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## Meet The 13 Scientists Honored For Making Big 'Breakthroughs'

The award-winning scientists, recognized at this year's Breakthrough Prize ceremony, are at the forefront of their fields.

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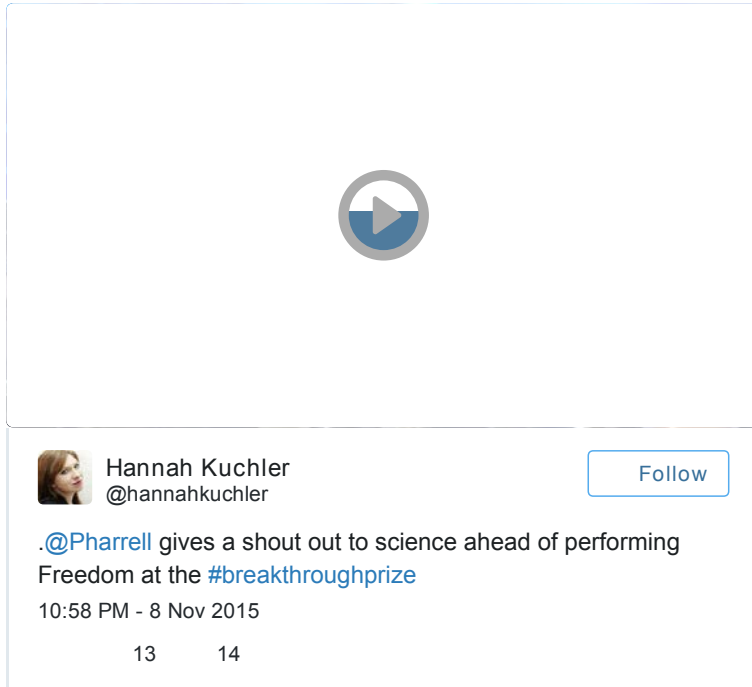
More than \$21 million in prizes was awarded to scientists at the forefront of fundamental physics, life sciences, and math in the glitzy [Breakthrough Prize award ceremony](#) at NASA's Ames Research Center in Mountain View, Calif., on Sunday night.

The red carpet event may have appeared like something for Hollywood's elite -- Pharrell, Russell Crowe, Hilary Swank, [Christina Aguilera](#), and other celebrities were in attendance -- but it was specifically for the science world. Seven groundbreaking research projects and the masterminds behind them were selected by a committee of previous winners to be honored.

(Watch the video above for special highlights from the ceremony.)

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"It's, of course, an amazing prize to get," Dr. Svante Pääbo, director at the Max Planck Institute for Evolutionary Anthropology and one of this year's winners, told The Huffington Post. "It's really from your peers ... That makes it exciting."



The ceremony was hosted by "Cosmos" executive producer and "Family Guy" creator Seth MacFarlane, who [described the event](#) as "a night where we celebrate people whose talent is their brain power."

Mark Zuckerberg, Facebook's chief executive and one of the co-founders of the awards, agrees.

"By challenging conventional thinking and expanding knowledge over the long term, scientists can solve the biggest problems of our time," he said in an email. "The Breakthrough Prize honors achievements in science and math so we can encourage more pioneering research and celebrate scientists as the heroes they truly are."

The ceremony [aired live on the National Geographic Channel](#).

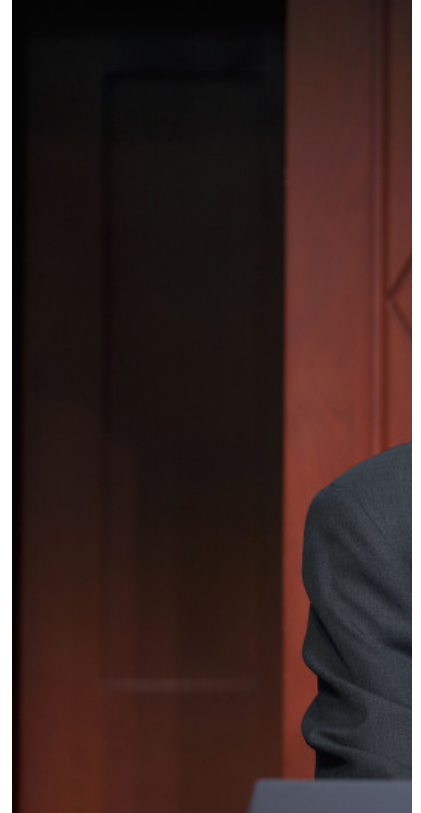
From sequencing ancient DNA to programming neurons, scroll down for a list of the winning research and scientists.

