Nobel winners and losers

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(PhysOrg.com) -- Author Erling Norrby discusses how the Nobel Prizes for the sciences, while often awarding breakthrough efforts, also can miss pivotal findings that made a difference.

Scientists James Watson and Francis Crick published a now-famous paper in 1953 that described the double-helix structure of DNA, but it wasn't until 1962 that the pair received a Nobel Prize for the discovery.

"You would think that the fantastic contribution of James Watson and Francis Crick would be a hot topic for a Nobel Prize, but still in 1959 there was no nomination," said Erling Norrby, a former member of the Nobel committee who has written a book,"Nobel Prizes and Life Sciences."

Norrby, a virology researcher turned science historian at the Royal Swedish Academy of Sciences, spoke at the Harvard School of Public Health (HSPH) on June 9 as part of the Dean's Distinguished Lecture Series. He focused on the nucleic acids DNA and RNA and their role in heredity as a way to share stories about the history of the prize. The talk was based on one of the chapters in his book.

Not long after scientist Gregor Mendel showed that traits in peas were inherited, a physician chemist in the 1800s named Friedrich Miescher isolated nucleic acids, but he did not understand their role in genetics. In 1910, nine years after the Nobels were established, Albrecht Kossel received one for his work on nucleic acids and proteins.

However, scientists and award judges were often drawn elsewhere, even when Oswald Avery and his colleagues identified DNA as genetic material in a 1944 paper. At the time, said Norrby, “The scientific community was not at all prepared to accept this pioneering contribution.” Indeed, it took until 1956 for Avery and his team to be considered for a Nobel, but by that time Avery had died. The Nobel committee does not award prizes posthumously.

Eventually, scientists became captivated by RNA, a nucleic acid similar to DNA but single-stranded. In 1989, two scientists received a Nobel Prize for showing that RNA can not only carry genetic information, but can also operate like an enzyme, catalyzing chemical processes in the cell. Last year, three scientists (including Jack Szostak from Harvard) shared a prize for showing how chromosomes, which carry genes, are protected by a part of the DNA strand called a telomere.

“It’s a never ending story,” said Norrby. “There are more surprises to come.” He predicts future prizes will result from the field of epigenetics, and from features that can control the activity — but not the DNA sequence — of genes and are inheritable.

Norrby noted that some eventual Nobel laureates are considered repeatedly. Kossel, for example, was nominated in 1902, reconsidered in 1903, 1904, and finally won in 1910. As a member of the Nobel Committee in the late 1970s, Norrby recalled considering a nomination first proffered in 1937, the year he was born. Others win the first time they are nominated. Still others thought worthy (like Oswald Avery) never receive science’s top award.

“Of course we’re only human beings,” he said. “But this prize could never have the extraordinary position it has among prizes if it were not deeply respected among the scientific community.”

More information: Here's a link to view a Webcast of this talk.

Provided by Harvard University