HIV/AIDS Research
at the University of Rochester Medical Center

"The caliber of what's being done at the U of R is top flight. I wouldn't be surprised if a cure for AIDS was found here."

–Michael Gottlieb, '73M (MD),
the physician and immunologist who discovered AIDS in 1981

The University of Rochester Medical Center is known for its cutting-edge, collaborative research that leads to new treatments, preventions, and cures. We have been a leader in HIV/AIDS research for nearly 30 years. We now have two goals to complete in less than five years: to be the world's first Center to test a new first-in-class therapy in people to prevent severe HIV-associated neurocognitive disorders; and to conduct the first test of a new treatment to save the lives of a half million persons with HIV/AIDS who currently die from meningitis caused by a deadly, but neglected, fungal pathogen.

As people with HIV/AIDS age, neurocognitive problems will likely become more severe. Our pre-clinical work can help the more than estimated 600,000 people living with some form of neuro-AIDS and help prevent it in the future. With philanthropic support of $1 million to help us prove the safety and efficacy of our treatment, we can attract government support and bring this therapy to the people who need it most. You can learn more about our work in HIV/AIDS research and care below.

Rochester's HIV / AIDS Timeline:

1981—UR alumnus (MD, 1973), Michael Gottlieb, describes an apparent, novel acquired immunodeficiency disorder in homosexual men. This is the first time AIDS is recognized as a unique disease.

1986—Clinical research site for HIV treatment established at URMC (ATCG).

1987—Clinical research site for HIV vaccines established at URMC (HVTN); first HIV vaccine administered to HIV-negative volunteers in 1988. First HIV clinic in Rochester established at URMC by Bill Valenti.

1988—FDA Commissioner Frank Young (and former Dean, UR School of Medicine and Dentistry) creates a new regulatory "Fast Track" approval process — accelerating the approval of new treatments for HIV/AIDS.

1990—UR scientists (Reichman) part of the team that first shows AZT (zidovudine) to be safe and effective for treatment of persons with asymptomatic HIV infection. UR scientists (Reichman, Dolin and colleagues) report the results of the first human trial of 2',3'-dideoxyinosine (ddI); ddI goes on to become only the second antiviral drug approved to treat HIV infection.

1991—Results of the first HIV vaccine study led by UR scientists (Dolin, Bonnez and colleagues) are reported. First demonstration of a cellular immune response to a preventive HIV vaccine (Keefer, Bonnez, Roberts, Dolin and Reichman).

1993—UR HIV Vaccine Clinical Research Site enrolls Rochester volunteers into the first US study of the 'canarypox-HIV' vaccine, which ultimately leads to the first preventive vaccine regimen showing a protective effect against HIV infection (in the phase 3 'Thai Trial' reported in 2009). UR scientists (Rose, Bonnez, Reichman) report that they have succeeded in assembling human papillomavirus virus-like particles - the key first step to making the HPV vaccine

1994—UR scientists (Gelbard, Epstein) identify early serum biomarkers of neuroAIDS.

1999—UR HIV Vaccine Clinical Research site enrolls first volunteer worldwide to receive a Merck preventive HIV vaccine that employs adenovirus (a cold virus) as a carrier for HIV proteins. The Merck vaccine moves rapidly into an efficacy trial by 2005, but is shown to be ineffective in prevention of HIV infection/disease in 2007.

2001—UR scientists (Evans, Reichman, Bonnez, Rose) report first-in-human study of a new vaccine for human papillomavirus.

2003—OyaGen founded by Harold Smith in Rochester; seeks to develop new first-in-class inhibitors of HIV.

2005—UR scientists (Jin, Smith) demonstrate that resistance to HIV infection is associated with high levels of APOBEC3G host restriction factor expression.

2006—The HPV vaccine is licensed, and goes on to save hundreds of thousands of lives each year. UR scientists (Gelbard, Dewhurst, Maggirwar) identify mixed lineage kinase 3 (MLK3) as a potential therapeutic target for neuroAIDS.

2007—UR scientists (Wedekind, Smith) generate the first-ever structure of APOBEC3G host restriction factor. OyaGen validates its therapeutic concept, showing that an antagonist of HIV Vif protein interactions can block HIV replication in vitro.

2008—UR recognized as a Developmental Center for AIDS Research (D-CFAR) by NIH.

2010—UR scientists (Bambara, Mathews) identify ancient host cell RNA sequences in the genome of HIV.

2012—UR scientists (Kim) and collaborators reveal a new mechanism by which the host protein SAMHD1 can protect cells against HIV infection.

2013—UR scientists (Gelbard, Dewhurst) report the development of a new MLK3 inhibitor that protects against HIV-induced neuronal damage in a preclinical model of neuroAIDS. UR recognized as a full NIH Center for AIDS Research (CFAR) by NIH. UR's NIH-funded Clinical Trials Unit (CTU) renewed for 7 more years under the leadership of Mike Keefer and Amneris Luque - marking over 25 years of continuous participation in NIH-supported clinical research on HIV/AIDS.

2014—UR scientists (Krysan), in collaboration with colleagues at Temple's Moulder Center for Drug Discovery Research, show that breast cancer drugs can be used to inhibit a fungal pathogen that is deadly in persons with AIDS.