

TALL POPPY CAMPAIGN

Investing in Australia's Future

Young Tall Poppy Profile: Dr David Wilson

Name: Dr David Wilson

Research Field: Mathematical modelling of infectious diseases

More Specifically: Use mathematics to describe epidemics of HIV/AIDS

Abbreviated Qualifications: BSc(Math), BInfTech, BAppSc(Math)(Hons 1), GradCertBioStats, PhD

Current position: Research Scientist

University/Institution: National Centre in HIV Epidemiology and Clinical Research, University of New South Wales

What do you do?

David directly informs health ministers, HIV/AIDS officials, community groups, and other stakeholders of the likely explanations for observed trends in HIV epidemics and predicts the best public health intervention strategies that should be implemented to reduce the number of new HIV infections and AIDS deaths in the future. He does this by using biological, clinical, epidemiological, and behavioural data in conjunction with complex mathematical equations that describe transmission between people and clinical disease in infected people. He is currently advising national HIV stakeholders in Australia, South Africa, Papua New Guinea, Cambodia, Indonesia, Thailand, and the Philippines.

Why is this research important? How is it relevant to society at large?

There is currently no cure or vaccine for HIV. Each year over 2.5 million people become infected with the virus and over 2 million people die due to the illness. With limited resources available and only partially effective biomedical interventions available, public health strategies which will prevent infections are desperately needed. Combining mathematics with available data can make the best predictions and provide the best possible advice for policy makers and campaign organisers to mitigate this destructive epidemic.

What's difficult about it?

HIV is an extremely difficult bug to fight! It will mutate around any drug we throw at it. It transmits from person to person by numerous routes and devastates the lives of whole communities. There are limited resources available in many settings that need to be optimised for treating infected people and promoting educational messages about prevention. Some of the best prevention measures may also involve lifestyle and culture change.

Why are you passionate about it?

Because of HIV, millions of people are dying and tens of millions of people have very poor health. This does not need to be the case. I use my skills to ensure that the best possible policies and campaigns are put in place so that less people suffer and more people maintain good health. I am extremely passionate about reducing morbidity and mortality, particularly in some of the poorest regions of the world that are afflicted by this disease.

Why share your research with high school students?

Sharing my research with students is important and enjoyable. My passion can rub off and instil fervour in budding students for a career of exciting, influential, and applied scientific research. High school students should also be educated about the afflictions faced by many people outside their boundaries. They need to be educated about sexual health for their own healthy well-being.

Why study sciences?

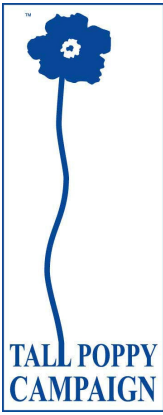
Science is exciting. It is about discovery and learning of things that are as yet unknown to anyone else. Applied science can make a huge difference in the world and advance the health and well-being of many people. A career in science can also lead to travelling to many parts of the world, engaging with people of all walks of life, and practicing some of the most technical methods available anywhere in the world.

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**Is it what you've always wanted to do?**

I always wanted to be a scientist and particularly enjoyed mathematics but I did not know how I could use it practically. I have been fortunate enough to have found my niche to perfection, where I can use complicated mathematics in a way that is very practical in the real world.

What else are you into? (ie. What are your hobbies and interests when you're not researching)?

I enjoy travelling, nice wines, and playing chess.

Public profile:

I have been a consultant for the TV show, NUMB3RS – shown on channel 10 (which is sort of similar to what I do) and also for National Geographic. I am frequently interviewed by radio, newspaper, and TV journalists about my research. I am often on radio stations such as ABC and BBC, TV news programs such as ABC, SBS, channel 9 news, and international newspapers such as the Australian, Sydney Morning Herald, Reuters, Associated Press, and various other internet news websites. I have given talks at schools, libraries, museums, youth centres, community groups, government policy maker forums. I have been on committees for the World Health Organisation and the World Bank.

Your achievements - How did you get where you are today?

Your HSC subjects: Mathematics, Physics, Chemistry, Computer Science

Degrees: Bachelor of Science (Mathematics), Bachelor of Applied Science (Honours), Bachelor of Information Technology, Graduate Certificate in Biostatistics, PhD (Infectious Disease Modelling)

Some of your previous position/s:

Research Fellow, University of California at Los Angeles Scientist
Research Scientist, University of New South Wales

Current position: Research Scientist, National Centre in HIV Epidemiology and Clinical Research

Relevant awards and prizes you have received as part of your studies/research/work:

"Beautiful Minds" award for Vice-Regal Nobel Forum Reception for Australia's Leading Young Researchers

Listed in 63rd Edition of Marquis Who's Who in America

Included in the International Biographical Centre, Cambridge, 2000 Outstanding Intellectuals of the 21st Century.

Summary of published works: David has written over 40 scientific manuscripts in high-impact international journals and two books.

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