Yuan-Sheng Hsu — M.D., Ph.D.

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Summary

Physician-scientist with dual M.D./Ph.D. combining deep biomedical domain expertise with hands-on data analytics experience. PhD research focused on metabolic mechanisms of cancer initiation (O-GlcNAcylation, nucleotide metabolism). Skilled in mining large-scale hospital datasets (400K+ samples) with SQL and bioinformatics pipelines. Actively seeking to apply scientific and analytical acumen to biotech investment analysis and drug development evaluation.

Education

China Medical University **Taichung, Taiwan**
M.D./Ph.D. in Medicine *2015–2024*

Ph.D. Advisor: Academician Wen-Hwa Lee, Genomics Research Center, Academia Sinica

Dissertation: Differential effects of glucose and N-acetylglucosamine on genome instability

Professional Experience

Veterans General Hospital Taichung **Taichung, Taiwan**
Physician *Mar 2025–Present*

- Provide patient care across clinical departments with exposure to treatment decision-making, drug efficacy evaluation, and real-world evidence of pharmaceutical interventions
- Participate in departmental research and manuscript preparation

Ministry of National Defense **Hualien, Taiwan**
Substitute Military Service *Sep 2024–Mar 2025*

China Medical University Hospital **Taichung, Taiwan**
Clinical Data Analyst (Concurrent with Clerkship) *Sep 2022–Aug 2024*

- Built and queried hospital data warehouse (400K+ patient samples) using SQL and ICD diagnostic codes to extract cancer vs. non-cancer cohorts for genetic profiling
- Designed 1:5 matched case-control study for breast cancer genomic research
- Executed genome-wide association studies (GWAS) on Linux using PLINK; identified statistically significant loci and generated publication-ready visualizations with R and LocusZoom

Genomics Research Center, Academia Sinica **Taipei, Taiwan**
Ph.D. Researcher *Mar 2018–Jul 2022*

- Investigated molecular mechanisms by which high-sugar diets induce pancreatic DNA damage and promote carcinogenesis through O-GlcNAcylation and nucleotide metabolism disruption
- Designed and executed animal model studies comparing DNA damage across sugar types and dosages, generating preclinical data relevant to metabolic disease drug targeting
- Performed LC-MS metabolomics for dNTP pool quantification and sample analysis
- Developed high-content imaging assays (96-well plate format) for DNA damage and protein glycosylation screening—skills directly applicable to drug screening workflows
- Conducted multiplex IHC + RNA SCOPE on precancerous pancreatic lesions to characterize cytokine expression in tumor microenvironment (Inhba in CK19+ lesions and α-SMA+ fibroblasts)

Technical Skills

Data & Analytics: SQL, R (data visualization, statistical analysis), Python (data visualization, statistical analysis, PyTorch), PLINK/GWAS, Linux

Biomedical: Western Blot, IP, IF, ELISA, LC-MS, High-Content Screening, Multiplex IHC combined with RNA SCOPE, Spinning Disk Confocal Microscopy, Animal Model Design

Analytical: Case-control study design, large-scale cohort data extraction, genome-wide association analysis, data warehouse management

Selected Achievements & Training

Publication: Hsu YS, Wu PJ, Jeng YM, Hu CM, Lee WH. Differential effects of glucose and N-acetylglucosamine on genome instability. Am J Cancer Res. 2022;12(4):1556-1576.
Liu YH, Hu CM, Hsu YS, Lee WH. Interplays of glucose metabolism and KRAS mutation in pancreatic ductal adenocarcinoma. Cell Death Dis. 2022;13(9):817.
Hsu YS, Yong SB. Correspondence to "early infancy dysbiosis in food protein-induced enterocolitis syndrome: A prospective cohort study". Allergy. 2024;79(2):540-541.

AI Training: Completed Medical Image Recognition course; built and validated CNN models using Python + PyTorch on Kaggle datasets

Languages

Mandarin Chinese (Native) | English (Fluent) | Japanese (JLPT N1) | German (Goethe B1)