THE CANCER LETTER
RESEARCH EDUCATION CONTROL

Vol. 3 No. 9
March 4, 1977

1411 ALDENHAM LANE RESTON, VIRGINIA TELEPHONE 703-471-9695

Subscription $100 per year

TECHNIQUES DEVELOPING OUT OF VIRUS RESEARCH LEADING TO IMPROVED THERAPY, EARLY DIAGNOSIS

Techniques and methodology of molecular biology developed in studies supported by NCI could lead to the prediction of treatment failure by as much as six months before that failure would become clinically evident with existing methods, according to Sol Spiegelman, Columbia Univ., who is conducting one of those studies in the Virus Cancer Program.

Spiegelman told the National Cancer Advisory Board that his studies and those of Daniel Martin, at Catholic Medical Center in Queens, have

(Continued to page 2)

In Brief

NCI FIGURE LEFT UNCHANGED BY CARTER; PAY RAISE PUTS FURTHER SQUEEZE ON INSTITUTE BUDGET

CARTER BUDGET for FY 1978 submitted last week to Congress did not change the amount for NCI requested in the Ford budget for NCI—$819 million, virtually the same as the institute is getting this year. NCI asked for $955 million. . . . **PAY RAISE** for members of Congress, federal judges and top government officials will lift the ceiling for career executives from $39,700 to $47,500. That and corresponding increases down the line will cost NCI $287,389 for the balance of fiscal 1977, and $483,819 for 1978, putting a little more strain on tight budget. . . . **FDA LAETRILE** hearing has been scheduled for May 2 in Kansas City, Mo. The agency published in the *Federal Register*, Feb. 18, notice of a rule making proceeding to compile an administrative record on the drug which every reputable study has found to be totally ineffective against cancer. FDA's action was taken to comply with a court order arising from a suit by a cancer patient to block the agency from interfering with his purchase of laetrile. An appellate court told FDA to obtain an administrative record on the basic issues of (1) whether laetrile is generally recognized by qualified experts as a safe and effective drug and (2) whether it is exempt from premarket approval requirements for new drugs by virtue of "grandfather" provisions of the law. Written testimony must be received by March 25; written replies to that testimony and requests to present oral arguments by April 22. Send to Hearing Clerk, FDA, Room 4-65, 5600 Fishers Lane, Rockville, Md. 20857. . . . **"REASONABLE EVIDENCE"** exists that contraceptive steroids are involved in the sudden increase of benign liver tumors, an editorial in the February issue of the *Journal of NCI* contends. Written by W.M. Christopherson, Univ. of Louisville, and E. Truman Mays, Univ. of Kentucky, the editorial says, "The evidence is less compelling in the case of hepatoma, a more commonly encountered neoplasm. . . At this point, the risk of liver tumors in oral contraceptive users appears to be very small and should be evaluated in terms of the benefit of the medication."

SPIEGELMAN DESCRIBES VIRUS PARTICLES USED AS MARKERS TO PREDICT THERAPY

(Continued from page 1)

developed to the point where they are almost ready for clinical trials using viral proteins as markers to track therapy results. Martin's studies are supported by the Div. of Cancer Treatment, and the two have worked closely on this project.

The methods they are developing also could be useful in determining the therapeutic value of various drug combinations. And they might eventually lead to techniques for earlier diagnosis, Spiegelman said. But the emphasis now is on early prediction of treatment failure, or relapse, following initial therapy.

A summary of Spiegelman's presentation to the Board follows:

Tumor cells shed virus particles which can be measured when detected in tissues of experimental animals. "We can always tell where those particles come from. They are all different," Spiegelman said. Sequences of particles found in these tissues are not only organ specific but disease specific.

"Where do we go from here?" Spiegelman asked. "There are a number of ways this information can be used. The ubiquity of the particles and their specificity for the particular type of primary tumor suggested we might be able to use them clinically as diagnostic signals for the presence of tumor. Each tumor has its own particles and we can tell from the particles where they came from. Clearly, if this material got into the blood or any other body fluid, you can identify the primary cancer."

