



## Yuqi Tan

Instructor, Microbiology and Immunology - Baxter Laboratory

### Bio

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#### BIO

Dr. Tan is a computational biologist developing innovative tools to quantify cell identity, enhance stem cell engineering, and dissect cancer heterogeneity. During her Ph.D., she specialized in computational and quantitative analysis of single-cell RNA sequencing (scRNA-seq) data, contributing to multiple high-impact publications. As a postdoctoral researcher, she has advanced the integration of single-cell omics with multiplexed imaging to decode high-dimensional tissue architecture in cancer and psychiatric diseases. Her long-term vision is to leverage multi-omics and develop machine learning techniques for both 2D and 3D analysis to uncover how diverse cell types and their interactions shape development, aging, and disease.

#### ACADEMIC APPOINTMENTS

- Instructor, Microbiology and Immunology - Baxter Laboratory

### Publications

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#### PUBLICATIONS

- **Training Tomorrow's Leaders in Cancer Immunology.** *Cancer immunology research*  
Tan, Y., Kim, B. J., Mujal, A. M., Chen, A. C., Weis, A. M., Bergaggio, E., Micevic, G., Xie, H., Park, J. S., Hor, J. L., Papanicolaou, M., Shobaki, N., Domizi, et al  
2026: OF1-OF8
- **SPACEc: a streamlined, interactive Python workflow for multiplexed image processing and analysis.** *Nature communications*  
Tan, Y., Kempchen, T. N., Becker, M., Haist, M., Feyaerts, D., Liu, J., Toma, M., Xiao, Y., Su, G., Rech, A. J., Hölzel, M., Fan, R., Hickey, et al  
2025; 16 (1): 10652
- **Polyamine Depletion by D, L-alpha-difluoromethylornithine Inhibits Ewing Sarcoma Metastasis by Inducing Ferroptosis.** *Clinical cancer research : an official journal of the American Association for Cancer Research*  
Offenbacher, R., Jackson, K. W., Hayashi, M., Zhang, J., Peng, D., Tan, Y., Stewart, T. M., Ciero, P., Foley, J., Casero, R. A., Cahan, P., Loeb, D. M.  
2025
- **Concerted changes in Epithelium and Stroma: a multi-scale, multi-omics analysis of progression from Barrett's Esophagus to adenocarcinoma.** *Developmental cell*  
Strasser, M. K., Gibbs, D. L., Gascard, P., Bons, J., Hickey, J. W., Pan, D., Caruso, J. A., Wang, X., Chen-Tanyolac, C., Bai, R., Schürch, C. M., Tan, Y., Black, et al  
2025
- **Iterative transcription factor screening enables rapid generation of microglia-like cells from human iPSC** *NATURE COMMUNICATIONS*  
Liu, S., Li, L., Zhang, F., Garcia-Corral, M., Meyer, K., Fortuna, P. R. J., van Sambeek, B., Appleton, E., Ng, A. H. M., Khoshakhlagh, P., Lu, Y., Cameron, J., Ramirez, et al  
2025; 16 (1): 5136

