findings is that the concentration of ozone in the troposphere seems to have increased in the past few years. The source is believed to be atmospheric pollution, perhaps partly from high-flying aircraft. Although this may help to block some ultraviolet radiation from reaching the earth's surface, a change in the distribution of ozone in the upper atmosphere could alter temperature distribution, with unpredictable effects on climate.

By themselves, these findings will not affect the outcome of the battle over further regulation of CFC's. But if they are confirmed, they undermine one of the chief arguments put forward by industry: that there is no hard evidence that CFC's are affecting ozone concentrations in the stratosphere.

The Environmental Protection Agency has been grappling with the problem of whether to regulate industrial uses of CFC's for several years. Last October, it issued a so-called advanced notice of proposed rulemaking, in which it simply outlined possible courses of action and asked for comments. In particular, it suggested that a cap could be placed on production, to keep use of CFC's at present levels.

The notice brought more comments than any other proposed rule in EPA's history—more than 2300 responses at last count. In part, the warmth of the response is a result of a well-organized and well-heeled lobby established by users and producers of CFC's in August 1980. Called the Alliance for a Responsible CFC Policy, it is seeking to prevent further regulation of CFC's at least until the ozone depletion theory is confirmed or shot down with hard evidence.

The alliance has drafted bills to prevent EPA from taking further action on CFC's until more studies have been completed. They have been introduced into the Senate by Lloyd Bentsen (D–Tex.) and into the House by Thomas Luken (D–Ohio). Heath, who says it is "most unfortunate" that the study results were announced before publication (they were cited during testimony by Mario Molina, a chemist from the University of California at Irvine who was one of the original formulators of the ozone depletion theory), plans to submit a paper to a scientific journal within a month.—***Colin Norman***

Brookhaven Director Quits as Isabelle Teeters

Amid rising costs, schedule delays, and increasing uncertainty over the fate of a one-half billion dollar particle accelerator under construction at Brookhaven National Laboratory on Long Island, the director of the laboratory has resigned.

George H. Vineyard handed in his resignation on 17 August to the trustees of Associated Universities, which runs Brookhaven for the Department of Energy. "I have wanted for some time to go back to research at the laboratory," says Vineyard, "and this appeared to be a good time to make the move."

Vineyard did not link his resignation to the troubles with the half-built accelerator, called Isabelle (*Science*, 21 August, p. 846). The machine is intended to be the most powerful in the history of U.S. high energy physics. Although it has already consumed $130 million, completion has been delayed because of technical problems with the construction of 1100 superconducting magnets—the heart of the project. Concern over the fate of Isabelle has recently heightened due to the completion by European physicists of a rival accelerator that may skim off the easiest discoveries in Isabelle's energy range. Says George A. Keyworth, the President's science adviser: "We have to ask ourselves in great detail what the composition of the best U.S. high energy physics program can be under realistic budget expectations." The Administration's decision on the fate of Isabelle is due this fall.

Vineyard, 61, said he is willing to stay on as director until the end of the year, unless a successor can be found earlier. Previous to his 20 years at Brookhaven as an administrator (six as deputy director and nine as director), Vineyard worked primarily in neutron scattering, a field of research far from the particle accelerators of high energy physics. Said Vineyard in a prepared statement: "The Isabelle project has, I believe, turned the corner by overcoming technical difficulties with the superconducting magnets. I am at an age when if I am to do more in research it is time to go at it. I would particularly like to take a leave for scientific refreshment, and may do so when I step out of this job."

—***William J. Broad***

Gene-Splicing Patent May Net $1 Million a Year

Stanford University has been getting a healthy response from industry to its 3 August announcement that licenses are available for its patented gene-splicing technology.

The patent granted last December is for the basic method of gene splicing and cloning that was developed in 1973 by Stanley N. Cohen of Stanford and Herbert W. Boyer of the University of California at San Francisco.

The patent sets a precedent as the first one to be awarded covering a process in the field of recombinant DNA. A second part of the patent application, still pending, covers the products of the process. Legal ground for this was cleared last year when the Supreme Court upheld granting of a patent to A. M. Chakrabarty of General Electric Co. for developing a strain of bacteria that digests oil spills.

Although there have been rumors that some firms want to contest Stanford's gene-splicing patent, Andrew Barnes of the university's Office of Technology Licensing says he is not aware of any challenge to the patent which "appears to be unassailable."

Stanford, in its press release announcing availability of licenses, carried the implied boast that it is not out to make unseemly profits from its piece of the bioengineering action. The nonexclusive license is available to any commercial user of the process for an initial fee of $10,000 plus an annual fee of $10,000. The royalty rate will be 1 percent on net sales of products up to $5 million, and 0.5 percent on sales above $10 million annually. Annual revenues, which Stanford estimates could reach $1 million in 4 or 5 years, will be divided between Stanford and UCSF.

Stanford expects to get license applications from about 200 firms that are either now employing the technique or gearing up to do so. Barnes is planning trips to Japan and Western Europe in the fall to explain the terms of the agreement to foreign firms.

—***Constance Holden***