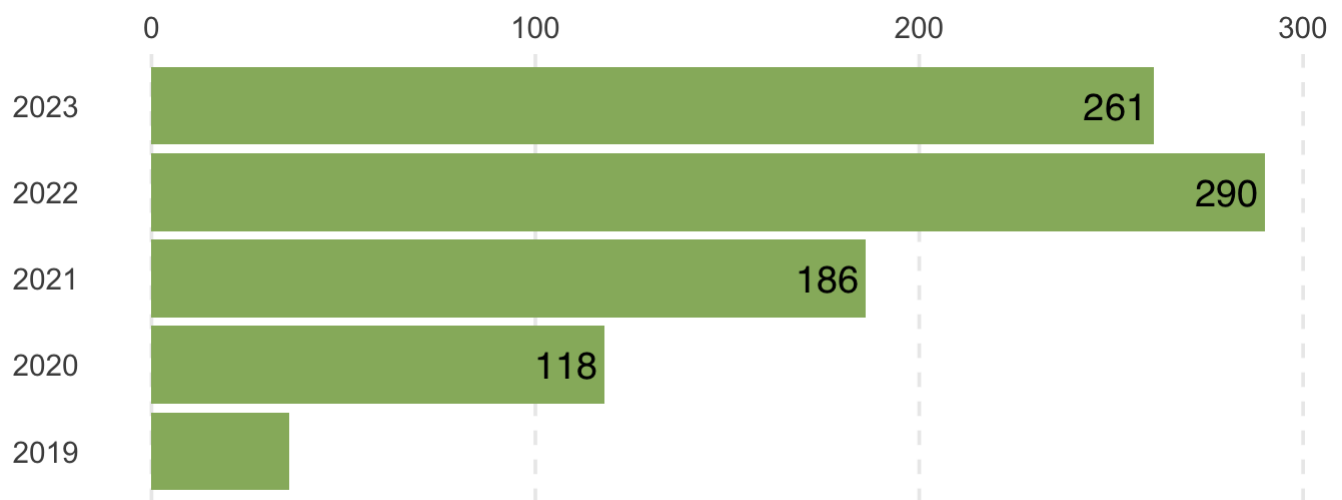
P3 **Onlinemeta: A Web Server For Meta-Analysis Based On R-shiny**

Y. Yi, A. Lin, C. Zhou, J. Zhang<sup>\*</sup>, S. Wang<sup>\*</sup>, P. Luo<sup>\*</sup>  
bioRxiv

2021 P2 **ezcox: An R/CRAN Package for Cox Model Batch Processing and Visualization**  
S. Wang, X. Liu, J. Li, Q. Zhao  
arXiv

2020 P1 **Revisiting neoantigen depletion signal in the untreated cancer genome**  
S. Wang<sup>†</sup>, X. Wang<sup>†</sup>, T. Wu<sup>†</sup>, Z. He, H. Li, X. Sun, X. Liu  
bioRxiv

## Cited by



Total citations: 898; Source: Google Scholar

## Talks

2020 T1 **BioC Asia 2020**<sup>12</sup>, Online  
Sigflow: an automated and comprehensive pipeline for cancer genome mutational signature analysis<sup>13</sup>

## Poster presentations

2020 P1 **BioC Asia 2020**<sup>14</sup>  
Sigflow: an automated and comprehensive pipeline for cancer genome mutational signature analysis<sup>15</sup>

2019 P2 **ShanghaiTech University, BioForum 2019**, Shanghai, China  
Antigen presentation and tumor immunogenicity in cancer immunotherapy response prediction

## Teaching experience

- 2019      **Teaching assistant, Cancer Biology**, ShanghaiTech University  
Teacher: Xue-Song Liu
- 2023      **Supervisor**, Open Source Promotion Plan 2023<sup>16</sup>  
Student: Shensuo Li

## Service

- 2021 — present      **Review Editor in in Cancer Immunity and Immunotherapy** Frontiers<sup>17</sup>
- 2019 — present      **Reviewer** Briefings in Bioinformatics<sup>18</sup>, Journal of Translational Medicine<sup>19</sup>, STAR Protocols<sup>20</sup>, Frontiers in Immunology<sup>21</sup>, Frontiers in Oncology<sup>22</sup>, Frontiers in Cell and Developmental Biology<sup>23</sup>

## Links

1. <https://github.com/openbiox>
2. <https://ropensci.org/>
3. <https://www.bioconductor.org/>
4. <http://english.sysucc.org.cn/>
5. [http://english.sysucc.org.cn/info\\_19.aspx?itemid=154](http://english.sysucc.org.cn/info_19.aspx?itemid=154)
6. <https://seqworld.com/>
7. <https://www.shanghaitech.edu.cn/>
8. <http://cemcs.cas.cn/>
9. [https://slst.shanghaitech.edu.cn/lxs\\_en/main.htm](https://slst.shanghaitech.edu.cn/lxs_en/main.htm)
10. <https://jj.chinapostdoctor.org.cn/website/index.html>
11. <https://www.nsf.gov.cn/>
12. <https://biocasia2020.bioconductor.org/>
13. <https://www.youtube.com/watch?v=nzAxPDTznm4>
14. <https://biocasia2020.bioconductor.org/>
15. <https://f1000research.com/posters/9-1217>
16. <https://summer-ospp.ac.cn/org/prodetail/2351d0245?lang=zh&list=pro>
17. <https://www.frontiersin.org/>
18. <https://academic.oup.com/bib>
19. <https://translational-medicine.biomedcentral.com/>

20. <https://www.cell.com/star-protocols/home>↵
21. <https://www.frontiersin.org/journals/immunology>↵
22. <https://www.frontiersin.org/journals/oncology>↵
23. <https://www.frontiersin.org/journals/cell-and-developmental-biology>↵