California Biotechnology Foundation

FACTS about HIV/AIDS RESEARCH & CARE

Biotechnology Medical Advancements are Changing the Course of HIV/AIDS Treatment

Human immunodeficiency virus (HIV), is the virus that causes acquired immune deficiency syndrome (AIDS). The virus destroys or impairs cells of the immune system and progressively destroys the body's ability to fight infections and certain cancers. Since its discovery in 1981, HIV/AIDS has become a major global epidemic. Today, approximately 40 million people worldwide are infected with HIV, and 1.1 million people in the United States are living with HIV/AIDS.

- In California, AIDS has claimed more than 82,000 lives over the past 25 years, and nearly 140,000 people are currently living with HIV/AIDS. Of these, approximately 40,000 do not know that they are HIV-positive. An estimated 70 percent of new sexually-transmitted HIV infections are unknowingly transmitted by people who have not been tested and therefore do not realize they are HIV-infected.

- At the onset of the epidemic, AIDS was a terminal condition for the vast majority of patients. Since then, advances in biotechnology and science have led to the discovery and development of highly active antiretroviral therapy, or HAART, which in turn helped transform what was commonly a death sentence into a serious but treatable chronic condition for many individuals.

Since 1995, the AIDS death rate has fallen by 70 percent nationwide, but the number of new HIV infections has remained constant, leading the Centers for Disease Control (CDC) to recently recommend voluntary opt out HIV screening in all health care facilities as opposed to the traditional opt in model. The CDC believes routine screenings will result in more people knowing their status. People who know their HIV status are less likely to infect others, and can access proper care and treatment to help them manage their disease. Additionally, routine testing can reduce the stigma associated with taking an HIV test and can help identify infected individuals early, when treatment is most effective.

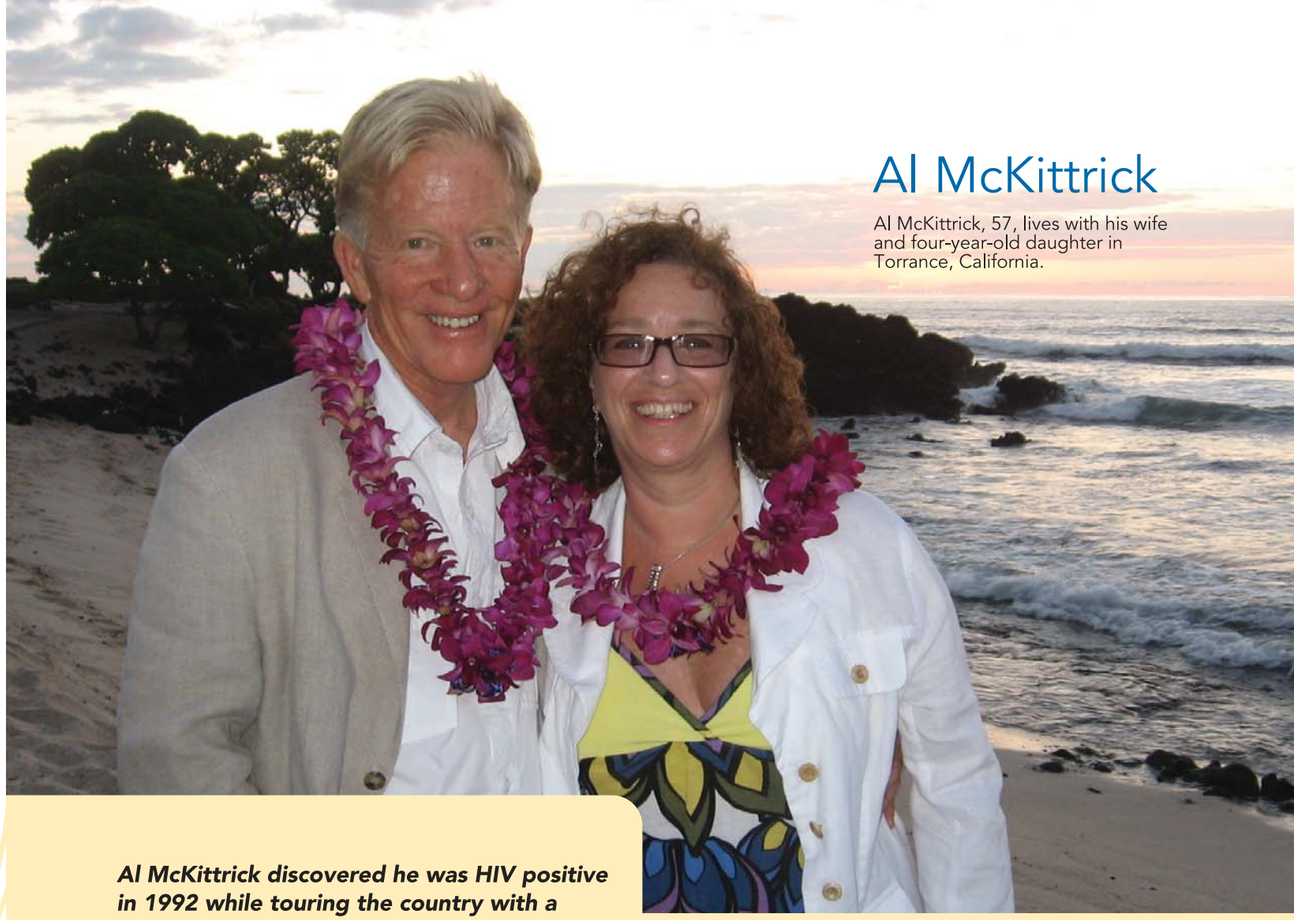
California Biotechnology Companies
Are Dramatically Improving Lives of HIV/AIDS Patients

