Physics

First Nobel Prize in Physics

Maria Goeppert-Mayer

[28 June 1906 - 20 February 1972]

Special Scientific Achievements

Publication of the book *Elementary Theory of Nuclear Shell Structure* (1955) in collaboration with Johannes Jensen.

First U.S. woman to receive a Nobel Prize in Physics 1963.

Maria Goeppert-Mayer developed the nuclear shell structure, a physical model that is still valid today.

1906 Maria Goeppert is born in Kattowitz, Upper Silesia, today Poland, on June 28.

1910 Her father goes to Göttingen as professor of pediatrics. Due to her father and her mother, a teacher of languages and music, Maria grows up in a circle of academics.

1921 - 1923 Since Maria wants to study at University after her school years, she has to attend a private 'School for Suffragettes', which was established by feminists and which prepared girls for the highschool graduation, the entrance examination for University. (Girls are not allowed in the "Gymnasium" or upper secondary school).

1923 Maria finally takes the high-school graduation examinations in Hanover as an external pupil.

1924 Maria Goeppert enrolls at the University of Göttingen for mathematics. 3 years later she becomes attracted to physics.

1930 Maria takes her doctorate in theoretical physics on the subject of double photon processes. She marries Joseph Mayer, a U.S. chemical physicist, who takes up an appointment in the Chemistry Department at Baltimore. Due to the Great Depression chances for women to obtain a profession are extremely limited.
Maria Goeppert-Mayer is able to work as a German correspondent and has access to research facilities.

1938 Together with her husband Maria Goeppert-Mayer writes the textbook *Statistical Mechanics*. Furthermore, she helps and supports Jewish colleagues who immigrate to the U.S..

1941 She helps – as many other colleagues do – to develop the atom bomb, although she is engaged in a peaceful use of nuclear energy.

1946 They move to Chicago which has become centre of nuclear research after the war. Maria becomes a member of the Institute of Nuclear Studies, is even appointed professor, but receives no payment. However she is offered a parttime position in a laboratory.

1956 Maria Goeppert-Mayer becomes a member of the National Academy of Sciences.

1956 - 1960 Research in theoretical physics.

1960 In California Maria Goeppert-Mayer accepts an appointment as professor in physics. Her research in the field of nuclear shell structure is widely recognized among experts.

1963 Maria Goeppert-Mayer receives together with Johannes H. D. Jensen the Nobel Prize for her groundbreaking work in models of the nucleus of atoms. She is the second U.S. woman ever to win a Nobel Prize, and the first U.S. woman to do so in physics. Shortly after, Maria Goeppert-Mayer suffers a stroke and is left paralyzed.

1960 - 1972 Despite her sufferings, Maria Goeppert-Mayer continues researching and publishing and she encourages young women to pursue careers in sciences. She dies in La Jolla, California, on February 20, 1972.

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