

# Distinguished Professor Jennifer Ann Marshall Graves

Chancellor, it gives me great pleasure to present to you an outstanding candidate for admission to the Honorary Degree of Doctor of the University (honoris causa): Distinguished Professor Jennifer Ann Marshall Graves.

Professor Jenny Graves is a globally acclaimed evolutionary geneticist, whose research over five decades has made seminal contributions to the understanding of mammalian genome organisation and evolution. Her leadership and service in this area pioneered the fields of comparative genomics and epigenetics globally and she has been the driving force behind sequencing the first marsupial and monotreme genomes.

Jenny Graves grew up recognising that science was a viable career option for ordinary people. Both her parents were scientists – her father was the head of the Soil Physics division at CSIRO and her mother was a geologist and urban geographer at the University of Adelaide. However, it wasn't until her final year of high school when she was exposed to biology, and more specifically genetics, that she accepted it could be the right career choice for her.

Jenny graduated from the University of Adelaide in 1964 with a Bachelor of Science Honours and then a Master of Science in 1967. A Fulbright award then allowed her to undertake a PhD in Molecular Biology at the University of California, Berkeley investigating the control of DNA synthesis. It was during her time at Berkeley that Jenny met fellow PhD student and future husband John. They were both starring in a department Christmas party production of NucleoSide Story, an adaptation of West Side Story that told the tale of star-crossed graduate students from warring Berkeley biochemistry and molecular biology departments. Jenny and John would maintain a keen interest in choral singing over many years and Jenny was known to later compose and sing genetics songs to her 2nd year students to keep them engaged, and is now writing the libretto for a major choral work "Origins", the creation story from science.

In 1971, Jenny returned to Australia as a lecturer in Genetics at La Trobe University, becoming a Professor in 1991. She has been involved in international comparative gene mapping and sequencing projects since the mid-1980s. Her research used the genetic diversity of Australia's unique mammals such as the kangaroo, emu and platypus to study how the mammal genome works and evolved, leading to a greater understanding of the complexity of the human genome and the discovery of new human genes.

In 2001 she founded and directed the Comparative Genomics Research Unit and the ARC Centre for Excellence in Kangaroo Genomics, based at the Research School of Biological Sciences at the Australian National University. She returned to Melbourne in 2011 as Distinguished Professor (and more recently Vice Chancellor's Fellow) at La Trobe University, and holds honorary positions at ANU, the University of Canberra and the University of Melbourne.

Jenny Graves is a champion of ideas. She has approached her stellar scientific career with intellectual creativity and along the way has transformed our understanding of how humans and all vertebrate animals evolved and function.

Her research achievements are extensive and have transformed our understanding of how sex chromosomes work. She is well known for her classic contributions in determining the relatively recent origin of the human XY sex chromosome system and discovering the origin and evolution of the Y chromosome and sex determining gene in mammals, leading to her suggestion that the Y chromosome will eventually disappear. Her research has uncovered the molecular mechanism of X

chromosome inactivation in female mammals; added to our knowledge of the control of DNA synthesis and expression in mammalian cells; and demonstrated how temperature and genes can interact to determine the sex of Australian dragon lizards.

Jenny Graves' eminent service to science and commitment to tertiary education also extends beyond the laboratory. She is an outstanding teacher, mentor and role model for women in science who has inspired and nurtured dozens of undergraduate and postdoctoral students over her career. She is an outstanding ambassador for Australian science and has built strong collaborative networks throughout her career to connect Australian science to the rest of the world. She has been an advocate for women in science at the local, national and international levels, and won the 2006 L'Oreal-UNESCO prize for women in science.

Awarded the 2017 Prime Minister's Prize for Science, Jenny Graves was the first woman to be individually recognised with this honour. She was appointed an Officer of the Order of Australia (AO) in 2010 and a Companion of the Order of Australia (AC) in 2022. She was elected a Fellow of the Australian Academy of Science in 1999 and served on the Academy Executive, first as Foreign Secretary, then as Secretary for Education. In 2019 she was elected as an International Member of the National Academy of Sciences, USA. Jenny has received many awards for her work including Academy career awards.

Today we extend that recognition, in awarding the highest honour the University can bestow.

Chancellor, I am pleased to present to you Distinguished Professor Jennifer Ann Marshall Graves, Bachelor of Science (Honours), Master of Science, Doctor of Philosophy, Companion of the Order of Australia, Fellow of the Australian Academy of Science, for admission to the Honorary Degree of Doctor of the University (honoris causa).

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