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Friedrich Hirzebruch, Mathematician, Is Dead at 84

By BRUCE SCHECHTER

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Max Planck Institute for Mathematics

Friedrich Hirzebruch was known for finding ties between fields.

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The cause was a brain hemorrhage, apparently brought about by a minor fall a month earlier, said Don Zagier, a director of the [Max Planck Institute for Mathematics](#) in Bonn, which Dr. Hirzebruch founded.

When Dr. Hirzebruch began his mathematical career after World War II, much of Germany lay in ruins. The best German scientists, according to the mathematician [Hermann Weyl](#), "were scattered over the earth."

Dr. Hirzebruch spent two years in the 1950s at the Institute for Advanced Study in Princeton, N.J., and was inspired by that experience with a vision of international mathematical collaboration that he hoped to recreate in Germany. When he returned there, not yet 30, he was appointed a full professor at the University of Bonn and set about achieving that goal.

"As a young man, by his own personality, example and organizational skills, he recreated German mathematics," said [Sir Michael Atiyah](#), a British mathematician.

Dr. Hirzebruch began by establishing an informal yearly mathematical meeting that he called the Arbeitstagung (working meeting), which quickly grew from a group of seven to more than 200 attendees.

It was unusual in that it had no programs or invitations. On the first day, the participants would gather in an auditorium and call out topics, which Dr. Hirzebruch would assign to experts in the audience. In the pre-Internet world, this was the best way to keep up with the latest developments.

He realized his dream of creating an international center of mathematics along the lines of the Institute of Advanced Study in the early 1980s, when he persuaded the Max Planck Society to open the Max Planck Institute for Mathematics, where he was director until 1995.

Dr. Hirzebruch was also the first president of the European Mathematical Society and served on the boards of many other mathematical organizations.


In his own work, Dr. Hirzebruch was best known for his ability to find connections between various fields of mathematics, like algebraic geometry and topology, which inspired new areas of mathematical research and turned out to be vital to modern physics. He is best known for the [Hirzebruch-Riemann-Roch theorem](#), the Hirzebruch signature theorem, his work on Hilbert modular surfaces and his co-creation of

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
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
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
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"He took old ideas and refurbished them," said Dr. Atiyah, who collaborated with Dr. Hirzebruch. "All of these fields had links before, but he was the person who mainly developed those links and put them in a modern form and forged a new way forward."

Friedrich Ernst Peter Hirzebruch was born on Oct. 17, 1927, in Hamm, Westphalia. His father, Fritz, a mathematician, was his first math teacher.

He was drafted into the Luftwaffe youth corps when World War II started. Spending long nights in antiaircraft positions watching the skies, he imagined spherical triangles drawn across the sky and worked out their geometry. Later in the war, he was briefly imprisoned by Allied forces. In prison he used toilet paper to write mathematical proofs.

Dr. Hirzebruch received many awards and honors, including the [Wolf Prize](#) in 1988, the Lobachevsky Prize in 1990 and nine honorary doctorates.

He is survived by his wife of 59 years, the former Ingeborg Spitzley; three children, Ulrike Schmickler-Hirzebruch, Barbara Hirsch and Michael Hirzebruch; and six grandchildren.

Even while serving as director of the Max Planck Institute, Dr. Hirzebruch continued teaching at the University of Bonn.

As a lecturer, Dr. Atiyah recalled: "He was a very skilled conjurer in the sense that he would lead you along and you didn't know where you were going, and then suddenly at the end of the lecture a beautiful thing would emerge. It was a work of art, a little theatrical production that gave the appearance of being ordinary, but they were very carefully planned."

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