

European
Latsis Prize
2011

Professor James W. Vaupel
“Demography”

Presented on the occasion
of the Annual Assembly of the
European Science Foundation,
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European Latsis Prize 2011



This year's European Latsis Prize is awarded to Professor James W. Vaupel, of the Max Planck Institute for Demographic Research in Rostock, Germany, for his contributions to research on ageing and lifespan, and his profound influence on demographic research.

The European Latsis Prize, valued at 100,000 Swiss Francs (80 000 Euros) is financed by the Geneva-based Latsis Foundation and awarded by the European Science Foundation to individuals or a group who, in the opinion of their peers, have made the greatest contribution to a particular field of research.

Professor James W. Vaupel

James Vaupel was born in New York, USA, on 2 May 1945, and lives in Kerteminde in Denmark but works in Rostock, Germany where he is the founding director of the Max Planck Institute for Demographic Research. He and his wife have two daughters and one grandson. He is honoured for a lifetime of groundbreaking research into the biology of ageing, the statistics of senescence and the connection between public health and longevity. His key papers on mortality and lifespan have each been cited many hundreds of times, and he has been honoured by the Ipsen Foundation in France and twice by the Population Association of America. He is also Professor of Demography and Epidemiology at the Institute of Public Health, University of Southern Denmark and Research Professor at Duke University's Population Research Unit. He is a member of the US National Academy of Sciences and the German National Academy of Sciences Leopoldina. The European Latsis Prize – announced in the month that the planet's human population reached 7 billion – highlights the importance of both the discipline and his contribution to it.

His studies began with mathematical statistics at Harvard College and then international enterprise at Harvard Business School; he completed his doctorate at Harvard's Kennedy School of Government. He became interested in mortality and demography while an assistant professor at Duke University, and while working part time in Washington DC for the Environmental Protection Agency and other government bodies

concerned with protecting lives. He was puzzled by population differences.

“Even if you take populations of the same sex, the same age and the same country, some people are frail, some more robust. I developed a model for understanding population heterogeneity and I walked over to the Duke's Center for Demographic Studies and showed it to them.” Colleagues at the centre gave him some books to read: these became his academic introduction to an unfamiliar science. “I became a demographer by publishing a demography article in the journal called Demography in 1979,” he says.

That paper was the first of more than 300 publications on population studies and ageing and it has been cited more than 600 times. Vaupel became professor of demography at the University of Minnesota, and established an interdisciplinary research team to examine population research from all aspects. He pioneered the use of biological data from fruit flies, nematode worms and yeast cells to enhance understanding of the dynamics of human population. “To understand why we age, it is necessary to understand whether other species age, and how they age, and how we fit into the tree of life, in terms of senescence. The interesting finding is that many species like humans suffer from severe senescence: mortality goes up rapidly when you get to be quite old. But other species – many reptiles, fish and trees, for example – don't show any signs of senescence at all.”

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He founded the Max Planck Institute in Rostock in 1996 and turned it into one of the world's leading centres of demographic research. He and colleagues have looked for lessons beyond living species: they have tested tens of thousands of light bulbs to see if senescence is a property of all complex systems. But perhaps his most dramatic contribution is in the contention that there seems no innate limit to human lifespan: an argument he put with Jim Oeppen in Science in 2002.

Periodically, he points out, demographers and actuaries would argue that human life expectancy was nearing a limit and would probably never be exceeded. "These ultimate limits were typically within a few years of life expectancy at the time – and they were on average broken about five years after publication. It is a very sorry saga," he says. "The actuaries and demographers couldn't imagine how we could make any further progress in bringing death rates down. But there were always things they didn't think of: penicillin, better treatment for tuberculosis, better treatment for heart disease; things that they didn't anticipate, that led to a further rise in life expectancy."

This has gone up, in the countries doing best, at a rate of about three months per year. He has demonstrated with a variety of data, that human senescence has been delayed by a decade, and that maximum age appears to be plastic: that is, it can be extended. In most countries with long life expectancy, life expectancy now is

increasing at the rate of 2.5 years every decade, an outcome that has profound consequences for health services, social policy, careers, savings and national economies. Since 1950, death rates have fallen substantially even for people over the age of 60. He encapsulated this in a much-quoted phrase: "Live nine months and you get three additional months free."

