

UQ leads \$10m study to fight dengue

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The spread of the life-threatening dengue fever virus could be stopped in its tracks if University of Queensland scientists successfully complete a new \$10 million (AUD) research project, funded by the Bill and Melinda Gates Foundation 'Grand Challenges in Global Health' (GCGH) initiative.

The UQ research grant is a share of a \$567 million (AUD) worldwide scheme, which seeks to identify critical scientific challenges in global health and fund increased research on diseases that cause millions of deaths in the developing world.

Professor Scott O'Neill, Head of the School of Integrative Biology in the Faculty of Biological and Chemical Sciences at UQ, will lead an international team of scientists who hope to shorten the lifespan of mosquitoes that carry the deadly dengue virus.

"This project, if successful, has the potential to dramatically improve the lives of people living in dengue affected regions of Australia and the rest of the world," Professor O'Neill said.

"We have discovered a type of naturally-occurring bacteria called *Wolbachia* that passes from one generation of mosquito to the next and can halve the adult mosquito lifespan. This project will seek to introduce the bacteria to mosquitoes so that they do not live long enough to transmit the dengue virus."

Professor O'Neill said the UQ research team and collaborative national and international partners were "excited" by the opportunities that now exist as a result of the GCGH grant.

"This biological control strategy has the potential to eliminate dengue virus transmission from large regional areas.

"At the moment, there is no vaccine available and no effective drug to treat dengue cases. The primary method of control is insecticide-based programs that target mosquito populations and are expensive to maintain. This project will provide a large area-wide control strategy that is cost-effective, self-perpetuating and will not require the use of insecticides."

Dengue fever is a potentially fatal viral disease transmitted by mosquitoes and approximately 2500 million people – two-fifths of the world's population* – are currently at risk of infection.

UQ will be the lead agency throughout the five-year project, working with a team of scientists from Thailand, Vietnam, Japan, Australia and the United States with expertise in *Wolbachia* genetics, dengue transmission and control, health promotion and education.

The project is to be carried out in Australia, Vietnam and Thailand. Scientists will collaborate with local communities and various government agencies in each of these countries from the outset.

The Grand Challenges initiative was launched by the Bill & Melinda Gates Foundation in 2003 and it is funded with a \$585 million (AUD) commitment from Gates Foundation, \$35.3 million (AUD) from the Wellcome Trust and \$5.8 million (AUD) from the Canadian Institutes of Health Research (CIHR).

The initiative is managed by global health experts at the Foundation for the American National Institutes of Health (FNIH), the Gates Foundation, the Wellcome Trust and CIHR.

The program is dedicated to improving the lives of people in the developing world. The Foundation focuses on health problems that cause the greatest burden in developing countries, but receive relatively little attention and resources, such as dengue fever, HIV, tuberculosis, malaria, vaccine-preventable diseases, diarrhea and respiratory infections.

*World Health Organisation statistics 2002

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For World Health Organisation fact sheet regarding dengue, please see link below:
www.who.int/mediacentre/factsheets/fs117/en/