

## MAGNUS GÖSTA MITTAG-LEFFLER

Swedish mathematician **Magnus Gösta Mittag-Leffler** (March 16, 1846 – July 7, 1927) earned an international reputation for his contributions to analysis. Early in his life he worked as an actuary, but in 1872 he was appointed to a mathematics post at the University of Uppsala. He went to Paris to study analysis with Charles Hermite, but the latter told him: “You have made a mistake, sir, you should follow Weierstrass’s course at Berlin. He is the master of us all.” Mittag-Leffler’s attendance at Karl Weierstrass’ lectures in Berlin significantly affected the direction of his mathematical research as a complex analyst.



In 1877 Mittag-Leffler was appointed to a chair at the University of Helsinki, and four years later he returned home to accept a post at the Stockholm Hogskola, later to become the University of Stockholm. In 1882, with the financial backing of his wealthy wife, Mittag-Leffler founded *Acta Mathematica* and served as its chief editor for 45 years. He was able to induce the leading mathematicians of the day to submit papers for the periodical, still considered one of the world’s premier mathematical journals. He recognized and encouraged new talent, being one of the first mathematicians to support Georg Cantor’s theory of sets. Mittag-Leffler also played an important role in helping the career of Sonya Kovalevskaya, who like him had been a student of Weierstrass.

Mittag-Leffler was able to persuade King Oscar II to endow prize competitions and honor various distinguished European mathematicians, including Hermite, Henri Poincaré, and Weierstrass. Mittag-Leffler established one of the finest mathematics libraries and research institutes of the world at his home in the suburbs of Stockholm and at his country home in Tallberg. His best-known research dealt

with analytic representations of single-valued complex functions leading to what is known as the Mittag-Leffler theorem.

Many mathematicians have passed on the yarn of why there is no Nobel Prize in Mathematics, but it has no basis in fact. There are two versions of the myth. The first is that in accumulating a fortune, Mittag-Leffler antagonized quite a few people including Alfred Nobel. When Nobel established his prizes for the best work in Physics, Chemistry, Physiology or Medicine, Literature and Peace, he asked his advisors if he established a mathematical prize was it likely that Mittag-Leffler would win it. They replied that he was a prominent enough mathematician that it was possible. On that basis, Nobel ordered that there be no prize in mathematics.

The other version is a bit spicier. It asserts that Nobel hated Mittag-Leffler because the mathematician had run off with the inventor's wife. This was impossible because Nobel never married. Well, perhaps it was the industrialist's mistress that Mittag-Leffler ran off with, because Nobel reportedly did have a mistress, a Viennese woman named Sophie Hess. But there is no evidence that Mittag-Leffler ever had anything to do with her. The story seems dubious because Nobel emigrated from Sweden in 1865, when Mittag-Leffler was still a student and seldom ever returned for a visit. There doesn't appear to be any known relation between Nobel and Mittag-Leffler throughout their lives. As good a mathematician as Mittag-Leffler was there were far more worthy candidates in Europe for a Nobel Prize had one been established.

A possible reason there is no Nobel Prize in Mathematics is because chemist Nobel didn't have any interest in the subject, which he did not consider a practical science from which humanity would benefit, a prime criterion in creating the Nobel Foundation. Another possibility is that perhaps Nobel

did not wish his awards to compete with the mathematical prize endowed by Sweden's monarch.

It is embarrassing to discover that something one has not only believed for a very long time but had passed along as gospel to others is without foundation. Far worse is the case of those who hear of something at some point in their lives, decide that it is true and then not only refuse to hear any other version but actually are outraged if anyone dares suggest that they have been misinformed. It seems to be a human failing to wish to have things established once and for all so there will never be any reason to think about them again. To be closed-minded is a dangerous characteristic of the ignorant. It is preferable to have some healthy skepticism about things until one has had the opportunity to investigate them. René Descartes put it succinctly:

“In order to reach the truth, it is necessary, once in one's life,  
to put everything in doubt, as far as possible.”

In 2002 as a fulfillment of the request of the Norwegian mathematician Sophus Lie and at the suggestion of the Department of Mathematics at the University of Oslo, the Government of Norway established an Abel Prize in Mathematics, following the model of the Nobel prizes. The prize is dedicated to the memory of Niels Hendrik Abel on the occasion of the bicentenary of his birth. In November 2003, Jean-Pierre Serre became the first mathematician to be awarded the Abel Prize for Mathematics by the Norwegian Academy of Sciences and Letters. The 2004 prizes went to Sir Michael Atiyah and I.M. Singer. The 2005 Abel Prize has been awarded to Peter Lax.

**Quotation of the Day:** “The mathematician's best work is art, a high perfect art, as daring as the most secret dreams of imagination, clear and limpid. Mathematical genius and artistic genius touch one another.” – Gösta Mittag-Leffler