

# Princeton University

Honors Faculty Members  
Receiving Emeritus Status



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The biographical sketches were written by colleagues in the departments of those honored, except where noted.

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# Andrew John Wiles



Andrew J. Wiles was born on April 11, 1953, in Cambridge, England. After doing his undergraduate degree at Merten College at the University of Oxford, he went to study at the University, Cambridge with John Coates as his Ph.D. supervisor. As a graduate student, Andrew made a major breakthrough in the diophantine theory of cubic equations, proving a result that became known as the Coates-Wiles Theorem. He came to the United States in 1977 as a Benjamin Pierce Instructor at Harvard University, where his collaboration with Barry Mazur resolved a long-standing conjecture in Iwasawa Theory. (Kenkichi Iwasawa was a professor of mathematics at Princeton from 1967 to 1986.) In 1982, Andrew was appointed professor of Mathematics at Princeton in 1994; he was named Eugene Higgins Professor of mathematics; and in 2009, he was named James S. McDonnell Distinguished University Professor of Mathematics. He retired in 2012 and returned to Oxford as Royal Society Professor (where his father Maurice Frank Wiles had been Regius Professor of Theology).

Andrew is world-famous for his proof of Fermat's Last Theorem, a simple sounding statement that Pierre de Fermat (1607-1665) had written in the margin of his copy of Diophantus' *Arithmetica*, along with the lament that the margin was too small to contain the proof. For more than three centuries, all attempts to prove Fermat's statement were unsuccessful. However, the efforts led to many deep developments in mathematics. In the early 1980s, work of Gerhard Frey, Jean-Pierre Serre and Kenneth Ribet showed that Fermat's Last Theorem would follow if one knew the fundamental Shimura-Taniyama Conjecture in the theory of modular forms and elliptic curves. (Goro Shimura is professor emeritus in the mathematics department.) It was this conjecture, along with its many far-reaching and celebrated consequences, that Andrew, in

part in collaboration with his former student Richard Taylor, resolved in 1994—after spending a proverbial seven years in his attic study working on the problem. (Richard is now a visiting lecturer with rank of professor in Princeton’s mathematics department and a faculty member in the School of Mathematics at the Institute for Advanced Study.)

In each instance of his resolving a long-standing problem, Andrew brought fundamental new techniques into number theory. In particular, the method that he and Taylor developed has been extraordinarily fruitful in wide swaths of the theory of modular forms.

Andrew has few equals in terms of his impact on modern number theory. Many of the world’s very best young number theorists received their Ph.D.’s under Andrew at Princeton, and many of these are today leaders and professors at top institutions around the world. Among them are Christopher Skinner and Manjul Bhargava, professors in the mathematics department. As a member of the mathematics department for 30 years, Andrew played a continued leadership role, including chairing the department from 2005 to 2009. His long list of awards includes the Wolf Prize, the King Faisal Prize, and the Shaw Prize, as well as a knighthood. We wish Sir Andrew the very best in his new post at Oxford.