# 2000 Cole Prize

The 2000 Frank Nelson Cole Prize in Algebra was awarded at the 106th Annual Meeting of the AMS in January 2000 in Washington, DC.

The Cole Prize in Algebra is awarded every five years for a notable research memoir in algebra which has appeared during the previous five years. The awarding of this prize alternates with the awarding of the Cole Prize in Number Theory, also given every five years. These prizes were founded in honor of Frank Nelson Cole on the occasion of his retirement as secretary of the AMS after twenty-five years of service. He also served as editor-in-chief of the *Bulletin* for twenty-one years. The original fund was donated by Cole from monies presented to him on his retirement. The fund has been augmented by contributions from members of the Society, including a gift made in 1929 by Cole's son, Charles A. Cole, which more than doubled the size of the fund. The prize amount is currently $4,000.

The recipients of the 2000 Cole Prize in Algebra are ANDREI SUSLIN and AISE JOHAN DE JONG.

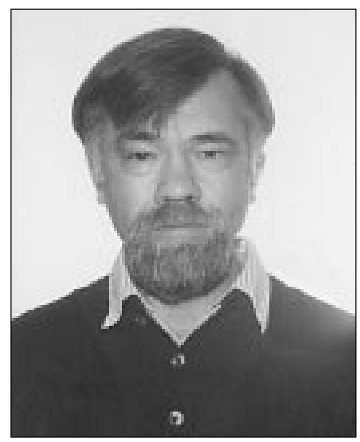
The Cole Prize is awarded by the AMS Council acting through a selection committee whose members at the time of these selections were: Simon K. Donaldson, William Fulton, and Efim I. Zelmanov (chair).

The text that follows contains, for each prize recipient, the committee's citation, a brief biographical sketch, and a response from the recipient upon receiving the prize.

## Andrei Suslin

### Citation

The Cole Prize in Algebra is awarded to Andrei Suslin for his work on motivic cohomology. In particular, the prize is awarded for his foundational paper, joint with V. Voevodsky, "Bloch-Kato conjecture and motivic cohomology with finite coefficients" (*Proc. NATO ASI/CRM School "The Arithmetic and Geometry of Algebraic Cycles"*, Banff, Canada); for his unifying paper "Higher Chow groups and étale cohomology" (*Ann. of Math. Stud.* (1999)), which establishes the relationship of S. Bloch's higher Chow groups to Suslin-Voevodsky motivic cohomology; and for the paper, written jointly with V. Franjou, E. Friedlander, and A. Scorichenko, "General linear groups and functor cohomology over finite fields" (*Ann. of Math.*, **150** (1999), 1–65), which achieves extensive computations of EXT-groups for general linear groups.



Andrei Suslin

### Biographical Sketch

Andrei Suslin was born on December 27, 1950, in St. Petersburg (Leningrad), Russia. In 1967 he received the first prize at the International Mathematical Olympiad. In 1972 he graduated from Leningrad University, and he received his Ph.D. there in 1975. In 1977 he earned the Doctor of Sciences degree from Leningrad University for the work "Serre's problem and related questions". In 1980 Suslin was awarded the "Leninsky Komsomol" prize (the highest scientific award for young scientists in the former Soviet Union) for the solution of Serre's problem.

In 1977 Suslin became a professor at the St. Petersburg (Leningrad) Branch of the Steklov Mathematical Institute. Since 1994 he has held a position as the Board of Trustees Professor at Northwestern University.

Suslin's interests lie in algebraic $K$-theory and its relations with algebraic geometry. Three times (in 1978, 1986, and 1994) he delivered an invited address at the International Congress of Mathematicians; he was a plenary speaker in 1986.

**Response**

It is a great honor for me to receive the Frank Nelson Cole Prize. I would like to use this opportunity to thank my colleagues and friends A. Merkurjev, E. Friedlander, and V. Voevodsky for a very productive collaboration over the years. Without this collaboration I would not have had a chance to get this high prize.

## Aise Johan de Jong

**Citation**

The Cole Prize in Algebra is awarded to Aise Johan de Jong for his important work on the resolution of singularities by generically finite maps. In particular, the prize is awarded for the fundamental paper "Smoothness, semistability and alterations", *Publ. Math. I.H.E.S.* **83** (1996), 51–93. Already it has been used to solve important problems: by de Jong and his coauthors to construct semistable reductions of families of varieties (which is a first step in constructing compactifications of moduli spaces, always a main goal of algebraic geometers) and also by others such as O. Gabber, who used it to prove part of Serre's famous conjecture about intersection numbers over regular local rings.

**Biographical Sketch**

Aise Johan de Jong was born on January 30, 1966, in Brugge, Belgium. After graduating from the Christelijk Gymnasium Sorghvliet in The Hague, he went to Leiden University in 1984. There he worked with Van de Ven writing his senior thesis on the Burkhardt Quartic. In 1987 he started working at the University of Nijmegen; during this time he was advised by Steenbrink and Oort (Utrecht University). Johan de Jong received his Ph.D. cum laude from the University of Nijmegen on January 28, 1992.

In the period following his graduation, Johan de Jong held positions at the following institutions (in chronological order): visitor at the Max-Planck-Institut für Mathematik in Bonn (1 year), visitor at the University of Bielefeld (3 months), fellow of the Dutch Royal Academy of Sciences stationed at the University of Utrecht (3 years), Benjamin Peirce assistant professor at Harvard University (1 year), and professor at Princeton University (2 years). At the time of this writing he is employed by the Massachussetts Institute of Technology.

Aise Johan de Jong is an arithmetic algebraic geometer. He has focused on moduli of curves, abelian varieties, and Barsotti-Tate groups in positive characteristic. This is intimately related to his work on crystalline Dieudonné modules and nondegenerate F-crystals.

**Response**

It is a great honor and a great pleasure for me to receive the Frank Nelson Cole Prize. I am very happy about this, and I am also very happy to share the prize with Professor Andrei Suslin. I would like to thank the AMS and the selection committee for awarding this prize to me.

The paper on alterations for which I received this prize shows that one can use geometric arguments to prove algebraic statements. In this particular case it shows that one can dominate any projective variety by a smooth projective variety by fibering by curves and doing induction on the dimension (see article for more details). Of course, this philosophy permeates algebraic geometry, but it was explained to me by my former advisor, Professor Oort. I would like to express my thanks to him here.