Partnership Power

Unlikely scientists unite to take aim at the virus.

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HIV research is usually considered an area of expertise for biologists—but not for engineers and physical scientists who ordinarily study physics, chemistry, astronomy and geology. But at the Massachusetts Institute of Technology (MIT), these professionals are working to develop a vaccine for the virus that's currently infecting about 34 million people globally.

In 2009, Massachusetts General Hospital teamed with MIT and Harvard University to launch the Ragon Institute. The research center routinely enlists engineers and physical scientists to explore different ways of thinking about the virus and its treatment. What's more, it encourages scientists to develop new methods and technologies for delivering vaccines and reviewing how HIV interacts with the immune system.

"It has encouraged people, like the engineers here, to start working in areas that they wouldn't have worked in otherwise," says Christopher Love, PhD, an associate professor of chemical engineering at the institute. Using technology he developed to research food allergens, Love is now in hot pursuit of an HIV vaccine.

Specifically, Love searches for biomarkers, or traits, that show which disease-fighting T cells are most adept at killing HIV-infected cells. Other scientists new to HIV are using computer models to zero in on better vaccine targets in cells, such as amino acids. Ain't teamwork amazing?