the hearing was that Don Brown and I were arguing against public involvement. That simply is not so. I certainly thought that I was taking a very pro-public involvement position."

It all comes back to the issue of just what public involvement means. Cohen believes the wide publicity given Asilomar constitutes public involvement. "The deferral of the experiments was to allow time for public reaction," he says. And he maintains there was public participation at the Asilomar conference itself, although he concedes that the high ratio of scientists to laymen could be a point of dispute. Cohen suggests that the way we handle radioisotopes in this country is a good model of what public involvement should be.

> . . . radioisotope use is subject to regulations designed to ensure the safety of laboratory personnel and the general public, and there is public involvement in the enforcement of these safety procedures. However, the merit or lack of merit of specific experiments that employ radioactive materials is entirely a scientific judgment that is determined by the peer review system.

Brown, too, leaned heavily on the virtues of peer review in his testimony, arguing that, whereas the public should participate in decisions about the application of scientific advances, only scientists themselves are qualified to direct research itself and recognize inherent problems. "Scientists have the special knowledge to recognize potential hazards of their research and to devise constructive solutions."

While it may be true that only scientists have the technical expertise to carry out certain types of experiments and to make judgments about the technology necessary to contain hazardous material, it is not true that only scientists have the intelligence to comprehend the general nature of the research and its social implications. Scientists hiding behind the jargon of the laboratory were, in part, the targets of testimony from Gaylin and Holman.

Gaylin, who stated at the outset that Asilomar was important only as it represented a "class of problems" involving science and society, challenged the position that, because science has been so successful in the past, it must therefore be left alone.

> . . . success has no claims on freedom. Quite the opposite. Success in the service of society may gain profit and prestige but never autonomy. The more a service ceases to be trivial and incidental, the more it becomes essential to the values or the survival of a society, the more restricted becomes its autonomy.

Gaylin also disputed the position, taken by Cohen and Brown, that the issues at Asilomar were properly ones of biological containment and safety. "Because an issue arises within the territory of science, is couched in the technology of science, and phrased with the language of science, [that] does not make it a scientific issue."

Holman, in his testimony, said that the actions of the Asilomar organizers were "perceptive and sensitive," but he was firm in his view that "actions taken by scientists alone are not sufficient." (It is reasonable to presume that Holman's position influenced Kennedy's Harvard remarks that Asilomar was not adequate.) Holman attacked the tyranny of governance by experts and declared that, by leaving the public out, major social relationships among the institutions of society could be threatened. He warned that "When knowledge is treated as a private possession . . . the public remains ignorant and may become apathetic or hostile."

Holman, who proposed the creation of some sort of national commission to oversee science, suggested that the model of informed consent as it applies to human experimentation is valid for basic research as well. The public, he maintained, has a right to give its informed consent to scientific experimentation. In an interview a few weeks after the hearings, he suggested that one device for letting the public in on research would be to require universities to hold public discussions about work going on at their campuses. In his opinion, such discussions at Stanford, which began out of concerns about the relationship of the engineering faculty to the Vietnam war effort, have led to a number of new, interdisciplinary courses that are quite worthwhile.

The question now in many minds is whether there should be a second Asilomar. Perhaps one should have been planned in the first place. Cohen emphasized in his testimony that questions associated with "ethical and religious issues of human experimentation . . . are quite peripheral to the biological safety questions considered at Asilomar." But it is the ethical and moral questions that concern the public. It has been said that there simply was not time for the Asilomar conferees to deal with both the technological and the social aspects of problems of recombinant DNA. Maybe so. But it is for this that they are being implicitly attacked. And it is the social problems that Kennedy is going to address, and for which he may propose legislative solutions. —BARBARA J. CULLITON

