## Year in Review—The most important research of 2015: April

December 15 2015, by Bob Yirka



An artist's impression shows the surroundings of a supermassive black hole at the heart of the active galaxy NGC 3783 in the southern constellation of Centaurus. A new University at Buffalo study finds that -- contrary to what some physicists have argued for the years -- information is not lost once it has entered a black hole. The research presents explicit calculations showing how information is, in fact, preserved. Credit: ESO/M. Kornmesser

## (ScienceX)—In this new monthly series, we are offering summary articles featuring links to some of the most interesting, intriguing or popular stories

## that appeared on ScienceX throughout 2015. This is the April 2015 edition.

In physics news, a team led by John Anderson wondered <u>why</u> <u>measurements of the gravitational constant vary so much</u>. They found that it appears to be related to the oscillatory period of Earth's rotation rate. Another team of researchers at IBM announced that they had <u>achieved some critical steps to building the first practical quantum</u> <u>computer</u>—an ability to measure and detect the two types of quantum errors at the same time and a demonstration of a new square quantum bit circuit design.

In space research news, a team working with the Mars Reconnaissance Orbiter reported evidence that showed that <u>Mars has belts of glaciers</u> <u>consisting of frozen water</u>. And another team of researchers at the University of Buffalo found evidence that <u>black holes don't erase</u> <u>information</u>—information lost when entities are pulled into a black hole does not just disappear, they reported. Also, another team at TU Wien in Vienna asked, <u>is the universe a hologram</u>? Their results suggested that the holographic principle holds even in a flat spacetime.

In technology news, a team of researchers at Virginia Tech reported that they'd made <u>a new discovery that may be a breakthrough for hydrogen</u> <u>cars</u>—a biological approach that costs less than other methods and can be done faster was well. A team at Ohio State University announced that they had developed <u>a mesh that captures oil—but lets water through</u>. The new material could prove helpful in cleaning up oil spills. And another team at Stanford University announced that they had developed <u>an ultra-fast charging aluminum battery that offers a safe alternative to conventional batteries</u>—they are just as good, but won't burst into flames.

In medical news, a team working at the Sanford-Burnham Medical Research Institute announced a breakthrough in pancreas cancer treatment—they found <u>a way to turn cancer cells into normal cells</u> by introducing a protein called E47. And a team at Toronto General Hospital Research Institute found that <u>two compounds targeted the gut to</u> <u>lower blood sugar in obese or diabetic rats</u>. They found that metformin and resveratrol triggered signaling pathways in the small intestine to lower blood sugar.

The January 2015 edition of our Year in Review series can be read <u>here</u>. The February 2015 edition of our Year in Review series can be read <u>here</u>. The March 2015 edition of our Year in Review series can be read <u>here</u>.

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