sored a full-page ad to this effect, which ran in the *New York Times* on 2 March.

On 6 March a medical delegation, headed by Howard Hiatt, dean of the Harvard School of Public Health, went to Washington to continue pressing the message. That group included Herbert Abrams, chairman of Harvard's department of radiology, Helen Caldicott of Boston's Children's Hospital Medical Center, Jack Geiger of City College of New York, Alexander Leaf of Harvard, Jerome Frank of Johns Hopkins Medical School, and Eric Chivian, the Harvard psychiatrist who arranged the original symposium. At a press conference in Washington, the group made it clear that things had been moving so swiftly they were not quite sure what to do next. Hiatt, for example, told *Science* that before the symposium he had not given much thought to nuclear disasters but he now intended to spend as much time as his duties would allow in spreading the word that, just as with a deadly disease, "prevention is the name of the game."

> . . . the population would be reduced to roving bands competing for food.

The group held meetings later that day with Lloyd Cutler of the White House staff and A. Bessmertnykh of the Soviet Embassy. They eagerly sought advice from the press on how to be featured on television news programs and talked of testifying before congressional committees.

The group appeared to feel that the American public is ripe for receiving their message. Hiatt professed himself amazed at the public response to the February symposium. And Frank, a psychiatrist who has been concerned with arms control for several decades, vouchsafed that "this is the first real spasm of publicity since the bomb shelter program" of the 1950's.

If the doctors are right, we may be on the verge of a full-scale national debate on civil defense the like of which has not been seen since the 1950's. Chivian, for one, believes that although government civil defense policy is now based on evacuation rather than bomb shelters, government thinking on the subject is every bit as simplistic and naïve as it was in the height of the shelter-building era.

Impressed with the response to their symposium, concerned physicians plan as their next move to conduct similar meetings at medical schools in a half-dozen cities around the country. They are now negotiating with a foundation in the hope of getting money for that purpose. And Harvard physicians Herbert Abrams, Bernard Lown, and James Muller are working on a plan to set up meetings on a yearly basis between American, Soviet, and Japanese physicians.

So far, the doctors have not attempted to compare their visions of destruction with the scenarios being mapped out by the federal government's disaster planners. But their stance—that there is no way to deal with nuclear war except to prevent it—highlights the ambivalence of the government's position. On the one hand, the government has made it clear that nuclear war must not be disregarded as a possible eventuality; on the other, civil defense planning is virtually nonexistent. (Chivian says that after the Boston symposium people started calling the Boston civil defense office to ask what they should do in the event of an attack, and were told to "go north.")

Science called the Federal Emergency Management Agency (FEMA), the new agency that houses civil defense, to find out what government planners had to say about the doctors' contentions. The reaction at FEMA, which is heavily populated by former career military men, is that the doctors are being naïve in thinking prevention is the only way out. Fred Haase of FEMA's Plans and Preparedness division said, "If you want to look at the worst side of things, sure it can be bad. . . . A nuclear attack would be a real catastrophe, no doubt about that . . . but if you take the worst situation, a lot of people are still going to survive." Nuclear war, in other words, has to be reckoned with as a possibility. "The name of the game," according to Haase, "is the country that can plan now for survival and recovery is the one that's going to fare best in the long run."

The FEMA world view is thus radically different from that of the Physicians for Social Responsibility, and the top policy-makers in the government come out somewhere in between (judged by Cutler's remark at the White House as quoted by Chivian: "Nuclear war should be prevented at all costs—if possible"). The result is that civil defense planning is, as Haase says, in "shambles." There

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Gasohol: A Choice That May Buy Grief

It takes about one-quarter of an acre of cropland to provide food for the average person in the Third World. It would take almost 8 acres to grow enough grain to run an average American automobile entirely on grain-derived ethanol.

Would an American citizen drive his car at direct expense to the nutrition of people elsewhere? That the question can even be raised is the result of the national goal announced by President Carter in January 1980 to produce 500 million gallons of ethanol a year by the end of 1981. Once the distillery capacity for such a production volume is in place, a direct and possibly permanent link will have been created between the world markets for food and for liquid fuels.

The consequences of forging this awesome chain have been explored by Lester Brown of the Worldwatch Institute in Washington, D.C. "The price of oil could eventually set the price of food," is Brown's conclusion. As the United States and other agricultural producers develop the means to convert crops to fuel alcohol, farmers will have the choice of producing food for people or fuel for cars, and in the absence of government controls are likely to do whichever is more profitable. "The stage is set for direct competition between the affluent minority, who own the world's automobiles, and the poorest segments of humanity, for whom getting enough food to stay alive is already a struggle," Brown concludes in a new report.*

Proponents of gasohol, who have built a powerful lobby among farm state senators, contend that alcohol production from corn will not reduce the amount of food available because the protein content of the corn is untouched and can be fed to livestock. Brown observes that starch is also a valuable component of food. In any event, he believes, the worldwide use of crops for energy is "certain to drive food prices upward, thus leading to more severe malnutrition among the poor."

A year ago the Administration's

**Food or Fuel: New Competition for the World's Cropland.* Lester R. Brown. Worldwatch Institute, 1776 Massachusetts Avenue, NW, Washington D.C. 20036. $2.

