

## POLICY

### Fertility step

The United Kingdom moved a step closer to allowing the creation of a baby by means of controversial *in vitro* fertilization techniques that use the DNA of three people. The methods prevent the inheritance of genetic disorders caused by mutations in mitochondrial DNA.

On 16 March, the country's regulator of fertility treatment, the Human Fertilisation and Embryology Authority, granted the Newcastle Fertility Centre at Life a permit to conduct mitochondrial replacement therapy. People wishing to undergo treatment must still be approved individually by the regulator.

### Weedkiller ruling

The European Chemicals Agency concluded on 15 March that the widely used — but controversial — weedkiller glyphosate is not a carcinogen. The chemical has been subject to a long-running dispute about its safety: critics fear that the chemical causes cancer, but many experts say that it is safe. The ruling paves the way for a resolution of a heated debate in the European Union over whether use of glyphosate should be reauthorized. Last July, the European Commission issued a temporary 18-month extension for glyphosate's use after member states could not agree on whether to issue a long-term authorization.

## FACILITIES

### Integrity office

On 15 March, Taiwan's ministry of science and technology established an office tasked with tracking cases of scientific fraud. Modelled after the US Office of Research Integrity, Taiwan's office will collect details of such cases in Taiwan



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## US puts nuclear-test films on YouTube

Dozens of declassified films of US nuclear tests have been digitized and made available on YouTube, the Lawrence Livermore National Laboratory in California announced on 14 March. The videos show footage taken by high-speed cameras of some 210 atmospheric explosions — of both atomic and thermonuclear bombs — conducted between 1945 and 1962

(pictured, a still frame of a 1962 nuclear test over Christmas Island). Of an estimated 10,000 films in existence, about 6,500 have been catalogued, 4,200 have been digitized and 750 declassified, the lab said. The purpose of the project is to preserve the videos and provide data for nuclear-weapons experts, as well as making the public aware of the weapons' destructiveness.

and elsewhere and compile them into a database. This will include information about how cases were handled and will serve as a reference tool for future fraud investigations. The announcement comes in the midst of a high-profile misconduct case that has so far led to the firing of two scientists from the prestigious National Taiwan University, although the new office will not be involved in the investigation.

## RESEARCH

### Hottest year

The World Meteorological Organization confirmed on 21 March that 2016 was the warmest year on record in all major data sets that track global surface temperature. The mean temperature was 0.06°C

above the previous record, set in 2015, calculated from data maintained by the US National Oceanic and Atmospheric Administration, NASA and the UK Met Office Hadley Centre. The three data sets extend back to at least 1880, but differ in the areas they cover. Warming in 2016 was most pronounced in data-sparse regions at high northern latitudes. The global mean temperature last year was 0.83°C above the 1961–90 climate reference period and 0.62°C above the 1981–2010 average.

### Five new particles

Five particles have been discovered by the LHCb experiment at CERN, Europe's particle-physics lab near Geneva, Switzerland. Found by spotting their decays

into more-familiar entities, the particles are variations on a known particle called Omega-c-zero ( $\Omega_c^0$ ). Like protons or neutrons,  $\Omega_c^0$  contains three quarks, but it is made up of the exotic 'strange' and 'charm' varieties (R. Aaij *et al.* Preprint at <https://arxiv.org/abs/1703.04639>; 2017). The five particles are heavier, high-energy states of  $\Omega_c^0$ , each with a different mass, which physicists had anticipated but until now never seen. The discovery should help physicists to understand more about how quarks bind together.

### Low polar ice

This year, both Arctic and Antarctic sea-ice levels hit record lows for the month of February, the US National

Oceanic and Atmospheric Administration said on 17 March. As Arctic sea ice approached its maximum annual extent, its February average measured 7.6% below the 1981–2010 average for the month. The Antarctic, around the time of the annual maximum melt, saw average ice coverage plummet to 24.4% below the February average. Ice in the south is notoriously variable; it marked a record high maximum just three years ago.

