$182 million in 1998—have remained stagnant in recent years, and many customers have complained about the high cost and long wait associated with many NRC studies (*Science*, 9 May 1997, p. 900). In addition, its rigid and complicated structure—the council has seven commissions that oversee most of the work of innumerable boards, task forces, and working groups—is poorly suited to interdisciplinary problems.

The question of restructuring the NRC has been on the table for several years. But a messy fight that resulted in the departure of former NAE president Harold Liebowitz (*Science*, 1 March 1996, p. 1222) and legal wrangling over whether the NRC must abide by a law that requires government advisory committees to conduct their business in public (*Science*, 14 November 1997, p. 1219) left top officials with little time to address possible changes. "We were kept busy with a series of crises, and now things have quieted down," says Alberts. The task force's charge, he adds, is to come up with a system that is "more efficient while providing equal quality." NAE president William Wulf says that the growing need for crosscutting approaches and the increased role of states in science and technology initiatives demand a review of the NRC's products, processes, and organization. "Everything is on the table," says Wulf.

Tall order. Choppin's task force is trying to make NRC more efficient.

Currently, the NRC's governing board approves requests for a report, which is then assigned to the appropriate body. A draft report, put together by a committee of outside experts, is typically reviewed by its parent commission, as well as by a separate report review committee that monitors the quality of the draft. Many voices inside and outside the NRC say that the commissions are a weak link in a process designed to ensure accurate and objective reports. "You could take out that layer," says one former NRC official. Another former official complains about the drain on time, money, and effort from frequent "dog-and-pony shows" performed by staff to keep commissions up to date.

Task force members agree that the commission structure should be revised to enhance the work of the boards. "You cannot mess with the boards—they are the ones in the trenches, the front-line troops," says member Brad Parkinson, a Stanford University physicist and engineer. Alberts says he would welcome "more standardized procedures" for the commissions. But sources familiar with the task force's deliberations say it is unlikely that the commissions—created in the 1982 reorganization that followed the 1981 study—will disappear. That approach was tried unsuccessfully in the policy division, says Alberts.

The scope of the NRC's work is also under scrutiny. Parkinson says the group is rethinking the mix of core activities in light of a flattening of federal requests. "Less [federal] work comes in over the transom," says Thomas Deen, a former NRC staffer who sits on the task force. At the same time, he says that the NRC "is uniquely positioned" to help states in such areas as transportation, education, and health care delivery. The NRC derives only about 15% of its revenues from nonfederal sources.

The panel is also looking at how to supplement the NRC's primary diet of reports with roundtables, workshops, fellowship programs, and other activities. "No one is trying to denigrate the studies, but there can be more synergy" in what the NRC accomplishes, Deen says. Creating a body of work in a specific area is another approach, notes IOM president Ken Shine, as the IOM has done to much acclaim with health care issues.

Once the report is submitted, it will fall to Alberts, Wulf, and Shine to win over the membership, volunteer community, and NRC staff. "We have to be strategic," says Alberts, who plans to start lobbying members this week during the academies' annual meeting in Washington. "It's not going to be simple to get members to recognize that changes will be good for the organization in the long run." One thing that may not change, however, is the academies' penchant for secrecy. The document outlining the 1982 reorganization remains confidential, and academy officials say there are no plans to release the new report, either. **–ANDREW LAWLER**

CREDIT: RICK KOZAK

GLOBAL WARMING

Draft Report Affirms Human Influence

For the past several years, an international panel of climate scientists has been testing alternatives to the idea that people are affecting global climate. They examined climate's natural variability, changes in solar radiation, and volcanic outpourings, among others. But none of those factors fit the past century's observed warming as well as the explanation they suggested in 1995: an increase in greenhouse gases generated by human activity. So last week, the group, the

ScienceScope

Just Say No? Prompted by critics who say gene patents are being given out too freely, the U.S. Patent and Trademark Office (PTO) offered to "raise the bar" last year. But some prominent critics say the new standard isn't high enough.

