

Professor of Pediatrics Raymond Schinazi Encourages International Collaborations Through Training and Research Exchange  
By Alma Freeman

When Raymond Schinazi, professor of pediatrics and chemistry and director of Emory's Laboratory of Biochemical Pharmacology in the Department of Pediatrics, first came to Emory as a Yale Fellow 30 years ago, HIV was unknown.

At the time, Schinazi was working on the discovery of antiviral drugs for the herpes simplex virus. His work later contributed to the first Food and Drug Administration (FDA)-approved drugs for herpes, eventually helping to reduce the mortality rate from the infection from 80 percent to 20 percent in children. It was at this point, Schinazi recalled, that he realized his aspiration to discover new antiviral drugs for life-threatening infections.

In 1984, researchers first confirmed that HIV was the virus that caused AIDS and Schinazi's life took a twist. "[HIV] could have been a bacteria or a fungus. But since I studied antiviral agents, I became interested and [my work] shifted into HIV."

At first Schinazi said, finding a lab location in which to grow the virus was difficult, as it was largely unknown at this stage how HIV spread and what level of contagion it held. However, Schinazi soon took the risk, and through collaboration with the Centers for Disease Control and Prevention (CDC), he set up the first HIV lab at Emory in a site near Grady Memorial Hospital in downtown Atlanta. He was one of the first to develop a highly robust and reproducible assay for discovering anti-HIV drugs. Only one other laboratory in the U.S. based at the National Institute of Health (NIH) had a similar system. From these efforts Schinazi made numerous discoveries, which he first patented and then published.

After a few years, Schinazi began working with Emory Chemistry Professor Dennis Liotta on antiviral drug research. In the early 1990s, to the disbelief of many of their peers, they announced the discovery of an unusual molecule called, FTC (also now known as Emtriva, the 'Em' stands for Emory) and 3TC (known as Lamivudine). But, convincing the community of their findings wasn't easy since everyone expected these molecules to also be toxic and to eventually fail.

"Everyone was intrigued but skeptical about our work – no one realized the importance of what we had found, the NIH didn't believe us – even my own administration didn't believe us," he said. The two were determined

however, and applied for grants that enabled further research. “We pushed Emory University very hard to file a patent to protect these inventions (FTC and 3TC). Emory finally did, and received the rewards less than 10 years later,” he said.

Emtriva was licensed in 1996 to Triangle Pharmaceuticals, a biotech company founded by Schinazi in 1995. In 2003, Gilead acquired Triangle for \$482 million and in the same year, the drug was approved by the FDA.

Today, more than 80 percent of those infected with HIV take at least one of the drugs that Schinazi and his team invented. According to 2006 World Health Organization estimates, there are around 40 million people living with HIV, 25 million of whom daily take a form of drug invented by Schinazi and his colleagues at Emory. “If you calculate in terms of number of days that these drugs have saved for persons with HIV, it’s in the billions,” he said. “It’s very gratifying to see that our work has helped so much and so many people all over the world. HIV is no longer a death sentence.”

Schinazi, who serves as the director of the Virology/Drug Discovery Core for the NIH-sponsored Emory Center for AIDS Research (CFAR), said “we have come a long way at Emory.” Today a combination of Emory resources, such as CFAR, which includes more than one hundred scientists studying HIV prevention and treatment and the Emory Vaccine Center, home to one of the largest university vaccine centers in the world, has enabled him and others to engage cooperatively and synergistically in viral research with many others.

Schinazi is currently involved with international collaborations in Armenia, Ukraine, Turkey, Argentina, France, and Thailand. In Thailand, he and his colleagues are working with a university to explore natural plant products that could be used to make effective drugs. Despite his work in these countries, Schinazi said he believes that the most valuable thing that Emory can give to the international community is to continue to invite researchers and doctors from overseas to train at Emory facilities with experienced research teams.

“By bringing people to Emory for training, we expand their horizons and skills so they can return to work in their countries and train other people,” he said. “Firstly, you make friends and introduce them to American culture and science, but also you hope that some of them will become drivers of scientific innovation in their own country.”