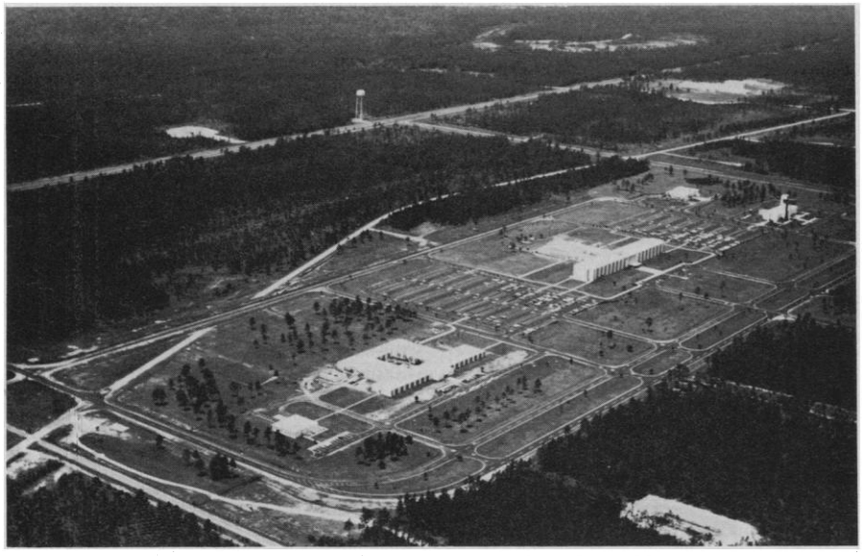
Navy Oceanographic Move: Renewal or Disaster for Basic Research?

The Navy, in recent months, has become embroiled in a dispute with its own oceanographers, with a number of prominent university scientists, and several members of Congress over a proposal to move 80 percent of its oceanographic activities from the Washington, D.C., area to a nearly empty group of federal laboratories in Bay Saint Louis, Mississippi. The site happens to be in the home state of Senator John Stennis, the Democrat who is chairman of the Senate Armed Services Committee and thus wields great power over the military budget.

The Oceanographer of the Navy, Rear Admiral J. Edward Snyder, put forward the proposal in draft form to the Secretary of the Navy last February. Snyder, the proposal's chief advocate, argues that the site—which was built as part of the space program but never occupied—can become a worldwide "center of excellence" in oceanography and revitalize Navy's programs, which have declined in recent years.

But the proposal ran into fierce opposition from university oceanographers. Under Snyder's plan, the 30-man oceanography section of the Office of Naval Research (ONR), which now supports basic research in 50 universities around the country, would be towed to Mississippi along with bigger applied research and operational offices. The basic oceanography work of ONR, opponents fear, will be swallowed up by these other groups.

Also, the oceanographers say that the move could be a first step in the dismantling of ONR, which is, from their vantage point, the country's most sacrosanct sponsor of basic science. The ONR was founded in 1946 to advance basic work in physics, chemistry, oceanography, and other disciplines—and it largely taught the



Proposed Navy oceanographic center at Bay Saint Louis, Mississippi.

government how to play that game. It served as the model for the National Science Foundation when it was founded in 1951. Today ONR's budget is around $115 million, of which some $17 million would be moved to Mississippi.

The proposal has also been labeled by critics a pork-barrel project for Stennis. In addition, many of the blacks among the 1281 Navy employees, who would move from the Washington, D.C., area, have protested that they do not relish the prospect of a transfer to a rural site in the Deep South. Bay Saint Louis is a tiny, marshland community which now houses some employees of some other federal agencies, about an hour's drive north along the coast from New Orleans. The Navy describes the site (*see illustration*) as having a "campus-like" atmosphere, but employees opposed to the move call the place a social and cultural backwater.

All these objections have caused a stir in Congress—an institution with interests of its own in the siting of federal facilities. The Navy has not requested any money from Congress for the move; nonetheless, Senator Charles McC. Mathias (R–Md.) has announced that the Senate Appropriations Committee will investigate the hidden and future costs of the move. And, at the urging of another congressional opponent, Charles Mosher (R–Ohio), the oceanography subcommittee of the House Committee on Merchant Marine and Fisheries held a full-dress hearing on the matter on 4 June—at which the director of the ONR oceanography group, Gordon Hamilton, testified that it would be "a disaster." The subcommittee plans a stiff letter to the Pentagon saying that the ONR oceanography group should not move.

At present, however, it looks as though the Navy's proposed move will indeed go through. However, the Navy has revised its plan to say that the ONR oceanography group's move will be delayed by 1 year. The announcement has led some observers to suspect that it may be a prelude to the Navy's backing down and leaving the 30-man office in Washington.