Spiegelman said he started the studies using nucleic acids as the particle marker "because we knew something about them" But they found that it was "an elegant idea for a good research lab, but not for a clinical lab. There is no way you can convert that to something that would be generally useful, even if the nucleic acid lasted, which it doesn't."

The solution was obvious, he said—convert the differences found in nucleic acid to nucleic proteins. "If you get two pieces of nucleic acid molecules which are very different in sequence, it is very likely they come from different proteins. If you identify the protein, then you're in, because then you can use the routine clinical immunology to find these things, and there are sensitive ways of doing it. All good clinical pathologists can do it. It's obvious that is the direction we're going to have to go if we're going to come up with a clinically usable tool."

Spiegelman and Martin tried the theory on mice. They found that by measuring the antigen levels of mice treated for breast cancer, they could predict which mice were going to relapse, and when. As long as the level stayed under a certain point, the mice remained tumor free. When it crossed that point, the cancer returned. "We noticed that in this whole experiment, only two mice survived tumor free for the course of the experiment. Those were the two in which the antigen remained below the critical level."

The results were confirmed in more elaborate experiments. "The next question was, is it a good indicator of therapy," Spiegelman said. They applied various therapies after surgery and then looked at the antigen levels. They tried two combinations they knew would work—cytoxan, adriamycin and fluorouracil; and CMF (cytoxan, methotrexate, fluorouracil). Both combinations pushed the levels down, and 90% were cured.

"You can tell in a matter of days whether a given therapeutic regimen is going to work by following antigen levels in the blood," Spiegelman said. "We were able to survey large numbers of combinations which had been used and some which have never been used in humans.

"One of the things Martin and I discussed at length is the problem, why is it we're not getting much better in chemotherapy in terms of finding new agents? We look for more poisons and more poisons. We hook one poison to another and certain combinations are better but there's no dramatic increase in effectiveness of these agents. There has been a great increase in our knowledge of how to use them.

"So the idea was, why not try another tack? Let's instead of adding a poison to a poison, add something to a poison which can possibly make it better. Now, there are various ways you can do this. One way is to cause an imbalance in the pathway and make it easier for the poisonous agent to do its job better."

They decided to look at therapy added to fluorouracil. "It has a wide spectrum of activity against breast cancer, lung and colon cancers. If you could potentiate that compound, you would have something with wide applicability."

Thymadine was selected for use with fluorouracil. In one experiment, fluorouracil alone was effective against only 60% of the tumors, but with the combination, "the tumor was stopped cold." The results held up in other studies, and the level of thymadine required to get that effect was well tolerated.

"We could tell in 10 days which combinations were worth following," Spiegelman said.

The investigators then tackled the problem of devising a test system for humans. They found that an enzyme derived from a Mason Pfizer virus in monkeys was related to an enzyme purified from human breast cancer. "They cross react," Spiegelman said. "It is a different protein and has a different action. It is related but different. The enzyme was quite specific for human breast tumor, and was found in the plasma of breast cancer patients."

But the method here was too complicated for use in clinical labs, involving enzyme fractionation and an assay. "A good size crew could handle only four patients a day. We had to simplify it, devise new methods, and we think we've done it, by converting from an enzyme assay to a radioimmune assay. And

that makes it possible to use with standard technology."

"How early in the disease are you finding the marker in the blood?" asked Benno Schmidt, chairman of the President's Cancer Panel.

"Comparing the life span of the mouse and human, the advantage gained in the mouse would correspond to at least a half year in the human," Spiegelman answered. "That's a half year before it becomes clinically evident with the methods we have now." He emphasized later that this half year advantage applies to treatment failure, not early diagnosis. These studies could lead to development of screening techniques, "but it's not certain onset of disease is the same as onset of relapse," he said.

"There are three things I can see here," Schmidt said. "First, you are plainly predicting relapse ahead of any clinical signals. Second, you're on the track of a better chemotherapeutic agent. Finally, there is the possibility of a diagnostic prediction before the first evidence of tumor."

"My feeling in this game is this," Spiegelman said. "Early diagnosis is going to be the last thing we're going to come up with because I think by following the course of the disease we'll learn how to really design a test for early diagnosis. The main theme now is to try to use it to mark therapy. God knows we've seen that if you know what's happening to the tumor, you have a chance of getting rid of it. But if you're flying blind, there's not much chance."

