THE CANCER LETTER

Vol. 8 No. 44
Nov. 12, 1982

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The Cancer Letter Inc.
Subscription $125 year North America/$150 yr elsewhere

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PANEL MAY TAKE ON OMB IN BATTLE TO RESTORE NCI CONSTRUCTION FUNDS; TWO WILL BE FUNDED IN FY '83

The President's Cancer Panel, which in its first year under the chairmanship of Armand Hammer has had a significant impact on the National Cancer Program, gave indication this week that it may try to use its influence to restore adequate funding for NCI's construction program. *(Continued to page 2)*

In Brief

WEICKER MAY BE NEXT CHAIRMAN OF SENATE HEALTH SUBCOMMITTEE FOLLOWING HARRISON SCHMITT'S DEFEAT

SEN. LOWELL WEICKER, who survived a strong Democratic challenge and grumpiness from his own party because of his liberal and anti-Reagan policies, could become the next chairman of the Senate Health Appropriations Subcommittee. The defeat of Harrison Schmitt of New Mexico left that position open, although it will remain in Republican hands since the GOP retained control of the Senate. Mark Hatfield of Oregon is next in line on the subcommittee, but he is chairman of the parent Appropriations Committee and probably will not opt to take over the subcommittee, leaving the way open for Connecticut's Weicker. All other members of the committee running for reelection survived, including the topranking Democrat, William Proxmire. Chairman Orrin Hatch of Utah and the second ranking Republican, Robert Stafford, of the Committee on Labor & Human Resources, which is the authorizing committee for most health legislation, were reelected, as was the No. 1 Democrat on that committee, Edward Kennedy. The leadership of the House health appropriations and authorization committees remains unchanged, although Democrat Toby Moffett of Connecticut and Republican Clarence Brown of Ohio will not be back, Moffett losing to Weicker in the Senate race and Brown unsuccessful in his race for governor. . . . **VINCENT LOMBARDI CANCER CENTER** will be formally dedicated Nov. 13 when the new $11.5 million, 75,000 square foot building at Georgetown Univ. will be officially opened. The building contains basic and clinical research labs, outpatient facilities, lecture and conference rooms, and administrative offices. John Potter is director of the center. Sen. Pete Domenici (R.-N.M.) will be the keynote speaker. . . . **PHILIP SCHEIN**, scientific director of the Georgetown Univ. Lombardi Center, has received the Commissioner's Special Citation and the Wiley Medal from the Food & Drug Administration in recognition for his contributions to FDA's oncologic drugs program. He served a term as chairman of the agency's Oncologic Drugs Advisory Committee. . . . **NATIONAL CANCER ADVISORY** Board's Organ Systems Committee will meet Nov. 28, the day before the next meeting of the full Board, starting at 4 p.m., Bldg. 31 Rm. 9.

NCI WILL FUND ALL CONSTRUCTION GRANTS SOUGHT IN '83—ONLY TWO

(Continued from page 1)

Donald Fox, chief of the Research Facilities Branch, briefed the Panel Monday on the history of construction grants, which have dwindled from $44 million in 1972 to $1 million in the President's FY 1983 budget request for NCI. This is the third consecutive year the White House has held NCI's budget request to $1 million, although an additional $1.03 million was reprogrammed to construction at the end of the 1981 fiscal year, and $200,000 more at the close of the 1982 fiscal year just ended.

Fox reviewed the survey of construction needs conducted by NCI staff at the request of the National Cancer Advisory Board in 1979. Institutions responding to the survey questionnaire, representing most of those in the U.S. at which cancer research was being carried out, reported their facilities needs, current and projected for five years, would cost a total of about $400 million. Assuming that peer review would trim that to about $300 million, NCI's share on a 50-50 matching basis would be approximately $150 million.

The NCAB accepted that estimate and voted unanimously to recommend that NCI's bypass budget include a minimum of $20 million a year for construction. The recommendataion has been followed, but each year the White House Office of Management & Budget has substantially reduced that amount, to $1 million in each of the last three years.

