Stanford



# Yiyun Chen

Postdoctoral Scholar, Stanford Cancer Institute

## Bio

### BIO

Yiyun Chen is a computational cancer immunologist whose interdisciplinary training spans structural biology, computational genomics, and cancer immunotherapy. During her doctoral training at HKUST, she developed multi-omic frameworks to decode the molecular landscape of brain tumors, gastric cancer, and B cell lymphoma — including the discovery of a tumor-associated monocyte population in the glioma microenvironment that drives mesenchymal transformation through the FOSL2-EREG/AREG-EGFR signaling axis.

As a postdoctoral fellow in the Crystal Mackall Laboratory at Stanford Cancer Institute, she extended this focus to the co-evolution of glioma and the immune system during CAR T cell therapy, uncovering multiple mechanisms of acquired resistance: anti-CAR humoral and cellular immunity, proinflammatory-to-immunosuppressive phenotypic shifts in macrophages, and tumor antigen escape. Her future research program will build an AI-powered platform that integrates longitudinal single-cell and spatial transcriptomics to model tumor-immune co-evolution in silico — constructing patient-level digital twins that simulate treatment trajectories, predict resistance, and identify real-time monitoring biomarkers.

### HONORS AND AWARDS

- Mikitani Cancer Research Fund, Stanford University (2025)

### PROFESSIONAL EDUCATION

- Doctor of Philosophy, Hong Kong University Of Science & Technology (2021)
- Master of Philosophy, Hong Kong University Of Science & Technology (2017)
- Bachelor of Science, Hong Kong University Of Science & Technology (2014)

### STANFORD ADVISORS

- Crystal Mackall, Postdoctoral Faculty Sponsor

## Research & Scholarship

### LAB AFFILIATIONS

- Crystal Mackall (6/15/2022)

## Publications

### PUBLICATIONS

- **Anti-CAR Immunity Drives Acquired Therapeutic Resistance to GD2-CAR T Cell Therapy in Diffuse Midline Glioma.** *medRxiv : the preprint server for health sciences*

Chen, Y., Reynolds, K., Koch, M. R., Petrakian, C. F., Good, Z., Yamada-Hunter, S., Sotillo, E., Song, K. W., Mahdi, J., Majzner, R., Desai, M. H., Huang, Y. W., Daghagh, et al
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- **Tumor-Associated Microglia Secrete Extracellular ATP to Support Glioblastoma Progression.** *Cancer research*
  Wu, C. Y., Chen, Y., Lin, Y. J., Wei, K. C., Chang, K. Y., Feng, L. Y., Chen, K. T., Li, G., Ren, A. L., Nitta, R. T., Wu, J. Y., Cho, K. B., Pant, et al
  2024; 84 (23): 4017-4030

- **Tumor-associated monocytes promote mesenchymal transformation through EGFR signaling in glioma.** *Cell reports. Medicine*
  Chen, Y., Huo, R., Kang, W., Liu, Y., Zhao, Z., Fu, W., Ma, R., Zhang, X., Tang, J., Zhu, Z., Lyu, Q., Huang, Y., Yan, et al
  2023: 101177

- **Deciphering Brain Complexity Using Single-cell Sequencing** *GENOMICS PROTEOMICS & BIOINFORMATICS*
  Mu, Q., Chen, Y., Wang, J.
  2019; 17 (4): 344-366

- **Mutational Landscape of Secondary Glioblastoma Guides MET-Targeted Trial in Brain Tumor** *CELL*
  Hu, H., Mu, Q., Bao, Z., Chen, Y., Liu, Y., Chen, J., Wang, K., Wang, Z., Nam, Y., Jiang, B., Sa, J. K., Cho, H., Her, et al
  2018; 175 (6): 1665-+

- **Longitudinal single-cell atlas of GD2-CAR T cell therapy in H3K27M-mutant diffuse midline glioma identifies humoral and cellular anti-CAR immunity**
  Chen, Y., Song, K., Desai, M. H., Huang, Y., Iswari, N., Ehlinger, Z. J., Daghagh, H., Koch, M. R., Reynolds, K., Mo, K. C., Tsui, K. C., Rietberg, S., Hamilton, et al
  AMER ASSOC CANCER RESEARCH.2026

- **Decoding the medulloblastoma surfaceome prioritizes the oncofetal antigen GPC2 for potent CAR-T cell therapy**
  Usta, D., Gwynne, W., Suk, Y., Chen, Y., Radosevich, M. T., Chernova, D., Feng, Y., Nasajpour, E., Trissal, M., Poetschke, R., Delaidelli, A., Dunham, C., Labanieh, et al
  AMER ASSOC CANCER RESEARCH.2026

- **Surface localized nuclear envelope proteins define a therapeuticvulnerability in MYC-driven Group 3 medulloblastoma**
  Singh, S., Suk, Y., Rossotti, M. A., Ibanez-Vega, J., Shaikh, M., Chen, Y., Patel, H., Escudero, L., Delaidelli, A., Khanna, A., Slassi, S., Bazan, C., Apel, et al
  AMER ASSOC CANCER RESEARCH.2026