Board Chairman Jonathan Rhoads asked, "Does the presence of this material in the circulation mean that cells have already spread and broken up, or do you think it's an excretory product and does not mean cells have already spread?"

"We know it's excretory," Spiegelman said. "We can see it on the cell surface, being shed."

Board member William Shingleton asked, "Does this suggest any etiological relationship between viruses and breast cancer?"

"My feeling is this, and it's a feeling I've had for some time," Spiegelman said. "I frankly don't care, so long as I can use that, whether these things cause cancer or the cancer causes these things. If there's always an association between them, then I can use them as a tool. And I'm willing to wait to satisfy my intellectual curiosity as to whether it's causing a cancer or not."

COMP CENTERS NEVER INTENDED AS PATIENT PRIMARY CARE FACILITIES, GAO TOLD

The General Accounting Office, which is an investigative agency operating under the direct control of Congress to scrutinize the Executive Branch of the federal government, last year created a flap in the NCI Cancer Centers Program with a report which criticized the geographic distribution of comprehensive centers.

NCI staff and their Cancer Program advisors were somewhat miffed at the criticism, feeling that GAO did not understand what the comprehensive centers effort was all about. A carefully-developed response by the Subcommittee on Centers of the National Cancer Advisory Board supports that feeling–GAO investigators apparently had not adequately analyzed the National Cancer Act, although perhaps they did have some appreciation of what Congress thought it was getting with the comprehensive centers.

The National Cancer Act of 1971 called for the establishment of 15 new "national cancer research demonstration centers," the NCI response pointed out. "The Act does not specify remarks concerning their geographic location nor their role in demonstration." Specifically, the Act says:

"The director of NCI is authorized to provide for the establishment of 15 new centers for clinical research, training, and demonstration of advanced diagnostic and treatment methods relating to cancer."

The response quotes from the report by the National Panel of Consultants on the Conquest of Cancer (the Yarborough Commission), which led to passage of the National Cancer Act. The Panel report described the role centers could play in the National Cancer Program:

"Existing cancer centers should be strengthened and additional cancer centers in different parts of the country should be created. The solution of the cancer problem lends itself to a multidisciplinary effort, where teams of highly qualified specialists are available to interact on problems of research, both clinical and non-clinical, teaching, diagnosis, preventive programs, and the development of improved methods in the delivery of patient care including rehabilitation.

"Among those who work in the cancer field, there is great emphasis on the advantages of critical mass–a critical mass of scientists and physicians committed to the cooperative solution of the cancer problem, of research facilities, of patients, and of financial and other resources. This is simply another way of saying that the comprehensive cancer center offers the best organizational structure for the expanded attack on cancer.

"In addition to the few comprehensive cancer centers that exist in the United States today, there are another number of institutions which combine all or most of the capabilities for a multidisciplinary effort in cancer. These could serve as a base for the creation of additional centers. The new centers should have appropriate geographic distribution and should, wherever possible, be created where a nucleus of scientific, professional and managerial personnel already exist and preferably where a university or medical school affiliation exists or is planned.

"In the creation of new cancer centers, manpower limitations should be taken into account, and new centers should not be created where there would be a dilution in the effectiveness of existing centers which would offset any gain from the new center.

"It should be emphasized that the strengthening of existing cancer centers and the creation of new cancer centers does not mean that under this program general responsibility should be undertaken for the care of the nation's cancer patients.

"The delivery of patient care in cancer cases is a part of the general problem of the delivery of patient care and should be so dealt with. However, this inhibition must not prevent the cancer centers from including such patient care facilities as are necessary for clinical research and teaching for the development and demonstration of the best methods of treatment in cancer cases.

"The cancer centers should also serve as administrative coordinators of those programs which require regional coordination. Such centers should support and assist clinics and community medical centers in their own geographic areas in order to assure the widespread use of the best available methods for early detection and treatment of cancer. They should also serve to collect data useful in the prevention and cure of cancer including patient follow-up information and be responsible for the dissemination of information, both at the lay and professional levels, that is useful in the prevention, diagnosis, and cure of cancer."

