

## Melody Duvall....AIDS vaccine researcher

“During my Ph.D. training, I combined my interests in clinical medicine with my investigations in the lab... learning from patients in Africa. Living in Africa where HIV is prevalent, yet access to medications and healthcare is limited, brought to light the disparity between the developed world and the undeveloped world. This program provided these unique experiences that have shaped my orientation to research and medicine....”

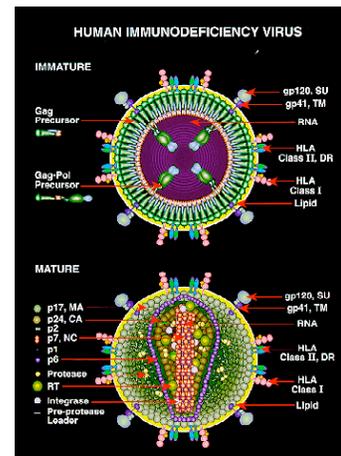


Melody Gayle Duvall grew up in Scottsboro, Alabama and slowly discovered her passion for experimental science during her college years as a dual major in Chemistry and Biology at the University of Alabama. After she graduated with honors in 2000, she first spent a summer at the Jackson Laboratories in Bar Harbor, Maine where she studied retroviruses in mouse. Deferring medical school for a year, she then accepted a position as a postbaccalaureate research student in the laboratory of Michael Lenardo at the NIH where she worked on the molecular mechanism by which HIV kills CD4 T lymphocytes thereby leading to AIDS. During this experience, she developed a growing awareness of the global health impact of AIDS particularly in areas of Africa and Asia least able to fight the epidemic. She developed a passion for health in developing countries and set her sights on making a direct impact on AIDS in these countries. After her first year of medical school, Melody and a classmate, Franklin Huang organized an education program to combat AIDS, “Students Teaching AIDS to Students” in the Caribbean country of Dominica which was facing economic and social collapse due to the epidemic. See: <http://www.aegis.com/news/mh/2002/MH020811.html>.

After her time as a post-baccalaureate student at NIH, Melody enrolled as a medical student at Washington University in St. Louis, but then felt herself pulled back to research and applied to the NIH-Oxford-Cambridge Scholars program. She was accepted, and chose to pursue a D. Phil. in experimental research directed at an AIDS vaccine. This took her from the laboratory of Dr. Richard Koup at the Vaccine Research Center, National Institute of Allergy and Infectious Diseases (NIAID), NIH in Bethesda, Maryland to work collaboratively with Professor Sarah Rowland-Jones at Medical Research Council (MRC) Human Immunology Unit, Weatherall Institute of Molecular Medicine and the John Radcliffe Hospital, Oxford and finally to the MRC Research Unit in the tiny Africa country, The Gambia. It was there that she tackled the question of why there was such a dramatic difference in clinical outcome for people infected with the two different HIV strains found in Africa – HIV-1 and HIV-2. HIV-2 – an HIV strain not typically seen in the United States is highly prevalent in West Africa. This work was recently published in the [Journal of Immunology](#). She extended this work in another paper describing [how HIV-2 interacts differently with the immune system compared to HIV-1](#). In her study, Melody was able to show that HIV-2-infected subjects, especially those with preserved CD4<sup>+</sup> T cell counts, are distinct from HIV-1-infected individuals in that they maintain a proliferation-competent, non-terminally differentiated, multiple cytokine-expressing HIV-specific CD4<sup>+</sup> T cell response. This work provides important new insights into the immune correlates necessary for a successful HIV vaccine.

After successfully defending her Ph.D. thesis at Oxford, Melody returned to Washington University Medical School to complete her M.D. training as an NIH-supported M.D./Ph.D. partnership student. She is now a Resident in Pediatrics at Children's Hospital in Boston.

Gambia, The



Vaccine Research Center, NIH



Prof. Sarah Rowland Jones, Oxford