Congress could have increased construction funds but has not chosen to do so in recent years. During the Nixon Administration. OMB at least twice refused to release construction funds, once ignoring explicit language in the appropriations bill directing those sums be spent for construction. Outside pressures, including some generated by the Cancer Panel headed by Benno Schmidt, eventually forced the White House to release the money.

"Obviously, we haven't made much of a dent in the projected needs," Fox told the Panel. He noted that the survey results were 1979 estimated needs, and suggested that they might be even greater today.

"I think we should point out the catalytic role of construction funds," Panel member Harold Amos said. "They have attracted considerable local money in support of these projects."

NCI Director Vincent DeVita commented that NCI's share of two recently completed major facilities in Los Angeles, at the UCLA Jonsson and the USC Norris cancer centers, was less than half the total cost in each case.

"It should be obvious throughout NIH that work is being compromised by inadequate facilities," Amos said. "We have a real and almost moral responsibility to do something about it. Would it be possible to have an NIH wide effort? Perhaps ask Congress for a separate appropriation for construction?"

DeVita agreed it is an NIH issue. "We need to leave some flexibility for the institutes to support construction within whatever budgets they have. This constraint we have, in which we are told, 'You will spend $1 million on construction in 1983, regardless of the needs and decisions by your Boards and program leaders,' is unrealistic."

Hammer, who has developed a keen interest in hybridoma research, related his experience in visiting the lab of Ronald Levy, the Stanford professor who may be the first investigator to cure a cancer patient with mouse monoclonal antibodies. The lymphoma patient treated by Levy has been in remission for more than a year.

"His lab is the size of this room, less than 1,000 square feet," Hammer said. "His assistants, equipment, animal cages are all crowded in there. I've never seen such a thing. Here's a case of a man taking a mouse hybridoma, applying it to a patient, and curing the patient. I went to see if he could quickly repeat this, see if it is not a fluke. I asked him, 'Dr. Levy, what do you need?' He said he has 10 patients in the same condition, and that if he had 4,000 square feet, 'I could really go to town.' He said about a quarter of a million dollars would do it.

"I asked him if Stanford could help, but he said they had no money available. I called Dr. DeVita to see if NCI could help, and he said no. So I gave him the money."

"The solution is to clone Dr. Hammer," DeVita said.

"OMB should not be the ones to make those decisions," Hammer said.

Amos suggested that a new survey should be undertaken of facilities needs. DeVita pointed out that the 1979 survey could be questioned, since the respondents were potential recipients of construction grants. "It should be possible to do an independent study," he said.

Hammer later told *The Cancer Letter* he would be willing to ask President Reagan to order a change in OMB policy on NCI construction grants.

"But first, we need the information. I'll be happy to go to him when I can present all the facts and figures."

A major part of the needs projected in the 1979 survey was for work required to meet federal animal facility and biohazard safety standards, as well as state regulations and local building codes. A major portion of the money would be used for renovations to upgrade existing facilities.

Most of NCI construction grant awards in recent years has gone for renovation or to complete "shell" space. With the limited budget, NCI has been able to make more awards. Cost of new construction fre-

quently makes an application so expensive that it would have no chance of being funded.

NCI does not intend to discourage applications for new construction, however. Institutions with proven records of excellent science which can demonstrate a pressing need for new space probably would be approved with good scores in peer review, and might eventually be funded, if and when OMB's policy is reversed. "If an application offered 75 percent local funds and asked only 25 percent from NCI, that might make it more competitive," Fox said.

NCI policy in the years when plenty of construction money was available was to fund up to 75 percent of the cost of construction. That was trimmed a few years ago to 50-50. Those were maximum NCI contributions, and in fact most facilities receiving NCI support have involved at least half or more local matching funds. Those are just construction funds; local, private, state, and other support generally pays for equipment and furnishings in the new or renovated facilities.

Ironically, in a year in which construction money is so limited, NCI will fund 100 percent of the applications it received.

