

LIFETIME ACHIEVEMENT AWARD: DR ELAINE OSTRANDER PhD

Dr Elaine Ostrander, a gifted and visionary American scientist, has been chosen as the winner of the Lifetime Achievement Award for her groundbreaking work in the field of canine genomics where she is recognised as the world's foremost authority.

Her work has stretched over two decades during which she led the effort to sequence the dog genome and played a principal role in the development of a host of other important canine genomics research tools. This in turn has led to dramatic advances in our understanding of mammalian genomics as well as the genetic basis of cancer susceptibility.



The identification of diseased genes is critical to the work of scientists such as those at the Kennel Club Genetics Centre at the Animal Health Trust. DNA tests here are now being developed to help breeders check for certain conditions before they breed, enabling them to breed out more and more canine inherited diseases, a huge step forward to the future of dog health across the world.

Charles Darwin famously used the domestic dog as his prime example of the potential of artificial selection but had no understanding of the underlying genetic or developmental mechanisms that explain diversification. One hundred and fifty years after publication of his groundbreaking book, the *Origin of Species*, Dr. Ostrander's efforts have provided answers as well as biological and analytical tools for addressing this question in a wide range of species.



As one of the most accomplished genomics researchers in the world and a leading figure in canine genetics and disease, Dr Ostrander has greatly advanced the dog as an important model for human disease. Thanks to her work, scientists have been able to zoom into dog DNA and locate various diseases such as lupus, metabolic disease, heart disease and cancer. Because we share such similar genetic makeup, humans and dogs also largely suffer from the same diseases – in fact the dog shares more genetically based diseases with humans than any other model species.

Often it can be hard to find a disease gene by studying human families due to small family sizes. However, canine families are large, and the pedigree records outstanding, so by making use of the canine family database, studies have been developed which allow researchers to find markers that pinpoint where we should search for a mutated gene. Once the mutated gene is found, humans with the same or similar diseases are checked and invariably there is a connection. This work has therefore helped transform our understanding of several human diseases particularly cancer. Dr Ostrander's work has had particular impact on our understanding of the genes involved in the development of some prostate and breast cancers. By helping to identify those at risk at an early stage, changes to lifestyle and early medical intervention and treatments can lead to significantly better outcomes and save lives.

Based just outside Washington DC, Dr. Ostrander is currently Chief of the Cancer Genetics Branch, Head of the Comparative Genetics Section, and NIH Distinguished Investigator at the National Human Genome Research Institute of the National Institutes of Health (NIH) in Bethesda, Maryland and she lives nearby with her husband and children.



The recipient of many high profile international awards over the years, Dr Ostrander has most recently received the Genetics Society of America Medal for her outstanding achievement to this field of science.