

SPEAKING OUT ABOUT SCIENCE

Barack Obama promised a new era of integrity and openness for American science. Government scientists are now asking what has changed.

BY EMILY WALTZ

Slide 11 in Robert Wall's presentation showed just three sentences. "Sheep and cattle have been cloned since 1980. Clones produced in the 80s were likely eaten. So why is there such a fuss about clones now?" But the words were enough to cause a fuss of their own.

It was September 2008, and Wall, a federal scientist at the US Agricultural Research Service (ARS), was preparing to give a talk at a meeting held at the Economic Research Service, a sister agency within the US Department of Agriculture (USDA) in Washington DC. The audience would consist of researchers from the agency and representatives from international embassies. Wall planned to explain that although Dolly the sheep, born in 1996, was the first mammal to be cloned from an adult cell by nuclear transfer, scientists had been cloning animals by splitting embryonic cells for some 16 years before that. But on the morning of the presentation, he received a call from Steven Kappes, a deputy administrator at the ARS staff headquarters in Beltsville, Maryland. The message was clear: slide 11 had to go, as did a second slide about nuclear transfer. "They didn't offer me a rationale," Wall says.

Wall was stunned. His talk was a history and overview of animal cloning — nothing, he felt, that was new, and all well within his expertise. Still, Wall did what he was told. "My boss's boss's boss is on the phone saying 'don't talk [about that] to those people.' There's no expectation I'm going to argue with him," he says. Neither Kappes nor Sandy Miller Hays — the director of information staff at the ARS — responded to *Nature's* repeated enquiries about the incident or Wall's experiences.

The whole episode was the "most disappointing" instance of censorship in Wall's career, he says, but not the first — or the last. Wall retired from the ARS in January 2010 at the age of 65, after studying transgenic animals for 30 years and publishing nearly 80 papers on the topic. "He is one of the main leaders in this field," says Elizabeth Maga, who researches transgenic animals at the University of California, Davis. But in the final six years of Wall's tenure — five under George W. Bush's administration and one under President Barack Obama's — he noticed increasing sensitivity and caution at his agency towards cloning and animal transgenics. The



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ARS frequently turned down requests from journalists to interview Wall about “purely scientific things”, he says. “Over the last two or three years, nearly every press request to speak to me was denied.”

Stories such as Wall’s surfaced frequently during the Bush era, when US researchers complained bitterly that politics trumped science across federal agencies, leading to censorship and suppression of data. But Obama promised change. He headlined it in his inaugural address on 20 January 2009, saying: “We will restore science to its rightful place.” Seven weeks later, Obama wrote a ‘scientific integrity’ memorandum to the heads of executive departments and agencies stating: “Political officials should not suppress or alter scientific or technological findings and conclusions. If scientific and technological information is developed and used by the Federal Government, it should ordinarily be made available to the public.” The memo ordered John Holdren, the director of the White House Office of Science and Technology Policy, to write a set of recommendations within 120 days that would ensure scientific integrity at federal agencies.

SCIENCE FOR SCIENCE’S SAKE

Almost halfway through Obama’s tenure, federal scientists have yet to see those recommendations — and some feel that the administration has not delivered on its promises. But many do describe a renewed sense of freedom and encouragement in the Obama era. “The atmosphere has been a lot more conducive to science being accepted for science’s sake,” says Kimberly Trust, an environmental toxicologist at the US Fish and Wildlife Service in Anchorage, Alaska. However, some researchers find themselves facing the same frustrating requirements to get approval before they publish or talk publicly about their work — and gag orders may still linger in the system. Francesca Grifo, director of scientific integrity at the Union of Concerned Scientists, a non-profit group in Washington DC that tracks political interference in science, says that since Obama took office she has received fewer calls from federal scientists complaining about censorship. But the calls still come in, she says — about ten so far.

It is not clear whether such incidents reflect high-level political interference or the hand of middle managers or press officers, who alter or block communication because they are wary of stirring up controversy. “They just do it to protect their backsides,” says Neal Lane, a senior fellow in science and technology policy at Rice University in Houston, Texas, and a former science adviser to US president Bill Clinton.

Interviews with nearly 30 federal scientists reveal that policies governing researchers’ communication with the public vary from agency to agency, and even from office to office (see ‘Permission to speak’). Even when formal policies exist, they are often communicated poorly to employees and enforced unevenly. The Department of the Interior is the only federal department to have issued a scientific-integrity policy since Obama took office — that was on 29 September this year. All this might go some way to explaining why scientists find themselves running up against barriers, despite the directives from the top. “The leadership is there from the president,” says Grifo. “It’s just that we have this giant disconnect between that and implementation of it at the agencies.”