That situation came about because only two applications were submitted. "People read in ***The Cancer Letter*** and elsewhere that the construction budget was down, so they didn't apply," Fox said. The deadline for applications which could be funded in the 1983 fiscal year was Oct. 1. The two applications submitted were from Purdue and Dartmouth. Both have been site visited, and it appears their dollar requests will consume the $1 million, so there will not be money left over. They still must clear an ad hoc construction grant review committee, and the NCAB.

There are no applications on hand now for the 1984 fiscal year. The first deadline for those is Feb. 1, with others at June 1 and Oct. 1.

NCI does not require a letter of intent for construction grants, but Fox strongly recommends that persons considering submitting applications call him first. He may be reached at 301-427-8804, or write to him at: Dr. Donald Fox, Chief, Research Facilities Branch, Div. of Resources, Centers & Community Activities, Blair Bldg. Rm. 3A07, NCI, Silver Spring, Md.

Four construction grants were awarded in FY 1982 —Univ. of Washington, $220,000; Univ. of North Carolina, $219,000; Albert Einstein, $639,785; and Boston Univ., $146,205.

The relatively small size of those grants was due to the fact that all were for renovation or completion of shell space.

DCT FACES "HARD CHOICES," CLINICAL GROUPS NEED RE-EXAMINATION: CHABNER

NCI's Div. of Cancer Treatment has "so many deserving alternatives for treatment research" that "hard choices must be made;" further cuts in contracts will "dismantle our development apparatus" and a "careful re-examination" of clinical program projects and the cooperative groups is needed, DCT Director Bruce Chabner said in a statement on priorities made to the division's Board of Scientific Counselors.

"Never have there been so many deserving alternatives for treatment research, encompassing the wide range from biological factors to particle radiotherapy, from rationally designed drug regimens to bone marrow transplantation," Chabner said. "The possibilities for success are real; prototype experiments have demonstrated the feasibility and potential effectiveness of these approaches, and yet hard choices must be made. The economic realities of 1983 have limited our ability to follow all paths."

DCT's grant and intramural programs have survived the severe budget restrictions of the past three years, "only because of significant cuts in the NCI and DCT contracts programs," Chabner said. "Further cuts in these contracts will in effect dismantle our development apparatus in the areas of drugs, radiotherapy, and biologicals. We must keep this fact in minds when we entertain further cuts in the contract efforts of DCT."

In the development phase of new drugs, Chabner said, "there are both administrative and scientific goals of great importance which must be addressed. Important short term goals for drug development are (1) to develop better preclinical predictive systems for acute and chronic toxicity of new drugs, a subject we are actively exploring in our contract toxicology program; (2) to accelerate the process of phase 1 testing in man (so that fewer patients are exposed at subtherapeutic doses), a subject under intense examination by a pharmacokinetic working group in the Developmental Therapeutics Program; and (3) to develop better predictive systems for choosing drugs for treating general classes of tumors, and for choosing treatment in individual patients. A broad spectrum of research projects in this area is ongoing in both the intramural and extramural communities, and includes work on refinement of the human tumor stem cell assay, as well as newer approaches such as analysis of tumor DNA for drug resistance genes by transfection or with gene probes. All these activities will require contract or RFA support in the future.

"For radiotherapy, the highest developmental priority is support of an effective clinical trial of neutron therpay ($2.6 million), and secondly the establishment of a clinical network for evaluation of NMR as a diagnostic procedure ($1.04 million). These efforts will serve as prototypes for the coordinated evaluation of major new modalities on a national scale, a major objective of the Radiation Research Program.

"The final phase of development of new treatments is the clinical trials apparatus, primarily supported through program project grants and the cooperative group network. Program project grants are an essential element because they allow coordinated laboratory and clinical evaluation of new therapies. These grants now constitute $60 million, or 22 percent of our budget, while the cooperative clinical trials groups have $42 million in funding or 14 percent of our budget.

"While both mechanisms have been productive in the past, they are costly. The financial stringency in cancer research today requires a careful re-examination of both mechanisms to be sure that they remain viable and productive. . . . In general, I see the need here for more careful development of grants both through investigator and NCI efforts in the planning stage, and a more critical eye in the funding process by NCI so that funds are allocated only to those high priority components of P01 grants.

