

Researcher Known for HIV Cocktail Addresses QU

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Dr. David Ho, senior director and chief executive officer of the Aaron Diamond AIDS Research Center, addressed the Quinnipiac community on Tuesday about his role in the AIDS pandemic that faces the global community.

The first case of HIV/AIDS in the U.S. emerged in 1981 in West Los Angeles. Ho was working in the hospital as patients with pneumonia symptoms and skin lesions came in.

"It mystified me and my colleagues," he said. "I devoted the rest of my career to this problem, but I never realized it would turn into the pandemic it is today."

Ho is known as the researcher who pioneered the use of protease inhibitors for an HIV drug cocktail that inhibits the virus' transformation into AIDS.

HIV, or human immunodeficiency virus, is an infection of the cells in the immune system. The most advanced stage of HIV is acquired immunodeficiency syndrome (AIDS), which is when the immune system completely shuts down due to weakened cells.

Ho's focus in AIDS research is the development of vaccines for HIV and other prevention strategies. In 1996 he was named Time Magazine's man of the year for his drug combination for HIV. Today there are four major classes of drugs and nearly 30 different drugs that can be



Photo by Jenna Uliano



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combine to make the ideal cocktail.

"Combination therapy is not about a cure, but it allows us to control HIV and won't allow any further damage to the body," Ho said.

He is currently studying a particular antibody that blocks HIV infection, funded by the Bill and Melinda Gates Foundation for AIDS Vaccine Discovery. The antibody vaccine would ultimately block a step in the HIV entry process.

"What I do is study the virus," he said. "It's tiny. It basically only has nine genes. It's so simple, yet it's so strategic in its attack. HIV integrates with our own DNA and in essence becomes a part of who we are, which is what makes it so difficult to defeat."

According to the World Health Organization (WHO), HIV can be transmitted through sexual intercourse, transfusion of contaminated blood, sharing of contaminated needles, and between mother and infant during pregnancy.

One project that Ho has been working on for the past five years is to prevent HIV transmission from mother to child in rural parts of China.

"For me, it's really hard to see babies born infected and know it was somewhat preventable," he said.

The project has helped more than 500 women so far—giving them the proper drug cocktail to prevent transmission to their unborn babies. Only two children of the 500 pregnancies were born with HIV.

"It was difficult to go into China because of restrictions," Ho said. "We had to change the political will of the central government."

But because of the high rate of success in preventing mother to child transmission, the Chinese government has adopted this method of treatment as the national prevention therapy.

According to the Centers for Disease Control and Prevention (CDC), there are over one million people living with HIV in the United States. The WHO estimated 33.3 million people living with HIV in 2009 globally.

"You cannot treat your way out of this epidemic," Ho said. "But teaching about prevention will have us moving in the right direction."