

SCIENTIFIC AMERICAN

MISSION TO ALPHA CENTAURI

Tiny laser-powered probes traveling at near light speed take aim at a star

PLUS

BUG BATTLE

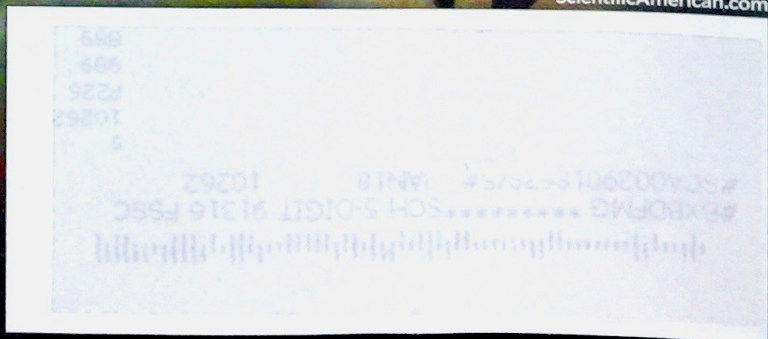
Gene switches fight a corn pest PAGE 64

NEW TURING TESTS

Four new ways to judge robot intelligence PAGE 58

HOW POVERTY HURTS KIDS' BRAINS

Could a simple remedy help? PAGE 44



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Presented by The Ohio State University Neurological Institute
and the Stanley D. and Joan H. Ross Center for
Brain Health and Performance

Explore the Latest in Brain Health and Performance at the Global Brain Health and Performance Summit

April 27–29
Columbus, Ohio

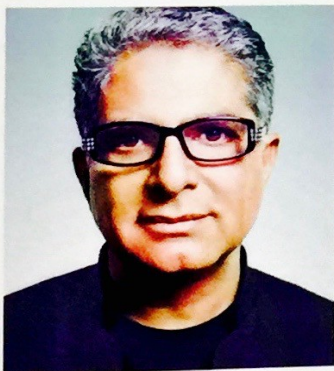


The 2017 Global Brain Health and Performance Summit will explore:

- The identification, validation, and application of biomarkers toward the enhancement of brain health and performance.
- Lifestyle practices, such as sleep, nutrition, exercise, and mindfulness, and how they affect performance on the playing field, battlefield, and everyday life.
- Technological advances in human performance sensors and analytics to enhance the understanding of connectivity, functioning, and performance.

Featured Speakers

The summit will host top scientists, technologists, and entrepreneurs who are transforming how we understand and impact brain-body function.



Deepak Chopra, MD
World-renowned pioneer in
Integrative Medicine and NY
Times best selling author



Dan Buettner
National Geographic Fellow
Author of The Blue Zones



Nathan Price, PhD
Institute for Systems Biology (ISB),
Seattle 100K Wellness Project

Learn more at go.osu.edu/brainhealth.



SPACEFLIGHT

30 Near-Light-Speed Mission to Alpha Centauri

A privately funded plan is under way to send tiny spaceships via laser beam to a nearby star; a one-way trip would take only 20 years. It may just be crazy enough to work. *By Ann Finkbeiner*

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Synthetic immune cells more powerful and longer-lasting than the ones that occur naturally in the body can now treat some forms of cancer. *By Avery D. Posey, Jr., Carl H. June and Bruce L. Levine*

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We need new tests that can distinguish artificial intelligence from the natural kind. *By Gary Marcus*

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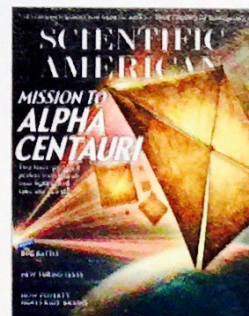
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The corn rootworm is winning an evolutionary battle against pest control. *By Hannah Nordhaus*

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It is now feasible to test every newborn for genetic risks. *By Bonnie Rochman*

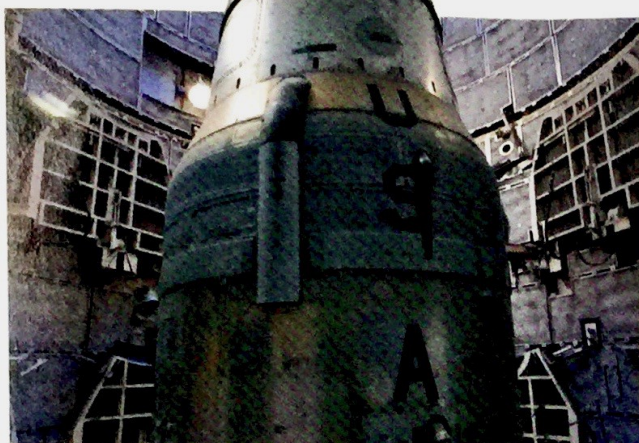


ON THE COVER

An ambitious project called Breakthrough Starshot would send a swarm of small, smart-phonelike chips to make the first visit to another star. "Light sails" pushed by laser light beamed from Earth's surface would propel the chip satellites to near light speeds, allowing them to make a quick flyby.

Illustration by Chris Wren, Mondolith Studios.

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Harnessing Biological Systems

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