

NOBEL PRIZEWINNERS AND THE UG

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Out of a total of 573 since its establishment in 1901 (the Nobel Prize in Economics was added in 1969), the Nobel Prize has been awarded to 870 individuals (822 men and 48 women) and 23 organizations. There have been just 21 Dutch laureates, making the achievements of Frits Zernike and Ben Feringa all the more remarkable. Both won the prize at the age of 65, one for Physics and the other for Chemistry.

Before Feringa, Zernike (1888–1966) was the only Nobel Prizewinner who was affiliated with the University of Groningen at the time of the award. He won the prize for inventing the phase-contrast microscope, which made it possible for scientists to study living cells. Prior to that, parts of cells could only be identified under the microscope with the aid of dyes that killed the cells. The contribution of Zernike's phase-contrast microscope to the development of biology and medicine is of inestimable value. Zernike studied chemistry at the University of



Amsterdam, where he obtained his doctorate in 1915. Already then, he was assistant to Jacobus Cornelius Kapteyn at the Astronomy Laboratory at the UG. In that respect his situation differs from that of Feringa, who has spent his entire academic career in Groningen. Feringa did his

first degree here, as well as his PhD, and – apart from a few years at Shell – he has always worked here. This is unusual since most Dutch Nobel laureates were working at universities abroad when they won the prize.

Zernicke had developed the principle of the phase-contrast microscope in 1932, and in 1941 the microscope went into production at the German firm Carl Zeiss AG. 1953 therefore seems rather late to be receiving the Nobel Prize for his invention. The situation is quite different for Feringa's research, as applications for the nanomotor still lie in the future. Another difference between the two Nobel laureates is that Zernike was awarded the prize alone, whereas Feringa shares it with Frenchman Jean-Pierre Sauvage and Briton Sir James Fraser Stoddart. Zernike did, however, collaborate closely with renowned instrument maker Caroline Bleeker. She was issued the patent for their invention, while Zernike won the Nobel Prize.

There are other researchers with a UG connection who have won the Nobel Prize (or who just missed out).



Heike Kamerlingh Onnes
(1853-1926)

was born in Groningen, where he first studied chemistry and then physics, and obtained his doctorate in 1879. In 1913 he was awarded the Nobel Prize in Physics. At that time he was a professor in Leiden, where in 1908 he was the first person to liquefy helium, at a temperature of $-269\text{ }^{\circ}\text{C}$. For many years his cryogenics laboratory was known as 'the coldest place on earth'.



Albert Szent-Györgyi
(1893-1989)

was born in Budapest and studied medicine in Hungary. He worked at various universities, including the UG from 1922 to 1926. Here he laid the foundations for the research that would earn him the Nobel Prize in Medicine in 1937 – biological combustion processes and the isolation and identification of vitamin C. He was a professor in Szeged in Hungary at the time.



Hessel de Vries
(1916-1959)

was born in Annen in Drenthe, and studied mathematics and physics in Groningen, where he obtained his PhD in 1942 and was appointed professor in 1950. This brilliant researcher may well have shared the Nobel Prize in Chemistry, awarded to the American Willard Frank Libby in 1960 for his role in developing radiocarbon dating, were it not for the fact that he had murdered his assistant, Anneke, one year earlier after she broke off their relationship. He then took his own life.



Rufus Dingelam
(fictional character)

is a professor in Chemical Engineering and the main protagonist in W.F. Hermans' 1975 novel *Onder professoren*. This satirical *roman à clef* is set at the UG, where Dingelam wins the Nobel Prize in Chemistry for something he had invented twenty years earlier – the substance alicodrin, for a whiter wash and to boost male potency. Many characters in the book are modelled on UG staff from that time.