RAMNIK XAVIER is a core institute member of the Broad Institute of MIT and Harvard and co-director of the Broad’s Infectious Disease and Microbiome Program. He is the Kurt Isselbacher Professor of Medicine at Harvard Medical School; director of the Center for Computational and Integrative Biology and member of the Department of Molecular Biology at Massachusetts General Hospital (MGH); and co-director of the Center for Microbiome Informatics and Therapeutics at MIT.

As a clinical gastroenterologist and molecular biologist, Xavier studies the specific molecular mechanisms involved in innate and adaptive immunity as well as the genetic variants associated with Crohn’s disease, ulcerative colitis, and autoimmunity. By determining the physiological functions of inflammatory bowel disease (IBD)-associated polymorphisms, his work illuminates processes underlying mucosal homeostasis and inflammation. Using human cohorts, the laboratory interrogates the microbiome’s impact on immunity and inflammation. Recent studies demonstrated that microbiome variability influences cytokine production and associated microbiome variation with autoimmunity risk, pinpointing microbial structures likely mediating susceptibility. Through a transformative collaboration with the Broad’s Chemical Biology and Therapeutic Sciences Program, the laboratory aims to discover small molecules that can correct pathways defective in Crohn’s disease and autoimmunity.

At the Broad, Xavier will focus on expanding research efforts in immunology and promoting investigations of fundamental questions in human disease biology. These efforts will define the immune processes that play a central role in both healthy and disease states, and will complement existing programs at the Broad that focus on conditions with a strong immunologic basis, for example, programs aimed at cancer biology, neurodegenerative and psychiatric conditions, medical and population genetics, and infectious disease.

Ramnik has spent his academic career at MGH serving as chief of gastroenterology and director of the Center for the Study of Inflammatory Bowel Disease at MGH.