THE CANCER RESEARCH EDUCATION CONTROL LETTER

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UNITED APPROACH WITH OTHER HEALTH ADVOCATES NEEDED TO INCREASE CANCER DOLLARS, ROYBAL SAYS

A congressman who plays an important role in determining the size of NCI's annual appropriations has challenged Cancer Program advocates to cooperate with other health forces in a united effort to sell Congress on increased support for all health research.

Edward Roybal (D.-Calif.), a member of the Labor-HEW Appropriations Subcommittee, told members of the Assn. of American Cancer Institutes that "all too often we are lobbied by health scientists who claim their disease is the most important, the most deserving of support. I would like to see health scientists and health lobbyists begin

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In Brief

APPROPRIATIONS HEARINGS SCHEDULED; ZUBROD HEADS AACI, NELSON ELECTED ACCC PRESIDENT

CONGRESSIONAL HEARINGS on NCI appropriations for the 1979 fiscal year are scheduled for later this month and early March. The Senate Labor-HEW Appropriations Subcommittee plans to consider the NIH budget, including NCI, Feb. 22-23; the House subcommittee tentatively has NIH down for sometime between March 2-8. . . . **AACI, ACCC** both elected new officers last week, and Floridians are heading both organizations. Gordon Zubrod, director of the Florida Comprehensive Cancer Center, is president of the Assn. of American Cancer Institutes, suceeding William Shingleton. John Nelson, Jacksonville surgeon, is president of the Assn. of Community Cancer Centers, suceeding Gale Katterhagen. Other AACI officers are Gerald Murphy, vice president and president-elect; Edwin Mirand, re-elected secretary-treasurer; and Timothy Talbot, John Durant and Stephen Carter, board members. Other ACCC officers are Charles Cobau, vice president and president-elect; Abraham Brickner, re-elected secretary, and David Johnson, re-elected treasurer; and Gilbert Friedell, Charles Allen, Edwin Savlov and Thomas Tucker, board members. . . . **DIANE McGRATH** has been named director of cancer control at Duke Univ. Comprehensive Cancer Center, replacing Donald Miller who left to enter private practice in North Carolina. . . . **EDWIN MIRAND**, associate director of Roswell Park Memorial Institute, received an award from the New York Div. of ACS for his role in development of a curriculum for teaching students about the nature of cancer and ways in which it can be prevented . . . . **NEW PUBLICATIONS**, both by UICC: "Lung Cancer Prevention—Guidelines for Smoking Control," and "International Catalogue of Films, Filmstrips & Slides on Public Education about Cancer." The first is free, except for a small handling charge for orders of more than one copy. The second is available for $10. Order from UICC, Managing Editor, 3 rue du Conseil-General, 1205 Geneva, Switzerland.

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ROYBAL PREDICTS NO CHANGES IN ACT THIS SESSION OF CONGRESS, OR NEXT

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a united effort for health research allocations. Isn't it logical to ask health scientists to get together and present to the committee that makes the allocations a united approach?" Roybal spoke at the annual AACI meeting in Los Angeles last week.

Roybal acknowledged that it might be difficult to pull the various health forces together, but pointed out that educators have been able to unite on particular issues with considerable success. He said this has enabled him to win on the floor of the House points which were opposed by the full Appropriations Committee Committee and the subcommittee.

"I have supported the National Cancer Program in the past and you can count on me to support it in the future," Roybal said. "But the ultimate success of government health programs depends almost entirely on health scientists and the health community working together in a spirit of cooperation. It's the one chance one has of gaining more access to the dwindling dollars. I firmly believe you are capable of a coordinated effort. Without it, friends fight friends, discipline fights discipline, and the people suffer.

"I'm confident that we can do something about the menace of cancer if we plan together," Roybal said.

The Los Angeles congressman was critical of health forces for not being more active in educating members of Congress about their programs and their requirements.

