



PHOTO: Cliff Moore

## Pierre Deligne

Pierre Deligne was born on 3 October 1944 in Etterbeek, Brussels, Belgium. He is Professor Emeritus in the School of Mathematics at the Institute for Advanced Study, Princeton, New Jersey, USA. Deligne came to Princeton in 1984 from Institut des Hautes Études Scientifiques (IHÉS) at Bures-sur-Yvette near Paris, France, where he was appointed its youngest ever permanent member in 1970.

When Deligne was around 12 years of age, he started to read his brother's university math books and to demand explanations. His interest prompted a high-school math teacher, J. Nijs, to lend him several volumes of "Elements of Mathematics" by Nicolas Bourbaki, the pseudonymous grey eminence that called for a renovation of French mathematics. This was not the kind of reading matter that one would normally dream of offering a 14-year old, but for Deligne it became a life changing experience. From then on he never looked back.

Although his father wanted him to become an engineer and to pursue a career that would afford him a good living, Deligne knew early on that he should do what he loved, and what he loved was mathematics. He studied mathematics at the Université Libre de Bruxelles (University of Brussels) and received his Licence en mathématiques, the equivalent of a B.A., in 1966 and his Ph.D., Doctorat en mathématiques, in 1968. In 1972, Deligne received the doctorat d'État ès Sciences Mathématiques from Université Paris-Sud 11.

Deligne went to the University of Brussels with the ambition of becoming a high-school teacher, and of pursuing mathematics as a hobby for his own personal enjoyment.

There, as a student of Jacques Tits, Deligne was pleased to discover that, as he says, "one could earn one's living by playing, i.e. by doing research in mathematics."

After a year at École Normal Supérieure in Paris as auditeur libre, Deligne was concurrently a junior scientist at the Belgian National Fund for Scientific Research and a guest at the Institut des Hautes Études Scientifiques (IHÉS). Deligne was a visiting member at IHÉS from 1968–70, at which time he was appointed a permanent member.

Concurrently, he was a Member (1972–73, 1977) and Visitor (1981) in the School of Mathematics at the Institute for Advanced Study. He was appointed to a faculty position there in 1984.

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Pierre Deligne receives the Abel Prize "for seminal contributions to algebraic geometry and for their transformative impact on number theory, representation theory, and related fields," to quote the Abel Committee.

Deligne is a research mathematician who has excelled in finding connections between various fields of mathematics. His research has led to several important discoveries. One of his most famous contributions was his proof of the Weil conjectures in 1973. This earned him both the Fields Medal (1978) and the Crafoord Prize (1988), the latter jointly with Alexandre Grothendieck.

Deligne's brilliant proof of the Weil conjectures made him famous in the mathematical world at an early age. This



first achievement was followed by several others that demonstrate the extreme variety as well as the difficulty of the techniques involved and the inventiveness of the methods. He is best known for his work in algebraic geometry and number theory, but he has also made major contributions to several other domains of mathematics.

Deligne is a highly influential mathematician with a number of mathematical concepts named after him: Deligne conjecture, Deligne–Mumford moduli space of curves, Deligne–Mumford stacks, and Deligne cohomology, to name a few. Alone or in collaboration, Deligne has written about a hundred papers.

### Awards and honours

Pierre Deligne has received many distinguished international awards. He was awarded the Fields Medal at the International Congress of Mathematicians in Helsinki in 1978. In 1974 he received the François Deruyts Prize, awarded by the Belgium Royal Academy, and the Henri Poincaré Medal, awarded by the French Academy of Sciences. He received the A. De Leeuw-Damry-Bourlart Prize in 1975 from the Belgian National Science Foundation.

In 1988 Deligne, jointly with A. Grothendieck, was awarded the Crafoord Prize by the Royal Swedish Academy of Sciences. The Balzan Prize in Mathematics, which Deligne received in 2004, carries a cash award of 1 million Swiss francs. The Balzan Foundation requires that half of the sum should be spent to support young researchers, and

Deligne chose to establish three-year research grants to support the most active young mathematicians working in Russia, Ukraine, and Belarus.

In 2008 Deligne was awarded the Wolf Prize in Mathematics, jointly with P. Griffiths and D. Mumford.

In 2006 Deligne was honoured by King Albert II of Belgium, who made him a Viscount, and the Belgian post office issued a postage stamp in honour of his achievements in fundamental mathematics.

Pierre Deligne has been an honorary member of the Moscow Mathematical Society since 1995 and of the London Mathematical Society since 2003. In 1978 he was elected a foreign honorary member of the American Academy of Arts and Sciences, and in 2009 he became a member of the American Philosophical Society. In 2009 he was elected a foreign member of the Royal Swedish Academy of Sciences.

Other academic honours include:

Elected membre associé étranger, Académie des Sciences, Paris (1978)

Doctor honoris causa of the Vrije Universiteit Brussel (1989)  
Elected membre associé, Académie Royale de Belgique (1994)

Doctor honoris causa of Ecole Normale Supérieure (1995)  
Elected foreign member, Accademia nazionale dei Lincei (2003)

Elected Foreign Associate, National Academy of Sciences (2007)