He and colleagues have begun to compile a database of supercentenarians: those people aged 110 years or more. This has not been easy: elderly people – or their younger relatives – may exaggerate their age and every claim must be checked against birth records. "We have managed to do this for 800 people. Of course, the number is doubling about every five years, so five years from now it might be 1600 and in another five years it might be 3,200," he says." Mortality improvements result from an intricate interplay of advances in income, sanitation, nutrition, education, medicine and so on.

"Since 1950, death rates have come down substantially for people above 60. It really has been quite amazing. And how has this progress been made? It has not been made by stretching the period of ageing. It has been made by delaying senescence. I like to say – based on our research – that 70 year-olds today are as healthy as 60 year-olds were 50 years ago. We are gaining about two additional years of healthy life every decade."

Biographical details

Education

1978

PhD, Kennedy School of Government, Harvard University, Cambridge, MA, USA. Dissertation: "Early Death: A Policy Analysis of the Prospects for Saving Lives"

1971

Master of Public Policy, Kennedy School of Government, Harvard University, Cambridge, MA, USA

1968

passed Doctoral Examinations, Harvard Business School, Boston, MA, USA

1967

B.A., Harvard University, Cambridge, MA, USA, highest honors in Mathematical Statistics

Honors

2010

Honorary Doctor of Civil Law, Newcastle, United Kingdom

2009

Seneca Medal, Industriecolub Düsseldorf, Germany

2008

Member of the German Academy of Sciences Leopoldina, Germany

Fellow of the American Academy of Arts and Sciences, USA

Mindel C. Sheps Award for Mathematical Demography, Population Association of America, USA [Talk by James W. Vaupel]

2004

Regular Scientific Member of the National Academy of Sciences, USA

2003

Longevity prize of the Ipsen Foundation, France

2001

Irene B. Taeuber Award for Lifetime Achievement, Population Association of America, USA

1996

Scientific Member of the Max Planck Society, Germany (to date)

Employment

October 1996 – current

Founding Director, Max Planck Institute for Demographic Research, Rostock, Germany

2007 – current

Director, Max Planck International Research Network on Aging

January 2006 – current

Research Professor, Sanford Institute, Duke University, Durham, NC, USA

2004 – current

Director, Rostocker Zentrum zur Erforschung des Demografischen Wandels, Germany

January 1992 – December 2005

Senior Research Scientist, Sanford Institute, Duke University, Durham, NC, USA

June 1991 – 2002, January 2011 – current

Professor of Demography and Epidemiology, Institute of Public Health, University of Southern Denmark, Odense, Denmark

September 1985 – December 1991

Professor of Public Affairs and Planning, Humphrey Institute of Public Affairs, University of Minnesota, Minneapolis, MN, USA

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September 1988 – December 1991

also Professor of Ancient
Studies and Adjunct
Professor of Epidemiology,
University of Minnesota,
Minneapolis, MN, USA

July 1984 – December 1985, May – August 1983, and September 1981 – July 1982

Research Scholar,
International Institute for
Applied Systems Analysis,
Laxenburg, Austria

1979 – 1981

Study Director, Committee
on Risk and Decision
Making, U.S. National
Academy of Sciences,
Washington, D.C., USA

October 1979 – March 1982

Consultant to the U.S.
Environmental Protection
Agency, Washington, D.C.,
USA

August 1972 – August 1985

Lecturer to tenured
Associate Professor,
Institute of Policy Sciences
and Public Affairs, Duke
University, Durham, NC,
USA

September 1967 – May 1975

Research Associate,
Harvard Multinational
Enterprise Project, Harvard
Business School, Boston,
MA, USA

Selected professional service

2009 – current

Chairman of the Board
of Trustees of Population
Europe: The European
Population Partnership

2009 – 2010

Chair, Advisory Board,
Centre for Population
Change, United Kingdom

2008 – current

Panel Chair, European
Research Council Starting
Grant, European Union
Member, Advisory Board,
Population and Development
Review, Population Council,
USA

