



THE
ABEL
PRIZE
2018

Robert P. Langlands receives the Abel Prize

The Norwegian Academy of Science and Letters has decided to award the Abel Prize for 2018 to Robert P. Langlands of the Institute for Advanced Study, Princeton, USA

“for his visionary program connecting representation theory to number theory.”

Robert P. Langlands has been awarded the Abel Prize for his work dating back to January 1967. He was then a 30-year-old associate professor at Princeton, working during the Christmas break. He wrote a 17-page letter to the great French mathematician André Weil, aged 60, outlining some of his new mathematical insights.

“If you are willing to read it as pure speculation I would appreciate that,” he wrote. “If not – I am sure you have a waste basket handy.”

Fortunately, the letter did not end up in a waste basket. His letter introduced a theory that created a completely new way of thinking about mathematics: it suggested deep links between two areas, number theory and harmonic analysis, which had previously been considered as unrelated.

Robert P. Langlands will receive the Abel Prize for his work from His Majesty King Harald V at an award ceremony in Oslo on 22 May.

Langlands’ insights were so radical and so rich that the mechanisms he suggested to bridge these mathematical fields led to a project named the Langlands program. The program has enlisted hundreds of the world’s best mathematicians over the last fifty years. No other

project in modern mathematics has as wide a scope, has produced so many deep results, and has so many people working on it. Its depth and breadth have grown and the Langlands program is now frequently described as a grand unified theory of mathematics.

The President of the Norwegian Academy of Science and Letters, Ole M. Sejersted, announced the winner of the 2018 Abel Prize at the Academy in Oslo today, 20 March.

Biography

Robert P. Langlands was born in New Westminster, British Columbia, in 1936. He graduated from the University of British Columbia with an undergraduate degree in 1957 and an MSc in 1958, and from Yale University with a PhD in 1960. He has held faculty positions at Princeton University and Yale University, and is currently a Professor at the Institute for Advanced Study in Princeton, New Jersey. He has won several awards as recognition of his outstanding contributions to the theory of automorphic forms.

Awards and recognitions

- The Shaw Prize in Mathematical Sciences
- The Nemmers Prize in Mathematics



- The Wolf Prize in Mathematics (jointly with Sir Andrew Wiles)
- The Leroy P. Steele Prize
- The Grande Médaille d'Or of the French Academy of Sciences
- The inaugural National Academy of Sciences Award in Mathematics
- The Common Wealth Award
- The American Mathematical Society's Cole Prize

The Abel Prize

The Abel Prize is awarded annually by the Norwegian Academy of Science and Letters to one or more outstanding mathematicians. The choice of laureate is based on the recommendations of the Abel Committee, which is composed of five internationally recognized mathematicians.

The members of the current committee are:

- John Rognes, Department of Mathematics, University of Oslo (Chair).

- Marie-France Vignéras, Institut de Mathématiques de Jussieu, Paris, France.
- Ben J. Green, Mathematical Institute, University of Oxford, England.
- Irene Fonseca, Department of Mathematical Sciences, Mellon College of Science, USA.
- Alice Chang Sun-Yung, Department of Mathematics at Princeton University, USA.

The Abel Prize is administered by the Norwegian Academy of Science and Letters on behalf of the Ministry of Education and Research, and has been awarded since 2003. The prize is worth NOK 6 million.

Niels Henrik Abel (1802–1829) was a Norwegian mathematician. In spite of his short life, he made significant contributions to a variety of mathematical fields.

For more information about the laureate, his achievements and the Abel Prize, please consult the Abel Prize website www.abelprize.no

