Stanford



Yan Liu

Cryo-Elect Micros Eng, Stanford Synchrotron Radiation Lightsource

Bio

BIO

I am a cryoEM specialist/staff engineer at Stanford-SLAC CryoEM Center, and I am dedicated to training the next generation of researchers and disseminating knowledge within the scientific community. My scope of work includes but not limited to developing cryoEM training curriculum in the center, organizing cryoEM training workshops, and assisting in equipment installation and maintenance. Additionally, my research interest has been focused on plant biology and the application of advanced imaging techniques. I used a combination of molecular tools (such as DNA/RNA techniques, protein expression, purification and characterization (FPLC, Western, IP, etc), tissue culture, and genome editing), and cutting-edge imaging techniques including confocal laser scanning microscopy, STED super resolution microscopy, serial block face imaging, traditional and cryo-transmission electron microscopy to understand the function, structure and subcellular localization of proteins in plant cells.

CURRENT ROLE AT STANFORD

Staff Engineer, SLAC National Accelerator Laboratory

CryoEM Specialist, Stanford-SLAC CryoEM Center

EDUCATION AND CERTIFICATIONS

- Phd, Washington State University (2020)

Publications

PUBLICATIONS

- **Structural basis of transcription of the hachimoji eight-letter alphabet by E. coli RNA polymerase.** *Nature communications*
  Li, Q., Kim, H. J., Liu, Y., Oh, J., Hou, P., Hoshika, S., Pintilie, G., Aiyer, S., Chong, J., Lyumkis, D., Benner, S. A., Wang, D.
  2026; 17 (1)
- **Hydrophobic unnatural base pair promotes trigger loop closure and catalysis in cellular RNA polymerase independent of hydrogen bonding.** *Proceedings of the National Academy of Sciences of the United States of America*
  Li, Q., Hou, P., Kimoto, M., Oh, J., Liu, Y., Tan, H. P., Chong, J., Hirao, I., Wang, D.
  2026; 123 (33): e2607774123
- **Cryo-EM structures of the small-conductance Ca2+-activated KCa2.2 channel.** *Nature communications*
  Nam, Y. W., Im, D., Garcia, A. S., Tringides, M. L., Nguyen, H. M., Liu, Y., Orfali, R., Ramanishka, A., Pintilie, G., Su, C. C., Cui, M., Logothetis, D. E., Yu, et al
  2025; 16 (1): 3690
- **Structural basis for intermodular communication in assembly-line polyketide biosynthesis.** *Nature chemical biology*
  Cogan, D. P., Soohoo, A. M., Chen, M., Liu, Y., Brodsky, K. L., Khosla, C.
  2024

- **CryoEM structures of the human CLC-2 voltage-gated chloride channel reveal a ball-and-chain gating mechanism.** *eLife*
  Xu, M., Neelands, T., Powers, A. S., Liu, Y., Miller, S. D., Pintilie, G. D., Bois, J. D., Dror, R. O., Chiu, W., Maduke, M.
  2024; 12

- **Three-dimensional structure-guided evolution of a ribosome with tethered subunits.** *Nature chemical biology*
  Kim, D. S., Watkins, A., Bidstrup, E., Lee, J., Topkar, V., Kofman, C., Schwarz, K. J., Liu, Y., Pintilie, G., Roney, E., Das, R., Jewett, M. C.
  2022

- **Proteomics of isolated sieve tubes from Nicotiana tabacum: sieve element-specific proteins reveal differentiation of the endomembrane system.** *Proceedings of the National Academy of Sciences of the United States of America*
  Liu, Y., Vasina, V. V., Kraner, M. E., Peters, W. S., Sonnewald, U., Knoblauch, M.
  2022; 119 (1)

- **Aspartate Residues in a Forisome-Forming SEO Protein Are Critical for Protein Body Assembly and Ca2+ Responsiveness** *PLANT AND CELL PHYSIOLOGY*
  Liu, Y., Peters, W. S., Froelich, D. R., Howell, A. H., Mooney, S., Evans, J. E., Hellmann, H. A., Knoblauch, M.
  2020; 61 (10): 1699-1710

- **Protein structural biology using cell-free platform from wheat germ** *ADVANCED STRUCTURAL AND CHEMICAL IMAGING*
  Novikova, I. V., Sharma, N., Moser, T., Sontag, R., Liu, Y., Collazo, M. J., Cascio, D., Shokuhfar, T., Hellmann, H., Knoblauch, M., Evans, J. E.
  2018; 4: 13