"In the cooperative group program, our most immediate problems are to reduce duplication and improve coordination in clinical trials in specific diseases, and, secondly, to determine appropriate funding for our grantees. We have made significant progress through changes in the review process. Important tasks remain in the cooperative group program. We need to:

"1. Establish a reasonable balance between headquarters and member funding.

"2. Improve the assignment of funding for new and recompeting grants to group members through greater input by DCT staff and by the group chairman.

"3. Establish mechanisms for adjustment of funding of noncompeting grants to allow for changes in accrual, performance, and productivity."

Chabner stressed the importance of the private sector in drug development.

"Collaborative research has existed between DCT and the private sector since the inception of the Cancer Chemotherapy National Service Center in the mid-1950s, primarily in the form of voluntary submission of compounds for testing by NCI and the licensing of NCI discovered drugs by private pharmaceutical houses. This relationship is likely to become more important in the immediate future as public funds become more limited, and as the potential for profit in anticancer drugs increases. It is important for NCI to actively encourage private firms to assume responsibility for candidate agents at earlier stages in drug development, and at the same time continue to make our drug screening and clinical testing apparatus available for compounds submitted by private firms.

"We must encourage private industry to participate in the overall planning of drug and analog development. All these aspects of public-private cooperation are now taking place, and we hope will be further accelerated by the $3 million National Drug Discovery Groups, which will encourage a liaison between public, academic, and private parties in the effort to discover new agents. . . .

"In the area of treatment discovery, our major source of new treatments for the past two decades has been the drug screening process. . . . I believe that, in the short term, drugs are still likely to be the most significant contributor to the improvement of cancer treatment. In the drug discovery area, we have two most important short term objectives for our division: The first is to integrate new developments in molecular biology and biochemistry into the process of drug design; this we will attempt to do through our National Drug Discovery Groups. The second is to develop more relevant systems for screening and identifying new compounds. This latter effort will require us to move toward screening systems which employ human tumors, drug resistant tumors of relevant biochemical configuration (such as those which have pleiotropic resistance), and metastatic tumors. We have initiated efforts in each of these areas. It is my firm belief that the next substantial advances in cancer treatment will accompany these changes in screening. It is worth noting that we are far from a solution to the problem of a human tumor screen.

"Our major hope, in vitro tumor cloning, has proven to be a difficult system to use for technical reasons. Improvement in this system will require a better understanding of growth requirements and regulation by cytokines before reliable in vitro human tumor screens will be available. I personally suspect that we will make greater progress through research which will identify the genetic or mutational basis of drug resistance; this information can then be used to set up relevant screening systems based on biochemical considerations.

"In the past three years, the scope of our discovery activities has broadened considerably, with the addition of the biological response modifier program and the radiation research program which now comprise 10 percent and 22 percent, respectively, of our overall budget. We are, in addition, beginning to strengthen our investment in surgical research.

"In the longer run, biologicals must be regarded as having significant advantages (lesser toxicity, greater specificity, and possibly diversity) and this latter program must be supported effectively through its formative years. I feel that this support must primarily be in the form of grants, until sufficiently promising leads are discovered to warrant the extensive procurement and development systems currently in place for drugs. At present, 84 percent of BRMP funds are in investigator initiated research, either intramural or extramural, and I feel this balance is appropriate. In the short term, of all the biological leads, monoclonal antibodies have the most promise for making a signif-

icant clinical contribution to cancer diagnosis and treatment. This area clearly warrants highest priority for immediate development through contracts and program initiated grants. Our recent RFPs in this area attest to the support we are providing for this work. I see a relative long term growth in the BRMP budget as basic research progresses to the isolation and characterization of lymphokines, cytokines, and other growth-regulatory compounds, and as we develop a better understanding of their potential in antitumor therapy.

"In radiotherapy, our highest priorities in the discovery phase are less well defined; it is clear that we must support grant research into basic mechanisms of radiation damage. A number of important topics await further study: the enzymatic basis of resistance to radiotherapy, the effects of radiomodifiers (protectors and sensitizers), and the role of sulfhydrils in radiation damage. In addition, there are a number of important areas of developmental work in radiotherapy, particularly in the area of particle irradiation and diagnostic imaging, which require and are receiving contract or cooperative agreement support.