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gasohol policy was one designed to avoid any entanglement with the food supply. "Through the mid-1980's there appear to be sufficient surplus and waste raw materials to meet any realistic projected level of alcohol production. . . . There does not now appear to be a need to grow additional crops for alcohol production," concluded a Department of Energy review published in June 1979. Cheese whey, citrus wastes, and distressed crops would supply feedstock to distill 660 million gallons of ethanol a year.

In the wake of the January 1980 embargo on Russian grain sales, however, Administration spokesmen talked explicitly of converting the grain to ethanol, and announced plans to increase distillery capacity. These plans had been in preparation before the Russian invasion of Afghanistan, presumably in response to pressure from the gasohol lobby.

What will the distilleries use for feedstock? The embargoed Russian grain is not sitting in a big heap in Kansas: apart from one Administration purchase, the grain is still in private hands, and may yet be sold on world markets. The DOE calculation that 660 million gallons of ethanol could be obtained from wastes and spoiled crops is regarded as a gross overestimate in the Department of Agriculture. It seems likely that the new distilleries will use corn, and world food supply will be the less.

UC–San Diego May Hire Hand That Feeds It

The directorship of the National Science Foundation may soon fall vacant if the present incumbent, Richard Atkinson, accepts the chancellorship of the University of California–San Diego, a post for which he is rumored to be the leader among two contenders.

Atkinson's acceptance would mark the triumph of hope over experience in that he would once again be succeeding William McElroy, his predecessor as director of the NSF. As chancellor of the San Diego campus, McElroy suffered a vote of no confidence from the academic senate for failing to consult with the faculty as much as the faculty would have liked. A few months after the episode he announced he would step down as chancellor and join the faculty.

The search committee is reported to have named two finalists, Atkinson and anthropologist Robert M. Adams of the University of Chicago. The winner will be announced on 21 March after a meeting of the University of California's board of regents. Atkinson is favored because of his bureaucratic experience and Washington ties.

Why does UC–San Diego have so insatiable an appetite for NSF directors as chancellor-fodder? The university is among the top five recipients of federal research grants, taking in some $120 million this year. "It would be wrong to say we get this because of McElroy, but it is to our advantage to have someone who can maintain an open line to Washington and who is knowledgeable about the workings of the federal granting agencies," says a campus official.

The RAC of Judgment

Is it permitted to clone the exotoxin of *Pseudomonas* in *Escherichia coli* K12? The NIH guidelines on recombinant DNA exempt from their purview experiments with the genes of bacteria which exchange genes naturally, as *Pseudomonas* and *E. coli* do. On the other hand the guidelines prohibit altogether the cloning of genes specifying a potent toxin. So is the experiment in question exempt or prohibited?

Such is the nature of the judgments now demanded of the group that wrote the guidelines, the NIH's Recombinant DNA Advisory Committee. Dealing at one moment with the jots and tittles of the law, at another with concepts of philosophical fogginess, the RAC struggles to produce decisions that keep abreast of the rapidly evolving world of genetic manipulation. At its meeting this month, much of the RAC's agenda was created by impending commercialization of recombinant DNA activities. Should the Occupational Safety and Health Administration be asked to set regulations for factory workers handling gene spliced organisms? Or should RAC do it? Or should such activities be considered as no more than a minor part of the fermentation industry?

RAC discussed further the guidelines for large-scale activities which it has in preparation. It also considered a voluntary application from the San Francisco firm Genentech to conduct commercial-scale production of human proinsulin, the hormone thymosin alpha-1, somatostatin, and the human insulin A and B chains, each in quantities of up to 750 liters.

As for cloning *Pseudomonas* exotoxin in *E. coli*, the committee decided that since the toxin is not potent, the experiment should be considered exempt from the guidelines.

Sakharov Expulsion Averted

The March meeting in Moscow of the Soviet Academy of Sciences has come and gone without the question of expelling Andrei D. Sakharov even being raised. Sakharov, exiled to Gorki in the wake of the Afghanistan invasion, had not been invited to the meeting, an omission which raised fears that an attempt would be made by the Soviet authorities to contrive his expulsion.

According to the rumor in Moscow, the president of the Academy was asked by political authorities if Sakharov could be expelled but replied that there was no hope of obtaining the necessary two-thirds majority of members voting in secret ballot, the *New York Times*'s Moscow correspondent reported.

The Academy has often shown a degree of independence from authority where its most vital interests are concerned; it refused to expel Nicolai Vavilov after his unsuccessful struggle with Lysenko. Appeals by Sakharov's wife Yelena Bonner and by groups in the West may perhaps have also been noted by Academy members.

Sakharov was not expelled from the Academy as feared, but his situation is still a matter of active concern to scientists in Western countries. A request to scientists in the United States and abroad to observe a 6-month boycott of official scientific interchange with the Soviet Union is being launched by Scientists for Orlov and Shcharanksy. Unless Sakharov is released, the proposed boycott would last from May until November this year. Nearly 2000 members of the American Physical Society recently signed a statement expressing concern over Sakharov's situation.

—*Nicholas Wade*