FUNDING

Wellcome pulls grant

Anti-bullying policy applied.

BY HOLLY ELSE

The Wellcome Trust has revoked a £3.5-million (US$4.5-million) grant awarded to a top cancer geneticist, Nazneen Rahman, following allegations that she bullied people when she worked at the Institute of Cancer Research (ICR) in London.

The decision represents the first implementation of a pioneering anti-bullying and anti-harassment policy that Wellcome, a London-based charity, introduced in June. In addition, for two years, Rahman will not be able to apply for funding from Wellcome or sit on any of its advisory committees or boards.

The charity says that it learnt from the ICR in July that an independent investigation had deemed some of the allegations serious enough to warrant consideration at a disciplinary hearing. But Rahman resigned and the hearing did not take place.

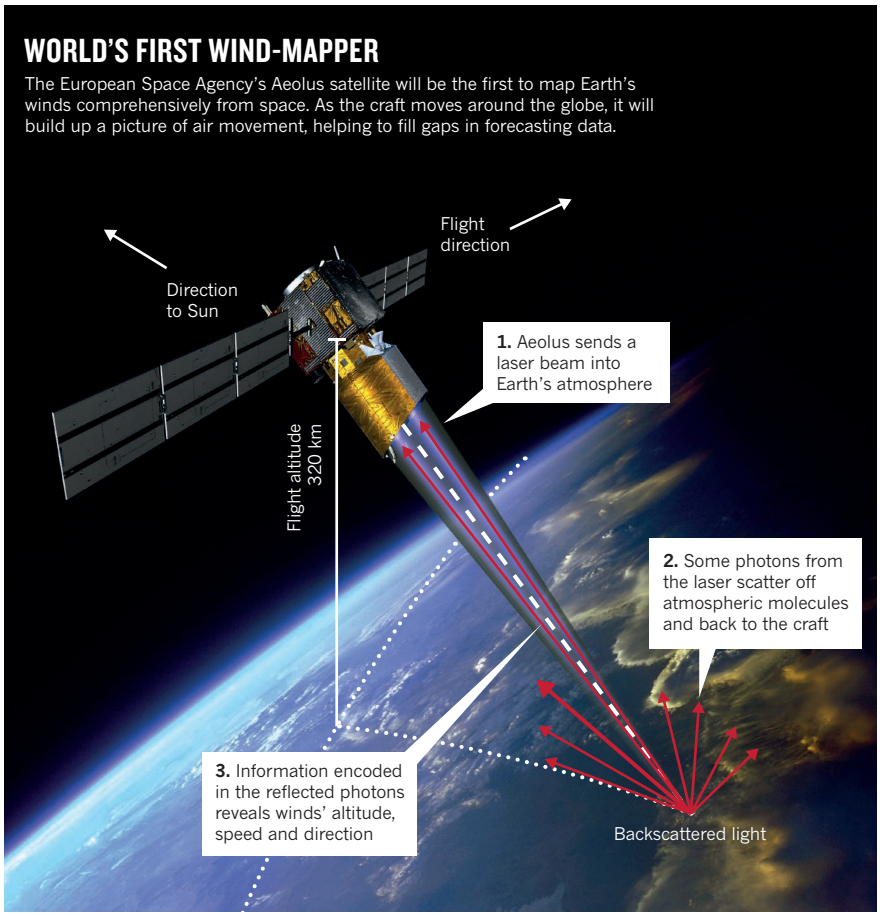
"My team and I will complete our Wellcome-funded research prior to my leaving ICR in October," Rahman told *Nature*. "We are working with ICR and Wellcome to ensure science and patients can benefit from our work." She made no further comments about the allegations or the investigation.

The ICR has not made public its investigational report, which it says contains highly confidential information. But Wellcome says it had enough information to act.

Wellcome was the first major UK research funder to institute an anti-bullying and anti-harassment policy; the US National Science Foundation introduced similar rules a few months earlier. Scientists welcomed the policies at the time, but some expressed concerns that they did not go far enough.

The Wellcome Trust says that it will update its policy in the wake of the ICR case. It will now require institutions to inform it of allegations when they decide to investigate, rather than when allegations are upheld. And it will prevent institutions from making secretive arrangements that keep them from sharing findings or otherwise applying the policy.

The ICR recognizes that it "could have done more to support those who came to us with concerns", and says it is "absolutely committed to learning the lessons". The institute says it is now working with Rahman and Wellcome to "complete and transition her research", and that it welcomes the efforts being made by the charity and others to improve the culture of the scientific community. ■



ESA

METEOROLOGY

Spacecraft will map world's wind

Europe's long-awaited Aeolus mission will be the first satellite to monitor winds at a global level.

