VESKI Innovation Fellow

Professor Cameron Simmons

Victorian Endowment for Science, Knowledge + Innovation

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Research Project

Stop Dengue: Novel approaches to diagnose, treat and prevent dengue

Project Summary

Dengue is a serious virus infection carried by mosquitoes in tropical countries. Approximately 40 million infants, young children and adults are infected each year, exhibiting symptoms such as a high fever, debilitating headache, nausea, muscle aches, pain behind the eyes and a rash that afflicts large areas of the body.

While these symptoms normally last between 3-7 days, life-threatening complications, such as shock or serious bleeding can occur. Unfortunately, there is no vaccine to prevent dengue and no specific treatments to reduce the severity of symptoms.

Through a combination of basic and clinical research, Professor Cameron Simmons will help combat dengue by providing doctors with a set of simple methods to help diagnose dengue in patients, and predict if the patient is at risk of developing serious complications. These efforts are complemented with pharmaceutical industry collaborations on the development of specific drugs to treat dengue.

Professor Simmons will further develop a novel strategy to stop mosquitoes transmitting dengue by "infecting" them with a micro-organism called Wolbachia that stops the dengue virus from growing in mosquito tissues. Professor Simmons will use his expertise and links in Asia to field test this novel disease control approach as part of the Eliminate Dengue initiative.

These novel research strategies are uniquely placed to deliver results that could help reduce the huge financial and social burden of dengue both in Australia and throughout the world.

Cameron has more than 10 years experience working in tropical infectious diseases in Vietnam with Oxford University, and is a WHO recognised expert in dengue epidemiology, pathogenesis and clinical trials.

In Victoria, Cameron will be working across the Nossal Institute for Global Health and the Department of Microbiology and Immunology at the University of Melbourne. He will also be a major contributor to the newly established Peter Doherty Institute, which will be at the forefront of the fight against infectious diseases.

"I'm at a stage in my career where I'm looking to take the next step, and I'm particularly looking forward to being a part of the Peter Doherty Institute. I've visited many similar institutions around the world but none match the plans for the Peter Doherty Institute."

Professor Cameron Simmons

Personal History

Cameron is returning to Victoria in mid 2012 from the Oxford University Clinical Research Unit at the Hospital for Tropical Diseases, Ho Chi Minh City in Vietnam.

While focusing on his research and building his team in Victoria, Cameron will retain a faculty appointment with the Oxford University Clinical Research Unit, Vietnam along with a small research group.

Cameron has the combination of basic science expertise with knowledge of clinical field based science, and understands how to bridge those two areas, which will be a particularly valuable asset for the Peter Doherty Institute.

Cameron is a Wellcome Trust Senior Research Fellow. He is also a consultant to several international pharmaceutical companies and a member of Eliminate Dengue, a team of international scientists with a diverse range of expertise including Wolbachia genetics, mosquito biology and ecology, dengue epidemiology and control, and health education and promotion. The collaboration draws on this diverse expertise with the explicit goal of developing a novel approach to dengue control.

As part of the Eliminate Dengue team, Cameron will be collaborating with Professor Ary Hoffmann from the University of Melbourne, and Professor Scott O'Neill, Dean of Science at Monash University. The group recently received top-ranking nationally and substantial funding through an NHMRC Program grant.

Cameron completed his Bachelor of Science with Honours and then his PhD at The University of Melbourne. He then moved to London in 1998 for post-doctoral work at Imperial College, and then in 2001 moved to the Oxford University Clinical Research Unit in Vietnam.

He is returning to Victoria with his partner, a human genetics expert, and three daughters who have been living with him in Vietnam.

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For further information about VESKI visit www.veski.org.au,
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BACKGROUND INFORMATION

VESKI enhances Victoria's intellectual capital through a dynamic program of fellowships, awards, and international networks including the VESKI Innovation Fellowships. This established and prestigious program returns successful Australian expatriates and leading researchers with outstanding skills in the fields of science, innovative technology and design to Victoria. VESKI is supported by the State Government of Victoria.

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