Health Effects Institute Links Adversaries

Automobile companies and EPA are joint sponsors of research to sort out health effects of air pollution

Pacific Grove, California—An unusual group of auto executives, federal officials, and scientists met here recently at the ocean retreat of Asilomar to discuss air pollution. They convened at the behest of the Health Effects Institute (HEI) of Cambridge, Massachusetts, an ambitious outfit created in 1980 to bring together adversaries in the field of air pollution and to fund research.

The conference-goers seemed to agree on at least one point, that the science in federal air quality documents is murky and needs cleaning just as much as the air. Many attendees seemed to think the government has overstated the hazards of low-level air pollution. (No one from an environmental group was present to argue the opposite view, however.)

Most of the talks dealt not with policy but with the substance of research, describing how airborne chemicals affect human health. HEI began making grants only a year ago, so most of the projects are still under way. Nevertheless, several speakers promised results in the offing. Some of the projects that could soon have an impact are:

- A major study, at four labs, to examine the claim that very low levels of carbon monoxide increase angina.
- Development of a technique that might make it possible to identify emphysema victims at a very early stage, long before symptoms appear.
- The investigation of nitrogen dioxide as an agent that increases one's susceptibility to viral infections.
- A search for ways of identifying people who may be unusually susceptible to injury by air pollutants.
- The study of animal carcinogens in diesel exhaust, including a highly potent one recently removed from a copy machine toner compound, 2-nitropyrene.

If things work as planned, the various research findings will be accepted readily by government and industry once they are finished, for they will have to clear many quality control points. Before data are released, reports will be vetted by HEI's review group* and critiqued by the sponsors—auto companies and the Environmental Protection Agency (EPA). The final reports will be published together with a chapter of "translation" written by the review committee, which will interpret the data for the rest of the world.

The institute is the brainchild of a former executive at the Cummins Engine Company, Charles Powers, and EPA officials who wanted to reduce the acrimony in discussions of clean air standards. Powers, the original director of HEI's staff, now has become president of a clone organization, Clean Sites of Alexandria, Virginia. It aims to play a similar role in mediating toxic dump controversies. At HEI, Powers has been succeeded by Thomas Grumbly, a former congressional aide and assistant to Stanford University president Donald Kennedy when Kennedy was commissioner of the Food and Drug Administration.

The original plan was to raise research funds from the auto companies and the government and to bring industry scientists and academics together for quiet discussions such as this one—HEI's second annual meeting at Asilomar. HEI plans to spend about $6 million a year, $5 million of it on basic research. Half comes from the EPA and the other half from dues paid by all companies selling cars in the United States, including foreign manufacturers. The spur that encourages contributions is a section of the 1977 amendments to the Clean Air Act requiring the manufacturers to study and report on "unregulated" pollutants. The car makers and the government have agreed to give this task to HEI.

Establishing credibility for unbiased research will be the key.

In order to succeed, HEI must be credible. For this reason, the founders recruited an eminently credible board of directors. Archibald Cox, the Watergate prosecutor who proved so difficult to dismiss, is the chairman. The other directors are William Baker, former chief of the Bell Laboratories, and Donald Kennedy. The institute has further insulated its scientists from pressure by entrusting sensitive decisions to two independent committees, one that creates the research agenda and another that reviews finished work.

"We are now beginning to have the kind of debate that everyone agreed we should have had a decade ago," said Douglas Costle, administrator of the EPA under President Carter. Appearing on a panel with several other policymakers, Costle said that regulations under the Clean Air Act always have drawn from "a very weak intellectual bank account."

According to Costle, Congress set detailed rules and deadlines that put regulators in "constant collision with the facts." He also gave what he called a "true confession," saying that as EPA chief he made the decision to relax the ozone standard in part to "show that the EPA can change its mind . . . that the standards are not set in concrete."

Christopher DeMuth, director of the regulatory review shop in the Reagan Administration's Office of Management and Budget until last year, was predictably harsher on the system. He said politicians often try to add authority to their views by seasoning them with a little science, even when the science is weak. Some of the data used by Costle in the carbon monoxide and ozone decisions now appear to have been flatly "wrong," according to DeMuth. "The puzzlement for me lies in the fact that the use of science by the EPA has been so consistently poor over the years . . . even after gross deficiencies were well understood." It is "no state secret," he concluded, that "in the absence of good scientific information, the pressure is to stick with the status quo." There is "no better hope" for improving the data than HEI, DeMuth said, but the question remains, will anyone use its work?

One test of HEI's mettle is a project known as the "multicenter study" on carbon monoxide, due to be finished in a year. According to Grumbly and others at HEI, the case began several years ago when crucial data on carbon monoxide collected over many years and used in EPA's air quality standard began to "disintegrate." Reports that men with angina were likely to see their condition worsen if they were exposed even to very low levels of carbon monoxide were challenged when data could not be veri-

*The Research Committee is chaired by Walter Rosenblith and includes Joseph Brain, Roger McClellan, Robert Sawyer, John Tukey, and Gerald Wogan. The Review Committee is chaired by Robert Levy and includes Gareth Green, Millicent Higgins, Paul Meier, Sheldon Murphy, and Arthur Upton.

fied because they were lost in a move.