BY ALEXANDRA WITZE

After a two-decade wait, data from a pioneering wind-monitoring satellite are finally in meteorologists' sights. As *Nature* went to press, the European Space Agency's (ESA's) Aeolus mission — set to be the first to comprehensively monitor wind around the globe — was readying for launch from Kourou, French Guiana, on 22 August. Researchers think that the satellite's data will significantly improve weather forecasts, because the lack of detailed wind measurements is one of the biggest gaps in the global Earth-observing system[1].

Aeolus, a three-year, €480-million (US$550-million) mission, will use ultraviolet lasers to track wind speed and direction in the lowermost 30 kilometres of the atmosphere[2]. Researchers have used similar lasers on aeroplanes to study winds in particular regions, but this will be the first wind-mapping mission to cover the entire globe. If Aeolus works as planned, forecasts will be improved substantially in tropical regions, and by a few per cent in Earth's mid- and high latitudes. "You may think that does not sound like very much, but if we improve forecasts by 2%, the value for society is many billions of dollars," says Lars Isaksen, a meteorologist at the European Centre for Medium-Range Weather Forecasts (ECMWF) in Reading, UK.

Until now, meteorologists have pieced together information on winds from a patchwork of sources, including weather

balloons and aeroplane flights. No satellite has directly measured winds, although scientists can infer wind speed and direction from satellite measurements of cloud movement, for instance.

CHALLENGES

ESA selected the mission in 1999. It is reaching the launch pad only now because of the difficulties of building a powerful enough laser. Fifty times each second, the satellite's laser will zap Earth's atmosphere with a beam of billions of ultraviolet photons (see 'World's first wind-mapper'). A few hundred of those photons will bounce off air molecules and particles and reflect back to the spacecraft's 1.5-metre primary telescope. Aeolus will measure not only the distance to the reflection — giving the altitude of the winds — but also the tiny change in wavelength created as the molecules move back and forth.

That 'Doppler shift' allows scientists to calculate the winds' speed and direction. "It's much more challenging than just measuring the signal coming back," says Oliver Reitebuch, an atmospheric physicist at the German Aerospace Center in Oberpfaffenhofen, who led aeroplane flights to test the satellite's technology. The information will, for instance, allow scientists to track winds of different velocities and at different altitudes in the atmosphere — information that is important for understanding developing storms, but that cannot be obtained globally in any other way.

The data from Aeolus will feed into numerical weather predictions, in which national weather services incorporate atmospheric conditions such as temperature, pressure and humidity to generate forecasts for the coming days[3]. Not incorporating winds can lead to errors: in one study, the ECMWF analysed a rainstorm in Europe in March 2014, and found that better data on winds above the Pacific Ocean in the days before the storm would have allowed a more accurate prediction of the heavy rains to come[4].

If Aeolus launches successfully, mission controllers plan to switch on the laser system in September, with initial data arriving by the end of January 2019 and inserted into forecasting systems by April. And if the technology proves solid, it could help pave the way for future wind-mapping satellites, says Lars Peter Riishojgaard, head of the World Meteorological Organization's Integrated Global Observing System in Geneva, Switzerland. ■

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ECOLOGY

Hurricane Maria's coral-reef clues

Scientists struggle to predict future of deep-water reefs.

BY SARA REARDON IN LA PARGUERA, PUERTO RICO

Dark skies hint at the hurricane that is moving quickly across the Caribbean on this early July morning, but the sea off Puerto Rico's southwest coast is glassy. Marine scientists Ernesto Weil and Juan Cruz Motta of the University of Puerto Rico–Mayagüez (UPRM) swim along the La Parguera reef, stopping to examine a fan coral marred by black patches of disease and a staghorn coral bleached white.

For decades, ecologists had thought that La Parguera and other reefs in the dimly lit 'mesophotic zone', 30–150 metres below the ocean surface, were sheltered from storms and temperature fluctuations — unlike corals in shallow waters. But several recent studies suggest that deep-water reefs are susceptible to the increasingly powerful hurricanes and ocean warming caused by climate change. And that casts doubt on the long-standing idea that deep-water corals could serve as refuges for marine life displaced from increasingly vulnerable shallow reefs.

In Puerto Rico, such questions are more than academic. In September 2017, Hurricane Maria — a deadly category-4 storm — devastated the island and many of its surrounding reefs. Weil, Cruz Motta and their colleagues are tracking the health of deep-water corals at La Parguera, which escaped significant damage, and that of deep reefs that were directly in the storm's path. This natural experiment could help to reveal the extent to which turbulence from the more frequent and extreme hurricanes predicted by climate models could endanger deep reefs in the coming decades.

"If we're going to have one of these or two of these per year, it's going to be very hard for reefs and other coastal communities to recover," Weil says.

The UPRM researchers expected to see devastation at offshore reefs after Maria hit. "We pretty much thought it was the end of the world," says Nikolaos Schizas, a marine biologist at the university. But when the ▶

H. RUIZ

Hurricanes and ocean warming are thought to present a growing threat to deep coral reefs.