

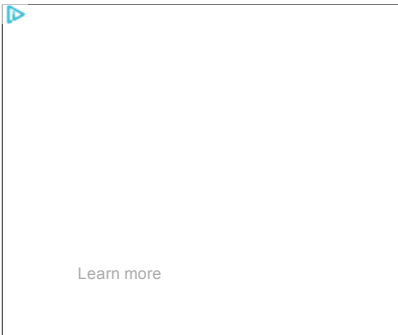


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Scientists get £14.6m in Zuckerberg-backed Breakthrough awards

[OPTOGENETICS \(/OPTOGENETICS\)](#) / 09 NOVEMBER 15 /
by [CARA MCGOOGAN \(/SEARCH/AUTHOR/CARA+MCGOOGAN\)](#)



The Breakthrough Prize (<https://breakthroughprize.org/>) has been running for just three years, but is already becoming one of the most glamorous awards in maths and science.

Breakthrough Junior |

Created by a team of Silicon Valley entrepreneurs, including Yuri Milner (</yuri-milner>), Mark Zuckerberg (</mark-zuckerberg>) and Google's Sergey Brin (<http://www.wired.co.uk/sergey-brin>), the 2015 Breakthrough awarded £14.6m in prize money, with just under £2m going to the winners -- three times that given to Nobel Prize (</nobel-prize>) winners.

"By challenging conventional thinking and expanding knowledge over the long term, scientists can solve the biggest problems of our time," said Facebook CEO Mark Zuckerberg. "The Breakthrough Prize honours achievements in science and maths so we can encourage more pioneering research and celebrate scientists as the heroes they truly are."

Ryan Chester is the 2015 'F explaining the special theo

This year seven prizes were awarded for breakthroughs in life sciences, maths and physics at a star-studded ceremony led by Seth MacFarlane and Pharrell Williams.

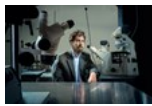
Here are some of the highlights.

BRAIN HACKING

One of the Life Sciences Breakthrough Prizes went to two researchers for their roles in developing optogenetics -- the manipulation of electrical brain activity using light signals. Edward Boyden (<http://www.wired.co.uk/magazine/archive/2012/11/features/seeing-the-light>) and Karl Deisseroth were part of a team that published research on optogenetics back in 2005.

Since the discovery, optogenetics has been used to stop rats binge drinking (<http://www.wired.co.uk/news/archive/2014-01/06/alcoholism-cure-rats>), wipe and restore memories in rats (<http://www.wired.co.uk/news/archive/2014-06/02/restoring-memories>), and help treat depression (<http://www.wired.co.uk/news/archive/2012-10/15/depression-light-switch>).

DON'T MISS



[/magazine/archive/2012/11/features/seeing-the-light](http://www.wired.co.uk/magazine/archive/2012/11/features/seeing-the-light)

Seeing the light: Ed Boyden's tools for brain hackers **(/magazine/archive/2012/11/features/seeing-the-light)**

ALZHEIMER'S RESEARCH

Another Life Sciences award went to the discovery of a genetic mutation that causes early onset of Alzheimer's disease (<http://www.wired.co.uk/alzheimer's>). John Hardy (<https://www.ucl.ac.uk/rlweston-inst/people/john>)'s discovery of the "amyloid precursor protein" mutation has led to new avenues of research for detecting and understanding dementia (<http://www.wired.co.uk/dementia>).

GHOSTLY PARTICLES

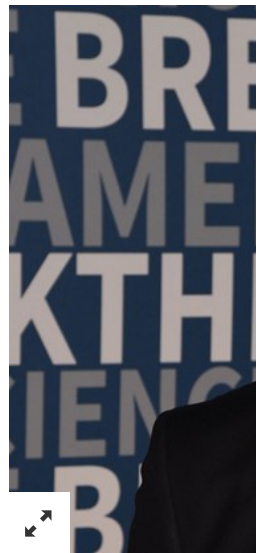
Five teams of 1,377 researchers were awarded the Breakthrough Prize in Fundamental Physics for the discovery of neutrinos (/neutrinos). The "ghostly" particles emitted by the sun are so small that billions are continuously passing through our bodies. The researchers behind its discovery hail from universities in Canada, the US, Japan, and China.

FIGHTING CHOLESTEROL

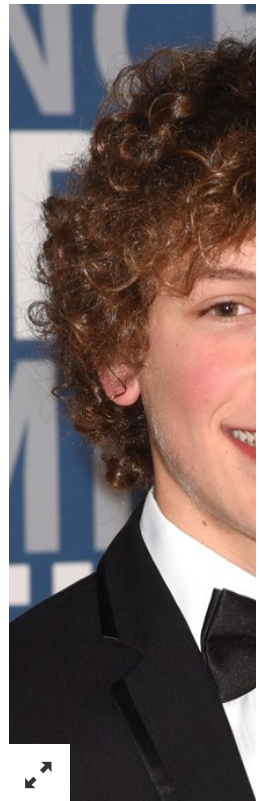
Helen Hobbs received a Life Sciences award for discovering genetic variants that affect the levels of cholesterol and lipids in humans. Her research led to new approaches for preventing cardiovascular and liver disease.