## Smoking success

The World Health Organization's landmark convention on tobacco control, which came into force in 2005 and committed signatories to introducing anti-smoking policies, seems to have driven down smoking worldwide, according to a study published on 21 March (S. Gravelly *et al. Lancet Pub. Health* [http://dx.doi.org/10.1016/S2468-2667\(17\)30045-2](http://dx.doi.org/10.1016/S2468-2667(17)30045-2); 2017). Researchers analysed data from 126 countries, and showed a strong association between smoking declines in 2005–15 and the implementation of five key measures: tobacco taxes, smoke-free policies, warning labels, support for quitting, and advertising bans. Every measure implemented was associated with an average decrease in smoking prevalence of 1.57 percentage points.



### AWARDS

## Maths prize

Mathematician Yves Meyer (pictured) of the École Normale Supérieure Paris–Saclay has won the 2017 Abel Prize, the Norwegian Academy of Science and Letters announced on 21 March. The academy cited Meyer's "pivotal role" in the 1980s in establishing the theory of wavelets — tools used for signal processing, file compression and data analysis. Wavelets were crucial to the 2015 discovery of gravitational waves. The prize of 6 million Norwegian kroner (US\$710,000) is one of the most prestigious in mathematics. See page 476 for more.

### FUNDING

## Ecological site

The US National Science Foundation announced on 15 March that it had set

aside US\$5.6 million to fund another Long-Term Ecological Research (LTER) site in Alaska. The project will focus on coastal ecosystems in the Beaufort Sea, where lagoons support extensive fisheries and migratory bird populations. Researchers will collaborate with the Iñupiat communities that rely on the ecosystems for subsistence hunting, and will create research opportunities for young members of the Iñupiat community. There are three other LTERs in Alaska, and 28 in total in the United States.

## US budget plan

US President Donald Trump proposed sweeping cuts to several science agencies in his first budget request, published on 16 March. Hardest hit would be the Environmental Protection Agency; the plan proposes slashing its US\$8.2 billion allocation by 31%. The National Institutes of Health's funding would be cut by 18%, to \$25.9 billion. By contrast, the proposal suggested trimming NASA's budget by just under 1%. But the White House seems poised to shift the agency's priorities to "deep-space exploration rather than Earth-centric research". The document omitted detail about some agencies, including the National Science Foundation, but the president

## COMING UP

### 25 MARCH

Physicists discuss how to catch a gravitational wave, at the Kavli Institute for Theoretical Physics in Santa Barbara, California. [go.nature.com/2nhkgst](http://go.nature.com/2nhkgst)

### 1–5 APRIL

The annual meeting of the American Association for Cancer Research takes place in Washington DC. [go.nature.com/2nfixhu](http://go.nature.com/2nfixhu)

is expected to release a fuller budget request in May. It is not clear how much of the plan will survive negotiations in Congress. See page 471 for more.

### PHARMACEUTICALS

## Cholesterol drug

A large clinical trial of a cholesterol-lowering drug that targets a protein called PCSK9 has shown that the compound can reduce the risk of heart disease and stroke. The US Food and Drug Administration approved evolocumab (Repatha) in 2015 for lowering the 'bad' cholesterol LDL. The results of a trial with more than 27,500 participants, published on 17 March, now show that evolocumab — which attempts to mimic a beneficial genetic mutation — also reduces the risk of death due to heart attack and stroke by about 20% in people taking other cholesterol-controlling drugs called statins (M. S. Sabatine *et al. N. Engl. J. Med.* <http://doi.org/b4j9>; 2017). But the reduction in risk is not as high as had been hoped; many researchers had expected PCSK9-targeting drugs to be the next generation of blockbuster treatments.

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## TREND WATCH

Global carbon dioxide emissions from energy production remained flat for a third straight year in 2016, despite a growing global economy, the International Energy Agency (IEA) said on 17 March. The flattening is mainly a result of rising renewable-energy generation and improved energy efficiency. Growing use of nuclear power also contributed. But the halt in emissions growth is not enough to keep global temperatures from rising by 2 °C above pre-industrial levels, the IEA notes.

## CARBON DIOXIDE EMISSIONS FLAT FOR THIRD YEAR

Rising renewables use and improvements in energy efficiency have kept the world's carbon dioxide emissions stable.