Chabner concluded by saying that the NCI intramural research program, "a remarkable national resource," must be streamlined in certain program areas; and that preservation of extramural centers of cancer research "is a goal of high priority to this division."

DCT BOARD APPROVES RECOMPETITION OF ONE CONTRACT, NIXES TWO OTHERS

The Board of Scientific Counselors of NCI's Div. of Cancer Treatment, in addition to the concept approvals reported in last week's issue of ***The Cancer Letter,*** approved the recompetition of a contract for production and testing of human and murine interleukin-2 which had been awarded this year to Litton Bionetics for three years.

DCT staff of the Clinical Oncology Program decided after the contract was awarded, estimated at $220,000 a year, that the effort should be expanded to permit acquisition of large amounts of murine interleukin-2 produced by EL-4 thymoma cells as well as the production of human interleukin-2 from the stimulation of human lymphoid cells by PHA. Estimated first year cost of the new award is $300,000. NCI determined that expansion of the contract would require that it be recompeted, and a new RFP will be issued.

Staff narrative of the project:

For the past four years, the Surgery Branch has been involved in intensive studies to investigate the use of lymphoid cells expanded in T-cell growth factor for the adoptive immunotherapy of cancer. Our studies were the first to demonstrate that lymphoid cells expanded long term in interleukin-2 were capable of mediating the accelerated rejection of skin grafts and were capable of curing mice with disseminated syngeneic lymphomas. These experiments demonstrated that it was possible to mediate rejection of substantial amounts of tumor in vivo by adoptive transfer of approximately sensitized lymphoid cells. Recent experiments have demonstrated that cloned cell lines with specific immunologic functions can also mediate these in vivo effects and attempts are being made to expand these studies to the rejection of human tumors. We are also exploring the in vivo effects of IL-2 administered directly in vivo.

These studies require large sources of interleukin-2. For the past several years our contract with Litton Bionetics has supplied murine interleukin-2 produced by the Con-A stimulation of murine splenocytes.

It is essential to the Surgery Branch's efforts in this area to have a contract that continues to supply murine interleukin-2. If possible, we would like to expand the scope of this project to supply interleukin-2 not only from Con-A stimulation of of mouse splenocytes but also from the stimulation of cloned murine thymoma cells that produce interleukin-2 at high levels as well as from human lymphoid cells and human T-hybridomas that produce human interleukin-2.

To expand this contract to supply interleukin-2 from EL-4 thymoma as well as human interleukin-2 from the T-cell hybridomas sources would require an additional technician as well as approximately a 30 percent increase in the supply budget for this contract.

The Board disapproved a proposal by the Developmental Therapeutics Program for a contract supported project to conduct targeted screening of new compounds for activity against multidrug resistant cell lines. Estimated first year cost of a three year contract was $300,000.

"I feel strongly this is not reading for a screening assay," Board member Susan Horwitz said. "Not that it's not important. But basic research is moving fast. We're not at the stage yet for a contract. This needs more R01 work."

"I agree we're not ready for screening," said John Driscoll, acting DTP director. "This is developmental research. It's a judgmental call, if the science is at the point where we can take over and stimulate this with a contract."

"I'm surprise you can't do this in house, you have so much expertise," Board member Israel Goldman said.

"It's a matter of space and resources," Driscoll answered.

"It sounds like this is ready for an RFA (grant)," Board member Gertrude Elion said.

"There is considerable work going on intramurally," DCT Director Bruce Chabner commented. "The real problem is finding appropriate cell lines. This (project) anticipates we will find those in a year."

"You won't find them any faster with a contract," Horwitz said.

"The sense of the Board seems to be that this is premature," Board Chairman Samuel Hellman said.

"It may not be premature a year from now," Chabner argued. "The contract process takes some time."

Board members were not convinced and voted unanimously to disapprove the concept.

The Board also turned down a request by the Radiation Research Program for an interagency agreement with Argonne National Laboratory to study neoplasias in beagle dogs after acute fission neutron irradiation. It would have cost an estimated $490,000 in the first year of a four year agreement.

