Stanford

Pujuan Deng

Postdoctoral Scholar, Biochemistry

Bio

BIO

I am a Postdoctoral Scholar at Stanford University, following my Ph.D. from Beijing Normal University and postdoctoral training at Tsinghua University. My research explores the vast genetic diversity of the microbiome, seeking to uncover novel biological mechanisms—like the different ways hosts defend against viral infections. I have an impressive track record of publications in leading journals, including Cell, Nature, and PNAS. Most recently, my work published in Science revealed the mechanism of protein-templated DNA synthesis.

HONORS AND AWARDS

- Academic Scholarship of Nanchang University, Nanchang University (2012-2014)
- Outstanding Graduate of Nanchang University, Nanchang University (2015)
- Excellent Freshmen Award, Beijing Normal University (2015)
- First Prize of Academic Scholarship, Beijing Normal University (2016-2018)
- First Prize for Oral Presentation in Doctoral Forum at BNU, Beijing Normal University (2018)
- National Scholarship, China (2019)
- Baosteel Education Award, Beijing Normal University (2019)
- Outstanding Graduate of Beijing Normal University, Beijing Normal University (2020)
- Outstanding Graduate of Beijing, Beijing (2020)
- Advanced Innovation Fellowship of Tsinghua University, Tsinghua University (2020)
- Discover Glo Explorer of Chinese Society for Cell Biology, Chinese Society for Cell Biology (2022)

PROFESSIONAL EDUCATION

- Doctor of Science, Beijing Normal University (2020)
- PhD, Beijing Normal University , School of Life Sciences (2020)
- BS, Nanchang University , School of Life Sciences (2015)

STANFORD ADVISORS

- Alex Gao, Postdoctoral Faculty Sponsor

Research & Scholarship

CURRENT RESEARCH AND SCHOLARLY INTERESTS

My research aims to explore the vast genetic diversity of the microbiome, seeking to uncover novel biological mechanisms—like the different ways hosts defend against viral infections.

Publications

PUBLICATIONS

- **Protein-templated synthesis of dinucleotide repeat DNA by an antiphage reverse transcriptase.** *Science (New York, N.Y.)*
  Deng, P., Lee, H., Armijo, C., Wang, H., Gao, A.
  2026: eaed1656

- **Systematic discovery of DNA-binding tandem repeat proteins.** *Nucleic acids research*
  Hu, X., Zhang, X., Sun, W., Liu, C., Deng, P., Cao, Y., Zhang, C., Xu, N., Zhang, T., Zhang, Y. E., Liu, J. G., Wang, H.
  2024; 52 (17): 10464-10489

- **Structural RNA components supervise the sequential DNA cleavage in R2 retrotransposon.** *Cell*
  Deng, P., Tan, S. Q., Yang, Q. Y., Fu, L., Wu, Y., Zhu, H. Z., Sun, L., Bao, Z., Lin, Y., Zhang, Q. C., Wang, H., Wang, J., Liu, et al
  2023; 186 (13): 2865-2879.e20

- **Structural Basis of the Transcriptional Elongation Factor Paf1 Core Complex from Saccharomyces eubayanus.** *International journal of molecular sciences*
  Qin, Y., Zhou, Y., Cao, Y., Ren, Y., Deng, P., Jiang, J., Wang, Z.
  2023; 24 (10)

- **LncRNA-Smad7 mediates cross-talk between Nodal/TGF-β and BMP signaling to regulate cell fate determination of pluripotent and multipotent cells.** *Nucleic acids research*
  Kong, X., Yan, K., Deng, P., Fu, H., Sun, H., Huang, W., Jiang, S., Dai, J., Zhang, Q. C., Liu, J. G., Xi, Q.
  2022; 50 (18): 10526-10543

- **Diverse activation mechanisms of PI3Ks.** *Nature structural & molecular biology*
  Deng, P., Liu, J. G.
  2022; 29 (3): 185-187

- **Nonspecific interactions between SpCas9 and dsDNA sites located downstream of the PAM mediate facilitated diffusion to accelerate target search.** *Chemical science*
  Yang, M., Sun, R., Deng, P., Yang, Y., Wang, W., Liu, J. G., Chen, C.
  2021; 12 (38): 12776-12784

- **Molecular basis of nucleosomal H3K36 methylation by NSD methyltransferases.** *Nature*
  Li, W., Tian, W., Yuan, G., Deng, P., Sengupta, D., Cheng, Z., Cao, Y., Ren, J., Qin, Y., Zhou, Y., Jia, Y., Gozani, O., Patel, et al
  2020

- **Transcriptional elongation factor Paf1 core complex adopts a spirally wrapped solenoidal topology.** *Proceedings of the National Academy of Sciences of the United States of America*
  Deng, P., Zhou, Y., Jiang, J., Li, H., Tian, W., Cao, Y., Qin, Y., Kim, J., Roeder, R. G., Patel, D. J., Wang, Z.
  2018; 115 (40): 9998-10003

- **Polycomb-like proteins link the PRC2 complex to CpG islands.** *Nature*
  Li, H., Liefke, R., Jiang, J., Kurland, J. V., Tian, W., Deng, P., Zhang, W., He, Q., Patel, D. J., Bulyk, M. L., Shi, Y., Wang, Z.
  2017; 549 (7671): 287-291