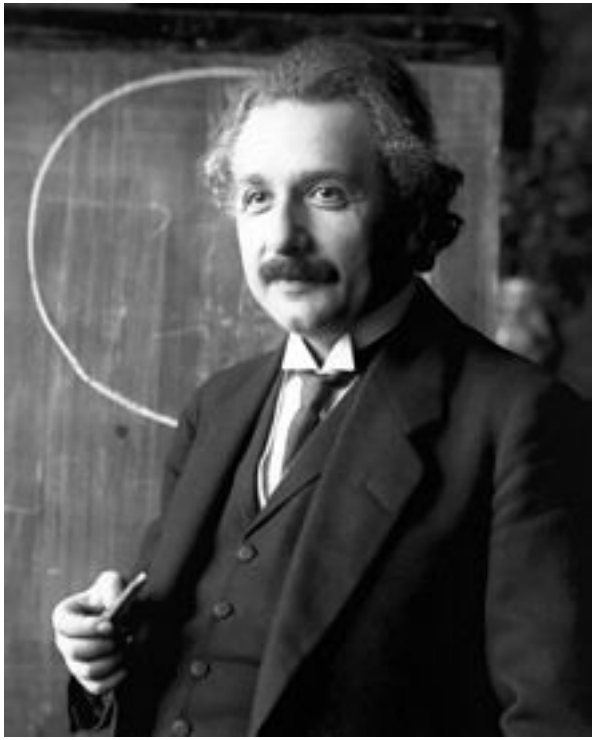
Corrigendum

The Nobel Prize in Physics 1921 was awarded to Albert Einstein "for his services to Theoretical Physics, and especially for his discovery of the law of the photoelectric effect".



Albert Einstein received his Nobel Prize one year later, in 1922. During the selection process in 1921, the Nobel Committee for Physics decided that none of the year’s nominations met the criteria as outlined in the will of Alfred Nobel. According to the Nobel Foundation's statutes, the Nobel Prize can in such a case be reserved until the following year, and this statute was then applied. Albert Einstein therefore received his Nobel Prize for 1921 one year later, in 1922.

And yet, when he finally delivered his Nobel lecture, the subject was...

Fundamental ideas and problems of the theory of relativity

Lecture delivered to the Nordic Assembly of Naturalists at Gothenburg*

July 11, 1923

"If we consider that part of the theory of relativity which may nowadays in a sense be regarded as bona fide scientific knowledge, we note two aspects which have a major bearing on this theory. The whole development of the theory turns on the question of whether there are physically preferred states of motion in Nature (physical relativity problem). Also, concepts and distinctions are only admissible to the extent that observable facts can be assigned to them without ambiguity (stipulation that concepts and distinctions should have meaning). This postulate, pertaining to epistemology, proves to be of fundamental importance...."

Something strange was happening in Bern, in the summer of 1905...

- In a May, 1905 paper (*On a Heuristic Viewpoint Concerning the Production and Transformation of Light* (Eng. Trans) Annalen der Physik **17**, 132-148,1905) Einstein postulated that light itself consists of localized particles (quanta). Einstein's light quanta were nearly universally rejected by all physicists, including Max Planck and Niels Bohr. This idea only became universally accepted in 1919, with Robert Millikan's detailed experiments on the photoelectric effect, and with the measurement of Compton scattering.
- Two months later:(On the Motion of Small Particles Suspended in a Stationary Liquid, as Required by the Molecular Kinetic Theory of Heat (Eng. Trans)Annalen der Physik **17**, 549-560, 1905) This is a highly mathematical solution to a very old and famous problem – Browninan motion, and was accepted without any fuss.

- Six weeks later: (On the Electrodynamics of Moving Bodies (Eng. Trans) Annalen der Physik **17**, 891-921, 1905) The work was controversial, and somewhat frightening in its implications. It was however, part of a rapidly developing mass of experimental and theoretical discovery. Max Planck was the first to come to his rescue: Planck (1906) defined the relativistic momentum and gave the correct values for the longitudinal and transverse mass by correcting a slight mistake of the expression given by Einstein in 1905. Planck's expressions were in principle equivalent to those used by Lorentz in 1899. For a while, this was known as the Einstein-Lorentz theory.
- And again two months later:(Does the Inertia of a Body Depend Upon Its Energy Content?(Eng. Trans.) Annalen der Physik **18**, 639-641, 1905) This is the $E = mc^2$ proposition- simply scandalous!!
- He also found time to submit his PhD thesis, A new determination of molecular dimensions. during this long summer.