

## METRO

# Portable blood test in works

By CAROL JOHNSTONE

Two Atlantic Canadian scientists are developing a cheap, reliable blood testing system they say will make it easier to track diseases like AIDS and rheumatoid arthritis in remote locations,

Abdullah Kirumira, a Nova Scotia biotechnologist, and Newfoundland immunologist William Marshall have been working since summer on a portable test that can count white blood cells, faiwon as CD4 positives.

"CD4 cells are the conductor of the immunological orchestra," said Mr. Marshall. Their number is critical to measuring the progress of viruses like HIV, believed to cause AIDS.

Mr. Kirumira, founder of Octopus Diagnostics in Hantsport, Hants County, left Nov. 27 to test-market the product in his native Uganda.

"Yes, my technology's useful here in Canada, but it's more of a convenience ... people don't have to wait" for the test results, said Mr. Kirumira. "In Africa, it's a life-or-death situation."

In Uganda, where AIDS is called "slim disease" because of the characteristic weight loss of victims, existing diagnoses are based on sight, said Mr. Marshall. With the new test, doctors will know how far the disease has progressed and be able to give the appropriate treatment,

Mr. Kirumira said the test can be done in minutes by someone with minimal training. The system will cost about \$5,000, which may still be too expensive.

Mr. Marshall said existing monitoring techniques require use of a flow cytometer which costs at

least \$100,000 and is available only in major centres.

"Operating tire cytometer is like sitting in the cockpit of a 747, surrounded by flashing lights and dials," said Mr. Marshall. "It takes a highly trained person. This new test can be used in any lab with a benchtop and a few pipettes (small tubes for measuring and transferring liquids)."

While neither test screens for HIV, both methods count CD4 positives, the critical white blood cells that fight infection. Healthy adults have on average about 700-1,100 CD4s per milliliter of blood.

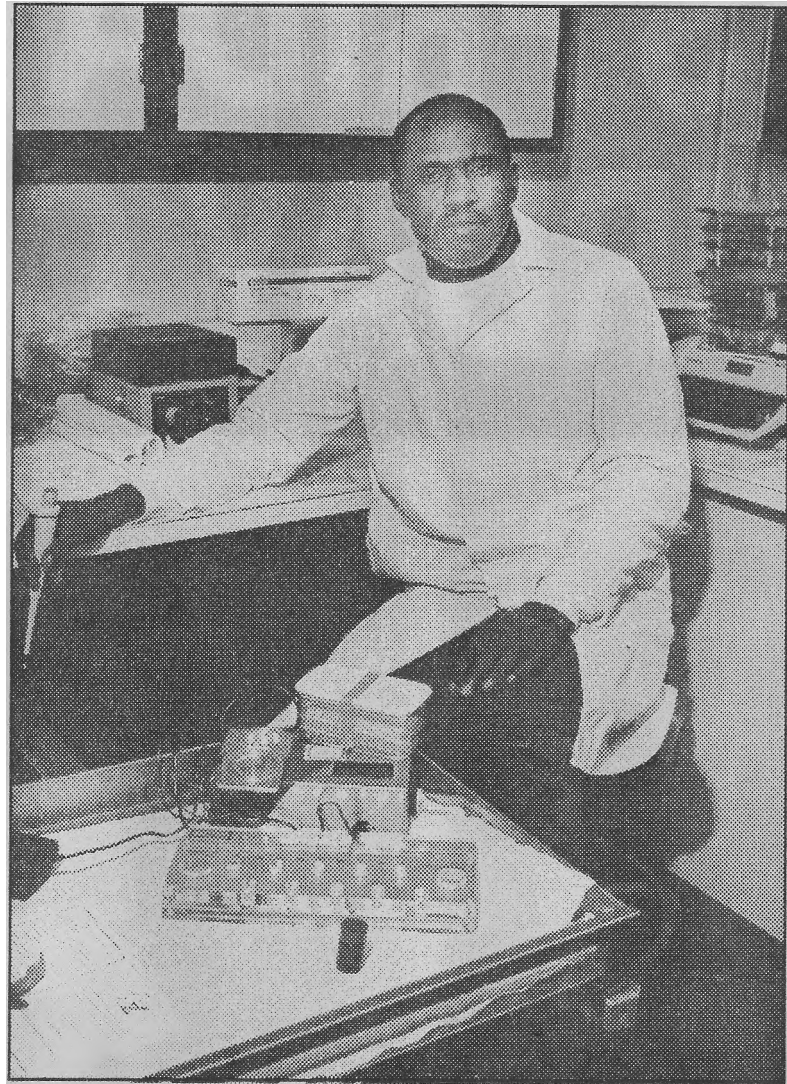
When tie count drops below 700, a person can be said to have the AIDS virus. Below 200, the person can no longer fight infections and has full-blown AIDS.

The cytometer uses a laser to count CD4 positive cells as they pass through a capillary tube in the machine. Mr. Kirumira's test counts them by reading the light output from a biological reaction caused when a blood sample is added to a dry pellet in a test tube and inserted into a small machine.

Mr. Marshall sees applications for the test in rheumatoid arthritis cases whose progress is currently measured on the only flow cytometer in Newfoundland, located at Memorial University in St. John's, where he teaches.

Mr. Kirumira fled Uganda to study abroad in 1975 during the reign of dictator Idi Amin. He's been back twice since then and knows people, including relatives, who've died of AIDS.

"That explains why I chose rapid medical diagnostics for resource-poor clinical settings. I want to take back what I have learnt from the



Dave Gandy/Clark Photographic

**Abdullah Kirumira teaches at the Dalhousie School of Pharmacy and has developed this portable AIDS monitoring system which he will test market in his native Uganda.**

West to help the people who probably need this most."

Mr. Kirumira will show his test to AIDS workers and doctors in the field, at hospitals and in research fa-

cilities in central Africa.

Mr. Marshall said it'll take more money and at least another 18 months of development for the test to be ready for clinical studies.