"When Nixon vetoed the HEW appropriations bill three years in a row, our committee, it is sad to say, received a total of only 27 letters urging us to override the veto. Of course, we failed to override. Why was there no coordinated effort by the health community encouraging Congress to override? If the bill is vetoed again, unite."

Roybal urged Cancer Program advocates to develop contacts with their congressional representatives. "There are people here that I haven't seen before," he said to the gathering of about 100 center directors and staff members. "It was not too long ago that I met Dr. (Denman) Hammond (director of the LAC/USC Comprehensive Cancer Center). You need to make contact with us if you're going to educate us. It was two years (after the LAC/USC center achieved comprehensive designation) before I met someone from the center, although I represent the downtown area (near which the center is located)."

There are some in Congress who would support a move to cut back NCI's authority when the Cancer Act is renewed, Roybal agreed, but they are not strong enough now to prevail. "I don't believe there will be any change in the Act, in this session or the next one. What will happen when the President takes a stand, I don't know.

"You have friends in Congress. You definitely have friends on the (Labor HEW) appropriations subcommittee. The full committee is something else," Roybal said.

Hammond commented that the Assn. of Community Cancer Centers "has given this staid organization (AACI) a lesson on how to play the political game," referring to the coordinated lobbying effort in Washington last month by ACCC members.

Charles Moertel, Mayo Clinic, asked Roybal, "As you and your colleagues evaluate the accomplishments of cancer centers and the Cancer Program as a whole, what criteria are the most important in making those evaluations?"

"That's the $64 question," said Roybal, who then went into a discussion of legislative procedure and wound up ducking Moertel's question.

R. Lee Clark, Univ. of Texas, told Roybal, "I came here in a pessimistic mood. . . but I'll go away now inspired for future effort. I'm greatly encouraged."

AACI members later approved formation of a policy committee, to develop positions for the association on issues related to the Cancer Program and to cancer centers. The American Cancer Society also has recently established a similar group. Roybal and his colleagues can expect to hear from both in the future.

Whether or not they or any other group involved with the Cancer Program can rally other health advocates into a united approach to Congress is another matter. Hammond asked his colleagues what may be the real $64 question:

"Is it really possible for all of us to get our act together? Just those in the Cancer Program reflect a great variety of interests." Hammond was implying that before Cancer Program constituents and supporters can approach other health forces, they will have to stop fighting among themselves.

AN ONCOLOGY UNIT: ACCC MEMBERS HEAR WHAT IT IS, HOW TO PLAN, START ONE

Advantages of and requirements for an oncology unit in a community hospital were the primary discussion topics at the recent annual meeting of the Assn. of Community Cancer Centers in Washington.

"But before you can start planning an oncology unit, everything else must be in place," said Gale Katterhagen, retiring ACCC president who was instrumental in development of an oncology unit at Tacoma General Hospital. "It must be an offshoot of an effective cancer program. You can't initiate a program with an oncology unit. All components must be well organized first. The oncology unit is an end point, a consequence of the program."

Katterhagen presented this definition of an on-

cology unit: "A designated hospital area which facilitates the team approach to comprehensive cancer care by bringing into close proximity those personnel and facilities necessary for such care. The unit must provide not only for the physical needs of the cancer patient but also for the ongoing emotional, social and spiritual support of the patient and his family."

Minimal hospital resources and services of the existing cancer program required to justify, initiate, and sustain an oncology unit include, Katterhagen said, a cancer committee, tumor registry, tumor board, active medical oncology service, radiation therapy department, surgery department, diagnostic radiology, clinical laboratory, blood component capability, physical therapy department, inhalation/respiratory therapy, social service department with discharge planning, and pastoral care.

Additional components contributing to quality cancer care include:

–Medical/surgical audit
–Detection programs
–Occupational therapist
–Enterostomal therapist
–Hospice association
–Liaison with ACCC, American College of Surgeons approved program, and American Cancer Society.