The Board took no action on a proposal by the Biological Response Modifiers Program for a survey of extramural scientific requirements for an acquisition, quality assurance, and distribution program.

When the same proposal was brought up at a previous meeting, Board members said the project was too big and too early, and suggested that a workshop be held. A workshop was held, but Chabner said the project needed further internal staff discussion.

Another proposal by BRMP also was withdrawn, for production and isolation of lymphokines and cytokines. "This was previously considered, and the Board said it was too big," BRMP Director Robert Oldham said. "This is for information only. We will be back with this at a future Board meeting."

The Board approved two noncompetitive procurements--operation of a collaborative office for cancer chemotherapy in Japan, with the Japanese Foundation for Cancer Research the contractor at $16,000 a year; and an interagency agreement with the Bureau of Radiological Health for a study of malignancy as a cause of death in beagles given whole body radiation during development, estimated to cost $450,000 in the first year of a four year study.

NEW ACR MAMMOGRAPHY GUIDELINES ARGUE FOR ITS USE IN AGE 40-50 WOMEN

The American College of Radiology, in revised guidelines for mammography, reaffirmed the College's position that the procedure is extremely useful in detecting nonpalpable breast tumors and presented a rationale for using it in screening asymptomatic women over age 40.

The American Cancer Society and NCI, following the furor which arose in the mid-1970s when the Breast Cancer Detection Demonstration Project was using mammography for screening women as young as age 35, both adopted guidelines limiting annual mammograms to women over 50. The presumption was that radiation exposure posed a lesser risk for older women, and that that age group had been shown to have benefited from annual mammograms while younger women had not.

The new guidelines stop short of an out and out recommendation of annual mammograms for women over 40, although making that recommendation for women over 50 and stating that for women age 40-50, data indicate that mammography can produce a "favorable benefit risk ratio."

The ACR guidelines, in recounting the history of the controversy, noted that the National Academy of Sciences Committee on Biological Effects of Ionizing Radiation indicated that the risk of low doses of radiation causing breast cancer is small, "but they have speculated that it may never be zero (the possibility of zero is not excluded by the data). This is based upon extrapolation from high radiation dose data (low dose data are lacking). Considerable disagreement exists concerning these conclusions."

ACR based its new guidelines, which it said does not materially depart from the statement the College published in 1976, on the following points:

"1. Results from screening at the 27 BCDDP centers in the 1970s indicate that approximately one-third of the breast cancers occurred between the ages of 35 and 50 and that most of these lesions were either in situ or did not involve the regional lymph nodes. Most of these cancers were detected by mammography and a much higher percentage were detected by mammography alone than by physical examination alone.

"2. There has been progressive and significant improvement in the quality and diagnostic accuracy of optimum mammography and there has been marked reduction in radiation dose (this should not exceed one rad at the mid-breast with a two view examination).

"3. While the risk of irradiation from optimum mammography is immeasurably small at all ages, the linear, no threshold response model seems to be a conservative method for estimating population risk for women under the age of 40. However, the available data strongly suggest that the risk for breast cancer induction by radiation is much smaller, if it exists at all, for women over age 40 at the time of initial exposure.

"This improved mammographic ability to detect many small breast cancers, particularly in women aged 40-50, strongly suggests that substantially favorable benefit/risk ratios will apply to all women over 40 years of age, so long as optimum mammographic technique and carefully monitored equipment are used.

"These guidelines are proposed as a summary of current informed opinion:

INTRODUCTION

"1) Mammography and physical examination are clearly complementary procedures and the end results are materially improved when the two diagnostic procedures are optimally combined. However, it is a basic tenet of cancer diagnosis and treatment to detect the primary tumor when it is small or nonpalpable and mammography, appropriately performed, is the most effective noninvasive diagnostic tool for these purposes.

"2) Although the presumed risks of radiation at current optimum levels of exposure (less than 1 rad to the mid-breast for a two view examination) are immeasurably small, continued efforts to reduce exposure should be made. However, this should not

be at the expense of image quality which must be preserved to insure the best benefit risk ratio.

