

ANTARCTICA

Report Backs Science, Not New Station

The National Science Foundation's (NSF's) dream of building a new research station at the South Pole got a splash of cold water last week. A White House panel praised the foundation's Antarctic research program but stopped short of endorsing construction of the new station. Instead, it asked NSF to assemble outside experts to recommend ways to reduce the \$196 million annual cost of the Antarctic program, and suggested that at least part of the new station may have to be funded from such savings.

This suggestion is part of a 67-page report* written by a subgroup of the presidential National Science and Technology Council (NSTC) and submitted last week to Congress. Legislators had asked for a review of U.S. policy in Antarctica in light of NSF's plan to build a \$181 million facility by 2005 to replace the aging Amundsen-Scott South Pole Station, one of three year-round U.S. stations on the continent (*Science*, 1 December 1995, p. 1433).

The NSTC report endorses the current rationale for doing science in Antarctica, upholding a 14-year-old presidential directive that says the United States should exercise "an active and influential" presence on the continent. It says there are still compelling national security and environmental reasons for a continued U.S. presence there—among them acting as a buffer for other countries' overlapping territorial claims. And it concludes that NSF's research program is important and of high quality.

However, those reasons aren't enough for a new station when money is tight. NSF officials have pushed for additional funds to replace the station, citing a clause in the 1982 directive that says the Antarctic program should not be funded "at the expense of other NSF programs." But federal budget officials have urged the agency to set priorities within the existing Antarctic program and not to expect additional money. And the report restates that advice. "Recently realized fiscal constraints force a reexamination of the size, lifetime, and capability of the [new] station," the report declares. It recommends that NSF convene an external panel of experts "accustomed to operating in challenging physical environments" to suggest ways to squeeze money out of operations without endangering lives, the environment, or science. The implication is clear: The resulting savings could help finance a new station.

That's not what NSF wanted to hear. "I'm disappointed that we didn't get a green light for the redevelopment of South Pole station," says Cornelius Sullivan, head of NSF's Office of Polar Programs. Sullivan, however, took some solace from the fact that the panel

"emphasized that science is one of the main reasons we should be in Antarctica" and supported NSF's request for \$25 million in the 1997 budget for essential safety and environmental upgrades to the existing station.

The report seems unlikely to change congressional attitudes toward NSF's plans to replace the South Pole station. A Senate aide says it "reaffirms our concern" about the financial impact of a new station on NSF's current program. But Gerald Garvey of the White House Office of Science and Technology Policy, which coordinated the study, says that most panel members backed NSF's efforts. "While nobody is getting add-ons for science, most of the committee felt that

NSF should negotiate as hard as it can [for the additional funding] because of the national interests involved as well as the quality of the work going on there. ... The fact is, at some point, you have to replace the current station."

However, it's not clear when that point will be reached. The report suggests that the outside advisory committee should finish in time for the 1998 budget cycle, which starts in September when NSF submits its request. But Sullivan thinks that the end of the year might be more realistic, after the panelists have gotten a first-hand look at the issue when the continent reopens to outsiders in November. "It's important that [they] go to Antarctica," he says. "It's a unique environment that needs to be experienced to be understood."

—Jeffrey Mervis

CRIMINOLOGY

Academy's About-Face on Forensic DNA

Four years ago, the National Research Council (NRC) published a controversial report advising the courts on the use of DNA evidence in criminal trials. The advice drew harsh criticism from prosecutors and some population geneticists, who lambasted it as arbitrary, illogical, and heavily tilted in favor of the defendant (*Science*, 5 February 1993, p. 755). The director of the Federal Bureau of Investigation asked for a reconsideration, and several agencies including the Institute of Justice put up the funds for another review of DNA fingerprinting. Last week, the NRC released the 200-page result.

The new panel, chaired by geneticist James Crow of the University of Wisconsin, concedes that the critics were right in saying the

proach in which odds are calculated on the frequency at which specific DNA markers occur in particular ethnic groups. In most cases, this will permit prosecutors to multiply the frequencies of four to six markers to determine the overall likelihood of a chance match, with a fudge factor for homozygotes, yielding impressively small odds. Already, DNA forensics experts like prosecutor Rockne Harmon of Alameda County, California, have embraced these guidelines as "reasonable."

The NRC's about-face was greeted with surprisingly little public comment. Four years ago, calculating odds based on differences between ethnic groups inspired fierce debate, but not today. For example, the outspoken Harvard University geneticist Richard Lewontin argued in the early 1990s that too little was known about the inheritance of DNA markers within ethnic groups. He also sent a letter to the NRC protesting the makeup of the panel, saying it would be naive to imagine it would improve on the cautious 1992 report. (The ceiling principle said that the odds of a match should be calculated by multiplying a series of frequency values for each DNA marker, using in each case the largest value derived from any racial group, or 10%, whichever was larger.) Now, Lewontin says, the "old population genetics question" is "not at the center" of the debate any longer.

Lewontin is still critical of the NRC, charging that the conclusions of this report were "bought" by the Department of Justice. The "serious problem," he insists, is now the lack of standardized, blind proficiency testing of DNA forensics labs. The odds of lab error, Lewontin and others argue, may be more significant than the odds of a chance DNA match. Lewontin also finds "disturbing" the use of big statistics—like "one in a million"—to impress jurors.



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Fingerprints. Lifecodes Corp. scientist sizing autorads of DNA fragments.

1992 report was arbitrary. The panel has withdrawn the most troublesome recommendation—that courts should use a rigid formula known as the "interim ceiling principle" to express the likelihood of a chance match between the defendant's DNA and DNA left at the crime scene. Instead, the NRC now recommends a more flexible and specific ap-