How to keep a scientist's mind FREE

James Bernard Lee

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solar magnetic field penetrates the Sun's photosphere and eventually extends beyond Earth. Such information might help to explain the modulation at Earth of the cosmic-ray flux, which has been reconstructed[5] across the 9000 years of the Holocene epoch from yet another messenger: deposits of the cosmogenic radioisotopes carbon-14 and beryllium-10.

Also on the messenger list for flare and CME events are energetic neutral atoms and free neutrons. Because of the neutron's finite half-life, only those with sufficiently high energies will reach us. For the same reason, neutron messengers from any source outside the solar system cannot be detected.

Including the basic photons, neutrinos, and cosmic rays, we can count about a dozen distinct messengers from the Sun. We are highly unlikely to detect solar gravitational waves because of the minuscule masses involved, but then again, many physicists also doubted that LIGO would ever succeed!

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LETTERS

The inventor of puffed rice

As I read the July 2018 issue of PHYSICS TODAY, the Quick Study "Engineering puffed rice" by Tushar Gulati, Mayuri Ukidwe, and Ashim Datta (page 66) immediately caught my attention.

During the last 15 years of my career, I had the opportunity and privilege to teach physical science to students at the Tower View Alternative High School here in Red Wing, Minnesota. The school is housed on the campus of the Anderson Center for the Arts, the legacy of Alexander Pierce Anderson (1862–1943).

Anderson invented a process to make puffed rice. The invention led to a successful exhibit and demonstration of the process and the product at the 1904 World's Fair in St Louis, Missouri. The Quaker Oats Company eventually used Anderson's process to manufacture puffed rice for public consumption.

The Anderson Center staff always encourage teachers, students, and school personnel to utilize the center and to interact with visiting artists and writers as part of their daily experience. Anderson's inventiveness and spirit carry on today in the lives of those who are part of this vibrant family.

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How to keep a scientist's mind

In his article "Who owns a scientist's mind?" (PHYSICS TODAY, July 2018, page 42), Douglas O'Reagan lays out all the concerns and fears of the competitive business leaders and scientists regarding the "ownership"—and loss thereof—of knowledge that resides in and travels with human beings. One might think of knowledge management as just another engineering problem, the solution to which is creating an environment for the knowledge bearers that provides meaningfulness to them. That is to say, a truly happy person may want to remain in the place that gives one's life meaning rather than run off for greener pastures. Greed at the top seems the bigger problem to solve.

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Douglas O'Reagan's article "Who owns a scientist's mind?" (PHYSICS TODAY, July 2018, page 42) ought to make us grateful that at the times of their momentous discoveries, both Sadi Carnot and Lise Meitner were effectively unemployed.

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