- **Efficacy of nuclear envelope protein targeting CAR T cell therapy for MYC driven group 3 medulloblastoma**
  Suk, Y., Ibanez-Vega, J., Rossotti, M., Shaikh, V., Chen, Y., Patel, H., Escudero, L., Delaidelli, A., Slassi, S., Bazan, C. B., Khanna, A., Sokeechand, S., Apel, et al
  AMER ASSOC CANCER RESEARCH.2026: A032

- **c-JUN enhances CRISPR knockin anti-B7-H3 CAR T cell function in small cell lung cancer and thoracic SMARCA4-deficient undifferentiated tumors.** *Cell reports. Medicine*
  Balke-Want, H., Keerthi, V., Del Carmen Arenas, M., Chen, Y., Malipatlolla, M., Klysz, D. D., Xu, P., Ho, K., Asano, K., Stahl, D., Huang, J., Retherford, A., Patel, et al
  2026; 7 (1): 102549

- **CD22-CAR T cell multiomic features linked to patient outcomes in CD19-CAR resistant large B cell lymphoma**
  Kramer, A., Murty, T., Chen, Y., Rodrigues, K., Hamilton, M., Desai, M., Kuo, A., Ehlinger, Z., Reynolds, W., Srinagesh, H., Tsui, K., Rietberg, S., Mo, et al
  ELSEVIER.2025: 566-567

- **Attention-based multiple instance learning predicts CAR T cell therapy outcomes from infusion product single-cell RNA-seq data and identifies engineering targets in large B cell lymphoma**
  Rodrigues, K., Tsui, K., Zhan, X., Chen, Y., Mo, K., Mackall, C., Miklos, D., Gevaert, O., Good, Z.
  ELSEVIER.2025: 5897-5898

- **Quantitative surfaceome profiling of high-risk medulloblastoma prioritizes the oncofetal antigen GPC2 for potent CAR-T cell therapy**
  Usta, D., Gwynne, W., Suk, Y., Chen, Y., Radosevic, M. T., Chernova, D., Delaidelli, A., Feng, Y., Nasajpour, E., Trissal, M. C., Poetschke, R. D., Dunham, C., Labanie, et al
  OXFORD UNIV PRESS INC.2025: v373

- **Modification of the Sphingomyelin-Ceramide balance on the Cell Membrane of Tumor-Associated Myeloid Cells Affects Membrane Permeability**
  Wu, C., Chen, Y., Wei, K., Pant, A., Choi, J., Kim, L., Cho, K., Chen, K., Lin, Y., Huang, C., Chen, P., Lim, M.
  OXFORD UNIV PRESS INC.2025: v447

- **HUMANIZED ANTI-CAR ANTIBODIES AFFECT DURABLE RESPONSE TO GD2-CAR T-CELLS IN DIFFUSE MIDLINE GLIOMA**
  Chen, Y., Song, K., Huang, Y., Iswari, N., Desai, M., Ehlinger, Z., Daghagh, H., Reynolds, K., Mahdi, J., Majzner, R., Richards, B., Kamens, J., Barsan, et al
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- **SINGLE-CELL LANDSCAPE OF B7H3-CAR T THERAPY IN GLIOMA: MECHANISMS OF RESISTANCE AND SIGNATURES OF LONG-TERM RESPONSE**
  Chen, Y., Song, K., Desai, M., Ehlinger, Z., Daghagh, H., Rietberg, S., Feeney, A., Tanner, K., Dyson, K., Stockdale, B., Dhapola, G., Lohman, C., Patil, et al
  OXFORD UNIV PRESS INC.2025: v13

- **SPATIAL TRANSCRIPTOMICS ANALYSIS OF GLIOBLASTOMA REVEALS THREE DISTINCT REGIONAL PROGRAMS OF T-CELL INFILTRATION**
  Wang, W. L., Chen, Y., Mo, C., Good, Z., Sotillo, E., Mackall, C. L.
  OXFORD UNIV PRESS INC.2024

- **MYELOID POPULATIONS MODULATE GD2 CAR T CELL ACTIVITY IN DIFFUSE MIDLINE GLIOMA**
  Ramakrishna, S., Geraghty, A., Good, Z., Desai, M., Mancusi, R., Mahdi, J., Song, K., Ehlinger, Z., Chen, Y., Hamilton, M., Rietberg, S., Majzner, R., Schultz, et al
  OXFORD UNIV PRESS INC.2024

- **CD22-Directed CAR T Cell Single Cell Multiomic Features Associated with Immune Effector Cell-Associated Hemophagocytic Lymphohistiocytosis-like Syndrome (IEC-HS)**
  Kramer, A., Murty, T., Chen, Y., Srinagesh, H., Hamilton, M. P., Mo, K. C., Prabhu, S., Desai, M., Kuo, A., Ehlinger, Z., Reynolds, W. D., Baird, J. H., Su, et al
  ELSEVIER.2024: 911-912

