Best of Last Week: A loose thread in string theory, e-cigarettes harm brain stem, and diet's role in obesity pandemic

July 8 2019, by Bob Yirka



Credit: University of Colorado at Boulder

It was a good week for physics as a team at the University of Chicago <u>combined light and matter to make particles with new behaviors</u>—the particles, which are part atom and part light, were found to also interact with each other quite strongly. Also, a team with members from Iowa State University, the University of Wisconsin and the University of Alabama <u>used light waves to accelerate supercurrents</u>, enabling ultrafast quantum computing—and allowing light-induced superconductivity without an energy gap. And an associate professor of physics at the University of Colorado, Boulder, found <u>a loose thread in a string theory</u> <u>puzzle</u>—perhaps moving one step closer to solving a string theory puzzle 20 years in the making. Also, a team with members from the U.S. Department of Energy's Princeton Plasma Physics Laboratory and General Atomics found evidence suggesting <u>that tiny granules could</u> <u>bring clean and abundant fusion power to Earth</u>.

It was also a good week for technology research, as a team at the U.S. Department of Energy's Lawrence Berkeley National Laboratory found that with little training, machine-learning algorithms can uncover hidden scientific knowledge by scanning the text of millions of papers. Also, a team at the University of Colorado, Boulder, reported on their experiments involving artificial gravity breaking free from science <u>fiction</u>—by spinning volunteers on a metal platform. And a team with members from Princeton University and MIT described experiments that showed <u>a dramatic increase in solar cell output</u> by knocking out two electrons with a single photon instead of the usual one. Also, a group led by a team at Stanford University announced that they had developed a new, more user-friendly language for programming supercomputers called Regent. It allows researchers to run projects without having to become experts in C++. And a team at the University of California, Riverside, found that <u>electronic cigarettes damage the brain stem</u> by producing a stress response in neural stem cells.

And finally, if you are one of the millions of <u>obese people</u> in the world today, and you have been blaming your genes for it, you might want to have a look at research conducted by a team led by Maria Brandkvist at the Norwegian University of Science and Technology—they found that while genetics does play a role, <u>the obesity pandemic is mostly due to</u> <u>diet</u>.

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