"3) Optimum and reproducible image quality are essential for accurate mammography interpretation. If xeromammography is the method of choice, it should be performed with a tungsten target tube and breast compressions during the x-ray exposure. If film-screen mammography is the method of choice, it should be performed only with an x-ray unit specialized for mammography. Each radiologist should have periodic monitoring of his equipment and procedures to assure that the patient's radiation exposure is being maintained at the lowest feasible level (less than 1 rad at the mid-breast for a two view examination) consistent with this optimum image quality.

"4) At present, other imaging modalities such as thermography and ultrasound have not demonstrated the requisite sensitivity to substitute for mammography in screening or diagnosis. The presumed risks of radiation with mammography are not a justification for their use. Computerized tomography has had limited application, requires greater radiation exposure, and has some risk of adverse reaction to the intravenous injection of contrast. There is active research going on with these and a number of other imaging modalities.

"5) Subsequent mammographic examination should be performed at one to two year intervals determined by the combined analysis of physical and mammographic findings and other risk factors, unless medically indicated sooner.

"6) Annual mammography and physical examination are recommended for all women over age 50."

NATIONAL CANCER INSTITUTE GIFT FUND SUMMER TRAINING AWARD ANNOUNCEMENT

NCI is seeking applicants for 1983 Summer Training Awards funded by the NCI Gift Fund. The fund receives donations from persons who wish to further the National Cancer Program, often from relatives and friends of patients treated in the NIH Clinical Center.

Applications will be accepted from students who are currently enrolled in medical school or who are in the second year of a doctoral program leading to research in the fields of epidemiology, carcinogenesis (particularly chemical carcinogenesis), the nutritional sciences, or cancer control. Awards will be for two or three months each and will offer research training in an intramural laboratory or branch at NCI. The awards will include a monthly stipend of approximately $1,000, with some adjustment for the level of the trainee.

Applicants should submit the following documents to Dr. Peter Fischinger, Associate Director, National Cancer Institute, NIH, Bldg. 31 Rm 11A46, Bethesda, Md. 20205.

- An application form including name, address, telephone number, relevant experience, future objectives, and the type or area of research in which the applicant wants to participate while at NCI. (Placement in a particular NCI laboratory or branch may be requested. Applicant should specify whether he or she will accept other placement.) The application form may be obtained from Fischinger, phone 301-496-7927.
- A curriculum vitae that outlines applicant's education, work experience, and any publications, prizes, scholarships, etc.
- Undergraduate and graduate transcripts.
- At least two letters of recommendation from senior faculty, university officials or researchers who have direct knowledge of their work.

Applications will be judged by a selection committee of senior NCI scientists. Awards will be approved by the Executive Committee of NCI on the basis of demonstrated academic excellence, evidence of serious intent to pursue a research career, and the availability of placement at the NCI congruent with the applicant's abilities and area of interest.

All applications must be received by Dec. 31, 1982. Awards will be announced by March 15. It is anticipated that approximately 10 awards will be made for the summer of 1983.

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. NCI listings will show the phone number of the Contracting Officer or Contract Specialist who will respond to questions. Address requests for NCI RFPs to the individual named, the Blair Building room number shown, National Cancer Institute, 8300 Colesville Rd., Silver Spring, Md. 20910. RFP announcements from other agencies reported here will include the complete mailing address at the end of each.

RFP NCI-CM-37569-29

Title: *Primary genetic centers*
Deadline: *Dec. 16*

The Animal Genetics & Production Branch, Developmental Therapeutics Program, Div. of Cancer Treatment, NCI, is interested in contracting with organizations that have the capability to operate primary genetic centers.

The objective of the contracts is to breed and produce large numbers of rodents of the highest quality. Individual strain selection and production levels will be directed by the government project officer. New and replacement starts will be supplied by the government in germ free shippers and in an associated flora status. Contractors will distribute animals on a weekly basis as directed by the project officer.

In order to accomplish the needs of the program, it is anticipated that five contract awards will be

made. One award will be made at each of the production levels indicated in the various tasks below. Only Task E will be a 100 percent small business set aside.

