

Jin-Wu Nam, Ph.D.



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Professional Profile

Bioinformatician and RNA biologist whose research integrates computational biology, functional genomics, transcriptomics, and AI-driven RNA design. Prof. Nam's work spans microRNA biology, long non-coding RNAs, genome and transcriptome analysis, single-cell omics, cancer bioinformatics, and AI-enabled design of RNA therapeutics.

Research Interests

RNA Biology	Bioinformatics & Omics	AI for Biomedicine
microRNAs, long non-coding RNAs, circular RNAs, RNA processing and RNA therapeutics	transcriptome reconstruction, genome variation, single-cell transcriptomics, cancer bioinformatics	AI-assisted RNA design, shRNA/mRNA design, computational modeling for functional genomics

Education

Ph.D. in Bioinformatics, Seoul National University (2004–2007)

M.E. in Bioinformatics, Seoul National University (2002–2004)

B.S. in Biology, Yonsei University (1994–2001)

Academic Appointments

2021–present Professor, Department of Life Science, Hanyang University

2016–2021 Associate Professor, Department of Life Science, Hanyang University

2012–2016 Assistant Professor, Department of Life Science / Graduate School in Biomedical Science and Engineering, Hanyang University

2019–2020 Visiting Professor, Department of Biochemistry, University of Washington

2008–2012 Postdoctoral Fellow, Whitehead Institute for Biomedical Research / MIT / HHMI

2007–2008 Postdoctoral Researcher, MicroRNA Research Center, Seoul National University

Selected Leadership and Professional Service

2026–present Director, Institute for Advanced Bio Convergence, Hanyang University

2026–present Member, National Bioethics Review Committee

2026–present Subcommittee Chair, Committee for the National Science and Technology Basic Plan, Ministry of Science and ICT

2026 Program Committee Co-Chair, IEEE-BIBM 2026 (Dallas, USA)

2026 Program Committee Co-Chair, ISCB-AI 2026 (Bali, Indonesia)

2025–present Member, Advanced Bio Technology Coordination Committee, Presidential Advisory Council on Science & Technology / National Strategic Technology

2025–2026 Member, National Bio Committee

2024 Government Delegate, U.S. Department of State Global Cooperation Meeting on AI-Bioscience

2023–2025 Director, Division of Next Generation Biotechnology, National Research Foundation of Korea

2023 Director, Advanced Bio Convergence Research Institute, Hanyang University

2022–2023 Head, Bio Big Data Center, HY-IBB

Selected Honors and Awards

- 2022 Minister of Science and ICT Commendation**, for contributions to biological research resources
- 2020 Teragen Bioinformatics Scientist of the Year Award, Korean Society for Bioinformatics**
- 2020 Blue Ribbon Lecture, Winter Conference of the Korean Society for Molecular and Cellular Biology**
- 2019 Researcher of the Month, Hanyang University**
- 2018 OnBIT Award, Korean Society for Bioinformatics**
- 2018 International Academic Exchange Support Program, LG Yonam Foundation**
- 2018 Poster Award, RNA Meeting 2018 (UC Berkeley)**
- 2016 Academic Award, Natural Science Research Institute, Hanyang University**
- 2012 Whitehead Postdoctoral Travel Award**

Selected Publications

1. Park S*, Park S-H*, Oh J-S, Noh Y-K, Hur J.K., Nam J-W#. shRNAI: a deep neural network for the design of highly potent shRNAs. *Molecular Therapy Nucleic Acids* 36:102738, 2025.
2. Choi S-W., Nam J-W. Optimal design of synthetic circular RNAs. *Experimental & Molecular Medicine*, 2024.
3. Lee K-T.*, Pranoto I.K.A.*, et al. Nam J-W#. Comparative interactome analysis of α -arrestin families in human and *Drosophila*. *eLife*, 2024.
4. Sohn J-I.*, Choi M-H.*, Yi D.*, et al. Nam J-W. Ultra-fast prediction of somatic structural variations by reduced read mapping via pan-genome k-mer sets. *Nature Biomedical Engineering* 7:853–866, 2023.
5. Cho B.*, Yoon S-H.*, Lee D., et al. Nam J-W#, Shim J#. Single-cell transcriptome maps of myeloid blood cell lineages in *Drosophila*. *Nature Communications* 11:4483, 2020.
6. You B.*, Yoon J.*, Kang H., et al. Nam J-W#. HERES, a lncRNA that regulates canonical and noncanonical Wnt signaling pathways via interaction with EZH2. *Proceedings of the National Academy of Sciences* 116(49):24620–24629, 2019.
7. Park J.*, Seo J-W.*, Ahn N., et al. Nam J-W#. UPF1/SMG7-dependent microRNA-mediated gene regulation. *Nature Communications* 10:4181, 2019.
8. Kim H.K., Song M., Lee J., et al. Nam J-W., Kim H. In vivo high-throughput profiling of CRISPR-Cpf1 activity based on target sequence composition. *Nature Methods* 14:153–159, 2017.
9. Agarwal V., Bell G.W., Nam J-W., Bartel D.P. Predicting effective microRNA target sites in mammalian mRNAs. *eLife* 4:e05005, 2015.
10. Nam J-W., Rissland O., Kopstein D., Agarwal V., Jan C., Yildirim M., Bartel D.P. Global analyses of the effect of different cellular contexts on microRNA targeting. *Molecular Cell* 53(6):1031–1043, 2014.
11. Nam J-W., Bartel D.P. Long non-coding RNAs in *C. elegans*. *Genome Research* 22:2529–2540, 2012.
12. Shin C.*, Nam J-W.*, Farh K., Chiang H., Shkumatava A., Bartel D.P. Expanding the microRNA targeting code: a novel type of site with centered pairing. *Molecular Cell* 38(6):789–802, 2010.
13. Park S.Y.*, Lee J.H.*, Ha M., Nam J-W., Kim V.N. miR-29 miRNAs activate p53 by targeting p85 α and CDC42. *Nature Structural & Molecular Biology* 16(1):23–29, 2009.
14. Han J., Kim Y.T., Yeom K-H., Nam J-W., et al. Molecular basis for the recognition and processing of primary microRNA by Drosha. *Cell* 125:887–901, 2006.
15. Kim V.N., Nam J-W. Genomics of microRNA. *Trends in Genetics* 22(3):165–173, 2006.