Breakthrough biotechnology treatments have helped transform HIV infection into a long-term chronic disease for most patients. Biotechnology first helped scientists identify HIV as the cause of AIDS. Today, new biotechnology techniques allow scientists to test for the presence of HIV in a person's blood, monitor the actual amount of virus present in the blood stream, study the virus' life cycle to design drugs that can interrupt the cycle, and eventually create new drugs and vaccines that may cure the disease or prevent new infection.

Through remarkable medical advancements by California's biotechnology companies, medical experts around the world now have the tools to overcome this infectious disease. Early in the epidemic, patients contracted AIDS through blood transfusions and other health procedures. Biotechnology helped identify the HIV virus in the nation's blood reserves and now the U.S. blood supply is among the safest in the world.

Biotechnology innovation also has greatly expanded the range of options available for diagnosing and treating the illness. In the early days of the epidemic, treatment was difficult to take and tolerate, and combination therapy often involved more than 25 daily pills with different dosing and food requirements. Today, treatment for HIV can be as simple as a once-daily single tablet regimen.

The AIDS epidemic in California, however, is far from over. New HIV/AIDS drugs are needed by patients who have become resistant to currently available treatments, which is increasingly common as patients live longer and stay on therapy for longer periods of time. This is one of the many areas of continued focus for companies continuing to lead efforts in the fight against HIV/AIDS. Today, California biotechnology companies have 19 treatments approved and another 20 in development for HIV- and AIDS-related complications.



Al McKittrick

Al McKittrick, 57, lives with his wife and four-year-old daughter in Torrance, California.

Al McKittrick discovered he was HIV positive in 1992 while touring the country with a production of Cinderella *that included his young girlfriend Dee Dee, who tested positive in the spring of 1993. Because Dee Dee had already progressed to AIDS when diagnosed, they married soon thereafter and began seeking treatment. Both of them considered their diagnosis to be a death sentence and decided to go public with their story to help people understand that everyone is at risk.*

In the early 1990s, treatment options were limited and efficacy varied. Sadly, Dee Dee succumbed to the disease in 1996, and Al believed he would follow within a few years. He turned his focus to working as a treatment advocate. That year, due to a new class of drugs (protease inhibitors) developed by biotechnology pharmaceutical companies, Al saw many friends who were near death begin to regain their health.

A year after Dee Dee's death, Al met his current wife at an HIV conference, and with new hope that his quality of life would be maintained, decided to marry again.

By the time it was necessary for him to start treatment in 1999, the biotech industry had developed 12 new compounds in three different classes. Al and his physician decided on a three-drug regimen from two of the classes. All three drugs inhibited the HIV virus and blocked its ability to duplicate itself. Treatment had an almost immediate and powerful impact on Al's immune function and viral load—two key markers of health in an HIV-infected individual—and within three months, the virus had dropped to undetectable levels in his body. Thanks to biotechnology's continued efforts to improve the safety, tolerability and convenience of HIV treatments, Al now takes only one pill, once a day.

In 2003, Al and his wife adopted their daughter Grace. Today, Al is living a full life as a dad and husband and, with continued advancements in biotechnology, looks forward to a future of living with HIV, not dying of AIDS. ●