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## Curriculum Vitae Prof. Dr. Caroline Dean



**Name:** Caroline Dean

**Born:** 2 April 1957

**Major scientific interests:** Flowering time, vernalisation, natural variations, FLC expression, adaptation

Caroline Dean is a British plant biologist who decodes the mechanisms of plant flowering times. Her work focuses on molecular control of flowering time after long periods of cold and the adaptation of flowering mechanisms to changed climate conditions.

### Academic and professional career

- since 2002 Honorary Professor, School of Biological Sciences, University of East Anglia, UK
- 1999 - 2008 Associate Research Director, John Innes Centre, Norwich, UK
- since 1988 Group Leader at the John Innes Centre, Norwich, UK
- 1983 - 1988 Post-doc, Advanced Genetic Sciences, Oakland, USA
- 1982 Ph. D. in Biology, University of York, UK
- 1978 - 1979 Research assistant, University of York, UK
- 1975 - 1978 Studies of Biology, University of York, UK

### Functions in scientific societies and committees

- 2012 - 2017 Member of the EMBO Council, European Molecular Biology Organization
- 2005 - 2007 Member of the Royal Society Council
- 1999 - 2008 Associate Research Director of the John Innes Centre

1999 - 2001      President of the International Society of Plant Molecular Biology

### Honours and awarded memberships

2020              Royal Medal by the Royal Society

since 2020      Member of the American Academy of Arts and Sciences

2020              Wolf Prize in Agriculture

2019              Honorary degree by the University of York, UK

2018              L'Oréal-UNESCO For Women in Science Award

2016              Darwin Medal by the Royal Society

2016              Dame Commander of the Order of the British Empire

since 2008      Member of the German National Academy of Sciences Leopoldina

since 2008      Foreign Member of the US National Academy of Sciences

2007              Genetics Society Medal

2004              Officer of the Order of the British Empire

since 2004      Fellow of the Royal Society

since 1999      Member of the European Molecular Biology Organization (EMBO)

1993 - 2002      Honorary Research Fellow, School of Biological Sciences, University of East Anglia

### Major Scientific Interests

Caroline Dean decodes the mechanisms of plant flowering times. Her work focuses on molecular control of flowering time after long periods of cold and the adaptation of flowering mechanisms to changed climate conditions.

Flowering time is a matter of life and death for plants. If they flower too early, they could freeze when it gets cold again. Dean and her research group investigate molecular mechanisms that plants use to determine the right time for flowering. She works primarily on the process of vernalisation, which is the induction of flowering through exposure to cold temperatures. For flower formation to be set in motion, some plant types require a period of cold for a specific length of time. Dean and her colleagues want to find out how different climate zones and mild-weather periods during winter influence this process. They investigated thale cress (*Arabidopsis thaliana*) and determined that the FLC (flowering locus C) gene suppresses the start of flowering at low temperatures. After a long period of cold temperatures, the gene then switches itself off, and the plant begins to flower.

In further studies, Dean is investigating which signal pathways control the activity of the FLC gene

and natural variation in the vernalisation process. This is because the duration of the FLC gene's flowering barrier varies in different climate zones; the gene has adapted to differing environmental conditions. Dean's research results thus provide important insights for crop cultivation.