

Relatively wrong

Scientists record particle moving faster than speed of light

Branden Labarowski | Staff Writer

Albert Einstein's theory of relativity might be wrong. On September 23, 2011, a group of scientists working for CERN, a European organization hosting the world's largest particle physics laboratory, recorded a neutrino particle traveling just over the speed of light, according to their website, Public.web.cern.ch. According to senior and AP Physics student Tajana Schneiderman, this contradicts Einstein's theory of special relativity – an integral part of modern physical science.

"If special relativity was proven to be false, then... it would completely overturn the foundations of physics," Schneiderman said.

AP Physics teacher Diana Messer, however, said physics students can rest assured that their field of study isn't in danger. She said she and her colleagues believe that CERN has not disproved the theory of relativity, but has instead stumbled upon an anomaly that can be explained.

"I'm a member of the AP Physics Listserv, [an online mailing list for AP Physics teachers nationwide,]... and I have not heard one comment on the Listserv that says, 'Yes, we think this is true,'" Messer said.

Messer said that CERN's results would have been more convincing had the neutrinos been traveling faster.

"[If] the CERN anomaly... [had only a] two percent error, then the neutrinos would've gotten there hours ahead of time, not milliseconds," Messer said.

Physics teacher Brian Thomas, however, said he would be surprised if an organization as well-respected as CERN succumbed to error.

"I know the laboratory at CERN is just state-of-the-art," Thomas said. "I'd be very surprised if the results

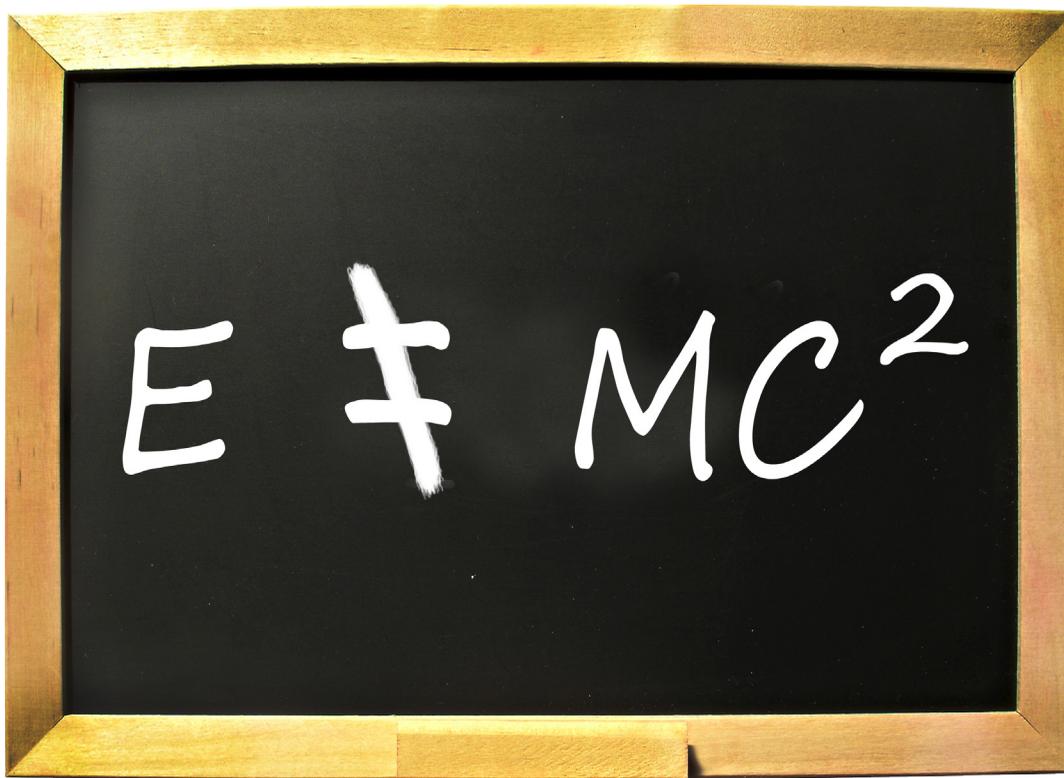


photo art by Jami Bechard

were simply inaccurate."

Senior and AP Physics student Andrew Carlin said he also thinks CERN's word is likely trustworthy.

"If that many smart people can come together and think that they did [this], then they probably did it," Carlin said.

Schneiderman said she will not believe CERN's results until they are reproduced.

"You can't base your opinions on one experiment in cases like this," Schneiderman said.

According to Thomas, even if the findings against the theory of relativity prove true, their effect on Mason's own Physics curriculum would be minimal.

"The physics in Physical Science that we talk about here in high school is just scratching the surface," Thomas said. "The area of physics that this will change is when you're exploring parts of the universe where the Newtonian mechanics break down."

Although Mason's science curriculum is in no danger of being revised, Messer said that CERN's findings have nevertheless given MHS a good opportunity to re-evaluate its idea of experimental analysis. To Messer, the CERN anomaly—and the need to repeat it before any conclusions can be made—is an upstanding example of the need to verify experiments in science.

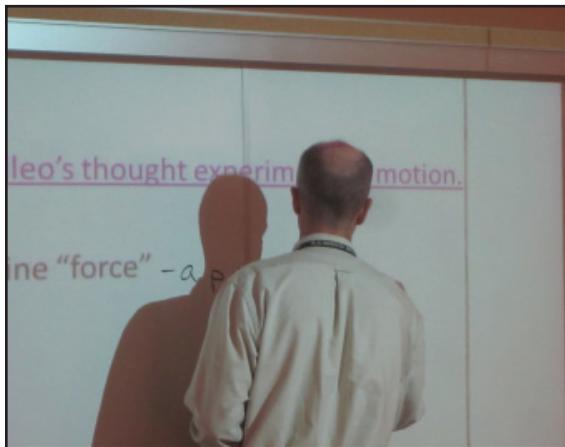
"[CERN's findings] are a great example of experimental analysis," Messer said. "I [tell] my AP class [that] when they design a lab, just because they do the same thing three times and get similar results doesn't mean that it's an accurate lab. They need to go out and find another resource to prove that whatever they found in the lab is something that somebody else has also found."

Although it's uncertain just what the future holds for the theory of relativity, Schneiderman said she entertains the idea of a concept as basic as the theory of relativity being disproved. According to Schneiderman, re-evaluating and even abandoning fundamental scientific ideas when necessary brings us closer to the truth.

"Science is about trying to understand the universe, and if you have a flawed perception of the universe, then it doesn't work," Schneiderman said.

Carlin said he is glad that the scientific community is continuing to challenge fundamental ideas such as the theory of relativity.

"If we can find ways to challenge the current thinking, it will just make us smarter and hopefully help us as [humans] towards new technologies and new understandings," Carlin said.



photos by Branden Labarowski

Physics teacher Brian Thomas, pictured above, teaches a lesson in motion to his fourth bell class. Though Einstein's theory may have been disproven, it will not greatly affect the Mason Physics curriculum.