Gene manipulation

Churches against germ changes

Washington

A RESOLUTION calling for an immediate ban on human genetic engineering that alters germ cells was released last week over the signatures of 21 Catholic bishops, a broad spectrum of Protestant and Jewish religious leaders and three scientists — George Wald and Ruth Hubbard of Harvard University and Ethan Signer of Massachusetts Institute of Technology.

The resolution cites "new advances in genetic engineering technology" that "raise the possibility of altering the human species", and concludes that humans have no right to decide which genetic traits should be introduced and which eliminated from the human gene pool.

The statement appeared to take a much harder line than that espoused by religious leaders and theologians who testified before the President's Commission on Bioethics, which last year produced a report on human genetic engineering called *Splicing Life*. Hearings on the report called in November by Representative Al Gore (Democrat, Tennessee) elicited strong support for the commission's approach of increased scrutiny together with no *a priori* bans on human genetic engineering. Several clergymen who testified before Gore's subcommittee also signed last week's resolution.

Morris Abram, chairman of the now-defunct President's Commission, expressed puzzlement at the resolution. "These techniques have already demonstrated a great potential for relief of suffering and possible diagnosis and treatment of diseases", he said. He added that human genetic engineering does indeed raise ethical problems, but that other medical procedures, such as artificial insemination and even cancer chemotherapy, raise similar problems. Alex Capron, former staff director for the commission, was more outspoken. Calling the resolution "knuckleheaded", he complained that it swept aside difficult ethical issues in favour of a "broadside attack".

Several of the signers were quick to explain that they did not fully agree with the resolution nor with a supporting letter that attempted to explain its philosophical basis. Both were written by Jeremy Rifkin, an author of popular books on social issues. His latest book, *Algeny*, was recently published, and this has prompted critics to question the timing of the resolution.

Father Richard McCormick, SJ, of Georgetown University's Kennedy Institute for Ethics — a witness at the Gore hearings — explained that he did not actually agree with the resolution's call for a ban on germ-cell engineering, but had signed it as a "good vehicle for public discussion" of the issue.

Other signers stressed that they did not object to genetic engineering of human

somatic cells. James Malone, a Catholic bishop and vice-president of the US Catholic Conference, issued a statement to that effect, noting that it was "in line with papal teaching"; Pope John Paul II last year told scientists assembled at the Pontifical Academy of Sciences of his "great hope" that genetic engineering could help those afflicted by genetic diseases.

But, as Capron noted, it is probably premature to be taking stands on either somatic or germ-cell engineering in humans. Although alteration of germ cells has been carried out in mice in one admittedly crude experiment (see *Nature* 300, 811; 1982) the only attempt to alter genes in humans — Martin Cline's unauthorized implantation of genes coding for red blood cells in the bone marrow cells of two women with a fatal genetic disorder, an attempt to alter somatic cells — was a dismal failure and a professional disgrace.

If these techniques do become prac-

ticable, however, a restriction of their use to somatic cells would probably rule out effective gene therapy for genetic diseases such as cystic fibrosis, which affect every organ of the body. Even diseases such as diabetes, which affect one organ, could probably be attacked more directly through the germ cells or the zygote.

According to Rifkin and some of the resolution's signers, the danger is that no line can be drawn between eliminating a genetic defect from the human gene pool and eliminating merely undesirable traits. "Indeed, what is to preclude society from deciding that a certain skin color is a disorder?" Rifkin writes in the letter accompanying the resolution.

Capron counters that the "supreme irony" in Rifkin's resolution is that by calling for government regulation in deciding what is acceptable human genetic engineering and what is not, the very danger that Rifkin is warning of — eugenics — is made all the more likely. The government, Capron says, would then be left with the responsibility of deciding which diseases gene therapy could be applied to.

Stephen Budiansky

Data falsification

Innocents and culprits

Washington

ONE of the two committees set up to investigate the noted work of Dr Karl Illmensee of the University of Geneva announced last week that it had found no evidence of fraud. Following charges by members of his own laboratory of irregularities in Illmensee's experimental work (see *Nature* 2 June, p.363), the University of Geneva and the Jackson Laboratory in Bar Harbor, Maine, each appointed external committees to investigate the work. The Bar Harbor committee, chaired by Dr Dorothea Bennett of the Sloan-Kettering Institute for Cancer Research, "searched for evidence of possible fraud and found none". The committee did suggest however, that Illmensee and his collaborator, Dr Peter Hoppe, should repeat the experiments using an experimental design that will yield "unequivocal" results. Meanwhile, the University of Geneva has still not finalized the membership of the international committee of inquiry that is to investigate Illmensee's work in Geneva.

Dr Wilbert Aronow, a prominent cardiologist who last year agreed to disqualify himself from new drug trials amid evidence that he falsified data (see *Nature* 14 April, p.560), was fired last week from Creighton University after an Environmental Protection Agency (EPA) investigation found that studies he had performed for EPA on carbon monoxide were similarly flawed.

The EPA investigators reported "considerable questions" about the validity of Aronow's studies, which have played a critical part in setting the ambient air quality standards for carbon monoxide.

Although the investigators said they "could not resolve the issue of possible falsification of data", they found that raw data had been discarded or lost, adequate records had not been maintained, and experimental controls were poor or non-existent. The only raw data that Aronow was able to produce were from the most recent of 10 carbon monoxide studies Aronow had carried out since 1971. Interviews revealed that no log books had been kept during the experiments and that much of the data had been recorded on "bits of paper" and "looseleaf notepaper".

A revision of the carbon monoxide standard has been pending since 1980. Some EPA officials had wanted to loosen the standard, but Aronow's data — which show adverse health effects of very low levels of carbon monoxide — convinced the agency that it should keep to the 1980 proposal, which differs very little from the standard currently in effect. (The current standard sets a limit of 9 carbon monoxide over an eight-hour average; the proposed revision would allow localities to exceed that limit once a year.)

The EPA investigation, headed by Dr Steven Horvath of the University of California, Santa Barbara, began in April after EPA officials read press accounts of Aronow's voluntary disqualification by the Food and Drug Administration (FDA).

Aronow resigned as chief of the cardiovascular section at the Veterans Administration hospital in Long Beach, California, last summer during the FDA's investigation of his drug trial data. He has been on a one-year appointment at Creighton since then. Stephen Budiansky