

Fan Zhou, Ph.D.

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PROFESSIONAL APPOINTMENTS

From Dec 2023, Associate Professor & Principal Investigator, School of Life Sciences, Tsinghua University

From Aug 2020, Principal Investigator, Tsinghua-Peking Center for Life Sciences, Tsinghua University

Aug 2020- Dec 2023, Assistant Professor & Principal Investigator, School of Life Sciences, Tsinghua University

EDUCATION AND TRAINING

Jul 2016-Jul 2020, Peking University, Beijing, China

Postdoctoral fellow in early human embryo development at Fuchou Tang's lab

Sep 2010-Jun 2016, Academy of Military Medical Sciences, Beijing, China

Ph.D. in hematopoietic stem cell development. Supervisor: Bing Liu

Sep 2005-Jul 2010, Datong University, Datong, China

B.S. in Clinical Medicine. Head teacher: Kaijun Li

HONORS AND AWARDS

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| 2024 | <i>Outstanding Young Investigator Award</i>
(Nominated by committee scientists of CSSCR, no more than three winners each year) | Chinese Society for Stem Cell Research (CSSCR) |
| 2024 | <i>Principal Investigator of Beijing Natural Science Foundation (Key project)</i> | Beijing Municipal Science & Technology Commission, Administrative Commission of Zhongguancun Science Park |
| 2023 | <i>University Scientific Research Outstanding Achievement Award (Science and Technology), Natural Science Category, First Prize</i> | Chinese Ministry of Education |
| 2023 | <i>Young Yangtze River Scholar</i> | Chinese Ministry of Education |
| 2022 | <i>Backbone Investigator of National Key Research and Development Program of China</i> | Ministry of Science and Technology of the People's Republic of China (MOST) |
| 2020 | <i>The 2019 Top Ten Advances in Life Sciences in</i> | China Association for Science and |

	<i>China (Reconstituting the transcriptome and DNA methylome landscapes of human implantation)</i>	Technology
2017	<i>China Postdoctoral Science Foundation (Special Support)</i> <i>Bayer Postdoc</i>	China Postdoctoral Science Foundation Bayer-Peking University Center for Translational Research
	<i>China Postdoctoral Science Foundation (First Grade)</i> <i>Young Elite Scientists Sponsorship Program</i>	China Postdoctoral Science Foundation China Association for Science and Technology
2016	<i>First Prize for Center for Life Science Post-Doctoral Fund</i> <i>Travel Award for ISEH 2016 Annual Scientific Meeting, San Diego, USA</i>	Peking-Tsinghua Center for Life Science International Society of Experimental Hematology, San Diego, USA
	<i>The PLA Annual Outstanding Doctoral Thesis</i>	Academic Degrees Committee of the PLA
	<i>Ray Wu Prize (Highest award in life science for Chinese PhD students, only 10 graduate-student winners in China each year)</i> <i>Excellent Doctoral Thesis</i>	Ray Wu Memorial Fund, USA Academy of Military Medical Sciences
2015	<i>First Prize for PhD Candidate Scholarship</i>	Academy of Military Medical Sciences

RESEARCH GRANTS

2024-2028, Beijing Natural Science Foundation (Key project), PI.

2023-2026, National Natural Science Foundation of China, PI.

2022-2027, National Key Research and Development Program of China, Major Member.

2022-2025, Haihe Laboratory of Cell Ecosystem Innovation Fund, PI.

2017-2020, Young Elite Scientists Sponsorship Program, China Association for Science and Technology, PI.

PRESENTATIONS

2024 The 9th International Stem Cell Forum, Tianjin, China. Invited talk.

2024 Reproductive Medicine Symposium, Yiwu, China. Invited talk.

The 7th National Developmental Biology Conference, Zhengzhou, China. Invited talk.

The 2024 Chinese Biophysics Congress, Lanzhou, China. Invited Talk.

CapitalBio Technology Single-cell Spatial-Omics Advances Forum, Beijing, China. Invited Talk.

10th CUHK International Symposium on Stem Cell Biology and Regenerative Medicine and 3rd International Conference of the Guangdong-Hong Kong-Macau Greater Bay Area on Regenerative Medicine, Hong Kong, China. Invited Talk.

