

SEVEN DAYS

The news in brief

CLIMATE CHANGE

'Keep US in Paris'

An open letter penned by 375 members of the US National Academy of Sciences, including 30 Nobel laureates, has condemned Republican presidential nominee Donald Trump's pledge to remove the United States from the Paris climate accord if he is elected. The letter, published on 20 September, says that human-caused climate change "is a physical reality", and that a US withdrawal from the Paris deal would have severe consequences for Earth's climate and "for the international credibility of the United States". The country formally joined the Paris agreement on 3 September, and the accord is widely expected to enter into legal force this year.

FUNDING

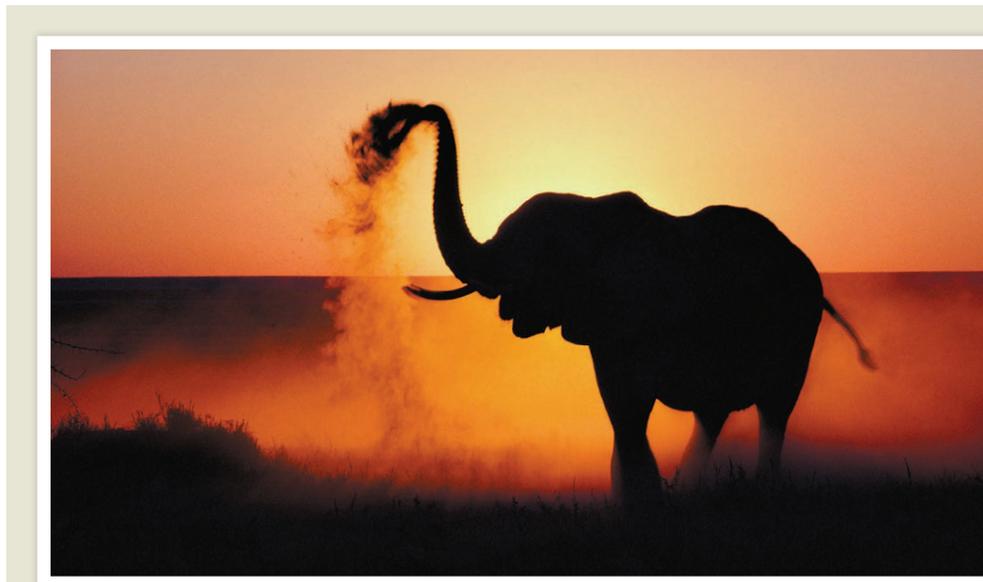
Billions for disease

Facebook co-founder Mark Zuckerberg and his wife, physician and educator Priscilla Chan, have pledged US\$3 billion for the first 10 years of an ambitious project to cure, prevent or manage all diseases by 2100. The commitment, announced on 21 September, is part of the Chan Zuckerberg Initiative, which the couple set up last year. The initiative has enlisted a 'dream team' of scientific leaders with diverse expertise to collaborate on developing new tools and technologies — something that scientists say is sorely needed. See page 595 for more.

POLICY

Harassment bill

A bill to fight sexual harassment in science was introduced into the US House of Representatives by Congresswoman Jackie



ANNIE GRIFFITHS BELTINGS

African elephants ravaged by poaching

African elephants have seen their worst decline in 25 years, according to the International Union for Conservation of Nature's African Elephant Status Report. The drop is mainly a result of ivory poaching, which has surged in the past decade. Elephant numbers, estimated from sources including aerial surveys and dung counts,

dropped by 111,000 to 415,000 from 2006 to 2015. East Africa has been worst hit by poaching, with a 50% decline. It is the first time in 25 years that the report, launched on 23 September at the Convention on the International Trade Endangered Species meeting in South Africa, has found a continental decline in numbers.

Speier (Democrat, California) on 22 September. If passed, the legislation would require universities to report sexual abuse by faculty members to grant-giving federal agencies. Any gender-discrimination violations would have to be reported within one month of the end of an investigation. Speier's action follows a string of revelations of sexual harassment by prominent academics in astronomy, biology and other fields.

Forensic science

A number of forensic methods used in US criminal courts lack adequate scientific validity, according to White House science advisers. The President's Council of Advisors on Science and Technology released a report on

20 September recommending actions to strengthen forensic science and promote its rigorous use in criminal justice. The report references many wrongful convictions that were partly based on doubtful forensic evidence — including DNA samples, bite marks, fingerprints and bullet marks. The advisers recommend empirical testing of commonly used forensic methods to evaluate their accuracy, reproducibility and reliability; methods that do not meet these standards should be considered invalid.

Resistance action

All 193 member states of the United Nations have signed a declaration to combat antimicrobial resistance. Some 700,000 people are

estimated to die each year as a result of drug-resistant infections. The declaration, signed in New York City on 21 September, commits countries to taking a broad, coordinated approach to address the root causes of resistance, which UN secretary-general Ban Ki-moon said poses a "long-term threat to human health". Growing levels of resistance are largely attributed to the overuse and misuse of antibiotics and other antimicrobials in humans, animals and crops.

