

# **Best of Last Week – A new optical state, cancer fighting robots and running to relieve brain stress**

February 19 2018, by Bob Yirka

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Thrombin can block tumor blood flow by clotting the blood within the vessels that feed tumor growth, causing a sort of tumor mini-heart attack, and leading to tumor tissue death. Credit: Jason Drees, Arizona State University

It was a good week for physics as a team with members from several institutions in the U.S. reported on [a newly observed optical state that](#)

[could enable quantum computing with photons](#)—they found that it is possible to make photons interact with one another. Also, a pair of physicists, Anthony Bartolotta and Sebastian Deffner found [a way to extend stochastic thermodynamics deeper into quantum territory](#)—they extended the Jarzynski equality to quantum field theory. Also, a team with members from Princeton University, the University of Konstanz and the University of Maryland reported finding that [silicon qubits plus light could comprise a new quantum computing capability](#)—they created a device that showed it was possible to use light as a messenger between qubits that are not adjacent to one another. And an international team of researchers showed that [stock market forces could be modeled with a quantum harmonic oscillator](#). They found that the restoring force in a vibrating quantum harmonic oscillator provides a good approximation of the market force that restores a fluctuating stock return to equilibrium.

In technology news, a team with members from the University of California, Harvard University and the Pennsylvania State University reported [teaching robots to climb walls by mimicking the cockroach headbutt](#)—cockroaches, they found, do not slow down when encountering a wall, they simply slam into it and keep running. And a combined team of researchers from Arizona State University and the Chinese Academy of Sciences reported that they had [developed cancer-fighting nanorobots programmed to seek and destroy tumors](#) by cutting off their blood supply. Also, a trio of researchers at Carnegie University, Hassan Khan, David Hounshell, and Erica Fuchs, claimed that [Moore's law has ended and asked what comes next](#).

In biology news, a team from Johannes Gutenberg University and the Max Planck Institute for Chemical Ecology found that [beewolves have been successfully using the same antibiotics for 68 million years](#), perhaps offering a lesson in how to overcome drug-resistance in viruses and bacteria. And a team with members from several institutions in France and Brazil conducted a study on eating behaviors and found [a](#)

[possible link between highly processed foods and cancer.](#)

And finally, if you are looking for ways to reduce the stress of everyday living, a team at Brigham Young University found that [running helps the brain counteract the negative effect of stress](#) and improves memory too.

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Citation: Best of Last Week – A new optical state, cancer fighting robots and running to relieve brain stress (2018, February 19) retrieved 26 April 2024 from <https://sciencex.com/news/2018-02-week-optical-state-cancer-robots.html>

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