Meet the Teen Scientist Studying the HIV Reservoir [VIDEO]

Samuel Weissman won second place at the 2019 Regeneron Science Talent Search. Next, he wants to help cure HIV.

March 19, 2019 By Trent Straube

A scientist working out of a lab at the University of Pennsylvania in Philadelphia just won a prestigious award for his research in HIV—and he's 17 years old. Samuel Weissman, a high school senior in Rosemont, Pennsylvania, won second place and $175,000 in the Regeneron Science Talent Search, an annual science and math competition.

Weissman's work focuses on the HIV reservoir, the group of HIV-infected cells that remain in a dormant state instead of replicating. This poses a challenge to HIV cure research because antiretroviral treatment works only on replicating cells, which means that the virus is able to hibernate in the reservoir even when a person is on treatment and maintaining an undetectable viral load.

Understanding the HIV reservoir is a vital aspect of cure research.

"I think my research is on a hot track right now," Weissman told Philly.com, noting that his research on how HIV interacts with cancer genes was "just published in the journal Nature Communications."

Weissman did his research at the Una O'Doherty Lab through the University of Pennsylvania's Department of Pathology.

The annual science and math competition is produced by the Society for Science & the Public, along with Regeneron Pharmaceuticals. A press release about the event describes Weissman's project as "analyzing the genetic makeup of HIV in two patients on long-term antiretroviral therapy to understand why they continued to have 'reservoirs' of treatment-resistant HIV-infected cells. Sam's research suggests that HIV-infected cells both clonally expand and are killed, therefore forming a reservoir of infected cells, which expands our understanding of HIV and may impact future treatment approaches."

In a Facebook video created for the science talent search, Weissman discusses his work. “When we currently try to treat HIV, it’s able to persist because of what we call the reservoir of HIV-infected cells that manages to remain in spite of treatment,” he explains. “And so I tracked the genetic makeup of HIV over 10 years to better understand how it changes over time, and what I came to realize was that the reservoir of HIV-infected cells that persists on treatment is much more dynamic than we previously thought.”

Lucky for us, his work is just beginning. “Next,” he says, “I’m going to further explore some of the things I researched in order to work for a better understanding HIV and how we can eventually work towards eradicating it.”

A list of the top 10 award winners and descriptions of their projects can be found here. The top award went to Ana Humphrey for her mathematical model that can help determine the likely location of exoplanets—planets outside our solar system.

To read a collection of POZ news items about the HIV reservoir, including articles on clonal expansion and new methods to measure the reservoir, click #Reservoir.

© 2026 Smart + Strong All Rights Reserved.
http://beta.docker.poz.com/article/meet-teen-scientist-studying-hiv-reservoir-video