Characteristics of the oncology unit itself include:

–A specific geographical area of the hospital.
–Specially trained nurses (work with minimum supervision, self starters).
–Medical director of the unit.
–Weekly inservice/staff support meetings (high stress level among staff).
–Social worker assigned to unit.
–Pastoral care (including liaison with community churches).
–Specialized dietary support.
–Education program for physician, nurse, patient and family.
–Conference facilities.

"We're probably where cardiologists were in 1953 or 1955, when they looked at the rapid developments in technology and felt the need for a center within a hospital," Katterhagen said. "It is generally recognized that if cancer patients are located centrally within a hospital, they will receive better care. Chemotherapists and radiotherapists can work more effectively and more efficiently. And the patient's psychological, spiritual and social needs are better met than if they are spread throughout the hospital."

Of all the components of an oncology unit, the key component is the nursing staff," not gadgets, monitors or other equipment," Katterhagen said. "The RN, the LPN, specially trained oncology nurse, self starting, capable of recognizing the physician's needs, the patient's needs and those of his family. That nurse is a special breed."

That kind of work is very stressful, and the drop-out rate is high "as people find it is not their bag," Katterhagen said.

"Not every hospital should have an oncology unit. You must look at your own institution, and determine if you have a program that is maturing. You need a certain volume of cancer patients." While there is no criteria for how many, Katterhagen said, he suggested that between 200 and 300 new cancer patients a year excluding skin cancer would be the minimum.

Summarizing, Katterhagen said that for an oncology unit to succeed, "you must have an existing cancer program, a staff–doctors, nurses, social workers–working together, and working with others in the community. And you can do so much more if you're not too concerned with who gets the credit."

Members of a panel which discussed administrative planning and staffing of the oncology unit included Abraham Brickner, program manager for the Metropolitan Detroit Cancer Control Program; Edward Moorhead, Grand Rapids oncologist who helped organize an oncology unit there; David Michaud, administrator of the Tacoma General Hospital cancer program; Herbert Kerman, radiation oncologist at Halifax Hospital Medical Center in Daytona Beach; Connie Henke, nursing coordinator at the Univ. of Alabama Comprehensive Cancer Center; and Libby Stiff, social worker at the Wilmington, Dela. Medical Center.

Comments by panelists included:

Michaud–The oncology unit budget at Tacoma is $1.5 million, which is 5.5% of the hospital's total operating costs, although cancer patients make up 10-11% of admissions. Total admissions are 2,000, with a total operating budget of $23 million. . . . To establish a new radiotherapy department, a certificate of need was required. "You can use the certificate of need process to promote your programs. . . . Prepare a separate budget for your program. Don't count on cross subsidization. Outside dollars eventually run out. There is no difference in financing a cancer program than any other. We charge the same rates in the oncology unit that we do anywhere else."

Moorhead (subbing for Robert Clarke, who was prevented from leaving Indianapolis by the big storm)–"I could tell you how not to organize an oncology unit. It should not be just another floor in a hospital. It should be a free standing unit of the hospital." . . . The oncology nurse is the heart and soul of the oncology unit. . . . The basic idea behind the oncology unit is to take care of patients in their own communities, and to refer to specialized centers those with special needs the community hospital can't provide.

Stiff (the social worker)–"I'm frequently re-

minded that I'm a guest in the system, and if I'm not careful I'll be sent back to the welfare department where I belong. . . . I'm amazed how doctors can appear to be asleep then ask the most devastating questions. . . . We try to remember there are some things about our patients we don't know. . . . Surgeons are different than medical men. I'm not sure why. There is a reluctance to let other people get inside the heads of their patients. . . . Patients always want to believe in their doctor. The rest of us have to remember, patients want to believe their doctor is good. They also want the nurse to be responsible for their comfort. If they don't get their pain medicine, they blame the nurse, never the doctor, even if the doctor did not order any medication. . . . Social workers like to do mini shrinkism. They say they are better than psychiatrists. Some are, some ain't. The social worker who spends all his time counseling, not doing the nuts and bolts work, is not doing the job."

