Remarks of

Anthony S. Fauci, M.D.

Upon receipt of

The Robert Koch Gold Medal

November 15, 2013

Berlin, Germany
It is with a great deal of humility and appreciation that I accept the Robert Koch Gold Medal. As I look back on my career in science and medicine, I realize how fortunate I am to have been given the opportunity to pursue, with a great deal of support from so many people, my passion for scientific discovery in the arena of health.

I began my career in basic science and clinical research as an immunologist and infectious diseases researcher at the U.S. National Institutes of Health (NIH) outside Washington, D.C. The early years of my research career were spent in studying the fundamental regulatory mechanisms of the human immune system while concurrently developing immunosuppressive therapies for a spectrum of immune-mediated inflammatory diseases such as the systemic vasculitides.

However, public health events beyond my control that occurred 3 decades ago compelled me to change course and pursue research on a new and strange disease that would ultimately evolve into one of the most devastating pandemics in human history. And so for the past 32 years, this is what I have been doing. Let me very briefly outline this extraordinary scientific and global health journey in which I was and am privileged to participate. In this regard, the June 5, 1981, issue of Morbidity and Mortality Weekly Report (MMWR), a publication of the U.S. Centers for Disease Control and Prevention (CDC) reported on five previously
healthy young gay men in Los Angeles, California diagnosed with *Pneumocystis carinii* pneumonia (PCP), an infectious disease usually seen only in people with profoundly impaired immune function. As a specialist in infectious diseases and immunology, I had cared for several people with PCP whose immune systems had been weakened by cancer chemotherapy. I was puzzled why otherwise healthy young gay men would acquire this infection. I was concerned, but mentally filed away the report as a curiosity.

One month later, the MMWR reported 26 cases in previously healthy gay men from Los Angeles, San Francisco and New York, who had developed PCP as well as an unusual form of cancer called Kaposi’s sarcoma. Their immune systems were severely compromised. This mysterious syndrome was acting like an infectious disease that very likely was sexually transmitted. My colleagues and I had never seen anything like it. The idea that we could be dealing with a brand-new infectious microbe seemed like something for science fiction movies.

Little did we know what lay ahead.

Soon, cases appeared in many groups: injection-drug users, hemophiliacs and other recipients of blood and blood products, heterosexual men and women, and children born to infected mothers. The era of AIDS had begun and as a young researcher, this became my world.
I changed completely the direction of my career to study this disease. The early years of AIDS were unquestionably the darkest of my career, characterized by frustration about how little I could do for my patients. At hospitals nationwide, patients were usually close to death when they were admitted. Their survival usually was measured in months; the care we provided was mostly palliative. Trained as a healer, I was healing no one.

In the first couple of years, few scientists were involved in AIDS research, and there was very little funding to study the disease. Initially, we did not know the infectious agent — if indeed there was one — and so researchers like myself had no precise direction in which to search.

The first major research breakthrough came in 1983 with the discovery of the human immunodeficiency virus, or HIV, and then in 1984, with proof that it caused AIDS. Our knowledge of HIV/AIDS rapidly grew with the development of a diagnostic test in 1985 that revealed the frightening scope of the pandemic. Our desperately ill patients were just the tip of the iceberg. Now that HIV had been identified, my colleagues and I began intensively studying the pathogenic mechanisms of HIV disease and described the remarkable capabilities of this virus to destroy the immune system. These early studies on pathogenesis opened the door to understanding potential targets for therapy.
In 1984, I became director of the National Institute of Allergy and Infectious Diseases at the NIH and soon established a distinct AIDS research program. With large infusions of resources, the field of HIV research flourished. My own research focused on the role of aberrant immune activation in driving HIV replication and in causing many of the immune dysfunctions associated with HIV disease. In addition, we described the latent HIV reservoir and demonstrated that it was the major obstacle in attempts to eradicate HIV with anti-retroviral therapy.

Today, thousands of researchers globally are intensively studying HIV, developing therapies, and designing and implementing prevention modalities — including a thus-far-elusive vaccine. The surge in research efforts has enabled enormous medical advances, especially in therapeutics. More than 30 anti-HIV drugs have been developed and licensed; in combinations of three or more these medications have proved extremely effective since the mid-1990s in slowing and even halting HIV’s progression. In the 1980s, patients received a prognosis of months. Today, a 20-year-old who is newly diagnosed and receives combination anti-HIV drugs according to established guidelines can expect to live 50 or more years. Furthermore, HIV treatment not only benefits the infected individual but can reduce the risk of transmitting the virus to others. Thus, there is a stunning contrast between how I felt as a physician-scientist in the 1980s and the optimism I
feel today as more infections are prevented and lifesaving drugs increasingly become available throughout the world.

In 2002, President George W. Bush sent me and a team of health officials to southern Africa on an HIV/AIDS fact-finding mission. Upon our return, the President asked me to help design a plan for providing HIV-related services on a large scale in low-income countries. I proposed a comprehensive program that eventually became known as the President’s Emergency Plan for AIDS Relief (PEPFAR). The implementation of PEPFAR — as well as programs such as the Global Fund to Fight AIDS, Tuberculosis, and Malaria; the Bill & Melinda Gates Foundation; the Clinton Foundation; Doctors Without Borders; and others — has changed the landscape of global AIDS. PEPFAR alone has provided anti-HIV drugs to more than 5 million infected people in the developing world, predominantly in southern Africa and the Caribbean, and it has offered HIV care, counseling, testing, prevention services and support to millions more. As of 2012, PEPFAR’s support of antiretroviral prophylaxis to prevent mother-to-child transmission allowed more than 1 million infants to be born HIV-free.

With most diseases, these results would sound like an unqualified success story. The HIV saga, however, is far from over. There have been more than 70 million HIV infections throughout the world, with at least 36 million deaths. In 2012, 2.3
million people became infected with HIV and 1.6 million died; more than 90 percent of cases occurred in the developing world, two-thirds in sub-Saharan Africa. To control and ultimately end the pandemic, we will need to treat many more HIV-infected people, for their own health and to reduce the risk of their sexual partners becoming infected. We also must accelerate implementation of other prevention approaches, as well as research toward a cure. In addition, we desperately need a vaccine, an area of research that now consumes much of my research efforts. And so, although I appreciate greatly receiving the extraordinary honor of the Robert Koch Gold Medal, my job as a scientist and a science administrator is far from over.

We cannot lose sight of the fact that lifesaving HIV/AIDS programs must be strengthened despite global constraints on resources. Enormous challenges remain and must be met by the next generation of scientists, public health officials and politicians throughout the world. I am privileged to have been able to play a small role in this effort. History will judge us as a global society by how well we address the challenges of HIV/AIDS in the next few decades. Thank you.