After listing the 10 characteristics for comprehensive centers developed by the National Cancer Advisory Board, the subcommittee's response to GAO contends that those characteristics, the Panel concepts and legislation "make clear that comprehensive cancer centers were not envisioned to provide for the primary care of the nation's cancer patients, but rather to provide a resource supplementing and extending the capabilities for cancer diagnosis and treatment possessed by high quality community hospitals throughout the nation. . . .

"It is clear from legislative intent and the guidelines that have been developed by NCI to carry out the mandates of the National Cancer Act, that comprehensive cancer centers are intended as regional resources to extend and supplement capabilities of good local community hospitals in the provision of care to cancer patients.

"It is also clear that in accepting the designation of a comprehensive cancer center, institutions incur an obligation which extends far beyond the federal government's intent or capability to provide complete funding.

"It was recognized early that the nation's major resource of appropriate scientific, medical and management personnel, cancer patient populations, facilities and equipment dedicated to cancer, resided in major medical schools and medical centers.

"Further, it was acknowledged that institutions having most of the required resources and having already developed a funding base for the conduct of such activities, must make further commitments to create new administrative structure in order to insure the stability and long-term success in achieving the characteristics required of comprehensive cancer centers.

"Therefore, it logically must follow that there are numerous considerations, in addition to geography, which will determine where successful comprehensive cancer centers can be developed. It should be recognized that a cancer center can only be developed where there is a critical mass of physicians, scientists, patients, appropriate referral patterns, appropriate local and regional environment, where the cost of such an endeavor is acceptable and where an organization is prepared to make the necessary commitment of the required administrative structure authority and resources."

The response mentions other types of cancer centers and describes briefly the Approved Hospital Cancer Programs of the American College of Surgeons' Commission on Cancer.

"Viewed in this setting, the mission of a comprehensive cancer center is to provide a backup resource in appropriate areas for the development and demonstration of new developments in diagnosis and treatment and to insure that these are rapidly disseminated to other cancer centers, community hospitals, and physicians in their region," the response said.

"With increasing capabilities for the cure of certain cancers and the consequent extended useful lives of many cancer patients, it is important that our most sophisticated diagnostic and therapeutic techniques be available to those cancer patients which can be cured only by the application of skills, facilities, or equipment which may not be available in the usual community hospital."

That final point—that the most advanced technology and skills should be available to all cancer patients needing them—undoubtedly was what most congressmen thought they were voting for in the National Cancer Act.

The subcommittee's response winds up with these recommendations:

1. "That the primary goal of the NCI Cancer Centers Program be to ensure that there are cancer centers of excellence for research in clinical oncology for cancer patients and physicians within the U.S. That NCI comprehensive and clinical cancer centers contribute to meeting this need. Both types of cancer centers should be included in 'appropriate geographic distribution.'

2. "Comprehensive cancer centers shall serve as referral centers where physicians may obtain for their patients advanced methods of diagnosis and treatment. While most cancer care should continue to be given in community hospitals and medical centers, patients may be referred by their physicians to comprehensive cancer centers when these patients may benefit from specialized care and techniques not available elsewhere.

3. "That comprehensive cancer centers should be

expected to provide leadership in the development of community programs involving active participation by members of the medical profession practicing within the area served by the center and that they continue to participate in the National Cancer Program by integrating their efforts with the activities of other centers in a nationwide system for the prevention, diagnosis, and treatment of cancer. This, however, is not meant to imply that comprehensive cancer centers should be the obligate focal points for all cancer activities in their region."

In Congress

ROGERS BILL WOULD AUTHORIZE $937 MILLION FOR NCI IN FISCAL 1978

Chairman Paul Rogers of the House Health Subcommittee held a hearing last week on his bill (HR 3539) to extend authorizations for all biomedical research programs for one year, including the Cancer Program. The bill will be marked up this week, could go to the full committee next week and to the House floor anytime thereafter.