- Hospital of Stomatology, Jilin University, Changchun, China. Invited Talk.
- The 2nd International Conference on Single-Cell and Spatial Omics, Shenzhen, China. Invited Talk.
- Wang Zhijun Commemorative Lecture, Department of Physiology and Pathophysiology, Peking University, Beijing, China. Invited Talk.
- 2023** Academic Lecture, School of Medicine, Xiamen University, Xiamen, China. Invited Talk.
- Forum on Frontier Omics and Translational Research in Greater Bay Area, Guangzhou, China. Invited Talk.
- 2023 New Postdoc Conference of Peking University, Beijing, China. Invited Talk.
- International Conference on AI and Cell Fate (Center for Quantitative Biology, Peking University), Beijing, China. Invited Talk.
- The 13th Annual Chinese Stem Cell Conference, Hangzhou, China. Invited Talk.
- Hematology and Immunology Salon, Liangzhu Laboratory, Zhejiang University, Hangzhou, China. Invited Talk.
- The 5th World Congress of Reproductive Biology, Beijing, China. Invited Talk.
- Ningxia University Biological Science Top Class Summer Camp, Beijing, China. Invited Talk.
- The 32st National Biology Olympiad for Middle School Students, Beijing, China. Invited Talk.
- The 6th National Developmental Biology Conference, Hohhot, China. Invited talk.
- 2023 Center for Life Sciences Summer Faculty/Student Class, Beijing, China. Lectures.
- The 5th Ray Wu Youth Forum, Hangzhou, China. Invited Talk.
- Cloud Development Forum, Chinese Society for Cell Biology, Developmental Biology Branch (online), China. Invited Talk.
- The 1st Phoenix Youth Salon, National Center for Protein Science (Beijing)/Academy of Military Medical Sciences, Beijing, China. Keynote Speech.
- The 10th China Developmental Biology PI Summit (Lyre Lake Forum), Guangzhou/Dongguan, China. Invited Talk.
- The 1st International Conference on Single-Cell and Spatial Omics, Guangzhou, China. Invited Talk.
- The 18th Annual Meeting of Chinese Society for Cell Biology, Suzhou, China. Oral Presentation.
- 2022** The 31st National Biology Olympiad for Middle School Students, Taiyuan, China. Invited Talk.
- Wutong Forum, Peking University Third Hospital, Beijing, China. Invited Talk.
- The Frontier Lecture, Tsinghua Xuetao Life Science Program, Beijing, China. Invited Talk.

- 2021** The 2nd Youth Forum, College of Life Sciences, Nankai University, Tianjin, China. Invited Talk.
The 4th Ray Wu Youth Forum, Wuhan, China. Oral Presentation.
Postdoctoral Salon of School of Life Sciences, Peking University, Beijing, China. Invited Talk.
The 1st Biomedical Postdoc Forum, Tsinghua University, Beijing, China. Invited Talk.
BD-International Society for Advancement of Cytometry (ISAC) Advanced Flow Cytometry Workshop, Beijing, China. Invited Talk.
- 2020** The 1st Frontier Cross Excellent Postdoc Forum, Beijing, China. Invited Talk.
The 2019 Meeting of Top Ten Advances in Life Sciences in China, Shenzhen. Invited Talk.
The 2nd Single-Cell Immunology International Summit, Shanghai, China. Invited Talk.
- 2019** 2019 Ray Wu Symposium, Xiamen, China. Oral Presentation.
The 17th Chinese Biophysics Congress Youth Forum, Tianjin, China. Oral Presentation.
- 2018** Annual Meeting of Chinese Physiological Society, Nanchang, China. Oral Presentation.
- 2017** The 1st Ray Wu Youth Forum, Beijing, China. Oral Presentation.
- 2016** ISEH (*International Society of Experimental Hematology*) 2016 Annual Scientific Meeting, San Diego, USA. Oral Presentation.
Cold Spring Harbor Asia, Single Cell Omics, Suzhou, China. Oral Presentation.
Graduation Ceremony of Academy of Military Medical Sciences, Beijing, China. Outstanding Graduate Speech.
2016 Ray Wu Symposium, Chengdu, China. Oral Presentation.

