



Global Health | Mathematicians, Graduate Students Travel to Botswana To Develop Formulas To Address Malaria, Tuberculosis, HIV/AIDS

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Two Canadian mathematicians and a team of 25 Canadian and African graduate students will travel to Botswana next week for a workshop on controlling the spread of infectious diseases, such as malaria, tuberculosis and HIV/AIDS, using mathematical equations and formulas, [CP/CBC News](#) reports.

According to Arvind Gupta -- scientific director of [Mathematics of Information Technology and Complex Systems](#), a Canadian math research network that is organizing the trip -- the team intends to develop mathematical models "so that when there's a disease outbreak, health officials have some idea how to answer 'what if' questions." The models can increase understanding of a disease by examining how people interact with others, Gupta said, adding that these interactions could help predict how the disease might spread. "Once you understand how much interaction there is, you can actually start predicting when you think the disease will get to other groups," Gupta said. In addition, the mathematical models could help officials develop plans detailing which groups to target with education campaigns and where to send medical supplies.

Abba Gumel, a math professor at the [University of Manitoba](#) who is leading the project, added that it is important for people in developed countries to design such projects because outbreaks of TB and other diseases in "one part of the world" make the rest of the world "vulnerable" because of international travel ([CP/CBC News](#), 8/12).

The workshop -- co-funded by [Industry Canada](#) through the [International Partnership Initiative](#) -- is part of a series of activities of the [MITACS Canada - Africa Biomath Network](#), which aims to encourage collaboration between mathematicians and public health scientists from Canada and Africa to control the spread of malaria, TB, HIV/AIDS other diseases using mathematical science ([Canada Business News Network](#), 8/12).