At present, the Secretary of the Navy has asked Snyder to study the proposal more closely and to come back with a final version in the next month or so. Snyder, for his part, is adamant that the proposed move to Bay Saint Louis will help, not hurt, basic research. "For $7 million I can make that center the greatest ocean science center in the world," he says. "There's nowhere else in the country I can do that."

The Navy has been under pressure to consolidate its oceanographic activities since 1966 when a panel of the President's Science Advisory Committee, (PSAC), headed by Gordon J. F. MacDonald, accused them of being badly disorganized. As a result, the Navy created the post of Oceanographer to coordinate work within the Navy and coordinate Navy activities with those of other agencies. A second form of pressure has come from congressional committees which have urged the armed services, particularly the Navy, to spread their largesse beyond Washington. Paradoxically then, the Navy has been told both to consolidate its oceanographic work and move some of its facilities out of the Washington area. Navy spokesmen claim that the Bay Saint Louis proposal accomplishes both ends.

According to the proposal, most of the work at the new center would be that of the entire, 1200-person Naval Oceanographic Office, better known as Navoceano. This group reports to the Oceanographer and is distinct from ONR. Its job is to know everything about ocean conditions all over the world—the sea floor, the water column, the air-sea interface. Navoceano maintains giant computerized data banks, 90 percent of which are unclassified, which it gives upon request to the fleet and to contractors designing new weapons, boats, and submarines. Navoceano is an important, but low-level part of Navy operations. As for the oceanography it performs, one academic oceanographer termed it "quite pedestrian."

The rest of the proposed center would be a so-called "laboratory" made up of three ONR offices now in the Washington area, which now have little to do with Navoceano. One office, the Long Range Acoustic Propagation Project, funds applied contract research in universities, industry, and think tanks. The second office is a smaller one, the Acoustic Environment Support Detachment, which makes applied, in-house studies of the impact of ocean conditions on sound propagation.

But it is the third piece of ONR which would move to Mississippi that has stirred up all the hoopla. This is ONR's unclassified Ocean Science and Technology Division—better known as "Code 480"—which supports basic research in oceanography at many universities and at the country's leading oceanographic institutions such as Scripps Institution of Oceanography and Woods Hole Oceanographic Institution. The "Code 480" group spends approximately $17 million a year on research—an amount roughly equal to the price of one of the Navy's 334 planned F-14 fighter planes.

One prominent university oceanographer, John V. Byrne, Dean of the School of Oceanography at Oregon State University, explains why he, like others, began lobbying Congress several months ago to oppose the move to Bay Saint Louis. "Most of the oceanographic institutions in the country owe their existence to ONR" Byrne says, even though today his school, like many others, gets at least as much money from the NSF and the National Oceanic and Atmospheric Administration's (NOAA) Sea Grant program, as from ONR's "Code 480." Nonetheless, the fate of "Code 480" and ONR is a precious issue to people at these institutions. "I guess we have more than just a financial interest in it," he says.

One objection raised by the oceanographers is that coordination of ship time and research work between Navy, NSF, and NOAA, which now goes on on a daily basis in Washington, would be hampered by the move to distant Mississippi.

A more central objection of opponents is

that the applied work at this "center of excellence" will gobble up funds that now go to "Code 480" projects. As one said: "The crux of the matter is that there has never been a successful laboratory that has an in-house and an external program. They [in Bay Saint Louis] will set up initially with an in-house and an external research program, but in the first reorganization in a year or so the boundary will be eliminated and the guards to protect basic research will break down."

There is rumor that Roy Gaul, director of the Long Range Acoustic Propagation Project, is the leading candidate to direct the new center. University oceanographers know Gaul primarily as an applied research man who is an unknown quantity in terms of his interest in protecting basic research. Gaul refused to comment on the possibility. Snyder said that the job of directing the facility was at the moment so ill-defined that no individual is under consideration for the job.

These fears for the future may or may not prove well founded. There are those within the Navy and among its long-term scientific advisers who believe that the move would not be such a bad thing after all.

