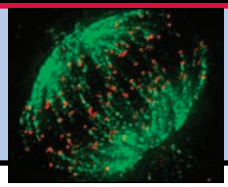

ale. NIH Deputy Director Raynard Kington responded that although NIH, unlike FDA, does not regulate companies, its "influence [has become] substantial," citing a drop in the market in December after two large NIH trials using COX-2 inhibitor painkillers were halted for safety reasons.

Scientific groups outside NIH, such as AAMC, generally support the new rules—with caveats. "The nuances and consequences must be watched very, very carefully," says Korn. The Federation of American Societies for Experimental Biology (FASEB) expressed concerns about recruiting as well as possible limits on participating in scientific societies. "It would be a serious loss if those activities were completely curtailed," said FASEB president Paul Kincade.

Thomas Cech, president of the Howard Hughes Medical Institute in Chevy Chase, Maryland, worries that the rules could undermine Zerhouni's goal of translating research into cures. "Medical uses require commercialization. It's not something to be ashamed about. The key thing is to manage to avoid conflict of interest," Cech says.

The new rules seem "like a heavy-handed solution," says Varmus, now president of Memorial Sloan-Kettering Cancer Center in New York City. But thanks to other reforms in the 1990s, "the intramural program is strong, and it can survive," he says. Top scientists will still be attracted to NIH, where they are protected from the vagaries of winning grants in a tight budget climate, he says. "The people who just want to do science will still come here," agrees Robert Nussbaum, a branch chief at the genome institute. But exactly what NIH will look like under some of the most stringent ethics rules in the federal government may not become apparent for several years. **–JOCELYN KAISER**

SCIENTIFIC PUBLISHING

NIH Wants Public Access to Papers 'As Soon As Possible'

Ending months of uncertainty, National Institutes of Health (NIH) Director Elias Zerhouni last week unveiled a policy aimed at making the results of research it funds more freely available. But the announcement has injected a new element of controversy into an already bitter debate. Zerhouni is asking NIH-funded researchers to send copies of manuscripts that have been accepted for publication to a free NIH archive. Researchers will specify when the archive can make them publicly available, but NIH wants that to be "as soon as possible (and within 12 months of the publisher's official date of final publication)." That language has stirred worries that NIH is putting authors on the spot by asking them to challenge publishers' own release dates.

The "public access" policy emerges from a major battle last year. At the request of Congress, NIH in September asked for comment on a proposal to urge its grantees to submit copies of their research manuscripts for posting on NIH's PubMed Central archive 6 months after publication. NIH argued that this would increase public access to research and help it manage research programs. Supporting this plan were librarians, patient advocates, and some scientists who feel that journal prices are too high and that access to research articles should be free. In the other corner, publishers said that free access so soon after publication could bankrupt them and inflict damage on scientific societies dependent on journal income.

After collecting more than 6000 comments from both sides, Zerhouni on 3 February issued a final policy* that states NIH will wait up to 1 year to post the papers, although it "strongly encourages" posting "as soon as possible." This "flexibility" will help protect publishers who believe earlier posting will harm revenues, he says. Norka Ruiz Bravo, NIH deputy director for extramural research, expects that authors "will negotiate" the timing with the publisher rather than relying on the publisher's policy for when articles can be posted. NIH will not track compliance or make public access a condition of accepting an NIH grant, she says: "We have no plans to punish anybody who doesn't follow the policy."

The policy applies only to original research manuscripts, and authors will send in the final peer-reviewed version accepted for publication. If the author wishes, PubMed Central will incorporate subsequent copy-editing changes to avoid having two slightly different versions of the paper. Alternatively, publishers can have NIH replace the manuscript in PubMed Central with the final published paper.

Authors vs. publishers? NIH's Ruiz Bravo urges authors to ask publishers to allow speedy free access to articles.

NIH didn't attempt an economic analysis of the impact on journals, Ruiz Bravo says, because that "would be a major thing." However, the agency argues that because NIH-funded papers make up only 10% of the biomedical research literature, the policy won't put journals out of business; NIH promises to track the impact of the policy through a new advisory group.

Neither side seems satisfied. A group of nonprofit publishers called the D.C. Principles Coalition argues that the $2 million to $4 million per year that NIH estimates it will cost to post 60,000 papers is an unnecessary expense because most nonprofit journals already make papers publicly available in their own searchable archives after a year. "We're concerned about the waste of research dollars," says Martin Frank, executive director of the American Physiological Society in Bethesda, Maryland. Frank also argues that the plan would infringe journals' copyright, and it might not stand up to a legal challenge.

For their part, open-access advocates aren't happy about the "voluntary" aspect or the 12-month timeframe. Whether articles will become available any sooner than they are now "is a big 'if,' " says Sharon Terry, president of the Genetic Alliance and an organizer of the Alliance for Taxpayer Access in Washington, D.C. The request that authors try to have their papers posted as soon as possible puts them "in the untenable position" of trying to please both NIH and their publishers, says the Alliance for Taxpayer Access.

The only group that seems pleased with the wording is the Public Library of Science (PLoS) in San Francisco, California, which ▶

* www.nih.gov/about/publicaccess

CREDIT: NIH

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charges authors publication costs and then posts papers immediately upon publication. "We have influence here," says PLoS cofounder Harold Varmus, president of Memorial Sloan-Kettering Cancer Center in New York City. "The journal may say 12 months, but the journal also wants [the] paper. Researchers are going to be voting with their feet."