- **Spatially organized inflammatory myeloid-CD8+ T cell aggregates linked to Merkel-cell Polyomavirus driven Reorganization of the Tumor Microenvironment.** *bioRxiv : the preprint server for biology*  
Haist, M., Matusiak, M., Tan, Y., Zimmer, S., Stege, H., Kempchen, T. N., Mitschke, S., Chu, P., Weidenthaler-Barth, B., Barlow, G. L., Rogall, F., Gonzalez, A. D., Baertsch, et al  
2025
- **Author Correction: AI-guided precision parenteral nutrition for neonatal intensive care units.** *Nature medicine*  
Phongpreecha, T., Ghanem, M., Reiss, J. D., Oskotsky, T. T., Mataraso, S. J., De Francesco, D., Reincke, S. M., Espinosa, C., Chung, P., Ng, T., Costello, J. M., Sequoia, J. A., Razdan, et al  
2025
- **AI-guided precision parenteral nutrition for neonatal intensive care units.** *Nature medicine*  
Phongpreecha, T., Ghanem, M., Reiss, J. D., Oskotsky, T., Mataraso, S. J., De Francesco, D., Reincke, S. M., Espinosa, C., Chung, P., Ng, T., Costello, J. M., Sequoia, J. A., Razdan, et al  
2025
- **Red teaming ChatGPT in medicine to yield real-world insights on model behavior.** *NPJ digital medicine*  
Chang, C. T., Farah, H., Gui, H., Rezaei, S. J., Bou-Khalil, C., Park, Y. J., Swaminathan, A., Omiye, J. A., Kolluri, A., Chaurasia, A., Lozano, A., Heiman, A., Jia, et al  
2025; 8 (1): 149
- **A machine learning approach to leveraging electronic health records for enhanced omics analysis.** *Nature machine intelligence*  
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2025; 7 (2): 293-306
- **A machine learning approach to leveraging electronic health records for enhanced omics analysis** *NATURE MACHINE INTELLIGENCE*  
Mataraso, S. J., Espinosa, C. A., Seong, D., Reincke, S., Berson, E., Reiss, J. D., Kim, Y., Ghanem, M., Shu, C., James, T., Tan, Y., Shome, S., Stelzer, et al  
2025
- **Inhibition of DKK-1 by WAY262611 Inhibits Osteosarcoma Metastasis.** *Molecular cancer therapeutics*  
Tal, A., Gunawardana-Zeigler, S., Peng, D., Tan, Y., Munoz Perez, N., Offenbacher, R., Kastner, L., Ciero, P., Randolph, M. E., Gong, Y., Deng, H. W., Cahan, P., Loeb, et al  
2025
- **INSIHGT: an accessible multi-scale, multi-modal 3D spatial biology platform.** *Nature communications*  
Yau, C. N., Hung, J. T., Campbell, R. A., Wong, T. C., Huang, B., Wong, B. T., Chow, N. K., Zhang, L., Tsoi, E. P., Tan, Y., Li, J. J., Wing, Y. K., Lai, et al  
2024; 15 (1): 10888
- **Leptin-activated hypothalamic BNC2 neurons acutely suppress food intake.** *Nature*  
Tan, H. L., Yin, L., Tan, Y., Ivanov, J., Plucinska, K., Ilanges, A., Herb, B. R., Wang, P., Kosse, C., Cohen, P., Lin, D., Friedman, J. M.  
2024
- **Polyamine Depletion by D, L-alpha-difluoromethylornithine Inhibits Ewing Sarcoma Metastasis by Inducing Ferroptosis.** *bioRxiv : the preprint server for biology*  
Offenbacher, R., Jackson, K. W., Hayashi, M., Zhang, J., Peng, D., Tan, Y., Stewart, T. M., Ciero, P., Foley, J., Casero, R. A., Cahan, P., Loeb, D. M.  
2024
- **Computational Approaches for Connecting Maternal Stress to Preterm Birth.** *Clinics in perinatology*  
Mirzaei, A., Hiller, B. C., Stelzer, I. A., Thiele, K., Tan, Y., Becker, M.  
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- **T cell-mediated curation and restructuring of tumor tissue coordinates an effective immune response.** *Cell reports*  
Hickey, J. W., Haist, M., Horowitz, N., Caraccio, C., Tan, Y., Rech, A. J., Baertsch, M. A., Rovira-Clavé, X., Zhu, B., Vazquez, G., Barlow, G., Agmon, E., Goltsev, et al  
2023; 42 (12): 113494
- **Treatment management for BRAF-mutant melanoma patients with tumor recurrence on adjuvant therapy: a multicenter study from the prospective skin cancer registry ADOREG.** *Journal for immunotherapy of cancer*