TAKE INTRAMURAL RESEARCH AWAY FROM PROGRAM DIVISIONS, SAUNDERS SUGGESTS

The reorganization of NCI proposed by Director Arthur Upton, in which the program divisions would (theoretically at least) gain the authority to support their extramural efforts with grants as well as contracts, has generated more concern among Cancer Program constituents than anything else that has happened since 1971.

J. Palmer Saunders, dean of the Univ of Texas Graduate School of Biomedical Sciences at Galveston and director of the cancer center there, was director of the NCI Div. of Cancer Research Resources & Centers until 1974. DCRRC has managed most of NCI's grant supported programs, with branches that are counterparts of programs in the other divisions—immunology, treatment, virology, etc. Under Upton's proposal, those branches would be moved, with their grant portfolios, to the program divisions, although the mechanics of this have yet to be worked out.

Saunders, while not disagreeing totally with the proposal, had some reservations about certain aspects. The most serious of these, he said, was the prospect that NCI staff members who now manage intramural research would gain control over all NCI supported extramural research in their respective fields.

The practice of permitting NCI scientists to extend their inhouse efforts through contracts has been severely criticized. In response, NCI has attempted to remove that control by creating within the divisions separate branches for extramural and intramural research. But the division directors and in some cases the overall program directors have remained in charge of the overall efforts.

To make certain that separation does in fact prevail, Saunders has proposed that a new position of associate director for intramural research be established, with responsibility over all NCI inhouse research activities. The program divisions would remain as proposed by Upton, with authority to award both grants and contracts, but without any control over intramural research.

Saunders supported his proposals and offered other suggestions in a letter to Upton. The letter, edited to conserve space, follows:

Objectives

In any system of support for scientific research in which no particular goals or objectives need be determined by the funding authority, it goes without question that the sole criterion for the support of such research would be: a) the scientific merit of the proposal in terms of the relationship of the project to advances in the field, b) the chance of success, and c) all the other traditional parameters that have come to be associated with the "peer review" system of scientific appraisal. But it is hardly conceivable that the consensus of scientific merit could remain separated from certain pragmatic aspects of "relevance" to particular categorical objectives as viewed by individual reviewers (as opposed to the program objectives of a categorical institute). A genetic scientist, for example, who by education and training could not accept the notion of environmentally induced genetic changes, would not be sympathetic to proposals to test a hypothesis in this area, and might not, therefore, give a pure, unbiased scientific appraisal of such a proposal. Similarly, some traditional virologists used to be somewhat resistant to the concept of a viral etiology for cancer, and scientists submitting research grant proposals in this area in the late 1950s did not fare well in reviews by the then-constituted study section. One perhaps can attribute the creation of the special virus oncology program in NCI and its exclusive utilization of the contract mechanism, to the unwillingness of traditional virologists in study sections to give sympathetic consideration to applications for grants in support of this type of research activity. It seems logical to conclude that peer review by study sections often (if not always) reflects the prejudices, fashions and biases of the members, and that these may not be in the best interests of continued progress in the field.

For argument sake, let us assume, however, that only the purest motives imbue scientists who are called upon to review proposals for scientific merit. When the funding authority then announces certain program objectives in terms of the utilization of its money, it is easy to see that any judgment based on pure scientific merit might have to be modified somewhat to meet the objectives of the funding organization. Let us assume, for example, that in a discipline such as biochemistry, there exist four different thrusts commonly engaged in by biochemists on a national scale. Let us also assume that each

of these thrusts relates entirely to a common categorical disease. Let us further assume that the funding authority has decided that in only three of these fields is there any hope of immediate application and that the fourth field, even if explored successfully, would still not bring any immediate application to bear on the disease.

