Curriculum Vitae

Name
Wei Yang

Current Position
Distinguished Investigator
Laboratory of Molecular Biology,
National Institute of Diabetes and Digestive and Kidney Diseases
NIH

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weiy@niddk.nih.gov

Education & Professional Experiences (Times New Roman, 11 point)
Columbia University Ph. D. 1991 Biophysics
Columbia University M. Ph. 1988 Biochemistry
Columbia University M. A. 1986 Biochemistry
SUNY at Stony Brook B. A. 1985 Biochemistry
Fudan University, China Undergraduate. 1980 - 1983 Biochemistry Biochemistry
Postdoctoral Training
1992 — 1995 with Dr. Thomas A. Steitz, Yale University.
1991 — 1992 with Dr. Wayne Hendrickson, Columbia University.
Positions held
Mar 2016 —present Distinguished Investigator, NIDDK, NIH
Sept. 2004 – Oct. 2015 Adjunct Professor at Johns Hopkins University
May 2000 – present Tenured senior investigator and sect
Dec. 1995 – May 2000 Tenure-track group leader at NIH

Research Interests (Times New Roman, 11 point)
Mechanisms of DNA repair, replication and recombination
Macromolecular assemblies, structure, and function
ATP in molecular recognition, motion, and signaling
Mechanism of enzyme catalysis

Selected Publications (※3-5 major papers)
Li, C.-L., Kim, J., Brussee S.J., Sugasawa, K., Luisterburg, M.S. & Yang, W. (2026) Preincision structures reveal principles of DNA nucleotide excision repair, **Nature,** online: DOI: 10.1038/s41586-026-10122-5
Zhen T, Cao Y, Dou T, et al. Yang W, Jiang J, Zhao K, Liu PP (2025) CBFβ-SMMHC-driven leukemogenesis requires enhanced RUNX1-DNA binding affinity in mice, **J. Clin. Invest**. eCollection October 2025.
Chen, X., Yao, L., Li, W., Ma, S., Yuan, X., Yang, Y., Yuan, Y., Liu, Y., Liu, L., Wang, H., Gellert, M. & Yang, W. (2025) How RAG1/2 evolved from ancestral transposases to initiate V(D)J recombination without transposition, **PNAS**, ePub July 2025.
Liu, L., Li, J., Cisneros-Aguirre, M., Merkell, A., Stark, J.M., Gellert, M. & Yang, W. (2025) Dynamic assemblies and coordinated reactions of non-homologous end joining, **Nature**, 643, 847-854.
Yang, X., Chen, X., Yang, W*. and Pommier, Y (2025) Structural insights into human Topoisomerase 3β DNA and RNA catalysis and nucleic acid gate dynamics. **Nature Commun**, 16(1):834. (*co-corresponding author).

Lecture Title
The Dance of Protein and DNA in Nucleotide Excision Repair

Abstract (500 words maximum)
Nucleotide excision repair (NER) removes bulky adducts from genomic DNA and prevents the ultraviolet light (UV)-sensitivity disease xeroderma pigmentosum (XP), cancer and pre-mature-aging. After initial lesion recognition by XPC in global genome repair (GGR), a lesion and surrounding DNA duplex are unwound by TFIIH, which includes ATPases XPB and XPD, and additional NER factors XPA, XPF, XPG and RPA, to form a ~27-nt bubble. The ds-ss junction-specific endonucleases XPF and XPG cleave DNA on the 5′ and 3′ sides of the lesion, respectively. I will present the functional steps and atomic structures of the ATPase-driven and lesion-dependent DNA bubble formation and arrangement of the complete NER factors for dual incision. Unwinding of nearly 30 bps DNA depends mainly on the dsDNA translocase XPB and the duplex dividers XPA and XPF. XPD binds the lesion strand with XPF at the 5′ ds-ss junction. XPF cuts the lesion strand only after XPG binds the 3′ ds-ss junction. The ERCC1 subunit of XPF facilitates DNA strand separation and recruitment of RPA to the non-lesion strand.