EPA officials, including former administrator William D. Ruckelshaus, make it plain that the HEI is meant to bring order out of chaos in carbon monoxide research. This is HEI's first and most important task. The EPA seems less concerned about the nature of the results than determined to get data it can trust. Meanwhile, the auto company sponsors hope that HEI will find that the angina danger has been overblown. If HEI's work does not help relax EPA standards, the companies hope it will at least discourage the EPA from tightening them.

HEI unavoidably will be pressured to cut its science to fit a pattern. But the problems are likely to arise less in the context of a particular topic than in the overall plan of research. Some tensions of this sort appeared at the annual meeting. Both EPA and auto company officials spoke about the need to shift the research plan in new directions, in each case to satisfy some immediate needs.

The companies are worried about a move to require "on-board" devices that would prevent vapors from escaping from the gas tank during fueling. And the EPA is eager to get information on formaldehyde, a problem chemical that has raised its head in other parts of the agency. Neither the government nor the companies seemed particularly eager to follow through on the diesel research that was so urgently requested a couple of years ago. General Motors has bowed out of the diesel market, and, contrary to forecasts only a few years old, there will be no diesel boom. Yet the research begun earlier is now beginning to produce results.

Several members of HEI's research committee spoke out, making it clear they were not willing to follow anyone's bandwagon. Faddishness and inconstancy, after all, are exactly the problems that bedevil government-sponsored programs. And HEI's leaders say they will not be deflected from their deliberate plans for carrying out research which they think is important, although they do poll sponsors to adjust their priorities.

Auto executives and EPA officials who were asked about HEI's value agreed that it has already shown itself capable of recruiting excellent researchers and setting very high standards. The EPA has pledged funding through 1988, and the auto companies are likely to keep up their side of the game at least that long. So the real test of the institute will come in the next year or two, as results come out and as regulators and manufacturers will have to act on them or ignore them.—**ELIOT MARSHALL**

OTA Says African Aid Focuses on Wrong People

A congressional research office, arguing that the food problems in sub-Saharan Africa will almost certainly worsen in the next few years, has advocated a shift in the focus of agricultural policies in the region toward helping small-scale, subsistence-level farmers and herders. Such producers have largely been ignored by both national governments and foreign assistance programs, according to a report by the Office of Technology Assessment (OTA).*

The study notes that Africa is the only major region of the world where per capita food production has declined over the past two decades, a consequence of high population growth rates and stagnant food production. These underlying trends will continue to cause food shortfalls in the region well after the current drought-induced crisis ends.

Focusing assistance on many low-income small farmers is a far more difficult task than concentrating on raising the productivity of a few larger producers, however. In particular, it requires better developed research and extension programs both to develop the appropriate technologies and to transfer them to the field.

The OTA study notes that these services are generally a very weak link in the chain of technological change in African agriculture. Similarly, the directors of international agricultural research centers who met in Washington in late January identified the generally underdeveloped state of national agricultural research and extension services as a major barrier to the transfer of new technologies from the centers to farmers (*Science*, 8 February, p. 616).

Consequently, OTA recommends that the United States increase its support to indigenous African universities and research centers and encourage programs in which farmers, herders, extension agents, and agricultural research workers are involved.

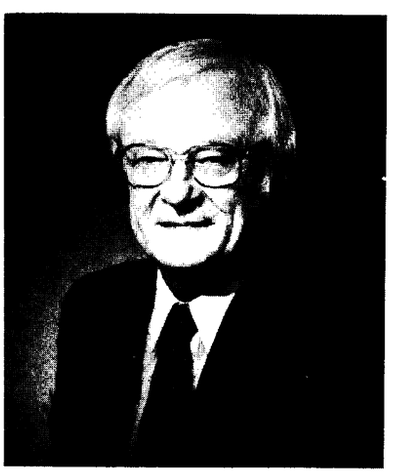
In general, the OTA study also argues that U.S. assistance to sub-Saharan Africa has been too crisis-oriented and has lacked clear and consistent goals. It emphasizes that long-term, consistent support, which is not buffeted around by shifting political winds in Washington, will be needed to make any inroads into Africa's food production problems.—**COLIN NORMAN**

**Africa Tomorrow: Issues in Technology, Agriculture and Foreign Aid* (Office of Technology Assessment, Washington, D.C. 20510).

National Science Board Seeks New Role

The National Science Board, the top policy-making body of the National Science Foundation (NSF), is attempting to shed some of its detailed responsibilities in order to involve itself more deeply in NSF and national science policy. It also intends to pay more attention to science education and human resource issues.

The board, whose statutory responsibilities include overseeing NSF programs and providing an independent source of advice on science policy,



Roland Schmitt

has never been a major player in Washington politics. This stems in part from a legal requirement that it must approve every NSF grant larger than $500,000 a year or which totals more than $2 million, a responsibility that takes up a large amount of the board's time. Equally important, by the time a project reaches the board for approval, it is generally too late for the board to exercise much influence on its substance.

Consequently, at its meeting last month, the board agreed to ask Congress to give it the power to delegate