



Contribution ID: 24

Type: **not specified**

# Does ionizing radiation affect HIV release from human macrophages? - (remote)

*Wednesday, 21 August 2024 10:00 (30 minutes)*

20-minute talk + 10-minute questions

Viruses have small genomes that encode a few proteins required for their propagation. To complete their replication cycles, viruses usurp host cell machineries. By studying virus replication, we gain insights into the biology of host cells and organisms. A classic example is the human immunodeficiency virus (HIV), the most studied virus. HIV affects host cells and progressively compromises the immune system, with the eventual development of AIDS in the absence of antiretroviral therapy (ART). ART suppresses virus replication, resulting in chronic and asymptomatic infection. During chronic infection, viral reservoirs persist, and that can cause viral load to rebound if treatment is interrupted or when drug resistance develops. Notably, some HIV-positive individuals may be exposed to low background radiation (LBR). However, studies have shown that LBR can shape the immune system, and it is not entirely clear how LBR may affect HIV infection prognosis and treatment. Changes in the morphology of subcellular structures have been reported in uninfected cells exposed to LBR. Although essential, studies on HIV replication in low radioactive environments such as underground laboratory conditions are lacking. The development of a new underground laboratory in South Africa, the Paarl Africa Underground Laboratory (PAUL), will provide a conducive environment to undertake such functional biological studies. PAUL is the first on the African continent and will be an excellent resource for biomedical research in Africa, especially the Sub-Saharan Africa, that has the highest global burden of infectious diseases.

**Presenter:** NKWE, David

**Session Classification:** Studies of Life in Low Background Radiation