



Grand Challenges Canada™  
Grands Défis Canada<sup>MC</sup>

## News Release

November 7, 2011

### **The “Electronic Nose”: A Bold New Innovation to Sniff Out Tuberculosis from a Patient’s Breath is Awarded Funding by Grand Challenges Canada and the Bill & Melinda Gates Foundation**

***The “E-Nose” Holds Out Promise for Detecting Lung Cancer, Pneumonia and other Pulmonary Disease Simply and Quickly to Enable Life Saving Early Treatment.***

**New Delhi, India.** A new hand-held device called the Electronic Nose, which has the potential to diagnose tuberculosis (TB) in symptomatic patients, was awarded a \$950,000 grant from Grand Challenges Canada and the Bill & Melinda Gates Foundation today to support further development and testing of this ground-breaking technology. The funding will help determine whether the Electronic Nose is able to detect TB immediately and non-invasively from the patient’s breath, in order to replace time-consuming testing with sputum. It is estimated that up to 400,000 lives a year can be saved in the developing world by early diagnosis, immediate treatment and reduced transmission of this killer disease.

TB has been all but eliminated in the developing world, but in poor countries it claims close to 1.7 million lives yearly and is second only to HIV/AIDs as the world’s most deadly infectious disease.

“This important discovery is testimony to the power of innovation to save lives,” said Dr. Peter Singer, CEO of Grand Challenges Canada. “Diagnosing TB and other pulmonary disease simply by testing a patient’s breath is a bold idea with potentially big impact.”

The development of the Electronic Nose is a collaboration between the International Centre for Genetic Engineering and Biotechnology in New Delhi, India, and Next Dimension Technologies in California. The New Delhi innovators are working with sensors developed in California to track biomarkers in the breath. Those biomarkers may hold promise to identify TB disease, leading to earlier diagnosis and improved patient treatment.

“We hope to take the concept of the Electronic Nose to the next level by developing and testing a prototype of the hand-held, battery-powered device,” said Prof. Virander Chauhan and Dr. Ranjan Nanda, lead researchers. “Our goal is to make the Electronic Nose widely available in poor, remote areas where tuberculosis often breeds and spreads, devastating so many lives.”

Scientists say Electronic Noses could also be created for early detection of lung cancer and pneumonia, based on signature biomarkers of that disease detectable in a patient's breath.

"Grand Challenges Explorations aims to tackle critical health and development challenges by funding creative, high-risk concepts that show the greatest potential for impact," said Chris Wilson, Director of Global Health Discovery at the Bill & Melinda Gates Foundation. "With this additional phase of funding, we're excited to move the most promising projects closer to products that could ultimately save millions of lives."

"Imagine detecting tuberculosis through a person's breath and the number of people who can be saved," said Joseph L. Rotman, Chair of Grand Challenges Canada. "We are pleased to support this discovery and, through Grand Challenges Canada's Integrated Innovation approach, to ensure rapid patient utilization and commercialization, so that the Electronic Nose is available, cost-effectively."

Grand Challenges Canada is funded by the Government of Canada through the Development Innovation Fund announced in the 2008 Budget. Grand Challenges Canada works in a consortium with Canada's International Development Research Centre and the Canadian Institutes of Health Research.

For more information, visit [grandchallenges.ca](http://grandchallenges.ca).

#### **About Grand Challenges Canada**

*Grand Challenges Canada is a unique independent not-for-profit organization dedicated to improving the health and well being of people in developing countries by integrating scientific, technological, business and social innovation. Grand Challenges Canada works with the International Development Research Centre (IDRC) and the Canadian Institutes of Health Research (CIHR) and other global health foundations and organizations to find sustainable long-term solutions to the most pressing health challenges. Grand Challenges Canada is hosted at the McLaughlin-Rotman Centre for Global Health.*

[www.grandchallenges.ca](http://www.grandchallenges.ca)

#### **About Canada's International Development Research Centre**

*The International Development Research Centre (IDRC) supports research in developing countries to promote growth and development. IDRC also encourages sharing this knowledge with policymakers, other researchers and communities around the world. The result is innovative, lasting local solutions that aim to bring choice and change to those who need it most.*

*As the Government of Canada's lead on the Development Innovation Fund, IDRC draws on decades of experience managing publicly funded research projects to administer the Development Innovation Fund. IDRC also ensures that developing country researchers and concerns are front and centre in this exciting new initiative.*

[www.idrc.ca](http://www.idrc.ca)

#### **About Canadian Institutes of Health Research**

*The Canadian Institutes of Health Research (CIHR) is the Government of Canada's health research investment agency. CIHR's mission is to create new scientific knowledge and to enable its translation into improved health, more effective health services and products, and a*

*strengthened Canadian health care system. Composed of 13 Institutes, CIHR provides leadership and support to more than 14,100 health researchers and trainees across Canada.*

*CIHR will be responsible for the administration of international peer review, according to international standards of excellence. The results of CIHR-led peer reviews will guide the awarding of grants by Grand Challenges Canada from the Development Innovation Fund.*  
[www.cihr-irsc.gc.ca](http://www.cihr-irsc.gc.ca)

***About McLaughlin-Rotman Centre for Global Health***

*The McLaughlin-Rotman Centre for Global Health is based at University Health Network and University of Toronto. We develop innovative global health solutions and help bring them to scale where they are most urgently needed. The McLaughlin-Rotman Centre for Global Health hosts Grand Challenges Canada.*  
[www.mrcglobal.org](http://www.mrcglobal.org)

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