Whatever the cause, there is an effect. Scientists say that navigating approval processes for communicating their work can be frustrating and slows down research. Just the perception that science is being muzzled dampens morale and erodes the public’s trust in their agencies, they say. “Public interaction is part of our jobs as government scientists,” says Jonathan Lundgren, an entomologist at the ARS office in Brookings, South Dakota. “If the public doesn’t know what we’re doing, how do they know whether it’s important to fund our work?”

The ARS serves as a good case study. Formal written policies there state that scientists must submit any manuscript intended for publication

to their research leaders for review, but if the topic of the manuscript is deemed sensitive it must be passed up the chain of command for approval by national-programme staff at the ARS headquarters. The sensitive topics aren’t always spelled out, however — for this, some researchers consult the agency’s ‘high-profile topics’ list, which includes cloning and the creation of transgenic organisms, in a separate handbook. Miller Hays says that the ARS formal publication policy is outdated and that the list has not been enforced for years.

The scattered instructions could explain scientists’ differing experiences in getting approval to publish. Many say they have never hit roadblocks. Some find the process cumbersome. The approval process “is excessive, and typically delays publication by about two months”, says Lundgren. Thomas Sappington, a research entomologist at the ARS office in Ames, Iowa, says that his only hold-up was when he attempted to publish a recent commentary on biotech crops. “It was very difficult for me to get permission to be the lead author on the paper,” says Sappington. “The ARS gets very nervous when its scientists write non-research pieces.” The commentary expressed concern about the biotech seed industry’s control over the information reaching the US Environmental Protection Agency (EPA), which regulates biotech crops. “The main hang up was whether it would cause problems with the EPA or embarrass the EPA,” he says. “In the end, I made a couple of minor wording changes that satisfied everyone and I was allowed to submit.” The process took a couple of months and the commentary was published this year (T. W. Sappington *et al.* *GM Crops* 1, 55–58; 2010). “As a scientist it’s frustrating, but if you can make your case they’ll let it go through,” he says.

When it comes to interviews with journalists, the official rule and the one heard by ARS scientists seem to differ. According to the formal policies, employees are “encouraged to respond willingly to requests from the media”, but alert information staff to all national media inquiries, “particularly when the topic is related to sensitive issues or the policies of other government agencies”. Miller Hays says that scientists are encouraged to call her office for advice beforehand, but that “it’s not at all uncommon for an ARS scientist to speak to the media and simply let me and others know about it afterwards”.

ARS scientists tell a different story. “Over the years we’ve been left with the firm conviction that heads can roll if we talk to reporters without permission,” says Sappington. Press requests involving high-profile topics can cause considerable anxiety at headquarters, ARS researchers say. “They’ll have a panic attack over anything on that list,” says an ARS scientist who asked to remain anonymous.

ONE MORE HOOP

In May this year, Steven Naranjo, a research leader at the ARS office in Maricopa, Arizona, ran up against a wall when he received an interview request from National Public Radio to comment on a paper published in *Science*. The paper discussed the emergence of ‘non-target’ pests in areas where genetically engineered insect-resistant crops are grown. Naranjo had reviewed the paper for *Science* and wanted to do the interview. But when he asked for permission from the ARS information staff, the request was passed up to the communications office of the USDA, and ultimately denied, he says. “They decided it was too controversial,” says Naranjo. “It was a little frustrating, but not a big deal.”

The process is more than a little frustrating for one ARS researcher, who says he is so fed up with the system that he has simply stopped asking for permission. For years, this scientist has been writing columns for regional newspapers and speaking to journalists without reporting it to the information staff. “I don’t want them changing my words,” this scientist said, under the condition of anonymity. “Getting permission is one more hoop and it’s a pain in the neck.”

Scientists at the National Oceanic and Atmospheric

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Administration (NOAA) encountered problems when they started talking about the Deepwater Horizon blowout in the Gulf of Mexico. NOAA employees are allowed to speak to the press without getting permission from the press office as long as they are talking about science, according to policies set in 2007. But Mark Powell, a hurricane expert at NOAA's Atlantic Oceanographic and Meteorological Laboratory in Tallahassee, Florida, says that after the oil spill, a team of NOAA experts was assembled and 'cleared' to talk to the media. As Powell understood it, no one else was allowed to speak publicly. "I decided to turn down a local TV interview because I had not yet been cleared," he says.

