



Advancing Precision Medicine Through Genomics, Microbiome Science, and AI

The Center for Genomic AI and Microbiome Medicine brings together researchers and clinicians across the Icahn School of Medicine at Mount Sinai to better understand how human genetics and the microbiome jointly shape health and disease. By integrating high-resolution genomic data, microbiome insights, and advanced computational approaches, the Center aims to improve disease prediction, inform treatment decisions, and support more personalized approaches to care.

Collaborators across Mount Sinai share their perspectives on the opportunities this new Center creates.



Gang Fang, PhD,
Director, Center for Genomic AI and Microbiome Medicine
Professor, Genetics & Genomic Sciences

Alison Goate, D.Phil.
Director, Ronald M. Loeb Center for Alzheimer’s disease **Chair** and Jean C. & James W. Crystal Professor, Genetics & Genomic Sciences



“To date, precision medicine has focused on the genetic factors of individual patients, but not the microbes in their gut. This new center puts us at a turning point where genomics and AI can integrate human and microbiome factors together to make accurate predictions, enabling a broad approach to many diseases.”

Fanny Elahi, MD, PhD
Director, Fluid Biomarker Research, Deane Center for Wellness and Cognitive Health **Associate Professor,** Neurology, Neuroscience, Pathology



“As a scientist who sees patients, I’m keen to focus on questions that can ultimately lead to interventions. Understanding how the gut microbiome relates to neurodegenerative diseases—using the tools the Center will spearhead—may help us decode this complex ecosystem, and learn how to modify them.”

Deirdre Cohen, MD, MS
Director, Gastrointestinal Oncology Program **Associate Professor,** Medicine, Hematology and Medical Oncology



“As a clinical researcher caring for patients with GI cancers, I’m focused on questions that can truly change what we do in the clinic. We’ve learned a great deal from tumor genetics, but the gut microbiome is another critical piece of the puzzle. The Center for Genomic AI and Microbiome Medicine gives us the ability to bring microbial data, human genomics, and AI together in one place. When we connect those dots, we can find clearer signals for early detection, better predict how patients will respond to therapy, and move closer to genuinely personalized care.”