The funding authority might therefore decide that it would fund in priority order the first three areas followed by the fourth area, if sufficient funds were available. The group of biochemists reviewing a particular proposal for scientific merit would be evaluating the pure scientific value of the work proposed, whatever the area. Let us assume that it was in the fourth area which the funding authority deemed less important. The reviewers might feel that the proposal in this area was exquisitely designed and was a superb example of the scientific method of approaching a research problem. They might on this basis give this a very higher priority than to proposals in the other three areas. If the funding authority relied solely on the ranking according to scientific merit, as viewed by the reviewers, it would find that the application in this fourth area would be high, perhaps first, in the ranking and yet it would feel that this was not a desirable priority in terms of its overall goals and objectives. It would then drop this particular project down below other applications in the first three areas. But by how much would it drop? Would it drop it all the way to the bottom? Would it rank it somewhere in the middle? Or would it just not fund it at all despite an abundance of funds? These are the problems one encounters in any review system based on a single parameter of quality, when the funding authority must satisfy criteria set by the people and their representatives in Congress, criteria other than those relating purely to scientific merit.

In all fairness one must agree that the above argument is based on an idealistic premise. When the chips are down, scientists can become quite pragmatic and will not long hold rigidly to points of view that might jeopardize their ability to attract the funds necessary to support their research ventures. The question is, however, how much time must elapse before such a transformation occurs—and how during this time will support be made available to the unpopular few in the vanguard of scientific thought? Will there always arise an Isabella to pawn jewels in support of a Columbian journey? How long will an established science take to decide that a study of the effect of penicillin on streptococcus is not useless, as occurred in the 1940s? (H.S. Bennett states that Barry Commoner cited this as an example of the lack of imagination of review committees.)

Role of Staff

The role of the funding organization staff in any program priority review is crucial to a balanced system. Staff has the first hand knowledge of the state of the art in a particular categorical area. Staff is familiar with currents of research, gap areas and areas of overemphasis. Staff is aware of potential breakthrough areas which need encouragement or stimulation. Staff is also sensitive to the grantee constituency and to the various schools or scientific thought that make up current research in the categorical areas. Staff also has as its advisory body a National Advisory Council, which has the opportunity of seeing all applications together at one time and viewing them as a whole. Thus, potentially, it can make more judicious decisions about program priority than could a discipline-oriented project review committee which sees but a single segment and then only on the review parameters of project merit, rather than relevance, need and priority of the project to the national program. We see, therefore, that staff is a potent force in establishing this mandatory priority when it utilizes all the inputs outlined above.

The question arises as to how much independent judgment is exercised by the staff person. In some cases the staff person merely reflects the input that he gets from the sources outlined above and exercises those inputs on the original priority score as assigned by the initial review group. In other cases, the staff person, perhaps because of his knowledgeability, or because of his training and experience in a particular field, would exercise a good deal of independent judgment and might even exercise this judgment against the advice and inputs he has received. It is probable that neither of these two extremes represents a desirable situation.

The optimal role of staff would be to combine scientific expertise, knowledge of the field, and a good appreciation of the views of the funding agency advisory groups and the scientific community. These inputs should be integrated objectively for a rational and useful imposition of a program priority on the pure scientific merit priority. It is doubtful, however, if this could be systematized and set forth in a final numerical system similar to the one used by the initial review groups in NCI.

A scheme proposed by me when I was on the staff of NCI consisted of a ranking of applications in four different groups in order of funding. This assumes, of course, that sufficient funds would be available to pay a reasonable number of approved applications in any given round. The first priority category would be made up of applications with high scientific merit and high program priority, as determined by the mechanism described above. The second group would contain applications of high scientific merit, but lower program priority. The third category would consist of applications with high program priority, but with defective scientific merit. The fourth category would include those of low program priority and low scientific priority. This is an arbitrary mechanism, but it could be used to make program priority decisions beyond the question of pure scientific merit.