The bill would establish funding authorizations at 115% of the amounts appropriated for fiscal 1977. For NCI, that would mean an authorization (not appropriation) limit of $937 million, a figure the cancer forces feel is entirely inadequate. The authorization for 1977 was $1.073 billion; NCI received $815 million. And NCI has requested $955 million for 1978.

The companion bill in the Senate is S. 754, introduced by Chairman Edward Kennedy of the Health Subcommittee. A spokesman for Kennedy said he plans to hold hearings "in a week or two." An effort will be made to increase the NCI authorization substantially over the amount in the Rogers bill.

Kennedy finally got his subcommittee organized last week, the delay caused by reorganization of the Senate committee structure. The new parent committee is Human Resources (replacing Labor & Public Welfare). Democratic subcommittee members are, in seniority after Kennedy, Gaylord Nelson (Wisc.), Claiborne Pell (R.I.), and William Hathaway (Maine). Republicans are Jacob Javits (N.Y.), John Chafee (R.I.) and Richard Schweiker (Pa.).

Stan Jones is the present staff director of Kennedy's subcommittee but will leave May 1. Larry Horowitz will replace him.

Chairman Warren Magnuson's HEW Appropriations Subcommittee also completed its organization. Democrats behind Magnuson are John Stennis (Miss.), Robert Byrd (W.Va.), William Proxmire (Wisc.), Ernest Hollings (N.C.), Thomas Eagleton (Mo.), Lawton Chiles (Fla.), and Quentin Burdick (N.D.) Republicans are Edward Brooke (Mass.), Clifford Case (N.J.) Schweiker, and Charles Mathias (Md.).

Health related bills recently introduced which could have some impact on the Cancer Program included:

HR 1603, by Paul Rogers, which would make major changes in the Food, Drug & Cosmetics Act. It would require package inserts for patients with prescription drugs (inserts now are for physician use), establish rules for phase IV testing, and tighten requirements for adverse reaction reporting.

S. 3, by Edward Kennedy, to "create a national system of health security" (Kennedy's national health insurance bill).

HR 3538, by Rogers, to extend health planning and related programs for one year, including authorizations.

HR 3591, by Richard Ottinger (D.-N.Y.), to provide for guidelines and strict liability in the development of research related to recombinant DNA.

HR 3322, by Tim Lee Carter (R.-Ky.), to establish a separate Dept. of Health.

HR 3330, by Philip Crane (R.-Ill.), to provide for congressional review of all regulations relating to costs and expenditures for health care.

CCIRC REVIEWS SOUTHEASTERN, MELANOMA GROUPS, PROSPECTIVE NEW ONE IN CALIF.

Two existing cooperative groups and a prospective new one were reviewed by the Cancer Clinical Investigation Review Committee this week. The committee's recommendations will go to the National Cancer Advisory Board in May.

The Southeastern Cancer Study Group and the Malignant Melanoma Group were reviewed for renewal of their grants. The new group is the Northern California Oncology Group, headed by Stephen Carter who applied for support as a new type of regional cooperative group.

The CCIRC spent a half-day reviewing those applications in closed session, following the open portion of the meeting which dealt with the following topics:

- VA cooperative groups and VA task forces supported by the Div. of Cancer Treatment.

Div. of Cancer Treatment Director Vincent DeVita said that DCT is considering one of two actions affecting the VA Lung Cancer Study Group and VA Surgical Adjuvant Cancer Chemotherapy Study Group, both of which are cooperative groups funded by grants, and the VA task forces which are supported through an interagency agreement between NCI and the Veterans Administration. One approach would be to move the two VA cooperative groups into the same category as the task forces, which are reviewed by a separate committee of NCI and VA staff members. The other approach would go the other way, moving the task forces into the cooperative groups and requiring them to compete for grants.

- Conference grants. One of CCIRC's traditional activities has been to sponsor state of the art conferences. The money to pay for them has come out of the CCIRC chairman's grant, but increased costs and

the tightened NCI budget has threatened to limit this activity.

DeVita said that additional conferences might be funded, after the chairman's grant has been allocated, by applying to the Div. of Cancer Research Resources & Centers for a grant. CCIRC members Nell Sedransk and Alvin Mauer pointed out that this involves a "Catch 22" situation. "You can't get your speakers committed until you are assured of funding, and you can't get the grant unless your program is firm," Mauer said. "No one will commit themselves 1½ years in advance."

