



Fri, 19 Dec 2025 | 2 pm | S3-05-02 Conference Room 1

Hosted by Assistant Professor Luo Min

Chemical dissection of microbiota mechanisms in health and disease

By Howard C. Hang

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About the Speaker

Howard C. Hang is a Professor in Departments of Immunology & Microbiology and Chemistry and Chair of the Department of Immunology & Microbiology at Scripps Research, California. He obtained his B.S. degree in chemistry from the University of California, Santa Cruz in 1998 with Professor Joseph P. Konopelski. In 2003, he completed his Ph.D. in chemistry at University of California, Berkeley with Professor Carolyn Bertozzi. During his graduate studies, he was awarded an American Chemical Society, Organic Division, Graduate Fellowship. He then worked with Professor Hidde Ploegh at Harvard Medical School and the Whitehead Institute of Biomedical Research at Massachusetts Institute of Technology from 2004-2006 as Damon Runyon Cancer Research Foundation Postdoctoral Fellow. He joined the faculty at The Rockefeller University as an Assistant Professor in 2007 and moved to Scripps Research in 2020. He has received Irma T. Hirsch Early Career Scientist Award in 2007, Ellison Foundation New Scholar Award in 2008 and Eli Lilly Award in Biological Chemistry from American Chemical Society Division of Biological Chemistry in 2017.

My laboratory is broadly interested in the molecular mechanisms by which chemical signals modulate host-microbe interactions in health and disease. These chemical signals may be derived from host metabolism or the environment (diet or microbiota) and can significantly affect host physiology, disease and response to therapy. To dissect the chemical mechanisms that govern host-microbe interactions, my laboratory has developed methods to characterize metabolite-protein modifications and discovered unpredicted functions in cell biology, host immunity and pathogen virulence. More recently, we have utilized our chemical methods and employed key animal models to discover and characterize novel protective factors from specific microbiota species. For this seminar, I will present our recent progress on the chemical dissection and translation of microbiota mechanisms towards infection and immunotherapy, which has afforded new opportunities for diagnostics and therapeutics.