Strengths

The imposition of program priorities on scientific merit priorities assures the appropriating authorities in government that the taxpayer's dollar is being expended for the purposes intended. Of more practical importance to the American people, it provides a system which encourages rapid translation of research findings to the solution of immediate problems in categorical disease areas. A system of program priorities also tends to avoid the sterilization of certain segments of science in which a body of scientists might capture, so to speak, a review group and bar consideration of any conflicting or opposing views. Program priority evaluations tend to offset this tendency. Another advantage is the rapid identification of breakthrough areas which might not be apparent from a narrow disciplinary evaluation of individual applications. Staff persons and members of advisory committees having an overview of an entire field might well be able to pinpoint readily such breakthrough areas.

Weaknesses

The main drawback of program priority review is the temptation to place individual views above consensus judgments. The personal opinion of a strong staff person might be used to offset the consensus view of representative scientists in the field of work, so that "program priority review" under these circumstances could well become a statement of individual prejudice. (This is the problem some critics object to in the system of contract-supported research where, due to the lack of statutory authority for contract review by outside advisors, there may be little opportunity for interplay between the scientific community and the program director of a particular area of contract-supported research.)

Another weakness of program priority review is that it tends to undervalue more fundamental and long-range research activity and emphasize projects aimed at quick results. Program priority is often interpreted as immediacy of application of research findings. A corollary of the last point is that there is a tendency to overemphasize areas of science by giving certain favored categorical interests currency and support. Thus, many dollars could be allocated for the immediate application of what might turn out to be an archaic approach to a health problem.

Modifications and Alternatives

Before discussing changes, let it be stated that the present system of peer review seems to be working well. It combines just the right balance of objective scientific merit review with program priority input as supplied by staff persons (largely grant mechanism oriented) who have no personal or bibliographic research interests.

As NCI moves toward a single management type of structure which combines both the grant and contract mechanism for the support of single scientific programs, there arises the possibility of a conflict which should be stated clearly. The chances of such a conflict depend to a significant degree on the type of staff person selected and his other responsibilities in the institute. If such a person has continuing responsibilities for carrying out research programs on his own, he has, perforce, a vested interest that might not be compatible with the best interest of scientific progress in his field. Moreover, he has an unfair advantage over his grantee-competitors in having at his disposal funds for the prosecution of his own ideas, at the same time as he has access to the ideas and concepts of scientists who submit grant proposals.

It would seem, therefore, that in combining grant and contract scientific management, it would be mandatory that a program director give up his personal research programs and devote himself entirely to extramural research activities as typified by the traditional grant-oriented scientist administrator.

Beyond the problem of extramural-intramural relations, however, there exists another, more subtle problem. A vigorous and competent program director will undoubtedly have some keen ideas as to what needs to be done in his field. In times of shortages of funds he might be reluctant to share precious dollars with grant applicants whose objectives might be different from his own—even though an initial review group might feel idfferently. Since we are dealing only with priorities and not alproval/disapproval decisions, the accountability of the program director is to the advisory board—and in this he has a great advantage over the views of the initial review group even if only on the basis of personal interaction with board members. This then becomes an individual interposition on a consensus opinion. It would seem that this situation could pose a direct threat to the continued healthy growth of science.

A possible modification of the system might be the adoption of a system which envisions a separate budgetary allocation for each program in the grant supported area. Each program director would rank approved applications in order of scientific merit as judged by the appropriate initial review group. Any desired modification of this priority must be presented to the National Cancer Advisory Board for verification. This is done on a case-by-case basis with full discussion of the circumstances requiring priority change. If the program director receives approval for his request, the final priority is adjusted accordingly. The essence of this system is, first, that each program has its own priority list, so that small or new programs do not have to compete in a common ranking with large well-established programs. Secondly, it provides a board review which protects an applicant against arbitrary or capricious decisions of both the initial review group and the program director.