PUBLICATIONS

Selected Publications

Li J*, Zhu Q*, Cao J*, Liu Y*, Lu Y*, Sun Y, Li Q, Huang Y, Shang S, Bian X, Li C, Zhang L, Wang Y, Nie Y, Fu J, Li W, Mazid MA, Jiang Y, Jia W, Wang X, Sun Y, Esteban MA, Sun Q[#], **Zhou F[#]**, and Liu Z[#] (2023) Cynomolgus monkey embryo model captures gastrulation and early pregnancy. *Cell Stem Cell* 30: 362-377. (Reported by *Nature* and *Science*)

Zhu Q*, Ge J*, Liu Y*, Xu J, Yan S, **Zhou F[#]** (2023) Decoding anterior-posterior axis emergence among mouse, monkey, and human embryos. *Developmental Cell*, 58: 63-79

Zhou F*, Wang R*, Yuan P*, Ren Y*, Mao Y*, Li R, Lian Y, Li J, Wen L, Yan L, Qiao J[#], Tang F[#] (2019) Reconstituting the transcriptome and DNA methylome landscapes of human implantation. *Nature* 572: 660-664

Zhou F*, Li X*, Wang W*, Zhu P*, Zhou J*, He W*, Ding M, Xiong F, Zheng X, Li Z, Ni Y, Mu X, Wen L, Cheng T, Lan Y, Yuan W[#], Tang F[#], Liu B[#] (2016) Tracing haematopoietic stem cell formation at single-cell resolution. *Nature* 533: 487-492. (Research Article, recommended by F1000)

Li Z*, **Zhou F***, Chen D, He W, Ni Y, Luo L, Liu B[#] (2013) Generation of hematopoietic stem cells from purified embryonic endothelial cells by a simple and efficient strategy. *Journal of Genetics and Genomics* = Yi chuan xue bao 40: 557-563. (Cover Story)

Other Publications

Transitions in development-an interview with **Fan Zhou**. *Development* 2024, 151.

Ziyi Li, Fan Zhou[#] (2023) Prolonged 3D culture unlocks black box of primate embryogenesis. *Cell Stem Cell* 30:911-912 (Invited Spotlight Preview)

Introductions to the community: Early-career researchers in the time of COVID-19 (2020) *Cell Stem Cell*, 26(6):815-816. Voice Piece: **Fan Zhou**, Cell fate and embryogenesis.

Tian F*, **Zhou F***, Li X*, Ma W*, Wu H*, Yang M*, Chapman AR, Lee DF, Tan L, Xing D, Yin G, Semayel A, Wang J, Wang J, Sun W, He R, Zhang S, Cao Z, Wei L, Lu S, Yang D, Mao Y, Gao Y, Chen K, Zhang Y, Liu X, Yong J, Yan L, Huang Y, Qiao J[#], Tang F[#], Gao G[#], Xie XS[#] (2020) Genomic Architecture of Cells in Tissues (GeACT): Study of Human Mid-gestation Fetus. *bioRxiv*

Hu X*, Deng Q*, Ma L, Li Q, Chen Y, Liao Y, **Zhou F**, Zhang C, Shao L, Feng J, He T, Ning W, Kong Y, Huo Y, He A, Liu B, Zhang J, Adams R, He Y, Tang F, Bian X, Luo J[#] (2020) Meningeal lymphatic vessels regulate brain tumor drainage and immunity. *Cell Research* 30: 229-243

Zheng X, Zhang G, Gong Y, Ning X, Bai Z, He J, **Zhou F**, Ni Y, Lan Y[#], Liu B[#] (2019) Embryonic lineage tracing with Procr-CreER marks balanced hematopoietic stem cell fate during entire mouse lifespan. *Journal of Genetics and Genomics* = Yi chuan xue bao 46: 489-498

Zhou J*, Xu J*, Zhang L*, Liu S*, Ma Y*, Wen X, Hao J, Li Z, Ni Y, Li X, **Zhou F**, Li Q, Wang F, Wang X, Si Y, Zhang P, Liu C, Bartolomei M, Tang F, Liu B[#], Yu J[#], Lan Y[#] (2019) Combined Single-Cell Profiling of lncRNAs and Functional Screening Reveals that H19 Is Pivotal for Embryonic Hematopoietic Stem Cell Development. *Cell Stem Cell* 24: 285-298 e285

Ye H*, Wang X*, Li Z, **Zhou F**, Li X, Ni Y, Zhang W, Tang F, Liu B[#], Lan Y[#] (2017) Clonal analysis reveals remarkable functional heterogeneity during hematopoietic stem cell emergence. *Cell Research* 27: 1065-1068