PTO's proposed new guidelines ask its examiners to demand more information about a gene's biological function before awarding a patent (*Science*, 18 February, p. 1196). PTO invited comments, which are now available on the Web (www.uspto.gov). Although most are favorable, an exception comes from the advisory council for the National Human Genome Research Institute, the federal government's main sequencing funder. Twelve members, including human genome sequencers Maynard Olson and Robert Waterston, wrote en bloc to argue that PTO should issue tighter guidelines that would rule out claims on gene functions not specifically described in an application. For example, the group objects to a broad patent obtained by Human Genome Sciences Inc. of Rockville, Maryland, based on the human CCR5 receptor, which may be useful in AIDS therapy (*Science*, 25 February, p. 1375).

Despite such complaints, the PTO isn't likely to raise the bar any higher. "We're taking the guidelines to the executive council" early this summer, one official notes. "My guess is that you'll see very little change" in the final version, due out in 3 months.

New Look The Canadian government says a planned overhaul will restore the luster of Health Canada, its scandal-prone health protection bureaucracy.

Agency officials last week announced a restructuring designed to prevent the repeat of regulatory controversies—involving inadequate oversight of products from silicone breast implants to bovine growth hormone—that have tarnished Health Canada's reputation over the last decade. The redesign (www.hc-sc.gc.ca/english/realign.pdf) calls for creating new branches to track diseases and regulate products, and appointing a new chief scientist to oversee research and field potential complaints about political or industrial influence. Responding to criticism of its 1997 decision to close in-house scientific labs conducting research on food toxins, Deputy Minister David Dodge said Health Canada will also spend the bulk of some $230 million in planned funding increases on hiring new scientists and extending its research partnerships with academe.

United Nations–sponsored Intergovernmental Panel on Climate Change (IPCC), released the draft of a new report concluding "that there has been a discernible human influence on global climate." If those words hold up under further expert and governmental review, they would be the strongest official pronouncement yet that human-induced warming is real.

"Something definitely seems to have happened" to the climate, says climate researcher Tim P. Barnett of the Scripps Institution of Oceanography in La Jolla, California, who reviewed part of an earlier draft. As this draft points out, "three of the last 5 years have been the warmest in the instrumental record," which goes back 140 years. And three different records of temperature preserved in tree rings and elsewhere have now revealed the large, abrupt 20th-century warming to be unique in the past 1000 years.

The confident recognition of an anthropogenic climate effect—which could bolster calls for action to curb global warming—is the draft report's only major shift since 1995, when the IPCC found that "the balance of evidence suggests a discernible human influence." The new report notes that there has been little progress in projecting the future of greenhouse warming, thanks to uncertainties about everything from climate models and the behavior of clouds to the vagaries of humans' burning of fossil fuels. Even so, the report, to be finalized later this year, should inform negotiations that culminate this fall on the implementation of the Kyoto Protocol for the reduction of greenhouse gas emissions.

The IPCC gained confidence in identifying the 0.6°C warming of the past century as anthropogenic through a process of elimination. Since the previous report, researchers have run their improved climate models repeatedly and longer to look for alternatives—the natural ups and downs of temperature, solar variability, or volcanic emissions. None seems to suffice. And model simulations of the past century including rising greenhouse gases bear a strong resemblance to the actual warming.