Another modification for consideration might be to constitute for each division an independent priority review group of appropriate outside scientists,

chaired by the program director. The mission of this group would be to develop a system of program priorities for the objectives and mission of the divisional program. It would then use this system to examine the initial review group priorities for individual applications and provide a systematic modification (if required) of these for presentation to the National Cancer Advisory Board. This would in no way infringe on the prerogatives of the board to provide advice to the institute director, but it would give the board a priority ranking based on the individual scientific review of the study section, an overview of the appropriate scientific fields, and the sorts of input now provided by staff.

Because of the increasing load of business conducted at board meetings and the members' concerns with a multitude of other problems, there is less and less attention paid to the question of program priority. It is my judgment that the board would welcome the systematic and objective program priority advice of a body of outside scientists whose sole mission would be to provide this input.

If program divisions are to have responsibility for both grants and contracts, I feel that the program divisions should be divorced from their responsibility for managing laboratory research with which they can associate rather extensive contract programs. What I would propose would be to create a position of associate director for intramural research and place under this person's jurisdiction all intramural research conducted by NCI. If any of the intramural scientists wished to participate in the review activities of the extramural programs they could do so on the same basis as any other university scientist. They should not, however, have any managerial authority in areas related to their own research programs.

CANCER PROGRAM, CENTERS CONTRIBUTE "ENORMOUSLY," A BASIC SCIENTIST SAYS

"Biomedical research as a whole has benefitted enormously from the National Cancer Program. It is time that even Nobel laureates recognize this."

Charles Heidelberger, highly respected scientist at the USC/LAC Comprehensive Cancer Center, made that comment when he addressed the meeting of the Assn. of American Cancer Institutes last week. Heidelberger had been asked to speak on the problem of improving the scientific quality and the national impact of the Cancer Centers Program and to make proposals for changes that will benefit laboratory scientists.

"As a basic scientist I am unabashedly interested in and committed to research on cancer, its causes and treatments," Heidelberger said. "I don't think that I am prostituting myself or sullying my intellectual integrity to be working in this field 'where the money is'—or used to be. On the contrary, I believe that the cancer problems (I have never understood what 'the cancer problem' is) represent an exciting scientific and humanitarian challenge that has its occasional rewards and its frequent frustrations.

"I have spent almost my entire research career in cancer centers, although they were not known as such until recently. I could not possibly have achieved what I have, such as it is, under any other circumstances. I believe intellectually and passionately that cancer research must be attacked in a multidisciplinary effort. I believe intellectually and passionately that such a multidisciplinary effort against cancer achieves more than if the same individuals did the same research in isolation. I believe intellectually and passionately that the cancer centers are the best environment yet created to achieve these objectives.

"I was fortunate to have been associated with two cancer centers at the Univ. of Wisconsin, both of which were founded and directed by Harold Rusch. In his wise and modest way he perceived talent in researchers, brought together teams, and provided the intellectual and physical milieu in which they flourished. I have assumed the challenges and responsibilities of trying to foster such an environment here at USC. The resources and scientific stimulation at Wisconsin were such that it was possible for me to follow problems wherever they led, from organic chemistry to biochemistry, pharmacology, cell biology, genetics and even virology. Such a multidisciplinary approach, in my own case, could only be accomplished in a cancer center with its availability of core resources and its pool of scientific expertise. And I and my students and colleagues have thus been able to make some modest contributions to the fields of chemical carcinogenesis and cancer chemotherapy.

"In a time of budgetary stringency, such as we are now in, it is high time for the basic scientists in the research community to get our act together. It is time for us to cease being strident and egotistical. It is time for us to unite and work for the common goal. Biomedical research as a whole has benefitted enormously from the National Cancer Program. It is time that even Nobel laureates recognize this!

"The public is becoming restive and disenchanted about the alleged lack of concrete benefits to them from the National Cancer Program. They are being told on one hand that solutions are just around the corner and on the other, that the surface of the cancer problem (whatever that is) has not yet been scratched. In my opinion such stands are irresponsible and damaging. We have made great progress in cancer research and many important and exciting discoveries have been made. But we must admit truthfully and humbly we have a long way to go. The public and the Congress need to be so educated by responsible and unsensational spokespersons. The public and Congress must be informed and convinced that although cancer research is terribly expensive,

there is absolutely no alternative to research if progress is to be made.

