

## Citation for the Award of Doctor of Agricultural Science (*honoris causa*) Professor Neil Bruce Chilton

Professor Neil Chilton's research has been consistently and closely tied to the Faculty of Veterinary and Agricultural Sciences of the University of Melbourne, and is in the area of One Health (i.e. development of detection strategies, treatments, and diagnostic tools for animal diseases, as well as new health and environmental policies to manage "one health" that unites animals, people and their shared ecosystems). He has conducted active surveillance programs for ticks of agricultural and veterinary importance. These programs have been essential for determining the distribution and abundance of these arthropod vectors in different geographical regions of the world, and the potential risks of exposure for animals and humans to vector-borne pathogens. He has also developed molecular diagnostic tools to screen ticks and other arthropod vectors for different types of pathogenic bacteria, and to examine bacterial diversity in parasitic arthropods. He has investigated the population genetic and phylogeographic patterns as well as the ecology of arthropod vectors (ticks and fleas) to achieve a better understanding of arthropod-borne diseases. He is now exploring how environmental factors, such as temperature, influence tick survival, and the diversity and species composition of bacteria in tick microbiomes, which also has major relevance in relation to climate change. Such detailed information has underpinned effective management policies to deal with vector-borne diseases of animals.

Professor Chilton has extensive expertise and skills in a range of areas of infectious disease research, host-parasite interactions, evolution, ecology, molecular biology, genomics, molecular and biochemical tools, which all underpin his extensive program. His research is focused on highly significant fundamental questions and applied and biotechnological outcomes, such as new and innovative tools for the diagnosis, surveillance, prevention, management and control of animal diseases and one-health problems. His program has consistently maintained an emphasis on fundamental research in an agricultural/veterinary context, the development of the scientific skills base required for biological and biotechnological research and on translational outcomes.

Professor Chilton has contributed substantially to research at the University of Melbourne, has established major international networks, and has been involved in many multidisciplinary research programs over the years on pathogens of agricultural and/or veterinary importance with scientists at academic institutions and government research laboratories in Australia, Canada, the UK, France, China, the USA and Thailand. All of this work has been underpinned by research funding from ARC, NSERC, Canada Foundation for Innovation, Beef Research Council, Agriculture Development Fund and the Saskatchewan Ministry of Health. His network has provided enormous opportunities for early career scientists in interdisciplinary research within a 'One Health' context, some of which are now actively involved in research and teaching at the University of Melbourne.

Professor Chilton is also an outstanding undergraduate teacher and mentor, and has received numerous awards for excellence in teaching. He also has an exemplary record in the supervision and mentoring of graduate students, and has published more than 190 papers in a wide range of high quality peer-reviewed international journals in his chosen fields (including the International Journal for Parasitology, Parasites & Vectors, Ticks & Tick-borne Diseases, Infection Genetics and Evolution, Veterinary Parasitology, Applied Environmental Microbiology, Veterinary Microbiology, Emerging Infectious Diseases and Journal of Medical Entomology). The significance of his research on parasitic helminths and arthropods, and arthropod-borne pathogens, has been recognized extensively by his peers, and is of significant interest to the general public. He has also provided outreach to the public, agricultural scientists, veterinarians and also medical practitioners concerning the identification of parasitic nematodes, ticks and insects, and the testing of ticks for pathogens. His international research standing has led to key roles as an editorial board member of some key international journals, member of numerous professional societies, and as an advisor to agricultural/governmental departments and agencies involved in One Health issues and infectious diseases, animal health, veterinary testing, quarantine and biosecurity. He has also served on numerous committees dealing with teaching, learning governance and methodologies as well as administration.

In conclusion, Professor Chilton is an internationally recognized scholar in his chosen disciplines in the agricultural and veterinary sciences. He has achieved, demonstrated and maintained a profound understanding of his disciplines, having extended knowledge and communicated results of scholarly endeavour in, and the precepts of the discipline to undergraduates, graduates, research staff, peers and other members of the scientific and non-scientific communities. He has demonstrated exceptional leadership and/or management qualities at different levels, and an ability to foster academic development and achievement in others as well as to identify and provide new opportunities in teaching and research to the University and various professional communities. For these reasons, Professor Neil Bruce Chilton is a worthy recipient of the honorary degree of *Doctor of Agricultural Science*.