Living Legend: Dr. Robert Gallo

Robert Gallo, MD, is renowned as a co-discoverer of HIV, the cause of AIDS, and as two-time recipient of the prestigious Albert Lasker Award. His first Lasker Award for Basic Science in 1982 was for his discovery of the first human RNA tumor virus, now known as "retroviruses," and its association with certain leukemias and lymphomas. In 1986, he received the Lasker-DeBakey Clinical Medical Research Award for his co-discovery of HIV-1, the cause



of AIDS. In 1996, Dr. Gallo co-founded the Institute of Human Virology (IHV) at the University of Maryland School of Medicine. Prior to founding the Institute, Dr. Gallo spent 30 years at the National Cancer Institute, including as head of its Laboratory of Tumor Cell Biology. Dr. Gallo is The Homer & Martha Gudelsky Distinguished Professor in Medicine, Special Advisor to the Dean and IHV's Emeritus Director.

Dr. Gallo's major impact on scientific discovery began in the 1970s when he characterized all 61 types of the transfer RNAs in animal cells. Then, with a coworker, he described in human cells the enzyme that makes copies of DNA, known as DNA polymerase. In 1976, he identified the first cytokine, a chemical messenger that activates the immune system. This cytokine, Interleukin-2, allowed researchers to grow T-cells in the laboratory for the first time and later was used to develop cancer immunotherapy.

In 1980, Dr. Gallo and colleagues discovered the first retrovirus, Human T-Cell Leukemia Virus-1, also the first virus shown to directly cause cancer. Two years later, he identified a second retrovirus HTLV-2. These discoveries paved the way for identifying HIV. In 1986, he discovered the



first new human herpes virus in more than 25 years, HHV-6, which causes roseola infantum, a fever and rash in infants, and possibly involved in some dementia. In 1985, Dr. Gallo and his team developed the first HIV blood test, which he and others have updated over the years and allows for patient diagnoses and blood screening for transfusions. Dr. Gallo and his colleagues were important participants in an NCI-led project with the Burroughs Wellcome

Fund to develop the first AIDS therapy, the antiretroviral drug AZT. In the early 2000s, Dr. Gallo and his colleagues at IHV developed a vaccine candidate for HIV that is currently in a Phase Ib clinical trial in Thailand.

In 2011, Dr. Gallo co-founded the Global Virus Network, a coalition of eminent virologists working to end viral threats. With the onset of the COVID-19 pandemic, Dr. Gallo with his GVN colleagues, notably Konstantin Chumakov, PhD, authored two studies that suggested that the oral polio vaccine made from a live, weakened virus may protect people from SARS-CoV-2. Dr. Gallo continues his investigation on the viral origins of some human cancers along with revealing more details on how HIV causes disease, focusing on one-day reaching a functional cure. Dr. Gallo received his BA Degree in Biology from Providence College and his MD Degree from Jefferson Medical College. After conducting his Clinical Clerkship at Yale University School of Medicine, he completed his residency at the University of Chicago.

Through his research legacy, Dr. Gallo has published more than 1,300 scientific papers and a book, "Virus Hunting – AIDS, Cancer & the Human Retrovirus: A Story of Scientific Discovery," which has been published in 12 languages. Dr. Gallo was the most cited scientist in the world from 1980-1990 and was ranked third in the world for scientific impact from 1983 to 2002. In 1996, Science magazine named his team's work the Breakthrough of the Year for demonstrating that certain cytokines could inactivate the HIV virus. Dr. Gallo holds 35 honorary doctorate degrees. A sampling of his most prestigious international awards includes Canada's Gairdner Foundation International Award, The Japan Prize of Science and Technology, Germany's Paul Ehrlich and Ludwig Darmstaedter Prize, India's Birla Prize, France's Griffuel Prize, Spain's Prince Asturias Award; Israel's Dan David Award, the first Otto Herz Cancer Prize, and the Rabbi Shacknai Immunology Prize; Italy's Premio International Award, International Science Prize, the Magna Graecia International Prize, and Tevere Roma International Award; China's highest award, the VCANBIO Award for International Cooperation Life Sciences and Medicine, and the World Health Award from former Soviet Union President Gorbachev.