"If part of our function is education, then we have to have a chairman's grant large enough for conferences," argued CCIRC member John Bennett.

CCIRC Chairman Giulio D'Angio said the main factor in higher costs of conferences is publication of the proceedings. Journals are charging for most such publications now, pushing the total cost of a conference to the $75,000 range. D'Angio asked if DCT would consider increasing the chairman's grant by $20,000 for each conference CCIRC sponsors, to cover those costs. DeVita agreed to "look into it."

CCIRC member Stephen Jones questioned the need for the committee to sponsor conferences. "NCI has changed, DCT has changed," Jones said. "Others are sponsoring conferences. There are so many other places where meetings can come from. If some other institution wants to put on a sarcoma conference, let them submit a grant application for it."

Sedransk argued that "this is a good body to put on some conferences, those which cut across disciplines." Bennett agreed that conferences "serve a good purpose. It forces the cooperative groups to get their material together, and it gets published where people can see it."

D'Angio said he felt it would be "a big mistake not to retain CCIRC conferences. It serves a purpose, targeting areas no one else does. If we leave it to others, you're at their mercy, to determine what is important, to seek for areas where information is needed."

DeVita suggested that the committee plan to sponsor one conference a year with funds from the chairman's grant. If additional conferences are deemed necessary, other fund sources would be needed.

• Reports of CCIRC members attending meetings of cooperative groups as observers. Jones, who attended a meeting of Acute Leukemia Cooperative Group B, noted that the group plans its meetings for the day prior to the start of a meeting of a national organization, at the city where the national meeting is held. This permits group members to attend the national meeting, with travel expenses paid by the group. "It's an inefficient way to have a meeting," Jones said. "Little was done. Jim Holland (the group chairman) ran the meeting in his authoritative way."

CCIRC member Arvin Glicksman sat in on the meeting of the Southwest Oncology Group, attending sessions on adult solid tumor groups, multidisciplinary discussion on head and neck cancer, radiotherapy plus surgery, and treatment of stage III breast cancer with chemotherapy and radiotherapy plus surgery.

CCIRC member Teresa Vietti observed a meeting of the Children's Cancer Study Group. "They still don't seem to be proceeding with development of pathology," Vietti said. "There is still some lack of innovative ideas. There is a good contribution they could make with childhood solid tumors."

Vietti said that only the chairman and executive committee had seen the critique of the Children's group by the CCIRC. "The other principal investigators should see it," she said. "They could get a feeling of how it is going, and would be in a better position to do something about it."

"That could have saved much agony in recent years as some groups faltered," D'Angio said. The committee agreed to a motion calling for summary statements of critiques to be sent to all PIs.

BROWN WOULD LIKE CALIFANO DECISION BY MARCH 31; SANDERS REJECTS OFFER

Things are starting to close in on Arnold Brown, who learned last October that he was the leading candidate to succeed Frank Rauscher as director of NCI. Five months and one Presidential election later, that's where he still is—the leading candidate, but with yet another administrative hurdle to clear before the appointment is made.

HEW Secretary Joseph Califano's decision to set up a search committee to look for prospects for the job came after Benno Schmidt, chairman of the President's Cancer Panel, had already recommended Brown to (1) President Ford, (2) President-elect Carter's transition team before the inauguration, (3) President Carter, after the inauguration, and (4) Califano.

Time is starting to run out as far as Brown is concerned. He has to decide by the end of March if he can accept an offer to be visiting scientist at the German Cancer Institute in Heidelberg for May and June. And, "Grant cycles are coming and going," he told ***The Cancer Letter***. "I'm going to have to start writing some applications if I'm going to continue research here (at the Mayo Clinic)."

Meanwhile, Califano apparently is still looking for an assistant secretary for health. Charles Sanders, director of Massachusetts General Hospital, had been offered the job. A spokesman for Sanders this week told ***The Cancer Letter*** that he had decided not to accept it.