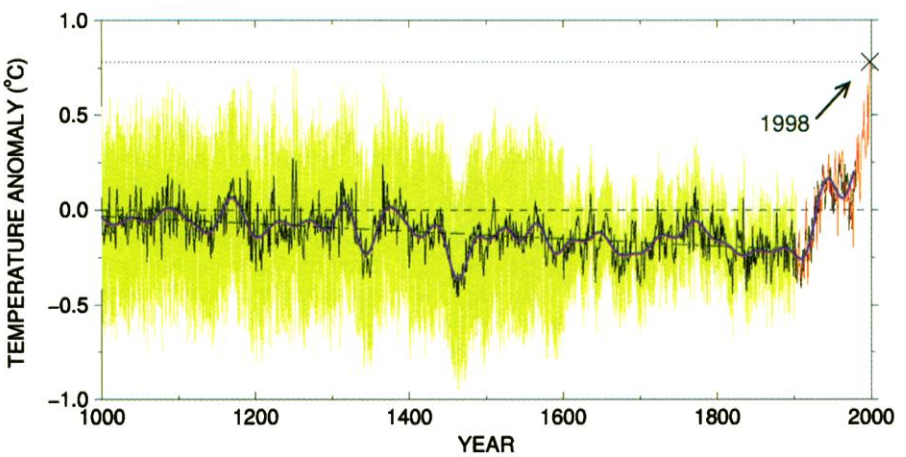
Barnett is cautious about declaring complete certainty, but "we have a change we can't explain with natural variations. There aren't many other options." Climatologist Gerald North of Texas A&M University in College Station, who does greenhouse detection work but has not been involved in the IPCC process, is more confident: "There are too many independent pieces of evidence, and there's not a single piece of contradictory evidence," he says. North is particularly impressed by the 1000-year temperature records. "The planet had been cooling slowly until 120 years ago, when, bam!, it jumps up," he says. "We've been breaking our backs on [greenhouse] detection, but I found the 1000-year records more convincing than any of our detection studies" using climate models.

Even greenhouse contrarians are tacitly going along with the IPCC's confident conclusion. Rather than dispute the reality of the warming or its cause, they have lately emphasized its modest size and inferred minimal future negative effects. Much of the warming, they note, has come at night, in the winter, and in areas that might stand some warming, such as Siberia.

While the report seems to reflect broad support for the recognition of human-induced climate change, "we don't quite know what it means for the next 100 years," admits North. The report offers nothing new on how much temperatures might rise given an added shot of greenhouse gases. It cites the same possible warming from a doubling of carbon dioxide—2.5°C with a range of 1.5° to 4.5°C—as did the 1990 and 1995 reports. Indeed, that range goes back to a National Academy of Sciences report of 1979. Uncertainties in the magnitudes of complicating factors such as solar variations and the effects of pollutant hazes have changed little since 1995.

One change in the report—a more prominent role for socioeconomic factors—only increases the uncertainty. Depending on which of six possible scenarios for emission of greenhouse gases and cooling pollutant hazes is used, warming by 2100 could be between a modest 1°C and a sizzling 5°C. The range of warming created by economic, demographic, and policy assumptions in the scenarios "is similar to that due to uncertainty in models," the report observes. With so much up in the air, the IPCC should have no lack of grist for its next report in 2005.

–RICHARD A. KERR



Exceptional century. Temperatures recorded in tree rings and elsewhere (purple) reveal that the 20th century (red is instrumental record) was unique in the millennium.

SOURCE: MANN *ET AL.*, AMERICAN GEOPHYSICAL UNION

SOUTH AFRICA

AIDS Researchers Decry Mbeki's Views on HIV

Most governments that face a serious AIDS epidemic have taken a long time to acknowledge the fact. In South Africa, one of the hardest hit countries in the world, this pattern has a bizarre twist: President Thabo Mbeki has acknowledged that his country has an AIDS epidemic, but he has questioned whether HIV is to blame.

Not only is Mbeki publicly flirting with scientifically discredited ideas about the cause of AIDS, but a leading skeptic of HIV's role in the disease has been invited to serve on a panel to discuss how South Africa should deal with the crisis. These moves are drawing international attention—and increasingly sharp attacks from AIDS researchers inside and outside South Africa, where the virus has infected one out of every 10 adults.

Mbeki's questioning of the scientific evidence that HIV causes AIDS became front-page news around the world last week when *The Washington Post* revealed that he recently sent a letter about his views to President Bill Clinton, other heads of state, and U.N. Secretary Kofi Annan. In the letter, Mbeki decries the "orchestrated campaign of condemnation" that has been directed at him for seeking out the views of so-called AIDS "dissidents," such as the University of California, Berkeley's, Peter Duesberg, who in 1987 began challenging the widely accepted scientific conclusion that HIV causes AIDS (*Science*, 9 December 1994, p. 1642). "We are now being asked to do precisely the same thing that the racist apartheid tyranny we opposed did, because, it is said, there exists a scientific view that is supported by the majority, against which dissent is prohibit-