But that assertion assumes researchers will feel strongly enough to raise the issue with publishers. Virologist Craig Cameron of Pennsylvania State University, University Park, says he will likely rely on the publisher's existing policy even if it's 12 months. "With everything I have to think about on a daily basis, it's not something I would spend a lot of time on," he says. Authors will be asked to send their manuscripts to NIH starting 2 May. –JOCELYN KAISER

ECOLOGY

Ginseng Threatened by Bambi's Appetite

With few natural predators left, deer are running rampant across much of eastern North America and Europe. In addition to damaging crops, raising the risk of Lyme disease, and smashing into cars, white-tailed deer are eating their way through forests. "This is a widespread conservation problem," says Lee Frelich of the University of Minnesota, Twin Cities. Indeed, on page 920, a detailed, 5-year forest survey of ginseng reveals that deer, if not checked, will almost certainly drive the economically valuable medicinal plant to extinction in the wild.

The survey was conducted by James McGraw, a plant ecologist at West Virginia University in Morgantown, and his graduate student Mary Ann Furedi. Ginseng is one of the most widely harvested medicinal plants in the United States; in 2003, 34,084 kilograms were exported, mainly to Asia, where wild ginseng root fetches a premium. Although the plant (*Panax quinquefolius*) ranges from Georgia to Quebec, it is slow-growing and scarce everywhere.

Oh deer. Deer are eating their way through too much ginseng (*inset*).

CREDITS: U.S. FISH AND WILDLIFE SERVICE

To determine the population trends of ginseng, McGraw and Furedi began a census in West Virginia forests. For 5 years, they checked seven populations of wild ginseng every 3 weeks during the spring and summer. They quickly noticed that plants were disappearing. In some places, all of the largest, most fertile plants were gone by mid-August. At first they suspected ginseng harvesters, but the valuable roots were left. Cameras confirmed that deer were at work. The nibbled plants are less likely to reproduce, and after repeated grazing, they die. Indeed, during the study, populations declined by 2.7% per year on average.

McGraw and Furedi then ran a ginseng population viability analysis. By plugging in the sizes of plants in various populations, mortality rates, and other factors, they learned that current ginseng populations must contain at least 800 plants in order to have a 95% chance of surviving for 100 years.

That's bad news. A broader survey they conducted of 36 ginseng populations across eight states revealed that the median size was just 93 plants and the largest was only 406 plants. At the current rate of grazing, all of these populations "are fluctuating toward extinction," McGraw concludes. Even the biggest population has only a 57% chance of surviving this century.

"This paper has high significance because it's one of the first demonstrations of the direct impact of deer browsing on understory plants," says Daniel Gagnon of the University of Quebec, Montreal. And deer eat more than ginseng. "We could lose a lot of understory species in the next century if these browsing rates continue," McGraw says. That in turn could affect birds, small mammals, and other wildlife that rely on these plants.

McGraw and Furedi calculate that browsing rates must be cut in half to guarantee a 95% chance of survival for any of the 36 ginseng populations they surveyed. That has direct management implications, says Donald Waller of the University of Wisconsin, Madison. "We should be encouraging the recovery of large predators like wolves. It also suggests we should be increasing the effectiveness of human hunting" by emphasizing the killing of does rather than bucks, he adds. Such deer-control measures are controversial: Reintroduction of predators like wolves faces logistical as well as political hurdles, for example. Meanwhile, the deer keep munching.

–ERIK STOKSTAD

ScienceScope

Biosafety Lab Fallout in Boston

New revelations about how Boston University handled an incident in which dangerous bacteria sickened three workers last year may hinder BU's plans to build a biosafety level 4 (BSL-4) lab in the city's South End neighborhood (*Science*, 28 January, p. 501).

When news of the infections broke last month, the university said that it had not suspected tularemia as the cause until October. But BU officials admitted last week that they had conducted tests on two workers in August that showed the presence of infectious bacteria. Because they were not convinced that the samples contained tularemia, they waited until a third worker fell ill in the fall before they closed the lab, ran further tests, and informed public health officials. Also last week, Peter Rice, the beleaguered head of the lab where the tularemia incident took place and chief of infectious diseases, resigned from his positions at BU. Opponents of the BSL-4 lab, meanwhile, are pushing a bill in the Massachusetts Senate which would ban such facilities from the state.

–ANDREW LAWLER

Turning Bombs Into Semiconductors

ALMATY, KAZAKHSTAN—Plans are afoot to create what may be the world's first "nuclear technopark" at one of the enduring legacies of the Cold War. The government of Kazakhstan is reviewing an $80 million proposal to establish a technology incubator at the Semipalatinsk Test Site—a territory nearly as big as Israel—in northeastern Kazakhstan where the Soviet Union detonated its first atom and hydrogen bombs. Since the closure of the Central Asian facility in 1992, Kazakh authorities have been trying to secure risky materials such as plutonium-laced soil (*Science*, 23 May 2003, p. 1220).

Looking to convert a liability into a sustainable venture, the former test site's physicist-caretakers have drafted plans to build an electron accelerator, a gamma irradiator, and other facilities for producing everything from medical radioisotopes to semiconductors. If the government approves the plan and kicks in the start-up money, the technopark would then use tax exemptions and other incentives to entice commercial partners from Kazakhstan and abroad. A decision is due by the end of the month.

–RICHARD STONE

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NIH Wants Public Access to Papers 'As Soon As Possible'

Jocelyn Kaiser

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