MAKING SCIENCE SIMPLE

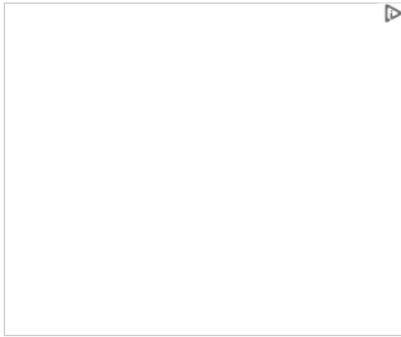
The 2015 Junior Challenge prize went to 18-year-old Ryan Chester (<https://www.youtube.com/channel/UCBtN1UDqV0cxqG-sMzf37CA>) for making a fun, simple YouTube (/youtube) video explaining the special



Edward Boyden, winner of



READ NEXT



A full list of this year's winners is available here (<https://breakthroughprize.org/News/29>).



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OIL

[Innovate, die, or both: inside the struggle to save big oil \(/news/archive/2016-02/05/inside-big-oil-in-crisis\)](#)



PIRACY

[Paypal bans VPN and DNS services \(/news/archive/2016-02/05/paypal-bans-vpn-and-dns-services\)](#)



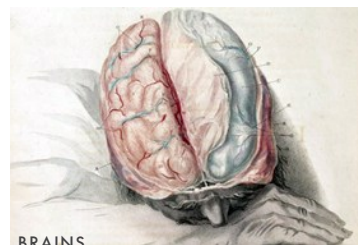
DRAFTKINGS

[DraftKings on why the UK is ready for one-day fantasy sport \(/news/archive/2016-02/05/draftkings-uk-interview\)](#)



GAMING

[Dividing Line: How The Division blends RPGs with shooter action \(/news/archive/2016-02/05/the-division-hands-on-preview\)](#)



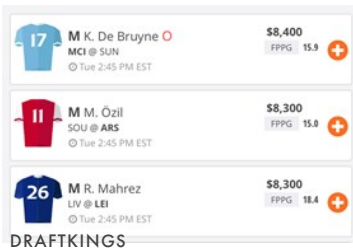
BRAINS

[What we learned about the brain this week: ravens and brain scans \(/news/archive/2016-02/05/what-we-learned-about-the-brain-this-week-2\)](#)



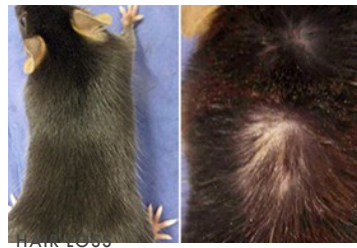
TIM PEAKE

[Astronaut Tim Peake will watch the Six Nations rugby live from space \(/news/archive/2016-02/05/six-nations-in-space\)](/news/archive/2016-02/05/six-nations-in-space)



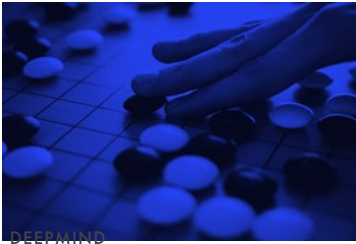
DRAFTKINGS

[DraftKings fantasy sports launches in the UK \(/news/archive/2016-02/05/draftkings-uk-launch\)](/news/archive/2016-02/05/draftkings-uk-launch)



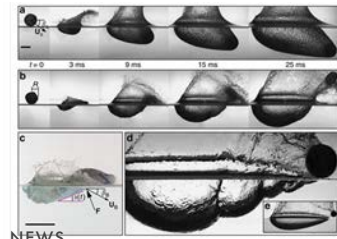
HAIR LOSS

[Why do people go bald? Science finally has an answer \(/news/archive/2016-02/05/thinning-hair-turns-to-skin\)](/news/archive/2016-02/05/thinning-hair-turns-to-skin)



DEEPMIND

[DeepMind will fight Go world champ live on YouTube \(/news/archive/2016-02/05/deepmind-go-match-live-stream\)](/news/archive/2016-02/05/deepmind-go-match-live-stream)



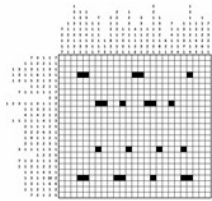
NEWS

[Scientists have made the perfect skimming stone \(/news/archive/2016-02/05/perfect-skimming-stone\)](/news/archive/2016-02/05/perfect-skimming-stone)



