

Gallo's Goal

An Interview with Robert C. Gallo, M.D.,
 Director, Institute of Human Virology at the University of Maryland School of Medicine,
 and Co-Founder and Director of the Global Virus Network

EDITORS' NOTE In 1984, Dr. Robert Gallo became world famous when the U.S. government announced his co-discovery of the human immunodeficiency virus (HIV) as the cause of AIDS. Concurrently, Gallo and his team pioneered the development of the HIV blood test. His research additionally helped physicians develop HIV therapies to prolong the lives of those infected with HIV. Before the AIDS epidemic, Gallo was the first to identify a human retrovirus and the only known human leukemia virus – HTLV – one of few known viruses shown to cause a human cancer. Prior to assuming his current post in 1996, Gallo spent 30 years at the National Institutes of Health's (NIH) National Cancer Institute (NCI). His interest in science and medicine was first stirred by the loss of his six-year-old sister to leukemia when he was 13 years old. Dr. Gallo's research interests currently focus on the development of an effective HIV preventive vaccine, the development of innovative HIV therapies, and malignancies associated with HIV.



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INSTITUTION BRIEF Founded in 1996 by Dr. Gallo and two colleagues, the Institute of Human Virology (www.ihv.org; IHV) is the first center in the United States to combine the disciplines of basic science, epidemiology, and clinical research in a concerted effort to speed the discovery of diagnostics and therapeutics for a wide variety of chronic and deadly viral and immune disorders. An institute of the University of Maryland School of Medicine, it houses more than 300 employees, including more than 100 faculty, whose research efforts are focused on chronic human viral infections and disease. More than 75 percent of the institute's clinical and research effort is currently targeted at HIV infection, but also includes the Hepatitis C virus, herpes viruses, and cancer research.

What purpose did you believe the Institute of Human Virology would fill and how has it evolved to where it is to today?

At NCI, I had observations that made it into the clinic, but not as I would have liked them to. I felt it was time for me to be in a position where I determined the priorities.

I really wanted it all in one building: basic science, the experimental clinic for new drug

testing, and public health and epidemiology. Two colleagues, one my collaborator at NCI and the other a clinician from Walter Reed's AIDS center, wanted to do the same thing so we discussed getting everything under one roof with research from the lab to the clinic.

I didn't know that we would make it financially, but after a few years and with some fundamental state support, we did. Today, the institute is thriving.

What is your primary goal at IHV at this time?

The number one goal for me is trying to get an HIV preventive vaccine. Another key goal is to focus on research designed to cure infected people and a third is to help bring therapy to people all over the world. We either have to get a cure or a preventive vaccine, but preferably both. But a vaccine would eventually solve the problem.

We would not have made it to where we are today in our efforts to find a vaccine without the help of NIH in the beginning, but even more importantly, without help from the Gates Foundation. With that support, our vaccine candidate will move forward within the next year.

How are you positioned today with regard to the vaccine and what is your hope for it going forward?

Like HTLV, HIV is another retrovirus. And both present special difficulties. Yet, we believe it can be done.

IHV's vaccine candidate is designed to elicit strongly protective antibody responses across the spectrum of HIV-1 strains – we have seen it work in monkeys, but have a problem sustaining the antibodies for more than three months. It simply is not possible to boost individuals three or four times annually, so we must solve this antibody sustainability problem.

You created the GVN (Global Virus Network) to rapidly respond to new or re-emerging viruses that threaten mankind, to bring together and achieve collaboration among the world's leading virologists, and to support training of the next generation of medical virologists. How has it been received?

I knew there was a critical need for an organization like the GVN, but didn't know how far this would go or how enthusiastically it would be received at the onset. I haven't met

a virus expert who wasn't overwhelmingly enthusiastic when learning about GVN, because medical virologists worldwide understand the reality and the magnitude of the deadly threat posed by existing, emerging, and reemerging viruses and consider the GVN to be an absolute and long overdue necessity.

The GVN was established to be the most uniquely qualified, knowledgeable, and experienced organization capable of identifying, responding to, and safeguarding the world from viruses that threaten civilization. Another mandate of the GVN is to develop comprehensive education programming, as well as to provide the financial and scientific resources required, to train the nearly 14,000 medical virologists desperately needed over the next decade. The GVN will also undertake a wide-ranging program to inform and consult with governments and the medical community throughout the world, as well as to make the public-at-large aware of emerging virus threats.

Thus far, the GVN has brought together the foremost medical virologists, including experts in every kind of virus, from 21 countries throughout the world. The GVN is in the process of finalizing its funding initiatives for the next five years and our goal is to raise a minimum of \$50 million in order to address and mitigate emerging virus threats, a problem that is growing and getting worse each year.

Throughout history, millions died and millions more were infected by pandemic viruses because governments and health authorities throughout the world were insufficiently prepared and unable to join forces in order to harness the collective knowledge, expertise, resources, and technologies necessary to effectively battle such viruses. We cannot permit this to happen again, either in our lifetime or in future generations, which is why my colleagues and I formed the GVN. An article in *TIME* said it best: "Forget economic depression, nuclear war or an errant asteroid – nothing poses a bigger threat to human civilization over the long term than the right virus in the wrong place."

Do you ever take the time to celebrate "victories" in your research?

No. There is always something else to focus on. For example, showing the cause of AIDS was slow and steady, not a one moment event. And really, what was there to celebrate? We knew it was only the beginning of the beginning. ●