



Leng Han, PhD

David Brown Professor of Genomic Medicine
Professor of Biostatistics & Health Data Science
Indiana University

Friday, March 21, 2025

12:00-1:00 pm

Biotech Center Auditorium *or* via Zoom

<https://uwmadison.zoom.us/j/99879638765?pwd=wbtqxoucEFjIPVCVc9SFbvKB1Av7Xk.1>

Passcode: 343271

Harnessing big data for precision medicine

Abstract: Despite advancements in treatment options for cancer, a majority of cancer types continue to lack fully characterized and effective targeted therapies to improve disease diagnostics, prognoses, and patient survival outcomes. Therefore, there is an urgent need to gain a more comprehensive understanding of the molecular basis of diseases and develop novel prognostic and therapeutic strategies. Our lab utilizes cutting-edge techniques in systems biology to understand the molecular mechanisms of complex diseases. We conducted a series of pan-cancer analyses to provide clinical insights into cancer therapy, including RNA targeted therapy (Journal of the National Cancer Institute, 2018; Genome Medicine, 2019a; Genome Medicine, 2019b; Nature Communications, 2019; Cancer Research, 2022), chronotherapy (Cell Systems, 2018), hypoxia-targeted therapy (Nature Metabolism, 2019), target therapy (Genome Medicine, 2020a), autophagy-targeted therapy (Nature Communications, 2022), and immunotherapy (Nature Immunology, 2019; Nature Communications, 2020a; Nature Communications, 2020b; Genome Medicine, 2020b; Advanced Science, 2020; Journal of the National Cancer Institute, 2021; Cancer Cell, 2021; The Innovation, 2021; Journal for Immunotherapy of Cancer, 2022; Nature Reviews Clinical Oncology, 2022; Cell Metabolism, 2023; The Innovation, 2023; Nature Reviews Clinical Oncology, 2023). These studies shed light on future clinical considerations for the development of innovative therapies for cancer types currently lacking effective treatment options. We will further develop highly innovative prognostic and therapeutic strategies with the potential to produce a major impact on biomedical research.

Bio: Dr. Han is David Brown Chair Professor in Genomic Medicine, Department of Biostatistics and Health Data Science, Brown Center for Immunotherapy, Indiana University School of Medicine (IUSM). Before join IU, he is an Associate Professor and CPRIT scholar at Texas A&M University, Institute of Biosciences & Technology, and Assistant Professor at The University of Texas Health Science Center at Houston. Dr. Han obtained his PhD from Chinese Academy of Sciences and did postdoc training with Dr. Joseph C. Wu at Stanford University, and Dr. Han Liang at MD Anderson Cancer Center. Dr. Han's lab focused on harnessing big data for precision medicine. In the past several years, his labs contributed to RNA-targeted therapy, target therapy, and immunotherapy, and published several papers in high profile journals, including Cancer Cell, Cancer Discovery, Nature Metabolism, Nature Immunology, Cell Metabolism, Nature Communications, The Innovation, Cell Systems, Cell Reports, Nucleic Acids Research, Genome Medicine, Journal of the National Cancer Institute, Journal of Immunotherapy of Cancer, Cancer Research. He has been invited to contribute review, commentary and spotlight by multiple journals, including Nature Reviews Clinical Oncology, Nature Biotechnology, Trends in Genetics, Trends in Cancer, Trends in Molecular Medicine, Genome Medicine, and Oncogene. To date, he has published >180 peer-reviewed papers, with a total of > 30,000 citations (Google scholar, H-index = 70).



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