ELECTRIC PLANES

[Elon Musk wants to build a vertical take-off electric plane \(/news/archive/2016-02/05/elon-musk-electric-planes\)](/news/archive/2016-02/05/elon-musk-electric-planes)



GCHQ

[GCHQ reveals the answers to its Christmas crypto puzzle \(/news/archive/2016-02/05/gchq-christmas-puzzle\)](/news/archive/2016-02/05/gchq-christmas-puzzle)



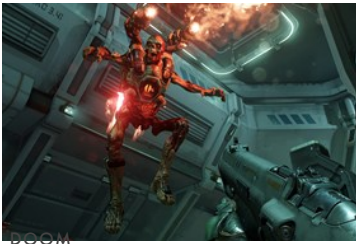
JULIAN ASSANGE

[Assange: UN detention opinion is 'really significant victory' \(/news/archive/2016-02/05/julian-assange-human-rights\)](/news/archive/2016-02/05/julian-assange-human-rights)



WIREDAWAKE

[WIRED Awake: 10 must-read articles for 5 February \(/news/archive/2016-02/05/wired-awake-5-february\)](/news/archive/2016-02/05/wired-awake-5-february)



DOOM

[Doom reboot is probably even more violent than you thought \(/news/archive/2016-02/04/doom-4-new-trailer\)](#)



CONTACT LENS

[The coating conducts electricity on a contact lens \(/news/archive/2016-02/04/contact-lens-computer-screen\)](#)

FILMS

[Instagram film launches in 15 second segments \(/news/archive/2016-02/04/instagram-film\)](#)

My degrees of separation

Emily Reynolds's average degree of separation from everyone is 3.27.

Some Facebook employees

Mark Zuckerberg
3.17 degrees of separation
Sheryl Sandberg
2.82 degrees of separation

The majority of the people on Facebook have averages between 2.9 and 4.2 degrees of separation. Figure 1 (below) shows the distribution of averages for each person.

FACEBOOK

[Facebook declares 'Friends Day', the internet hates it \(/news/archive/2016-02/04/facebook-friends-day\)](#)

MAGAZINE

[From the Editor \(/magazine/archive/2016/03/start/editors-letter-march-2016\)](#)



MAIL RAIL

[You'll be able to ride London's vintage Mail Rail in 2017 \(/news/archive/2016-02/04/mail-rail-london-postal-museum\)](#)



JULIAN ASSANGE

[Reports: UN panel backs Julian Assange 'unlawful detention' claim \(/news/archive/2016-02/04/julian-assange-embassy\)](#)



WIRED AWAKE

[WIRED Awake: 10 must-read articles for 4 February \(/news/archive/2016-02/04/wired-awake-4-february\)](#)



NUCLEAR TOWER

[Nuclear fusion energy experiment turned on in Germany \(/news/archive/2016-02/03/nuclear-fusion-experiment-turned-on-germany\)](#)



FRINKIAC Search screenshots
Frinkiac has nearly 3 million Simpsons screenshots so get to searching for crayglaven!

SIMPSONS

This website is a search engine for Simpsons' quotes
(/news/archive/2016-02/03/frinkiac-simpsons-search-quote-screenshot-meme)



GAMING

Broken Sword just achieved an unusual Guinness World Record
(/news/archive/2016-02/03/broken-sword-guinness-world-record)



GAMING

Nintendo reveals launch details of first smartphone game
(/news/archive/2016-02/03/nintendo-miitomo-launch-details)



ANTS

Ants show no sign of aging
(/news/archive/2016-02/03/ants-dont-age)



RAVENS

Ravens have paranoid, abstract thoughts about other minds
(/news/archive/2016-02/03/ravens-theory-of-mind)



ROBOT WARS

Robot Wars reboot has a new logo, new presenters and no Craig Charles
(/news/archive/2016-02/03/robot-wars-craig-charles-not-picked-presenter)



BLOODHOUND

Bloodhound 800mph land speed record bid delayed until 2017
(/news/archive/2016-02/03/bloodhound-ssc-world-land-speed-record-delay)



GO PRO

GoPro gives best look yet at its 'Karma' drone, still doesn't show it
(/news/archive/2016-02/03/go-pro-karma-drone-video)



MAGAZINE

Big 3: Samsung Serif, Panono camera, Kef Muo
(/magazine/archive/2016/01/gear/new-samsung-tv-kef-speakers-panono-camera)



NINTENDO

[This 'Mario Maker computer' puts Nintendo's own creativity to shame \(/news/archive/2016-02/03/mario-maker-computer-nintendo\)](/news/archive/2016-02/03/mario-maker-computer-nintendo)



ZIKA VIRUS

[Zika 'sexually transmitted' in first US mainland case \(/news/archive/2016-02/03/zika-sex-sexually-transmitted-virus-details\)](/news/archive/2016-02/03/zika-sex-sexually-transmitted-virus-details)



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