Califano is left with a number of other candidates, including Lester Breslow, dean of the UCLA School of Public Health; former Kansas Congressman William Roy, an M.D. and attorney who was a member of the House Health Subcommittee before running a losing race for the Senate; Harvey Sloane, Louisville mayor, an M.D. who was co-chairman of a Carter campaign health group; New York psychiatrist Joseph English,

who served in the Johnson Administration; Howard Hiatt, dean of the Harvard School of Public Health, and Thomas Bryant, director of the private Drug Abuse Council.

PANEL TELLS CARTER CANCER PROGRAM MUST HAVE INCREASED FUNDS IN 1978

"For the past two years the cancer budget has been level in constant dollars," the 1977 report to the President on the National Cancer Program from the President's Cancer Panel says. "This has put the program this year under serious pressure. By virtually eliminating new construction, we may be able to get by in 1977 without too serious damage to the program. However, if we do not get a reasonable increase for 1978, there will be a loss of momentum which we cannot afford."

The Panel's report was sent to President Carter soon after the inauguration. It offers the new President his first look at the kind of advice he will be getting from the Panel.

Written by Panel Chairman Benno Schmidt, the report includes a defense of the National Cancer Program against various criticisms expressed in recent years, and also includes a strong pitch for increased funding for all biomedical research.

"The cost of medical care is such an enormous and increasing expense for our people and, therefore, for the government, that we cannot afford to starve the research efforts which will provide us the knowledge we need to avoid the crushing burdens of medical care," the report says. "If it were not for the results of past biomedical research, we would still be saddled today with the horrendous costs and burdens of tuberculosis, polio, and all of the infectious diseases which through the products of research have been virtually eliminated from our medical picture. We must continue our research until cancer, heart disease, stroke, arthritis, multiple sclerosis, diabetes, and other diseases that agonize our people and fill our hospitals have been added, or largely added, to that list.

"If any well-run business were spending $130 billion per year on medical care, it would be spending at least 5% of that amount on research to reduce those costs. While we cannot go to that level under today's circumstances, sound business judgment requires that we not cut back on the present effort.

"Finally, the Federal expenditures in biomedical research are leverage dollars. Hundreds of millions of dollars of institutional facilities built by our universities and other philanthropic institutions, and thousands of people whose salaries are paid by these institutions, are mobilized in the cause of biomedical research by the relatively few federal dollars that are spent in stimulating this activity. However, stop the flow of federal dollars under today's circumstances, and these essential activities will grind virtually to a standstill. This we must not do."

Schmidt cited figures to prove that NCI does support basic research, to a greater extent than at any other time in history. In 1976, 52% of NCI's budget, or $396 million, went to basic research. The entire NCI budget in 1970 was $180 million, with less than $100 million of that for basic research.

The report concludes, "All of us connected with the program must continue to explain at every opportunity to the American people and to Congress that the Cancer Program is a vast undertaking which will require long-term support and great patience. We are still far away from being able to put either a date or a price tag on the ultimate conquest of cancer. We are making progress in our understanding of this disease, and there is no question that the benefits of our research are increasingly available to the American people in the form of better treatment as time goes by. But it is a long road that will require patience and constancy on the part of the Congress, the Administration, and the public."

RFPs AVAILABLE

Requests for proposal described here pertain to contracts planned for award by the National Cancer Institute, unless otherwise noted. Write to the Contracting Officer or Contract Specialist for copies of the RFP, citing the RFP number. Some listings will show the phone number of the Contract Specialist, who will respond to questions. Listings identify the respective sections of the Research Contracts Branch which are issuing the RFPs. Their addresses, all followed by NIH, Bethesda, Md. 20014, are:

Biology & Diagnosis Section – Landow Building
Viral Oncology & Field Studies Section – Landow Building
Control & Rehabilitation Section – Blair Building
Carcinogenesis Section – Blair Building
Treatment Section – Blair Building
Office of the Director Section – Blair Building
Deadline date shown for each listing is the final day for receipt of the completed proposal unless otherwise indicated.

