Stanford



Kevin Rose

Postdoctoral Scholar, Structural Biology

NIH Biosketch available Online Curriculum Vitae available Online

Bio

PROFESSIONAL EDUCATION

- Doctor of Philosophy, UC Berkeley Extension (2025)
- PhD, UC Berkeley , Molecular and Cell Biology

STANFORD ADVISORS

- Peter Dahlberg, Postdoctoral Faculty Sponsor

Research & Scholarship

CURRENT RESEARCH AND SCHOLARLY INTERESTS

I am interested in studying organelle dysfunction and host cell responses at the highest resolution possible in natively preserved tissues. To do this, I couple correlative light and cryo-Electron Tomography (cryo-ET) and perform ultrastructural analysis of healthy and diseased organelles. This technique hopes to uncover new molecular details of pathophysiology so that we can improve our understanding of diseases such as cancer and neurodegeneration to improve the rationale therapeutic design.

LAB AFFILIATIONS

- Peter Dahlberg, Dahlberg Lab (6/16/2025)

Teaching

GRADUATE AND FELLOWSHIP PROGRAM AFFILIATIONS

- Biophysics (PhD Program)
- Molecular and Cellular Physiology (PhD Program)
- Structural Biology (PhD Program)

Publications

PUBLICATIONS

- **In situ cryo- ET visualization of mitochondrial depolarization and mitophagic engulfment** *PROCEEDINGS OF THE NATIONAL ACADEMY OF SCIENCES OF THE UNITED STATES OF AMERICA*
  Rose, K., Herrmann, E., Kakudji, E., Lizarrondo, J., Celebi, A., Wilfling, F., Lewis, S. C., Hurley, J. H.
  2025; 122 (31): e2511890122
- **Structural Mechanism and Cellular Restriction of Tau Seeding from Endolysosomes.** *bioRxiv : the preprint server for biology*
  Herrmann, E., Tan, S., Rose, K. M., Hooy, R. M., Hurley, J. H.

2026

- **Correlating physiology and structure with fluorescent biosensors and cryo-ET**
  Azaldegui, C. A., Perez, D. D., Dwyer, W., Rose, K. M., Rui, Y., Dinneny, J., Dahlberg, P. D.
  CELL PRESS.2026: 11a

- **A RAB7A phosphoswitch coordinates Rubicon Homology protein regulation of Parkin-dependent mitophagy.** *The Journal of cell biology*
  Tudorica, D. A., Basak, B., Puerta Cordova, A. S., Khuu, G., Rose, K., Lazarou, M., Holzbaur, E. L., Hurley, J. H.
  2024; 223 (7)

- **Tau fibrils induce nanoscale membrane damage and nucleate cytosolic tau at lysosomes.** *Proceedings of the National Academy of Sciences of the United States of America*
  Rose, K., Jepson, T., Shukla, S., Maya-Romero, A., Kampmann, M., Xu, K., Hurley, J. H.
  2024; 121 (22): e2315690121

- **In vitro reconstitution of calcium-dependent recruitment of the human ESCRT machinery in lysosomal membrane repair.** *Proceedings of the National Academy of Sciences of the United States of America*
  Shukla, S., Larsen, K. P., Ou, C., Rose, K., Hurley, J. H.
  2022; 119 (35): e2205590119

- **When in Need of an ESCRT: The Nature of Virus Assembly Sites Suggests Mechanistic Parallels between Nuclear Virus Egress and Retroviral Budding (vol 13, 1138, 2021)** *VIRUSES-BASEL*
  Rose, K. M., Spada, S. J., Hirsch, V. M., Bouamr, F.
  2021; 13 (9)

- **From Capsids to Complexes: Expanding the Role of TRIM5α in the Restriction of Divergent RNA Viruses and Elements.** *Viruses*
  Rose, K. M., Spada, S. J., Broeckel, R., McNally, K. L., Hirsch, V. M., Best, S. M., Bouamr, F.
  2021; 13 (3)

- **Budding of a Retrovirus: Some Assemblies Required.** *Viruses*
  Rose, K. M., Hirsch, V. M., Bouamr, F.
  2020; 12 (10)

- **A helical assembly of human ESCRT-I scaffolds reverse-topology membrane scission.** *Nature structural & molecular biology*
  Flower, T. G., Takahashi, Y., Hudait, A., Rose, K., Tjahjono, N., Pak, A. J., Yokom, A. L., Liang, X., Wang, H. G., Bouamr, F., Voth, G. A., Hurley, J. H.
  2020; 27 (6): 570-580

- **Selection of 2'-Deoxy-2'-Fluoroarabino Nucleic Acid (FANA) Aptamers That Bind HIV-1 Integrase with Picomolar Affinity.** *ACS chemical biology*
  Rose, K. M., Alves Ferreira-Bravo, I., Li, M., Craigie, R., Ditzler, M. A., Holliger, P., DeStefano, J. J.
  2019; 14 (10): 2166-2175