- **GLUT1 overexpression in CAR-T cells induces metabolic reprogramming and enhances potency.** *Nature communications*
  Guerrero, J. A., Klysz, D. D., Chen, Y., Malipatlolla, M., Lone, J., Fowler, C., Stuani, L., May, A., Bashti, M., Xu, P., Huang, J., Michael, B., Contrepois, et al
  2024; 15 (1): 8658

- **The CCR6-CCL20 axis promotes regulatory T cell glycolysis and immunosuppression in tumors.** *Cancer immunology research*
  Pant, A., Jain, A., Chen, Y., Patel, K., Saleh, L., Tzeng, S., Nitta, R. T., Zhao, L., Wu, C. Y., Bederson, M., Wang, W. L., Bergsneider, B. H., Choi, et al
  2024

- **Engineered CD47 protects T cells for enhanced antitumour immunity.** *Nature*
  Yamada-Hunter, S. A., Theruvath, J., McIntosh, B. J., Freitas, K. A., Lin, F., Radosevich, M. T., Leruste, A., Dhingra, S., Martinez-Velez, N., Xu, P., Huang, J., Delaidelli, A., Desai, et al
  2024

- **Inosine induces stemness features in CAR-T cells and enhances potency.** *Cancer cell*
  Klysz, D. D., Fowler, C., Malipatlolla, M., Stuani, L., Freitas, K. A., Chen, Y., Meier, S., Daniel, B., Sandor, K., Xu, P., Huang, J., Labanieh, L., Keerthi, et al
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- **CCL8/CCL13-producing tumor-associated macrophages linked to poor outcomes after CAR T cell therapy for LBCL** *American Society of Hematology*
  Mo, K. C., Yeh, C. Y., Hamilton, M. P., Spiegel, J., Desai, M., Ehlinger, Z., Reynolds, W. D., Yang, E., Ozawa, M. G., Chen, Y., Prabhu, S., Frank, M. J., Muffly, et al
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- **Noncoding mutations cause super-enhancer retargeting resulting in protein synthesis dysregulation during B cell lymphoma progression.** *Nature genetics*
  Leeman-Neill, R. J., Song, D., Bizarro, J., Wacheul, L., Rothschild, G., Singh, S., Yang, Y., Sarode, A. Y., Gollapalli, K., Wu, L., Zhang, W., Chen, Y., Lauring, et al

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- **MITOCHONDRIAL ATP BIOGENESIS REGULATED BY VDAC1 IN TMEM119+TUMOR-ASSOCIATED MICROGLIA AND MACROPHAGES MEDIATES HIGH-GRADE GLIOMA GROWTH**
  Wu, C., Chen, Y., Lin, Y., Wei, K., Chang, K., Feng, L., Wu, A., Chen, K., Ren, A., Nitta, R., Wu, J., Pant, A., Cho, et al
  OXFORD UNIV PRESS INC.2023

- **Somatic MAP3K3 mutation defines a subclass of cerebral cavernous malformation** *AMERICAN JOURNAL OF HUMAN GENETICS*
  Weng, J., Yang, Y., Song, D., Huo, R., Li, H., Chen, Y., Nam, Y., Zhou, Q., Jiao, Y., Fu, W., Yan, Z., Wang, J., Xu, et al
  2021; 108 (5): 942-950

- **Classifying gastric cancer using FLORA reveals clinically relevant molecular subtypes and highlights LINC01614 as a biomarker for patient prognosis** *ONCOGENE*
  Chen, Y., Cheng, W., Shi, H., Huang, S., Chen, H., Liu, D., Xu, W., Yu, J., Wang, J.
  2021; 40 (16): 2898-2909

- **Noncoding RNA processing by DIS3 regulates chromosomal architecture and somatic hypermutation in B cells** *NATURE GENETICS*
  Laffleur, B., Lim, J., Zhang, W., Chen, Y., Pefanis, E., Bizarro, J., Batista, C. R., Wu, L., Economides, A. N., Wang, J., Basu, U.
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- **Structural Basis for the High-Affinity Interaction between CASK and Mint1** *STRUCTURE*
  Wu, X., Cai, Q., Chen, Y., Zhu, S., Mi, J., Wang, J., Zhang, M.
  2020; 28 (6): 664-+

- **Noncoding RNA transcription alters chromosomal topology to promote isotype-specific class switch recombination** *SCIENCE IMMUNOLOGY*
  Rothschild, G., Zhang, W., Lim, J., Giri, P., Laffleur, B., Chen, Y., Fang, M., Chen, Y., Nair, L., Liu, Z., Deng, H., Hammarstrom, L., Wang, et al
  2020; 5 (44)

- **Ca (2+)-Induced Rigidity Change of the Myosin VIIa IQ Motif-Single alpha Helix Lever Arm Extension** *STRUCTURE*
  Li, J., Chen, Y., Deng, Y., Unarta, I., Lu, Q., Huang, X., Zhang, M.
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  Chan, C. M., Chen, Y., Hung, T. S., Miller, A. L., Shipley, A. M., Webb, S. E.
  2015; 59 (7-9): 289-301