Best of Last Week–Building the smallest transistor, maximum human lifespan reached and awarding of Nobel science prizes

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MoS2 transistor with 1-nanometer carbon nanotube gate. Credit: Sujay Desaj

(ScienceX)—It was a good week for physics as the Nobel physics prize was awarded to three researchers for topology work—David Thouless, Duncan Haldane and Michael Kosterlitz were awarded the prize for their

work that brought breakthroughs in a theoretical understanding of matter's mysteries. Also, as the hunt for the sterile neutrino continued, the mystery deepened as researchers working at Fermilab and the Daya Bay Reactor Neutrino Experiment ruled out many possible properties. Also, a team led by researchers at Lawrence Berkeley National Laboratory used novel materials to build the smallest transistor—one with a one nanometer carbon nanotube gate and in the process, overcame the five nanometer threshold that was thought to be the smallest size possible. And a team with members from Italy, the U.S., Germany and Japan solved a 50-year-old puzzle tied to enigmatic, lone wolf waves. Another team with members from the U.S., Japan and China, reported that electrons in graphene behave like light, only better.

It was also a big week for space news as a team at France's CNRS research center announced that a planet in the star system nearest our sun 'may have oceans,' and researchers at the Carnegie Institute for Science found that our galaxy's most mysterious star is even stranger than astronomers thought—the non-periodic star named KIC 8462852 also faded over the four years it was observed using Kepler. Also, NASA announced that the Curiosity rover began its next Mars chapter, embarking on a trip to a mineral-rich ridge and then an exposed expanse of bedrock.

A team at Albert Einstein College of Medicine made headlines by announcing that the maximum human lifespan has already been reached —drawing to a close the period of continued increase in lifespan over the past century and a half. They came to these findings after analyzing data in the Human Mortality Database.

And finally, if you haven't been following news from the Karolinska Institute, you may not have heard that Yoshinori Ohsumi took home the Nobel Prize in medicine for his work back in the 1990s that revealed the process of autophagy—in which cells break down and recycle cellular

'garbage.'