PEOPLE

Genomes and drugs

Drug giant AstraZeneca announced on 28 September that geneticist David Goldstein will head its 10-year project to mine 2 million genomes.

Goldstein will maintain his current position at Columbia University in New York City as he steers AstraZeneca's efforts to incorporate genomics into its drug discovery and development programme. AstraZeneca, based in Cambridge, UK, will pool sequences from multiple projects, including its own clinical trials.

FACILITIES

Chinese telescope

China has begun testing its Five-hundred-meter Aperture Spherical Radio Telescope (FAST), the largest single-dish radio telescope in the world. FAST, located in a mountainous region of the southern Guizhou province, is 65% wider than the next-largest single-dish radio telescope. Greater dish size increases the likelihood of detecting signals from faint objects such as pulsars. On 25 September, some 200 scientists from around the world attended an opening ceremony and got a first look at FAST's preliminary data. Once the testing process is complete, teams will be able to bid for telescope time. See page 593 for more.

Gene bank opens

China opened its first national gene bank, reportedly the world's largest, on 22 September. The



China National GeneBank (pictured), a five-hectare facility in Shenzhen, currently houses some 10 million gene samples — from people, animals, plants and microbes. Developed by genomics firm BGI, the US\$1-billion repository will make some samples and data available to scientists worldwide, and aims to promote research on human health and the conservation of biodiversity. The bank's director, Mei Yonghong, said that it also aims to bring the cost of sequencing an individual genome down to 1,000 yuan (\$150).

RESEARCH

Gender pay gap

Getting more women into science, technology, engineering and mathematics (STEM) roles might be key to closing the gender pay gap in the United Kingdom,

according to a report from accounting firm Deloitte. At today's rate of progress, the gap — currently 9.4% for full-time work — is likely to persist until 2069, the report says. It found that although men's and women's salaries are better balanced in STEM roles, women occupy just 14% of these jobs; up to 70% of women with STEM qualifications do not go into related roles.

Europa's water jets

The presence of plumes shooting out from Jupiter's moon Europa has been confirmed by astronomers using the Hubble Space Telescope. The phenomenon was first reported in 2013. Researchers speculate that the jets are water originating from an ocean buried beneath kilometres of ice, which has the potential to support life. Most of the plumes are clustered near

COMING UP

10–14 OCTOBER

An amendment relating to hydrofluorocarbons, powerful greenhouse gases, is top of the agenda at the 28th meeting of the parties to the Montreal Protocol on Substances that Deplete the Ozone Layer in Kigali, Rwanda. go.nature.com/2czrOrt

17–20 OCTOBER

Habitat III, the United Nations Conference on Housing and Sustainable Urban Development, takes place in Quito, Ecuador. habitat3.org

Europa's south pole, scientists report in a paper set to appear in *The Astrophysical Journal*. The researchers looked for the plumes as Europa passed across the face of Jupiter. See go.nature.com/2d65uwv for more.

AWARDS

Genius grants

Eight scientists are among the 23 recipients of this year's 'genius grants', handed out by the MacArthur Foundation in Chicago, Illinois. Winners include Rebecca Richards-Kortum, a bioengineer at Rice University in Houston, Texas, who develops simple and inexpensive diagnostic technologies for use in the developing world; and Subhash Khot, a theoretical computer scientist at New York University, who seeks to understand the limits of computation. Each of the MacArthur awards, announced on 22 September, comes with a no-strings-attached grant of US\$625,000 paid over five years. See go.nature.com/2cp7qbq for more.

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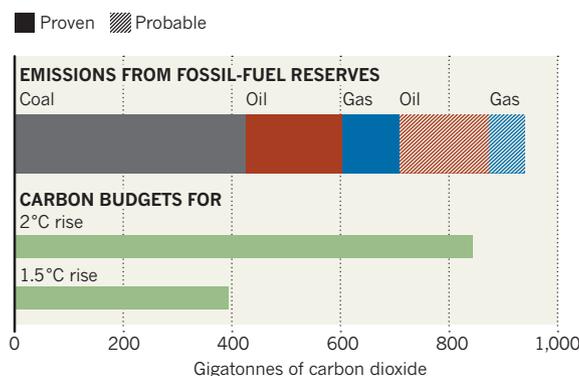
For daily news updates see: www.nature.com/news

TREND WATCH

Carbon emissions will cause global warming to surpass 2°C if the world produces all of the oil, gas and coal in reserves that are already being exploited or developed, according to a 22 September report by Oil Change International, an advocacy group in Washington DC. Using industry and government data, the group found that emissions from current fields would exceed by 12% the amount of carbon that can be emitted to maintain a 66% chance of holding global warming to 2°C.

KEEP IT IN THE GROUND?

Emissions from known fossil-fuel reserves would bust the carbon budget needed to keep global warming below 2°C.



Carbon budgets give a probable (66%) chance of limiting warming to below 2°C, or a medium (50%) chance of achieving 1.5°C.