- Haist, M., Stege, H., Rogall, F., Tan, Y., von Wasielewski, I., Klespe, K. C., Meier, F., Mohr, P., Kähler, K. C., Weichenthal, M., Hauschild, A., Schadendorf, D., Ugurel, et al  
2023; 11 (9)
- **Large-scale correlation network construction for unraveling the coordination of complex biological systems** *NATURE COMPUTATIONAL SCIENCE*  
Becker, M., Nassar, H., Espinosa, C., Stelzer, I. A., Feyaerts, D., Berson, E., Bidoki, N. H., Chang, A. L., Saarunya, G., Culos, A., De Francesco, D., Fallahzadeh, R., Liu, et al  
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  - **Large-scale correlation network construction for unraveling the coordination of complex biological systems.** *Nature computational science*  
Becker, M., Nassar, H., Espinosa, C., Stelzer, I. A., Feyaerts, D., Berson, E., Bidoki, N. H., Chang, A. L., Saarunya, G., Culos, A., De Francesco, D., Fallahzadeh, R., Liu, et al  
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  - **Annotation of spatially resolved single-cell data with STELLAR.** *Nature methods*  
Brbic, M., Cao, K., Hickey, J. W., Tan, Y., Snyder, M. P., Nolan, G. P., Leskovec, J.  
2022
  - **Revealing the impact of lifestyle stressors on the risk of adverse pregnancy outcomes with multitask machine learning.** *Frontiers in pediatrics*  
Becker, M., Dai, J., Chang, A. L., Feyaerts, D., Stelzer, I. A., Zhang, M., Berson, E., Saarunya, G., De Francesco, D., Espinosa, C., Kim, Y., Maric, I., Mataraso, et al  
2022; 10: 933266
  - **Gene Regulatory Network Analysis and Engineering Directs Development and Vascularization of Multilineage Human Liver Organoids** *CELL SYSTEMS*  
Velazquez, J. J., LeGraw, R., Moghadam, F., Tan, Y., Kilbourne, J., Maggiore, J. C., Hislop, J., Liu, S., Cats, D., Lopes, S., Plaisier, C., Cahan, P., Kiani, et al  
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  - **Strategies for Accurate Cell Type Identification in CODEX Multiplexed Imaging Data.** *Frontiers in immunology*  
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  - **Transcriptome Dynamics of Hematopoietic Stem Cell Formation Revealed Using a Combinatorial Runx1 and Ly6a Reporter System** *STEM CELL REPORTS*  
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  - **Ligustrazine Prevents Intervertebral Disc Degeneration via Suppression of Aberrant TGF beta Activation in Nucleus Pulposus Cells** *BIOMED RESEARCH INTERNATIONAL*  
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  - **SingleCellNet: A Computational Tool to Classify Single Cell RNA-Seq Data Across Platforms and Across Species** *CELL SYSTEMS*  
Tan, Y., Cahan, P.  
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  - **SCD1 and SCD2 Form a Complex That Functions with the Exocyst and RabE1 in Exocytosis and Cytokinesis** *PLANT CELL*  
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2017; 29 (10): 2610-2625
  - **Assessment of engineered cells using CellNet and RNA-seq** *NATURE PROTOCOLS*  
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  - **Understanding development and stem cells using single cell-based analyses of gene expression** *DEVELOPMENT*  
Kumar, P., Tan, Y., Cahan, P.  
2017; 144 (1): 17-32

- **MONENSIN SENSITIVITY1 (MON1)/CALCIUM CAFFEINE ZINC SENSITIVITY1 (CCZ1)-Mediated Rab7 Activation Regulates Tapetal Programmed Cell Death and Pollen Development** *PLANT PHYSIOLOGY*  
Cui, Y., Zhao, Q., Xie, H., Wong, W., Wang, X., Gao, C., Ding, Y., Tan, Y., Ueda, T., Zhang, Y., Jiang, L.  
2017; 173 (1): 206-218
- **MON1/CCZ1-mediated Rab7 activation regulates tapetal PCD and pollen development in Arabidopsis** *Plant Physiology*  
Cui, Y.  
2017
- **Valproate-Induced Neurodevelopmental Deficits in Xenopus laevis Tadpoles** *JOURNAL OF NEUROSCIENCE*  
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