One scientist close to Navy decision-making says that a move to the district of any powerful member of Congress could benefit oceanography and basic research. He claims that lack of congressional champions is one reason that oceanography and basic research have been chronically weak when competing against other Navy projects (such as acoustic applications, aircraft carriers, and the Trident submarine) for funds and facilities. According to this logic, the proposal to move to Bay Saint Louis is less political pork for Stennis than a bid for power within the Navy bureaucracy by one part of the Navy which is friendly to oceanography. "Oceanography has no defenders in the Navy because oceanographers are stupid," he says. "They haven't played their political cards right." This reasoning, of course, does not justify relocating to rural Mississippi—but it does offer a counter to the cries of doom of the university oceanographers.

Snyder says that he has recently added some "checks and balances" to his proposal to assure that the "Code 480" program for basic science will remain protected. "The basic research money necessary to the vitality of the future Navy must be protected against everyday attempts to solve today's crises," he says. Hence, some "Code 480" staff will remain in Washington, and policy, as well as coordination with NSF and NOAA, will be conducted from Washington. Moreover, the "Code 480" group in Mississippi will continue to report to the chief of Naval Research and head of ONR, Rear Admiral M. D. Van Orden, just as it does now. But as the skepticism of some university oceanographers and certain members of Congress indicates, Snyder has a chore ahead persuading doubters that the move to Bay Saint Louis—however checked and balanced—is indeed the best way for the Navy to conduct basic oceanographic research.—DEBORAH SHAPLEY

American University in Beirut: Walking a Precarious Line

Beirut.—The beleaguered republic of Lebanon has been flirting with civil war for more than a month. Since early April, Palestinian refugees have clashed in the streets, killing more than 430 people and paralyzing the Middle East's most sophisticated capital and financial nerve center.

During the fighting, the American University of Beirut (AUB), plagued in recent years by political strife and student unrest, has been uncharacteristically serene. The campus' peaceful veneer, however, is deceptive. For some time now the university, which has produced many of the Middle East's most eminent Arab leaders and dissenters, has been struggling to survive.

Beirut's American University has been the United States' most visible and influential educational and cultural center in the Middle East for more than a century. Founded by American missionaries in 1866 as the Syrian Protestant College, it has awarded some 20,000 degrees. Its alumni include 3 Arab presidents, 10 prime ministers, more than 30 cabinet ministers, and 35 ambassadors. But in important ways AUB's stature is fast becoming a liability. While Arab faculty members insist that maintaining a large American presence in the university is its best assurance of continued autonomy, a growing number of student dissidents and local politicians see AUB as an anachronistic symbol of American paternalism.

A bitter and divisive student strike last year over tuition increases, coupled with the same kinds of financial problems that afflict universities back home, have contributed to AUB's malaise. Underlying the university's present angst is a fundamental question: Is there still a place for an American university in the Middle East?

The answer is by no means clear. Many of the reasons for which AUB was founded no longer apply now that there are numbers of universities in the Middle East, where once there were few. And in an age of rapid international communications, AUB is no longer the only repository of Western knowledge that it once was. Nevertheless, AUB remains an unparalleled center of academic excellence in this part of the world and is one of the few universities where students and faculty can freely debate controversial political issues.

The American University introduced American-style education to the Middle East: small classes, high faculty-to-student ratios, and modern teaching methods that emphasize independent thought and individual autonomy. The private, nonsectarian college that began with 16 undergraduates a century ago now has an enrollment of more than 5000 students. It occupies 80 buildings, including an enormous medical complex, on 73 acres of some of the most beautiful and expensive land in the heart of Beirut. Situated majestically in foothills overlooking the Mediterranean, set against a backdrop of snow-capped mountains, abounding in exotic trees and brightly colored flowers, AUB's beauty belies the university's precarious economic health.

Like universities in the United States, AUB is caught in a severe financial squeeze that stems from past expansion and current financial vagaries beyond the university's control. This year, the $31,386,000 university budget is expected to fall $2 million short of operating costs and will be $4.7 and $6 million short in the next 2 years. Unless new sources of income are found, AUB's administrators project a $16 million deficit by 1980.

The AUB's largest supporter is the U.S.