2007 – 2010

Deputy Editor, Demography,
USA

2005 – current

Rector, European Doctoral
School of Demography

2004 – 2006

Visiting Professor, London
School of Economics and
Political Science, UK

2004 – 2010

Member, Scientific Advisory
Council of the Netherlands,
Interdisciplinary
Demography Institute, The
Netherlands

2003 – current

Senior Fellow, Center for
the Study of Aging and
Human Development, Duke
University Medical Center,
USA

2002 – current

Member, European
Association for Population
Studies, Committee on
Training in Population
Studies in Europe, Chair of
the Council of EAPS

2002 – current

Rector, International Max
Planck Research School for
Demography

2000 – current

“Honorary professor” (Full
professor with all rights and
privileges but with a reduced
teaching load and without
pay), University Rostock,
Germany

1999 – current

Founding Publisher and
Member of the Scientific
Review Board, Demographic
Research, an online journal
of research and commentary
in the population sciences

1999 – 2005

Member, Standing
Committee on Population,
National Research Council,
U.S. National Academy of
Sciences, USA

1999 – 2002

Member, Commission on
Global Aging, “Global Aging
Initiative” (Honorary Co-
Chairs Ryutaro Hashimoto,
Walter F. Mondale, and Karl-
Otto Pöhl)

1999 – 2001

Chair, Advisory Board,
European Association for
Population Studies

1999 – 2001

Member, Scientific Advisory
Board, German Socio-
Economic Panel, Germany

Biographical details

1999 – 2000

Co-Chair, Committee on the Use of Biological Indicators in Social Science Surveys, National Research Council, U.S. National Academy of Sciences, USA

January 1998 – 2002

Member, National Advisory Council on Aging, National Institutes of Health, USA

1998 – 2002

Member, Scientific Advisory Board, Chinese National Research Center on Aging

1998 – 2000

Chair, Scientific Advisory Board, Danish Center for Demographic Research, Denmark

1998 – 2000

Member, Committee on Population Forecasting, National Research Council, U.S. National Academy of Sciences, USA September

1992 – March 1997

Member, Social Science and Population Review Committee, U.S. National Institutes of Health, USA

October 1992 –

September 1996

Head, Aging Research Center, Odense University Medical School, Denmark

February 1990 – current

Program Director, “Oldest-Old Mortality: Demographic Models and Analyses”, a “P01 program project” grant from the National Institute on Aging, U.S. National Institutes of Health, USA

1988 – 2008

Member, Social Science and Population Studies Review Committee, U.S. National Institutes of Health, USA

July 1987 – December 1991

Program Director, “Interdisciplinary Research in the Population Sciences”, a grant from the Sloan Foundation

June 1987 – December 1991

Examining member of the graduate faculty in Gerontology, University of Minnesota, USA

September 1986 – December 1991

Member, Advisory Committee, University of Minnesota’s China Center, USA

April 1986 – December 1991

Director, Center for Population Analysis and Policy, University of Minnesota, USA

July 1986 – June 1990

Member, Gerontology Review Committee, National Institute on Aging, National Institutes of Health, USA

September 1980 –

September 1985

Associate Editor, Journal of Policy Analysis and Management, and founding editor of the “Insights” department of that journal

Papers, books, and proposals reviewed for

Climate Change; Demographic Research; Demography; Ecology; European Journal of Population; The Gerontologist; International Studies Quarterly; Journal of Aging and Health; Journal of Economic Literature; Journal of Forecasting; Journals of Gerontology; Journal of Health Policy, Politics, and Law; Journal of Policy Analysis and Management; Journal of the American Statistical Association; Management Science; Mathematical Biosciences; Mathematical Population Studies; Nature; Physical Review Letters; Policy Analysis; Policy Sciences; Political Science Quarterly; Population and Development Review; PNAS; Public Policy; Science; Theoretical Population Biology; Cambridge University Press; Goodyear Publishing Company; Oxford University Press; The Danish Cancer Society; The U.S. National Institutes of Health; The U.S. National Science Foundation

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