Li Z*, Lan Y*, He W, Chen D, Wang J, **Zhou F**, Wang Y, Sun H, Chen X, Xu C, Li S, Pang Y, Zhang G, Yang L, Zhu L, Fan M, Shang A, Ju Z, Luo L, Ding Y, Guo W, Yuan W, Yang X[#], Liu B[#] (2012) Mouse embryonic head as a site for hematopoietic stem cell development. *Cell Stem Cell* 11: 663-675

UNDERGRADUATE/GRADUATE COURSE

Stem Cell Technology Session, Frontier of Bioengineering in fall semester since 2020, 6 periods, Tsinghua University

Single-Cell Omics and Early Embryogenesis Session, Developmental Biology in spring semester since 2021, 8 periods, PKU-THU-NIBS

Special Talk Session, Bioinformatics in spring semester in 2021, 2 periods, Peking University

Stem Cell and Embryogenesis in fall semester since 2021, 8 periods, PKU-THU-NIBS

Discussion of Research Ethics, Training for Advanced Research Thinking in spring semester since 2022, compulsory course for graduates, 3 periods, Zhili College, Tsinghua University

Scientific Ethics in Biology-Animal Rights and Biological Image Processing in fall semester since 2022, compulsory course for graduates, 2 periods, Tsinghua University

Cell Biology Literature Discussion-Cell Death in fall semester since 2022, 16 periods, Tsinghua University

Scientific Writing-Dissertation in spring semester since 2023, compulsory course for graduates, 16 periods, Tsinghua University

Stem Cell and Life in fall semester since 2023, undergraduate general studies program, 32 periods, Tsinghua University

DISSERTATION DEFENSE REVIEWER

2020, 2 PhD candidates at Tsinghua University.

2021, 8 PhD candidates at Tsinghua University and Peking University; 1 master student at Peking University.

2022, 20 PhD candidates at Tsinghua University, Peking University and Academy of Military Medical Sciences.

2023, 6 PhD candidates at Tsinghua University and Peking University, 1 master student at Academy of Military Medical Sciences, 13 undergraduates at Tsinghua University.

2024, 15 PhD candidates Tsinghua University, Peking University and Academy of Military Medical Sciences. (to Sep 2024).

RESEARCH SUPERVISION (SINCE 2020)

2 postdocs, 9 PhD students, 17 undergraduate students, 11 rotation students

OTHER MENTORING ACTIVITIES

Class 22, School of Life Science, Tsinghua University, Head Teacher
Tsinghua Xuetao Life Science Program, Advisor

ACADEMIC JOURNAL SERVICE

Journal of Genetics and Genomics, Guest Reviewer

Nature, Guest Reviewer

Nature Cell Biology, Guest Reviewer

Cell Reports, Guest Reviewer

Developmental Cell, Guest Reviewer

eLife, Guest Reviewer

Cell Discovery, Guest Reviewer

Protein & Cell, Guest Reviewer

Cell Genomics, Guest Reviewer

Frontiers in Cell and Developmental Biology, Reviewer Editor

Frontiers in Genetics, Reviewer Editor

Cell Regeneration, Young editorial board

MEMBERSHIP

International Society for Stem Cell Research (ISSCR) , Member

Chinese Association for Physiological Sciences (CAPS) , Member

Chinese Society for Cell Biology (CSCB), Member

China Zoological Society (CZS), Board Member

Branch of Reproductive Biology, Chinese Zoological Society, Committee member

Cell Regeneration, Youth Editorial Board

MEETING ORGANIZERS

2023 China Stem Cell Annual Meeting, Youth Forum, Hangzhou, convenor

2023 Benyuan Academic Conference, Suzhou, organizer

COMMITTEE SERVICE

Tsinghua-Peking Center for Life Sciences (CLS) Postdoctoral Fellowship Review Committee (since 2021, 4 times).

PhD candidate Recruitment Review Committee (since 2020, 8 times at CLS, 3 times at PTN).

Member of Benyuan Public Science Committee (since 2022).

Phoenix Talent Project Evaluation Committee (Academy of Military Medical Sciences, 2022).

Evaluation Committee for Outstanding Young Researchers (Beijing Institute of Genomics, Chinese Academy of Sciences, 2023).

Academic Committee Member in 2023 China Stem Cell Annual Meeting (Hangzhou, 2023).