Mr Christopher Charles Heyde

The degree of Doctor of Science (honoris causa) was conferred upon Christopher Charles Heyde at the ceremony held at 2.00pm on 15 May 1998.

Citation

Chancellor, to-day we honour Christopher Charles Heyde, a distinguished graduate of this University. Professor Heyde was born in Sydney on 20 April 1939. He holds the degrees of Bachelor of Science with honours and Master of Science from this University, and Doctor of Philosophy and Doctor of Science from the Australian National University. He is the first medallist in mathematical statistics from this University. Its award heralded the start of a distinguished career in theoretical statistics.

After completion of his PhD, senior appointments followed quickly. Heyde was appointed Reader in the Department of Statistics at the Australian National University in 1968, Senior Principal Research Scientist at the CSIRO Division of Mathematics and Statistics in 1975, Chief Research Scientist 1977 and Acting Chief of Division from 1981 to 1983 when he accepted the chair of Statistics at the University of Melbourne. He returned to Canberra in 1986 as Professor of Statistics at the Institute of Advanced Studies Australian National University. He continues in this position and from 1993 is also Professor of Statistics at Columbia University, New York, and the Director of the Columbia Centre for Applied Probability, an indication of his international standing.

Within Statistics, Professor Heyde's field of research is probability. His work on probability limit theory and its applications is of depth and distinction. In his early work he developed significant new results on the classical limit theorems such as the laws of large numbers and the central limit theorem. These provide a unified description of the effect of a large number of superimposed chance influences and are at the heart of the most commonly used statistical procedures. At the same time, he completed important work on stochastic processes, that is processes which evolve over time in a random manner, such as queueing, branching and population processes. These fall within the general area of applied probability.

He contributed in a fundamental way to the theory of martingales, a concept whose intuitive roots are in gambling systems but which provides a powerful unified approach to random processes of general significance. He pioneered the use of martingale methods in time series analysis. Time series methodology deals with observations on phenomena taken in sequence over time, a field of research in which Australians have been among the international leaders. As one of the world experts on martingale methods, he has applied them with great success and in a unified way to large sample methodology in statistics. Most recently, his interests have turned to the important topic of long range dependence.

His research has been honoured by election to the Australian Academy of Science in 1977, the award of the Pitman medal by the Statistical Society of Australia in 1988, the Hannan medal of the Academy of Science in 1994 and of its Lyle medal in 1996. International awards include election to a Fellowship of the Institute of Mathematical Statistics in 1973.

Professor Heyde has been Editor of "The Australian Journal of Statistics" (1973-78), "Stochastic Processes and their Applications" (1983-89); and of the "Journal of Applied Probability" and "Advances in Applied Probability" since 1990. The last three are leading international journals, much sought after as vehicles for publication of new probabilistic research.

He has served on the committees of international organisations such as the organising committee of the Bernoulli Society for Mathematical Statistics and Probability from 1985 to 1987 and the International Statistical Institute for two three-year terms.

On the Australian scene, Professor Heyde has been President of the Statistical Society of Australia (1979-81) as well as President of both its Canberra Branch (1977-79) and its Victorian Branch (1985-86). The Society made him an Honorary Life Member in 1981.

His major committee work has included membership of the Scientific Advisory Committee for the Australian Government Inquiry into the possible effects of herbicides on Vietnam veterans and their families (1980-84). From 1980 to 1984, Heyde chaired the Australian Statistical Policy committee. More recently, in 1995 he was Chair of the Review Committee for the School of Mathematics and Statistics at this University.

When Professor Heyde became an undergraduate here, it was not possible to major in Mathematical Statistics. A graduate in mathematics completed a course in both pure and applied mathematics including one term's work in mathematical statistics. Through representations of this University and with support from the fledgling Statistical Society, this was to be remedied during Professor Heyde's time as an undergraduate. The Society is one of this country's earliest learned societies and is very much the creature of this University

having been started by academics from here in 1947. High on its agenda was the need to raise the profile of statistics and to establish in the University a strong statistics curriculum. Its members promoted the recommendations of the University's mid 1940s review for development of the teaching of statistics. The Murray committee of Inquiry into Higher Education agreed that this new discipline was important and recommended the creation of the Department of Mathematical Statistics. The Department was established in 1959 and had its first honours class in 1960 when Professor Heyde was in fourth year. This year the Statistical Society held its fiftieth Annual General Meeting: an appropriate year in which to honour the University's first medallist in mathematical statistics and one of Australia's greatest statisticians.

Chancellor, I present to you Christopher Charles Heyde for admission to the degree of doctor of Science honoris causa and I invite you to confer the degree upon him.