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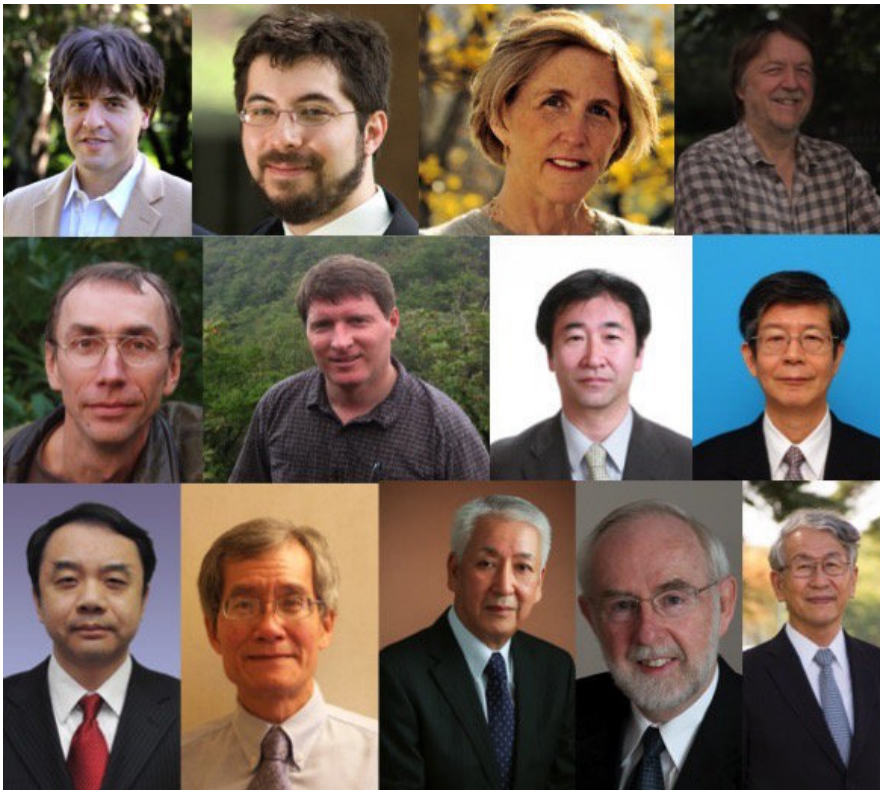


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This year's Breakthrough Prize award winners.

### The Breakthrough Prize in Life Sciences

- [Karl Deisseroth](#), of the Howard Hughes Medical Institute and Stanford University, and [Ed Boyden](#), of the MIT Media Lab and the MIT McGovern Institute, developed optogenetics, a [new technique that controls brain cells](#) in mammals by making them respond to light signals.
- [Helen Hobbs](#), of the Howard Hughes Medical Institute and the University of Texas Southwestern Medical Center, discovered human genetic variants that alter the levels and distribution of cholesterol and other lipids in the body.
- [John Hardy](#), of the University College London, discovered gene mutations that may cause early onset Alzheimer's.
- [Svante Pääbo](#), of the Max Planck Institute for Evolutionary Anthropology, sequenced ancient DNA and genomes that illuminate the origins of modern humans and our relationships with Neanderthals.

### The Breakthrough Prize in Math

- [Ian Agol](#), of the University of California, Berkeley, made unprecedented contributions to low dimensional topology.

### The Breakthrough Prize in Physics

- [Takaaki Kajita](#), of the Institute for the Physics and Mathematics of the Universe in Tokyo and the Institute for Cosmic Ray Research; [Yoichiro Suzuki](#), of the Kavli

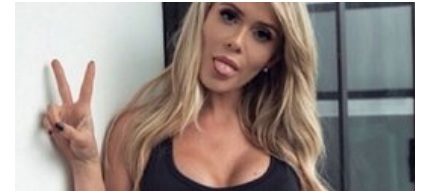
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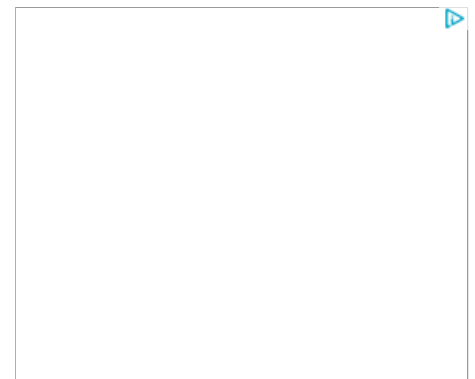
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Institute for the Physics and Mathematics of the Universe; [Yifang Wang](#), of the Institute for High Energy Physics; [Kam-Biu Luk](#), of the University of California, at Berkeley; [Koichiro Nishikawa](#), of the K2K Long-Baseline Neutrino Oscillation Experiment; [Arthur B. McDonald](#), of the Sudbury Neutrino Observatory Institute; and [Atsuto Suzuki](#), of KEK, led five international teams that built experiments in underground caves to trap the neutrino, and confirm the theory of neutrino oscillation. A total of 1,300 physicists will share the prize.

The ceremony also included the inaugural [Breakthrough Junior Challenge](#), which invited high school students to share their passion for math and science in videos. The award went to 18-year-old Ryan Chester, of North Royalton, Ohio. Check out his winning video below.



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