RFP NO1-CP-75894-62

Title: *DNA repair studies in cultured hepatocytes*
Deadline: *May 11*

NCI's Carcinogenesis Program is interested in determining the predictive value of a mammalian cell culture system using DNA repair (unscheduled DNA synthesis) as an endpoint in the evaluation of chemical compounds for carcinogenic potential. The government estimates that approximately 1½ professional man-years of effort per year for three years is required for this project.

Contract Specialist: D. Britton
Carcinogenesis
301-427-7575

CONTRACT AWARDS

Title: Breast Cancer Detection Demonstration Project

Contractors: Wilmington Medical Center, $266,246; and College of Medicine & Dentistry of New Jersey, $289,909.

Title: Statistical analysis and quality control center for the centralized cancer patient data system
Contractor: Fred Hutchinson Cancer Research Center, $93,820.

Title: Incorporation of 11 alteration/renovation projects at the Frederick Cancer Research Center
Contractor: Litton Bionetics, $388,947.

Title: Computer support effort for OPR&L resources management
Contractor: EG&G/Mason Research Institute, $265,682.

Title: Study of mammography
Contractor: Health Insurance Plan of Greater New York, $152,678.

Title: Immunological assays for DNA and RNA viruses
Contractor: Litton Bionetics, $27,503.

Title: Mouse virus typing and diagnostic agents
Contractor: Microbiological Associates, $475,000.

Title: Studies on the possible viral etiology of malignancies
Contractor: Baylor College of Medicine, $349,900.

Title: Studies of human papovirus BK and JC and simian virus 40
Contractor: UCLA, $103,383.

Title: Research on spontaneous and virus induced neoplastic formation
Contractor: Meloy Laboratories, $436,645.

Title: Comparative leukemia and sarcoma viral studies
Contractor: Univ. of California (Davis), $448,409.

Title: Establishment and development of a Connecticut cancer epidemiology program
Contractor: Yale Univ., $449,302.

Title: Immunity studies of herpes simplex associated antigens
Contractor: Johns Hopkins Univ., $75,000.

Title: Maintain mammary tumor virus production facility
Contractor: Meloy Laboratories, $298,000.

Title: Support services for studies of Type C RNA tumor viruses
Contractor: Microbiological Associates, $109,954.

Title: Immunological studies on relationship of embryonic antigen virus-induced tumor antigen
Contractor: Univ. of Tennessee, $49,140.

Title: Operation of Louisiana Tumor Registry
Contractor: Charity Hospital of Louisiana, $178,709.

Title: Spontaneous and virus induced neoplastic transformation studies
Contractor: Meloy Laboratories, $183,520.

Title: Research on immunoprevention of spontaneously occurring neoplasms
Contractor: Microbiological Associates, $1,456,000.

Title: Replication of oncogenic RNA viruses and their relation to human cancer
Contractor: Columbia Univ., $3,955,050.

Title: Support for the U.S. National Committee on the International Council of Societies of Pathology
Contractor: National Academy of Sciences, $20,606.

Title: Support of the U.S. National Committee on the International Council of Societies of Pathology and WHO international reference centers
Contractor: National Academy of Sciences, $147,625.

Title: Biochemical and morphologic components of hepatic carcinogenesis
Contractor: Univ. of Toronto, $175,919.

Title: Studies on carcinogenesis in human tissues—bronchial epithilium, pancreas, breast and colon
Contractor: Univ. of Maryland, $287,100.

SOLE SOURCE NEGOTIATIONS

Proposals are listed here for information purposes only. RFPs are not available.

Title: Molecular studies of human and animal cancer with emphasis on breast carcinoma
Contractor: Meloy Laboratories.

Title: Development and implementation of at-home rehabilitation programs
Contractor: The Cancer Center Inc., Cleveland.

Title: Determining a viral involvement of feline mammary carcinoma
Contractor: Sloan-Kettering Institute.

Title: Studies of the viral involvement in canine mammary carcinoma
Contractor: Pfizer Inc.

Title: Support of activities of the U.S.A. National Committee for the International Union Against Cancer
Contractor: National Academy of Sciences.

The Cancer Letter—*Editor* JERRY D. BOYD

Published fifty times a year by The Cancer Letter, Inc., 1411 Aldenham Ln., Reston, Va. 22090.