Task A—Maintain approximately 3,300 mouse cage equivalents as defined flora foundation cages in isolators. It is estimated this effort will require 3,000 mouse cages and 120 rat cages. Maintain approximately 15,650 mouse cage equivalents in a maximum barrier room environment. This effort houses 12,400 mouse cages and 1,300 rat cages.

Task B—Maintain approximately 1,300 isolator cages for foundation colonies. Maintain approximately 4,600 cages in a maximum barrier room environment. It is not expected that any rats would be produced within this task.

Task C—Maintain approximately 2,100 mouse cages in isolators for foundation colonies. Maintain approximately 5,500 mouse cages in a maximum barrier room environment. It is not expected that any rats would be produced within this task.

Task D—Maintain approximately 3,650 mouse cage equivalents in isolators for housing foundation colonies. This task houses 750 mouse cages and 80 rat cages in isolators. Maintain approximately 3,650 mouse cage equivalents under maximum barrier room conditions. This task houses 2,400 mouse cages and 500 rat cages.

Task E (small business set aside)—It is anticipated that this award will be to a contractor who is not currently performing at the genetic center level. Maintain approximately 2,000 mouse cages under maximum barrier room conditions. There will be no isolator foundation cages within this task. Approximately 500 of the total 2,000 cages would be used for maintaining the foundation colony and the remaining 1,500 cages would be for pedigreed expansion propagation and stock.

A mouse cage is considered to be approximately 7½ by 11½ inches. A rat cage is considered to be approximately 2½ times the size of a mouse cage.

Contracting Officer: Clyde Williams
RCB, Blair Bldg. Rm. 228
301-427-8737

RFP N01-CP-31012-74

Title: *Bioassay by tracheal organ culture system*
Deadline: *Jan. 3, 1983*

This effort is for the bioassay of new retinoid compounds whose synthesis is being supported under the Chemical & Biological Prevention Program.

Offerors must be able to:

1. Set up and make operational in all its aspects the hamster tracheal organ culture system for bioassay of new retinoid compounds.
2. Employ in the standard assay procedure at least three dilutions of the new retinoid as well as three dilutions of the referenced standard, all-trans-retinoic acid.
3. Employ for each assay at least seven replicate samples (tracheas) for each of the three dilutions of the new retinoid and for the reference all-trans-retinoic acid. Proper controls shall be parts of each assay.
4. Perform duplicate trials on all new retinoid compounds.
5. For some compounds which show high activity or erratic results. perform additional trials as may be necessary.
6. Where indicated, test other concentrations than those initially evaluated in order to find the maximum response.
7. As part of the bioassay, assess histologically the tracheal epithelium with respect to both the extent of squamous metaplasia and the presence or absence of keratin and keratohyaline granules.
8. In these assessments, grade cultures as to the percentage with keratin and keratohyaline granules. Analogs will be scored as "inactive" if both keratin and keratohyaline granules are seen; they are scored as "active" if keratohyaline granules are not demonstrable.
9. In addition, grade cultures as to the percentage of their total epithelium showing squamous metaplasia. Such grading will be reported as none; mild squamous metaplasia, between 1% and 10%; marked, between 10% and 40%; and severe, greater than 40%.
10. Maintain close communication with the NCI project officer and retinoid synthesis contractors, reporting promptly the evaluations of all bioassays.

It is anticipated that an 18 month incrementally funded contract will be awarded.

Contract Specailist: Odessa Henderson
RCB, Blair Bldg. Rm. 118A
301-427-8888

NCI CONTRACT AWARDS

Title: Alteration/renovation/maintenance/upgrading projects at Frederick Cancer Research Facility
Contractor: Litton Bionetics Inc., $859,239.

Title: Bioassay testing of chemicals, continuation
Contractor: Gulf South Research Institute, Baton Rouge, La., $2,339,648.

Title: Analytical services support of the Div. of Extramural Activities
Contractor: Prospect Associates, Rockville, Md., $832,934.

The Cancer Letter _Editor Jerry D. Boyd
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