Communication staff at NOAA say that they used the term cleared to identify subject experts who had been put through some quick media training after the explosion. "This effort did not preclude anyone from speaking to the media or public, as per the NOAA policy," says Justin Kenney, director of communications for NOAA. But Powell wasn't the only one with the impression that communications rules had been tightened. "I did feel early on that I would make people a lot happier if I worked with media relations," says Michelle Wood, director of the ocean chemistry division in the same lab as Powell, a process that she says was "maddeningly slow" and often sent journalists to experts outside of NOAA. Wood says it was a great relief to later learn that it was coordination with external groups working on the spill that was delaying NOAA's responses to the media, rather than NOAA itself, and that communication lines eventually opened up.

It can be hard to trace restrictions back to their origin or determine when they are politically driven, says Lane. "The tone gets set by the administration or political appointees or the secretary, and people react — or sometimes overreact — to what they think is the right thing to do." Grifo adds: "It's pretty typical that a supervisor at a certain level takes it upon themselves to be the great defender of secrecy at their agency."

Lane is concerned about the effect of these restrictions on scientists and their work. "It kills morale," he says. "It makes scientists feel like their work is not valued, and it makes it harder for agencies to recruit and retain the best scientists." Keeping information from the public could put the credibility of the agency at risk, and some scientists say it affects their careers. "The restrictions limit my overall stature in the research community," says an ARS scientist who asked to remain anonymous.

Not everyone feels this strongly. Some ARS scientists say that the agency's internal review process for their research papers is appropriate, and is just part of working for the government.

Still, outside experts say that policies on communication should be spelled out to government researchers before they take the job. "There's not a clear expectation of what it is to be a government scientist," says Roger Pielke Jr, who has testified to Congress on scientific integrity and is a science-policy analyst at the University of Colorado at Boulder.

Pielke says the White House's scientific integrity guidelines could help to clarify those expectations — when they finally arrive. At a meeting of the President's Council of Advisors on Science and Technology on 2 September, Holdren said that the delay is partly a result of "a long process" of public input and consultation with the agencies that would be affected. He said that the recommendations will be issued by the end of the year.

It is not yet clear how those recommendations will be implemented. "If this is a priority of our president's, the [cabinet members] are going to go back to their agencies and ask that the message be sent all the way down through the organization," says Lane. "They don't want to read in *Nature* that one of their scientists was prevented from talking after the president has just told them that he's serious about this."

Some change is already afoot at the ARS. Miller Hays says that the agency will post a manuscript-publishing policy this month that does not require scientists to get approval from national programme staff. Wall is not so sure that things are going to change. "Avoiding controversy," he says, "may always be a part of what bureaucrats see as their mission." ■ [SEE EDITORIAL P.751](#)

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PERMISSION TO SPEAK

US agencies have differing policies on communication and political interference, or 'science integrity'.

"We have a communications staff that encourages our scientists to talk with reporters."

Linda Birnbaum, director of National Institute of Environmental Health Sciences, part of the NIH.



PUBLICATION POLICY

Lab or branch chiefs review and approve manuscripts.

MEDIA POLICY

Scientists should inform the communications office before interviews.

SCIENCE-INTEGRITY POLICY? No.



PUBLICATION POLICY

Manuscripts undergo reviews; centre directors implement the policy as they see fit.

MEDIA POLICY

Scientists must coordinate with public affairs before interviews or straight after.

SCIENCE-INTEGRITY POLICY? Yes.

"Are there frustrations? Yes. But no one has tried to stop me from making the data accessible."

Russell Beard, director of NOAA's National Coastal Data Development Center.



PUBLICATION POLICY

Each lab has its own process of internal review; lab directors commonly review and approve manuscripts.

MEDIA POLICY

No permission required to do interviews.

SCIENCE-INTEGRITY POLICY? No.



PUBLICATION POLICY

No internal review required.

MEDIA POLICY

No permission required for interviews; scientists are asked to inform public affairs if the interview involves policy.

SCIENCE-INTEGRITY POLICY? Yes.

"I see an openness now. People from on high — many of the political appointees — are soliciting input from what I would call the rank-and-file scientists."

John Glaser, scientist at the EPA's National Risk Management Research Laboratory.



PUBLICATION AND MEDIA POLICY

Developing its first agency-wide communications policy that will include instructions for manuscript publishing and speaking to the press.

SCIENCE-INTEGRITY POLICY? Yes.