

THIS WEEK

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What goes up

Federal restrictions on the use of drones by US researchers threaten an increasingly productive tool. The scientific community must speak out while there is a chance to change matters.

When US regulators ordered the journalism programme at the University of Missouri in Columbia to stop using camera-carrying remotely piloted aircraft last year, researchers around the country watched in alarm. The drones had been flown over private property, with the consent of the landowner. They had remained below 120 metres' altitude to avoid interfering with larger aircraft. Most thought that such flights would be legal.

They are not, according to the US Federal Aviation Administration (FAA). It is well known that the agency has largely banned commercial drone flights, pending the development of regulations to ensure their safety. But, as we report on page 239, many scientists did not realize that the agency considers research and education at private universities to be 'commercial' activities. It is an unfortunate and distorted definition that threatens research programmes in a wide swathe of disciplines. Scientists must speak out to make the FAA aware of these impacts.

There is much to say. The FAA has an unfeasibly narrow definition of those eligible to apply for special permission to fly unmanned aircraft. The agency has applied its historical division between government- and civil-operated aircraft to universities, creating a nonsensical distinction between public universities that receive a substantial amount of government funding and private universities that do not. Researchers at public universities are eligible to apply for an exemption to the commercial flight ban; researchers at private universities are not.

It is clear that the FAA has a difficult job. Technological advances are making drones increasingly appealing for everything from police work to package delivery. The agency must forge regulations that will ensure the safety and propriety of the machines and how they are used. A smattering of drone accidents — including the crash of a tourist's drone into a famous hot spring in Yellowstone National Park on 2 August — underscore the importance of these regulations. The agency should also take care not to hamper the burgeoning field's development.

Researchers must make their needs heard amid the clamour of lobbyists from industrial-drone manufacturers and aeroplane-pilot unions. Yet many researchers remain unaware that their work is threatened. Some continue to fly their machines in blissful ignorance of the FAA's rules. Others knowingly flout the guidance.

The community needs to spread the word — both to its own members and to the FAA — about the threats to research if drone use remains restricted. On 23 June, the FAA announced guidance intended to clarify its stance on drones, and outlining the distinctions that concern researchers. That document is open for public comment until 23 September, providing a clear opportunity to voice concerns to the agency.

The FAA is hard at work developing its regulations for drones, and intends to release an initial draft before the end of the year. That draft will also be open for public comment, but scientists need not wait until then to offer the agency their input. It is important to guide the discussion before it is too late to change its course. ■

Finding the root

The NIH is right to investigate whether bias makes grant awards unfair.

A prominent 2011 paper in *Science* found that white researchers receive grants from the US National Institutes of Health (NIH) at nearly twice the rate that African American researchers do (D. K. Ginther *et al.* *Science* 333, 1015–1019; 2011). Although some of the disparity could be explained by differences in education, institution and publication record, the sheer magnitude of the result seemed to suggest that something more insidious was at play.

The idea that scientists who volunteer time and energy to review NIH grants could be biased against qualified minority researchers is a tough pill to swallow. The NIH is to be commended for not sweeping this possibility under the rug; it has turned to the scientific method to investigate the suggestion. Over the next three years, researchers will strip names and other identifying information from grant applications,

text-mine proposals for subtle clues to an applicant's race that might subconsciously tip off reviewers, and study reviewer critiques to see whether they hold evidence of prejudice (see page 243).

It is a topic that the NIH will need to broach delicately. Few academics consciously hold any such inclinations, and fewer still would deliberately allow them to affect their grant evaluations. Some are likely to bristle at what might be seen as an accusation of racism, and the NIH plans to conduct at least some of its studies of grant reviews without the reviewers' knowledge or consent.

But better for the NIH to offend a few people than to make snap judgements and institute blunt policies to address the problem. Fixes such as increasing scholarships and training for minority groups would no doubt be a good thing, but they could be an unhelpful use of money if they do not address the root cause of the disparity. And policies such as grant-allocation quotas could come at the expense of other researchers.

The NIH says that it will be guided by the data produced. Interventions could include training programmes on bias for reviewers, or using peer reviewers from different demographic groups, such as early-career scientists. If the agency does find evidence of bias, fixing it will be a difficult task. Unconscious bias, wherever it resides, is a difficult thing to turn off, even for the most educated and progressive of people. ■