"In my own fields of research the public is developing two attitudes that I consider ill-informed and dangerous. One attitude is that all chemicals in our environment are carcinogenic; therefore, the situation is hopeless and nothing can be done to reduce environmental hazards. The public must be responsibly educated that this is not so. At the same time we, the basic scientists involved in environmental carcinogenesis research, must guard against the present governmental tendency to overregulate. We must provide as best we can, unfortunately usually with inadequate data, the risk to humans of a given environmental hazard. The risk versus benefit decisions based on currently available information is a societal decision, not a scientific one. It goes without saying, however, that society must be provided with responsible data by responsible spokespersons.

"Another attitude, greatly fostered by the poignant and haunting photographs of Hubert Humphrey wasting away in his last months, is that chemotherapy "poisoning" is worse than the disease. It is this attitude that makes possible the laetrile scene. We need to point out the positive and exciting results of chemotherapy, to point out that the wasting is usually a consequence of the disease and not the treatment, and to point out to clinicians that it is often not necessary to produce extreme toxicity in order to achieve therapeutic results.

"The subject of budgetary, and consequently research, priorities is a mirror into which we look and see ourselves. This is natural and perfectly understandable, because if we don't think what we are doing is terribly important we shouldn't be doing it. Nevertheless, the time is past when we can afford the luxury of basic scientists telling clinicians that they are wasting money and vice versa. We need to maintain a National Cancer Program in which basic research, clinical research, and regional activities are balanced and effective.

"And speaking of those three endeavors brings me to comprehensive cancer centers, which are bold experiments and unique resources. I believe that the role of basic research in a comprehensive center must be somewhat different from its role in a specialized center. I firmly believe that the essence of a comprehensive center is to provide the milieu where basic and clinical researchers can work together side by side in the same building, posing and solving problems together, and appreciating together the peculiar opportunities and difficulties in each field. We are developing such a relationship here at USC, particularly in our drug development program.

"So I firmly believe that cancer centers are unique and vital resources that foster sustained and multidisciplinary attacks on the cancer problems. They provide core resources for their institutions which allow pooling of expertise, space, and equipment, and consequently effect economic savings. They require enormous commitments from their sponsoring institutions, as well as from the public. They are expensive, but I don't see any other acceptable alternative. If this is so, then it is our responsibility and that of NCI to make them work. It is heartening to be assured that Arthur Upton is committed to a strong centers program.

"In these times we all yearn for stability and continuity. We must be able to plan ahead knowing that the guidelines that control our destiny will not continually be changed. Our brightest scientific minds must be assured of the means of feeding and housing their families for more than three years at a time. We must be able to develop innovative new programs, because what cancer research needs more than anything else is innovation. And above all, we must have the means to train new investigators. Nothing could be more shortsighted than the present policy of not funding training grants, which effectively shuts off the future of biomedical research. We must resurrect the training programs!"

RFP 210-78-0030-0000

Title: *Pathomechanism of temperature-chemical carcinogenesis*

Deadline: *Approximately March 25*

The National Institute for Occupational Safety & Health is soliciting proposals from organizations interested in conducting a pilot study to determine the effects of temperature on tumor incidence and growth in females exposed to benzo(a)pyrene (BaP). Requests for RFP must be in writing and reference above number.

Contracting Officer: Michael Stitely
NIOSH
5600 Fishers Lane Rm B-29
Rockville, Md. 20857

CONTRACT AWARDS

Title: Development of immunodiagnostic tests for cancer

Contractor: Georgia State Univ., $70,601.

Title: Comparative leukemia and sarcoma viral studies, continuation

Contractor: Univ. of California (Davis), $450,000.

The Cancer Letter —*Editor* JERRY D. BOYD

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