



Frank Slack Ph.D.
Director, Harvard Medical School Initiative for RNA Medicine
Director, BIDMC Cancer Research Institute

Frank Slack, Ph.D., is Director of the Harvard Medical School Initiative for RNA Medicine hosted at Beth Israel Deaconess Medical Center (BIDMC). He is also the Shields Warren Mallinckrodt Professor of Pathology at Harvard Medical School.

Frank Slack received his B.Sc. from the University of Cape Town in South Africa, before completing his Ph.D. in molecular biology at Tufts University School of Medicine. He started his work on microRNAs as a postdoctoral fellow in Gary Ruvkun's laboratory at HMS. Dr. Slack subsequently moved to the Department of Molecular, Cellular, and Developmental Biology at Yale University, where he was a program leader in the Yale Cancer Center and the

director of the Yale Center for RNA Science and Medicine. There he discovered that microRNAs regulate key human oncogenes and have the potential to act as therapeutics. He also demonstrated the first role for a microRNA in the aging process. In 2014, he joined Harvard Medical School/BIDMC as the director of the Institute for RNA Medicine. In 2016 he became the Director of the HMS Initiative in RNA Medicine. In 2020 he took on the role of Director of the BIDMC Cancer Research Institute.

Dr. Slack studies the roles and uses of microRNAs and their targets in development, disease, and aging. He has been at the forefront of the small RNA revolution. He was part of the team that discovered the first human microRNA, *let-7* and subsequently showed that it is a tumor suppressor that controls key cancer genes, such as *RAS*, *MYC*, and *LIN28*. They are developing *let-7* and a second microRNA, miR-34, as novel cancer therapeutics with miR-34 already in Phase I clinical trials. They also proved that microRNAs act as oncogenes and developed strategies to target these oncomiRs for cancer therapy. One of these oncomiRs, miR-155 is currently in Phase I clinical trials for lymphoma. Their research also extends to discovery of additional novel small RNAs in development, cancer, aging, and diabetes as well as identifying novel single nucleotide polymorphisms (SNPs) in the non-coding portions of the genome with an eye to identifying the next generation of targets in cancer. He is co-founder of three companies in this area, MiraDx, Impilo Tx and 28/7 Rx, and is or has been on the SAB of multiple additional companies, including Mirna Rx, miRagen Rx, Alexion Pharmaceuticals, The RNA Medicines Company.

Dr. Slack was an Ellison Medical Foundation Senior Scholar; received the 2014 Heath Memorial Award from MD Anderson Cancer Center and is an NCI Outstanding Investigator.