Women In Science Scholars
Virtual Annual Meeting Highlights
October 4, 2021

Marilyn Foote-Hudson welcomed the 2021-22 Women In Science scholars, mentors and university faculty and staff to the North Carolina GlaxoSmithKline Foundation Women in Science Scholars annual meeting. Marilyn congratulated all the scholars on their scholarship awards.

The Foundation committed over $5.8 million to educational initiatives across North Carolina in the last nine months. Marilyn highlighted several projects being funded. She noted that early this year the Foundation worked to get funds in place for student hardships related to the pandemic, specifically for STEM students transferring from local community colleges into undergraduate programs at NC A&T, NC State University, and UNC Chapel Hill. The combined multi-year hardship funds total $623,750.

The Blue Ridge Parkway nonprofit secured the Foundation's support for their efforts to provide scientific, inquiry-based learning in parks. This initiative will help address learning loss associated with the pandemic.

The Foundation awarded a $700,000 grant to *myFutureNC* to support their goal of "2 Million by 2030" to increase the number of North Carolinians with skills and credentials beyond high school by 2030 and ensure the state remains economically competitive.

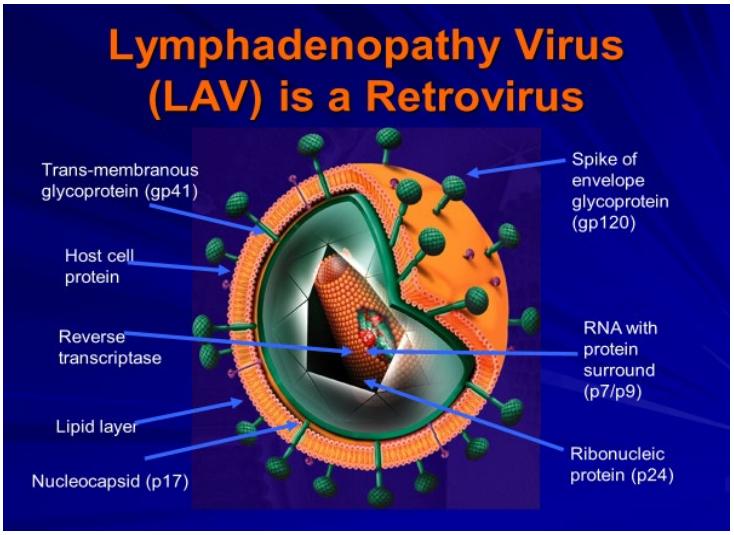
A $2.0 million grant to the North Carolina Community College System supports rural community college nursing instructors and students. The grant provides funds for coaches, faculty development and faculty educational attainment.

In Durham, a $1.8 million commitment to North Carolina Central University will provide enhanced STEM educational opportunities for high school students, NCCU student scholarships, and STEM workshops for middle and high school teachers and community college students.

Marilyn then welcomed Marty St. Clair, highlighting her career as a research scientist at Burroughs Wellcome and current role as part of ViiV Healthcare.

Marty St. Clair, "Thirty-Five Years of HIV Drug Development: A Message of Hope". Marty traced the development of HIV/AIDS research since the disease was first reported as pneumocystis pneumonia in 1981. In 1982 Acquired Immunodeficiency Syndrome (AIDS) was selected as the name for the disease. This disease was alarming as the number of deaths associated with it rose quickly, as it had an extremely high, nearly 50 percent mortality rate. HIV/AIDS was associated with gay white males transmitting the disease and this stigmatized those affected by the disease and many outrageous theories grew and were rampant as to how it was spread. The disease is spread via bodily fluids, it is an infectious disease, however that was unknown originally. Marty emphasized that value of science and early on science was not keeping up with the disease.

"*Science needs to drive the way we deal with infectious diseases*." – Marty St. Clair



In 1983 the discovery of Lymphadenopathy Virus (LAV) was an important scientific discovery. Marty highlighted since she was 13 years old, she has wanted to become a virologist. Her background includes graduating from Oregon State University majoring in biochemistry and working in a virology lab her senior year as an undergraduate. This retrovirus lab experience built her knowledge of what she needed to develop a drug to impact a retrovirus. She continued to highlight her passion for retroviruses as she explained the make-up of a retrovirus. A lot of the fear in the early days would have been alleviated if the science of the disease had been talked about. The lipid biolayer is why you can't contract Human Immunodeficiency Virus (HIV) off a doorknob, cooking utensils or clothing.

1984 is a very important year in Marty's life. She requested to move from working on Herpes virus to working to combat HIV within the company. Marty noted the cases continued to grow and nobody knew how to combat the AIDS retrovirus. It was noted

that we still don't have a vaccine against HIV/AIDS. One reason is HIV changes fast and that complicates the work around securing a vaccine for this disease. Details around HIV transmission, symptoms and how the virus spreads as the immune system is destroyed were highlighted.

In January 1984 Burroughs Wellcome (which became GlaxoWelcome, now GSK, and ViiV that broke away), decided to screen compounds to combat HIV activity. Marty noted she was the one doing hands on work screening these compounds. She shared her appreciation for then Burroughs Wellcome, to work on this project. In November 1984 she discovered the anti-HIV activity of AZT. The excitement of the finding activity against HIV in her lab on Friday had spread over the weekend through the company.

The research verified to other researchers that AZT was well tolerated in patients and crossed the blood/brain barrier. She further explained the research and discovery process. When she presented her discovery along with collaborators in the fall of 1985, interest was so intense that they filled a basketball stadium (30,000 people) in Minneapolis, and it was standing room only! She shared that this was an amazing day for someone that considered herself a "lab rat" and for many other people in the audience that day. Marty walked the audience through applying for a use patent for the use of AZT and how AZT impacted the retrovirus.

The AIDS red looped ribbon became the universal symbol and Marty wears one every day. The complications of enrolling patients into a study, getting materials to the FDA for review, along with finding AZT product were highlighted. The US Food and Drug Administration (FDA) gave AZT top priority status, and on March 19, 1987, the FDA approved AZT for use in HIV-positive people—just 2½ years after the discovery was made in the lab. This is a very fast track for drug development and approval.

Marty highlighted the demand for PharmD's and if anyone is still considering a graduate program to consider becoming a PharmD.

She said researchers continued exploring several aspects of the disease treatment, and developed more drugs used in HIV/AIDS. Marty shared a photo of the Washington Monument with the NAMES project AIDS quilts of people who have died of HIV.

Today, she is very happy to be working in HIV, and continues looking for ways to reduce the number of drugs that people take, which also reduces toxicity and cost. Questions continued for Marty and the audience thanked her for the presentation.

Marilyn shared her appreciation to Marty and her valuable, life changing work. She highlighted the recently added Virtual Networking Sessions are an opportunity to get together with greater frequency and feel even more connected in this challenging time. Marilyn's ending words were to take care and stay safe!