Science Copes With Public Confidence, Condemnation

BY LARRY BUSH
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During 1975 science and technology continued to regain prestige and public favor locally and ultimately following a decline of public acceptance and interest in the late 1960s.

Nationwide, and at the U-M, more students enrolled in science and engineering courses during the year than at any time since the enrollment slump in the early part of this decade.

The U-M received a record total of $91.4 million in research dollars in fiscal 1975 as compared to $91.1 million in fiscal 1974, and even though inflation cut the gain in something like 10 million in constant dollars, it continued a record.

Ann Arbor's science-based industry also was on the cutthrush trail after a sharp decline of a few years back. At year's end, it looked like Ann Arbor could hang onto its turnabout title of "Research Center of the Midwest."

Employment in science and technology, which has been a mainstay of the area's economy in recent years, was also on the increase in the many government and foundation laboratories of the local community.

A 5 per cent increase in graduate science and engineering enrollment in the nation's colleges in 1974, as reported by the National Science Foundation, appeared on the way to being matched if not exceeded in 1975.

Locally, the annual Southeastern Michigan Science Fair for junior and senior high school students last April at the U-M drew the most participants it has drawn since 1965.

This appeared to be another indication that young people, at least, were taking more interest in science and scientific careers.

Meanwhile, scientists and engineers made progress during the year in their research battle against disease — and in providing better things for better living.

While scientists didn't come up with a cure for cancer, for example, considerable progress was made in 1975 in developing new forms of treatment and providing doctors with tools for early detection.

As a result, at the year's end the American Cancer Society reported that "cancer deaths would be leveling off, or even going down if there was no lung cancer. In other types of cancer there was a leveling off or a decline as a result of medical science advances.

In the quest for more knowledge, which may or may not have immediate visible material benefits, scientists also made headway during the year.

Two U.S. Viking space craft, carrying equipment built in Ann Arbor by Bendix Aerospace Systems Division, were launched this past summer on a year-long trip to Mars in the first effort to detect possible life on the "red" planet. In addition to gathering other information.

There were also advances too numerous to mention in high energy and upper atmosphere physics, astronomy, chemistry and other basic science areas, including some on the local scene.

But even though more dollars flowed into university, government and industrial research in 1975, and despite an apparent renewed public confidence in the benefits of science, there also was controversy over and condemnation of some of the fruits of science and technology which appeared to be a threat as well as a blessing.

Among the fruits of science that became highly controversial during the year were the household convenience aerosol sprays, the [illegible] (PCB) chemicals that scientists developed to improve manufactured products, and nuclear fusion power plants which were to be a solution to the energy crisis.

In each case the issue of threats to the environment and human health was raised, and Ann Arbor didn't escape the controversy over them that reached a peak nationwide in 1975.

The fluorocarbon (Freon) gas that propels paint, deodorants, etc., from containers with the press of a finger was said to be seeping to the stratosphere to destroy the protective ozone layer. As a result, the incidence of skin cancer would increase dramatically, climatic changes harmful to the world's food production might occur, and genetic mutations could take place, some were saying.

As for PCB's, there was good scientific evidence, much of which came out of the U.S. Department of Interior's Great Lakes Laboratory in Ann Arbor, that the chemical was dramatically interfering with reproduction of Great Lakes fish and paving a health hazard to those who eat them.

Nuclear power generation also was charged to be paving a health threat to humans through radioactive releases in the event of a power plant accident and through transportation of nuclear fuels to the plants.

In each case, there was a strong voice raised in support of a total ban to eliminate them from the scene to what some were saying was a threat to the human race and the environment.

At the same time there were those who pointed out in this year of controversy that such bans could result in the loss of jobs for many and cause economic and sociological stress. They advocated going slow until all the evidence was in.

Dr. Ralph J. Cicerone, a scientist at the U-M Space Physics Laboratory, who mathematically calculated a timetable on ozone destruction from spray can gas, was busy throughout the year testifying before legislative and congressional committees and speaking about the threat.

His calculations were given a boost on Dec. 12 when the National Science Foundation reported that Dr. David C. Murray, a University of Denver physicist, had made measurements on the stratosphere over New Mexico by balloon which showed that fluorocarbon levels have more than doubled since 1968.

This represents an average annual increase of 14 per cent, or about the same as the annual increase in fluorocarbon use here on earth. If as Cicerone and some other scientists think, increased levels of the gas will begin destroying ozone faster than it is produced, the suspected health threat may be upon us sooner than we think.

The nuclear power plant controversy also was strong at local involvement. Dr. Chihiro Kikuchi, U-M nuclear engineering professor, was one of the most ardent campaigners during 1975 in support of nuclear power, while Mary Sinclair, a lecturer in the University's Residential College, is its strongest opponent in the state. In fact, she was with consumer advocate Ralph Nader for that title in the nation.

Ann Arbor's KMS Fusion, however, could bring a rapid end to that controversy with a breakthrough in its scientific research aimed at developing safe, clean, non-polluting and substantial nuclear fusion power. Fusion power which is based on harnessing the energy produced in a hydrogen bomb explosion, unlike present nuclear fission power, would not pose a threat to human health and the environment.

The year 1975 was a year of progress in developing fusion power, with KMS Fusion receiving its first federal support to the total of $[illegible] in February and an additional $[illegible] in June. Repeatedly this year's progress and funding will aid in producing that long awaited breakthrough in 1976.

In summary, it will have to be scientists and engineers who will solve the problems of scientific [illegible] that may have backfired to the [illegible] of the human race. Fusion research is one example, and the renewed public interest in and support of science and technology should help solve such problems.

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